

Opening Minds and Mouths Wider: Developing a model for student reflective practice within clinical placements

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*“All that we are is the result of what we have thought (reflection)...
the mind is everything” - Buddha*

ABSTRACT

Critical reflection provides a bridge between university and the workplace, and in ultimately preparing work ready graduates (Patrick et al, 2008). Reflective practice is known to be widely used in work integrated learning (WIL) via journals, written and oral assessments. This paper highlights the use of reflective practice and the use of feedback through the application of a framework based on facets of employability and levels of student autonomy in work experience. The Work Skills Development Framework (WSD) monitors and assesses the proactive participation of students during their placement using different work skill facets and levels of autonomy in the workplace (Bandaranaike & Willison, 2009).

This paper presents the adaptation of the WSD to the Bachelor of Oral Health (BOH) at the University of Adelaide. The BOH is a 3-year undergraduate program, where students spend between 40-60% of their contact time undertaking clinical placements. Assessment of specific, psychomotor skills has been the traditional focus of clinical placements in most health science courses – however, this approach has its limitations. The value of a more holistic approach, based on reflective practice, is well documented (Epstein et al, 2008; Tsang and Walsh, 2010; Chambers, 2009). Consequently, the WSD has been used to scaffold an assessment rubric that measures the more holistic aspects of developing the professional abilities required by all health professionals. This expanded approach to assessing BOH students during clinical placements will be implemented in 2012, and ongoing evaluation is planned to measure its effectiveness in developing reflective, highly skilled oral health practitioners.

Introduction

Reflective practice is emerging as a leading characteristic of professional development and is regarded as essential for professional competence. It is widely recognised in work integrated learning as a means to bridge the gap between theory and practice and in preparing work ready graduates (Patrick et al, 2008). In health care, reflective practice has been identified as a critical attribute of proficient practitioners (Argyris

& Schön, 1974; Schön, 1983, 1987; Boud et al, 1985; Epstein & Hundert, 2002; Moon, 2004) and is a skill set that can be nurtured in teaching and learning contexts such as clinical placements.

Reflection is a process of reviewing an experience in order to describe, analyse, evaluate and inform your learning and your practice. It is the ability to uncover and make explicit to one self what one has planned, observed, or achieved in practice (Raelin, 1997). These experiences can be understood and generalised both during (reflection in) and after (reflection on) action (Schön, 1983). Thus reflection is recognised as having a role in academic learning, in skills development and for lifelong learning (Harvey et al, 2010).

The concept of reflective practice has been developed to incorporate not just the ‘collecting experiences’ of a student, but also the thinking, active learning and behaviour change based on their reflections (Chambers et al, 2011). It is commonly used by professionals in nursing (Nicholl & Higgins, 2004; Kulper et al, 2004), physiotherapy (Donaghy and Morss, 2007), teacher education (Pedro, 2005; Chitpin, 2006), psychology (Ward & Gracey, 2006; Phan, 2008), social work (Gould & Taylor, 1996) and management (Cuncliffe, 2002), amongst others, as a means of gaining awareness of our behaviours, understanding them and becoming more effective in our actions. Donaghy & Morss (2007) conclude in a trial of clinical placements in physiotherapy, that reflective practices build self awareness in students, critical thinking and reasoning skills, and skills for decision making within the professional environment.

Although there is substantial literature on reflection and reflective practice, especially in the nursing sciences (O’Connor et al, 2003; Kulper et al, 2004), there is limited practical application in the field of work integrated learning. While the need to think and act professionally is acknowledged by many researchers as an essential component (Boud, 1999; Schon, 1983), the method of reflective practice *per se*

remains largely theoretical and yet to be well defined (Andrews, 2005). To date methods have varied from appraising the value of self monitoring and self regulation (Bandura, 1986), significant event analysis (Henderson et al, 2002), group reflection (Grey et al. 2003), the use of grounded theory framework (O'Connor et al, 2003), peer discussion (Lesnick, 2005), scaffolded reflection (Murphy et al, 2008), scenario based learning (Chambers et al, 2011) to career development reflection (Bandaranaike & Willison, 2011).

Further, most research on reflection focuses on reflective practice as an individual experience, as in writing journals or reflective essays. This research extends reflection further by engaging the students in reflective practice through a continuum of student autonomy levels in each of the defined work skills facets (Table 2).

This paper discusses the framing and planned implementation of an applied model of reflective practice, the Clinical Reflective Skills (CRS) framework for undergraduates undertaking clinical placements in the second year of the Bachelor of Oral Health (BOH) at The University of Adelaide, Australia. The framework is adapted from the Work Skills Development Framework (WSD), which has been trialled successfully in amongst work integrated placements in the environmental sciences, earth sciences and urban planning at James Cook University, Townsville, Australia (Bandaranaike & Willison, 2009, 2010).

The value of the framework lies in its two-dimensional assessment of the facet of skill development and the level of student autonomy. In this structured format, students are obliged to think not only on 'collecting experiences' but also think actively on processing, lifelong learning and changing their behaviours based on their reflections (Chambers et al, 2011). The CRS framework has the potential for developing reflective, highly skilled oral health practitioners and for educating existing practitioners on the value of reflective practice. In this paper we have adapted the WSD framework to scaffold an

assessment rubric that measures the more holistic aspects of developing the professional skills required by all health professions.

Conventional reflective models (Kolb, 1984; Gibbs, 1988; Aitkin & Murphy, 1994; Johns & Graham, 1996) tend to be theory-based experiences relying on tacit knowledge rather than how reflection may improve specific aspects of work placement or clinical practice. Students once in practice need to think and practice independently, extrapolate into the future, change their approach mid stream, negotiate and continually reflect and inquire (Reiley, 1982).

The purpose of this paper is to develop a model for reflective clinical practice, based on our experience in the oral health sciences, but nevertheless adaptable to other health science programs. The aim is to promote reflection in clinical practice focussing on the six facets of skill development: Initiative, Use of Technology, Learning and Evaluation, Self-Management, Problem Solving and Communication. Consequently, students will be able to self-assess their level of autonomy for each of the facets as they progress, in order to plan and implement improvement (Table 2).

While this research project is ongoing, the focus in this paper is on the process of developing the CRS framework for reflective clinical practice in the BOH. Subsequently the framework will be empirically tested to assess the pre and post clinical experiences using the newly framed CRS framework. In this paper we describe the methodology adopted in developing and implementing the CRS model. Next we discuss the theoretical basis and rationale for developing each skill facet along the five levels of student autonomy that scaffold the performance levels in explicit steps. We then give a scenario to illustrate how the CRS framework can guide BOH students in reflective practice skill development.

Methodology

Students need the opportunity to trial their conceptual academic knowledge so that it becomes grounded and contextual. They learn by extrapolating their experiences through critical reflection (Long, 1990; Raelin, 1997). The WSD framework was conceived to guide students in their work experience through reflection on key employability facets and assess their performance or level of autonomy from Level 1 (requiring a high degree of guidance) to Level 5 (working with self determined guidelines appropriate to their context of practice).

A combination of graduate attributes (Graduate Attributes, 2009) with employability skills (DEST, 2002, 2006) and Bloom's taxonomy (Bloom et al 1956), together with employer feedback, were used in defining the WSD's six employability or work skill facets of Initiative, Technology, (Lifelong) Learning, Self Management, Problem Solving and Communication (Appendix 1). The WSD is currently used by students to reflect on the six employability facets through a reflective journal throughout the placement, as well as a reflective essay and an interview at the end of the placement. The WSD is also used in employer feedback that targets the six employability facets. The WSD has been utilised both as a reflective tool for students and also as an assessment tool for the placement coordinators to rank the student work according to their level of autonomy in each of the facets.

The Clinical Reflective Skills (CRS) framework (Appendix 2) adapts the function of the WSD to reflective clinical practice in the BOH. Similar to other health sciences courses that lead to a registrable qualification, BOH students spend up to 60% of their time in the latter phases of the course, undertaking clinical placements. The traditional approach to clinical teaching and assessment in dental undergraduate programs has been based on apprenticeship models and 'technical rationality' (Tsang and Walsh, 2010) that focussed on developing technical expertise based on systematic underpinning knowledge. Congruent with colleagues across the health sciences, dental education researchers are recognising that reflective

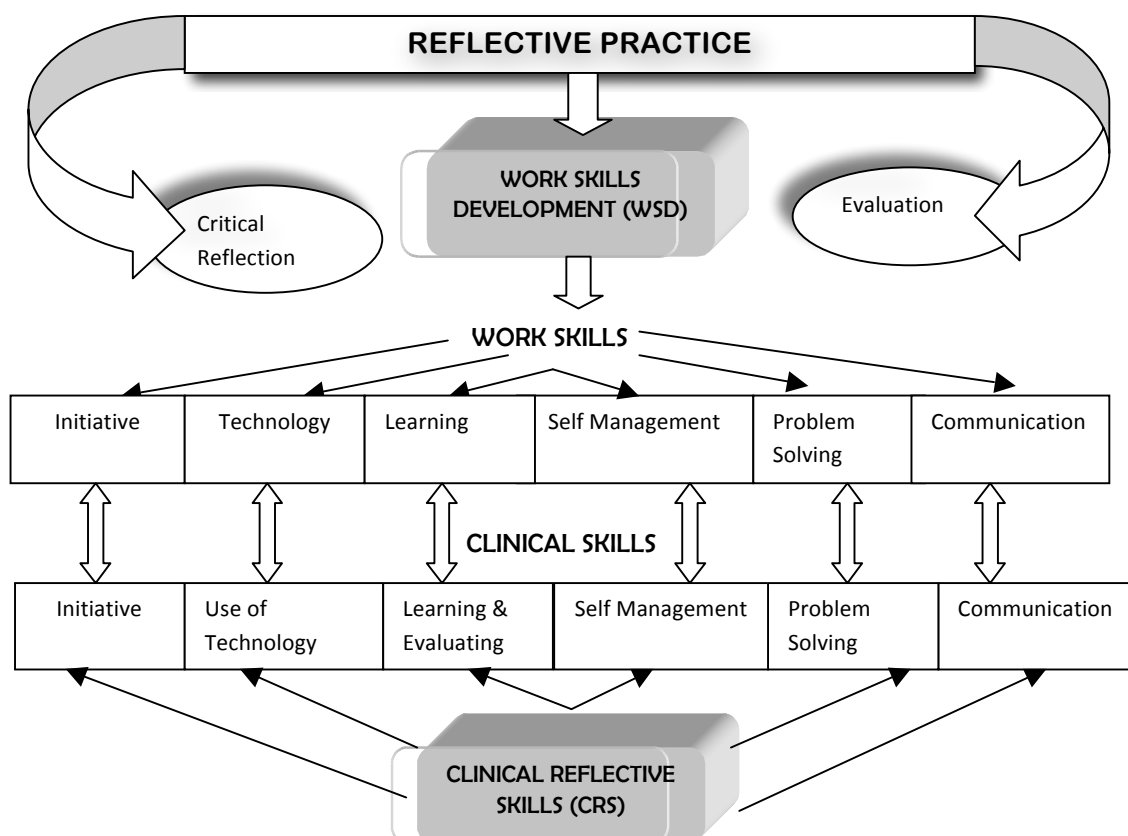
practice - termed 'the third pedagogy' (Chambers, 2009) - should be an essential part of a student's undergraduate experience. Reflective practitioners should not only possess the skill to critically examine clinical experiences, but must also learn from them in order to navigate the complexities of their professional role (Asadoorian et al, 2011) and provide quality assured patient care.

In the past, second year BOH (BOH2) students on placements, have tracked and recorded a prescribed series of clinical procedures in the Clinical Learning Portfolio (CLP). Following each procedural skill 'sign off', they were required to 'reflect' on their developing competence and encouraged to plan for further development in this area. Whilst providing an effective means of quantitatively monitoring clinical work, this approach tended to segment their overall professional role into a set of specific skills, and did not encourage holistic reflection. Epstein et al (2008, p.9) consider it "necessary to integrate and act upon data derived from assessments of a variety of clinical skills and behaviours".

The development of reflective practice is best done when integrated throughout the undergraduate years, rather than taught in a stand-alone subject (Chambers, 2009; Tsang and Walsh, 2010; Asadoorian et al, 2011). With this in mind, clinical placement coordinators in BOH2, determined to revise the established CLP and redesign its assessment rubric, based upon the Work Skills Development Framework, developed by Bandaranaike and Willison (2010).

Rigorous analysis and evaluation of the WSD underpinned developing the CRS. Similar terms for the six Facets of Skill Development (the y-axis) were utilised, in order to provide alignment to the original work-based learning model (WSD) (Diag.1). Where necessary, changes to the descriptors of some CRS facets were made, but only to provide a health practice focus. The five levels of autonomy (the x-axis) on the WSD remain unchanged on the CRS, as they provided a logical and clinically-realistic sequence of reflective practice development.

Diag 1: Adaptation of the Work Skills Development Framework to the Clinical Reflective Skills Framework



The subsequent design of each cell on the CRS was developed against each facet and sequenced according to the descriptors of each level of autonomy. Utilising the established approach to effective assessment to 'begin with the end in mind' (Chickering and Gamson, 1987), the highest level of autonomy for each facet describes the 'gold standard' that every health practitioner should attain. This benchmarking activity provided the initial blueprint for the framework. Table 1 demonstrates the WSD facets of skill development that were used as the guiding principles to determine the performance criteria at the highest level (level 5).

Table 1: Linking Facets of Skill Development (WSD) to Performance Criteria on CRS

Facet of Skill Development (adapted from WSD)	Clinical Performance at highest Level of Autonomy (level 5) on CRS
A Initiative Student establishes professional role within their scope of practice & clarifies skills & knowledge required	Highly developed sense of professional role in all clinical contexts. Completes all clinical requirements using a high degree of initiative and self direction.
B Use of Technology Student utilises relevant resources & technology to find & generate information/data applicable to their clinical practice	Demonstrates independence in using a comprehensive range of technology to collect and record evidence-based information relevant to clinical practice. Self-selects sources within self-determined guidelines.
C Learning and Evaluating Student evaluates their performance in order to set goals to establish lifelong learning skills	Evaluates information/data related to clinical performance using prescribed criteria.
D Self Management Student organizes realistic goals in order to develop self management skills	Rigorously evaluates information/data related to clinical performance using self-generated criteria based on experience, expertise and the literature.
E Problem Solving Student synthesises and analyses data to create solutions in a range of clinical contexts	Skillfully analyses an issue of high significance as a basis of reflection. Independently and skillfully makes connections between existing knowledge...and evidence-based practice. Selects and uses a wide range of sophisticated elaboration techniques to establish a focused solution Synthesises, and applies information/data to fill self-identified gaps and extend knowledge.
F Communication Student communicates knowledge and understanding through interpersonal communication and teamwork	Uses sophisticated discipline-specific language choosing appropriate genre to extend knowledge and understanding, from diverse perspectives for a range of audiences

This planning approach facilitated the utilisation of the evidence-based approach to work-integrated learning that the WSD has established (Bandaranaike and Willison, 2010), whilst contextualising it to authentic clinical practice by cross-referencing the six facets of development to the graduate outcomes required by oral health, indeed any health, practitioners.

The value of scaffolding levels of performance in skill development is well documented (Tharp and Gallimore, 1988; Roehler and Cantlon, 1997; Shannon et al, 2001). Based on the constructivist pedagogical model, it is best defined by its developer, psychologist Lev Vygotsky, as the “role of teachers and others in supporting the learner’s development and providing support structures to get to that next stage or level”. It is considered valuable as "it directs attention to the need for support in the learning process" (McLoughlin, 2002, p.149). Table 2 provides an example of how one of the key facets of development, Problem Solving, is scaffolded across the levels of autonomy 1-5.

Table 2: Sample Descriptors of Levels of Autonomy on CRS

Level of Student Autonomy	CRS Cell Description	Examples from Facet E: PROBLEM SOLVING¹
Level 1	<i>Student requires a high degree of structure & guidance</i>	Attempts to analyse an issue of minimal significance as a basis of reflection Needs a high degree of guidance to make connections between existing knowledge...and evidence-based practice.
Level 2	<i>Student works with some degree of structure/guidance</i>	Analyses an issue of minimal significance as a basis of reflection. Moderate degree of guidance required to make connections between existing knowledge...and evidence-based practice.
Level 3	<i>Student works independently within provided guidelines</i>	Analyses an issue of moderate significance as a basis of reflection. Needs limited guidance to make connections between existing knowledge... and evidence-based practice. Synthesises information/data to construct emergent knowledge.
Level 4	<i>Student works in an innovative manner with minimal reliance on guidelines</i>	Thoroughly analyses an issue of high significance as a basis of reflection Independently makes connections between existing knowledge ... and evidence-based practice. Synthesises information/data to fill recognized knowledge gaps.
Level 5	<i>Student works with self-determined guidelines appropriate to the context</i>	Skillfully analyses an issue of high significance as a basis of reflection. Independently and skillfully makes connections between existing knowledge...and evidence-based practice. Synthesises, and applies information/data to... extend knowledge.

The table explicitly demonstrates the increasing skill level of reflective practice required by students', but most importantly provides exemplars of how the next level of autonomy can be achieved. This is visible not only to students' for self and peer assessment, but the means by which clinical tutors provide feedback for further reflective practice skill development.

The implementation of the CRS assessment rubric will occur across the 2012 academic year. Evaluation of its effectiveness in developing clinical reflective skills will be undertaken by independently-run focus groups involving students and (separately) their supervisors at the end of the clinical teaching year. To verify data generated from these groups, strategic questions will be embedded in the standard Student

¹ The full CRS framework can be viewed in Appendix 2

Evaluation of Learning and Teaching (SELT) questionnaire, the student evaluation tool used by the University of Adelaide.

Discussion

Incorporating the CRS framework into the established BOH2 clinical placement program was achieved by redesigning the existing CLP into a more holistic and authentic assessment tool. The list of 'signed off' clinical skills in the CLP was retained as a logbook method of tracking and collating student experience and technical expertise through a log book approach that also helps the students pace the development of their technical skills. However, a major change to the CLP has been to embed opportunities for student reflection at regular intervals, where they holistically evaluate their own performance as a practising oral health therapist, rather than how well they performed a specific procedure. Students are asked to submit their CLP at 6 weekly intervals across the clinical teaching year, using the CRS rubric to assess students' reflective practice skill development.

This framework is designed to cater for the needs of BOH students across the 2nd, and eventually 3rd year, of the program, facilitated by the scaffolded levels of autonomy that allow for the 'bar to be moved' across as students' develop their reflective practice skills.

The CRS rubric will have a dual-fold purpose - as a means of identifying the level of students' reflective practice skills, but as (if not more) importantly to serve as explicit guidelines by which strategies for further development can be devised and implemented. Tsang and Walsh (2010) promote the value of supporting reflective practice skill development through regular and timely feedback, and using a well designed step-wise framework.

The following scenario identifies how the CRS has been designed to assess and guide BOH students' reflective practice skill development:

"During a clinical placement, a patient presents with a complicated medical history. The medications that the patient is taking require the student to research the potential effects these medications may have on the patient's oral health and dental treatment planning. They will need to be able to relate any systemic health disorder related to these medications and rationalise how this systemic condition and the medications contribute to the state of the oral tissues as they appear clinically. Compounding this, the student will need to discuss the interplay between these systemic issues, other risk factors, the patient's behavioural and oral health practices and the current oral health status of the patient. A student embarking on an early clinical practice experience will be overwhelmed with the amount of data, problems and desired treatment and preventive outcomes that will need to be considered."

The CRS framework will guide the students' thinking process by approaching the learning situation with a set of carefully constructed guidelines. Firstly, they will need to consider their professional role (Facet A) in this clinical context and where they fit in the overall interdisciplinary care of the patient, which informs the final oral health treatment plan. The student will need to use a variety of technologies (Facet B) ranging from texts, online resources, clinical instruments and procedures, to collect information and data, evaluate its relevance and significance (Facet C) and then organise it in a way that will inform their approach to managing the patient (Facet D). The student will need to interpret, analyse and eventually synthesise an approach to treatment that will best meet the patient's needs (Facet E) and communicate these findings to the patient and the tutor (Facet F). The treatment approaches that the student adopts and must have a solid rationale with a strong evidence base.

Through reflective writing in their CLP, students will map out the learning issues that they encounter, where their knowledge deficits lay, and the areas/issues that provided them with the biggest challenges.

From here they will be asked to describe how they went about searching and analysing this information, what challenges this approach provided, and how they managed any ambiguity. Ultimately, it is hoped that the CRS framework will enable students to develop new knowledge constructs and improvement strategies that can be readily applied in similar and differing clinical situations.

Conclusion

The emergence of reflective practice and integrating experience with reflection dates back to the early part of the last century (Dewey, 1933). Since then several models of reflection have identified and acknowledged the need for students to act and to think professionally. In work integrated learning, it's important that reflection is based not solely on broad experimentation, but on specific work or clinical skills as shown in the context of this research.

This paper provides evidence that reflection can influence developing practice based work skills on the evaluation of a reflective framework for students on clinical placement. A potential challenge to developing the concept among students is the possible increase in their workload, maintaining journals and engaging in reflection. Therefore a preliminary briefing on the value of the concept of reflective practice is imperative for successful output.

The Clinical Reflective Skills framework is both a qualitative and a quantitative framework which can be used as a reflective tool and an assessment tool across the health sciences. Its value lies in its ability to measure the more holistic aspects of developing the professional skills required by all health professionals through reflective practice.

A fundamental concept in oral health practice is that a mouth that is 'open wide' allows practitioners to identify, diagnose and treat their patients in optimal clinical conditions. If these same practitioners have minds that have been 'opened wide' by effective reflective practice, they are ideally placed to provide high quality and sustainable health care. It is hoped that the enabling pathway to this goal is the Clinical Reflective Skills (CRS) framework, and that its implementation in the BOH program will embed these skills in oral health practitioners of the future.

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Clinical Reflective Skills Development Framework

	← LEVEL OF STUDENT AUTONOMY →				
FACET OF SKILL DEVELOPMENT ↓	Level 1 <i>Student requires a high degree of structure/guidance</i>	Level 2 <i>Student works with some degree of structure/guidance</i>	Level 3 <i>Student works independently within provided guidelines</i>	Level 4 <i>Student works in an innovative manner with minimal reliance on guidelines</i>	Level 5 <i>Student works with self-determined guidelines appropriate to the context</i>
A. INITIATIVE <i>Student establishes professional role within their scope of practice</i>	Requires a high degree of guidance to identify and adapt to professional role.	Able to restate professional role requirements, but requires some guidance to identify and adapt to position.	Able to establish professional role requirements, and identifies and adapts to the position with minimal oversight.	Readily establishes professional role requirements and identifies and adapts to position in a variety of contexts.	Highly developed sense of professional role in all clinical contexts
B. USE OF TECHNOLOGY <i>Student utilises relevant resources and technology to find and generate information/data</i>	Uses basic/limited technology with a high degree of guidance to find and generate information/data relevant to clinical practice.	Uses an adequate level of technology with some degree of guidance to find and generate information/data relevant to clinical practice.	Uses a good range of technology to collect and record evidence-based information relevant to clinical practice. Self-selects sources from several prescribed methodologies.	Uses a wide range of technology to collect and record evidence-based information relevant to clinical practice. Self-select sources within structured guidelines.	Demonstrates independence in using a comprehensive range of technology to collect and record evidence-based information relevant to clinical practice. Self-selects sources within self-determined guidelines.
C. LEARNING & EVALUATING <i>Student evaluates performance in order to set goals to establish lifelong learning skills</i>	Evaluates data/information related to clinical performance at a basic level.	Evaluates information/data related to clinical performance using prescribed criteria.	Adequately evaluates information/data related to clinical performance using self-determined criteria within structured guidelines.	Comprehensively evaluates information/data related to clinical performance using self-determined criteria within structured guidelines.	Rigorously evaluates information/data related to clinical performance using self-generated criteria based on experience, expertise and the literature.
D. SELF MANAGEMENT <i>Student uses reflective practice to organize realistic goals</i>	Uses reflective practice to reproduce existing knowledge/prescribed goals in a basic format.	Uses reflective practice to develop existing knowledge/prescribed goals using a recommended structure and process.	Uses reflective practice to develop existing knowledge/prescribed goals using recommended structures and self-determined processes.	Uses reflective practice to develop and expand existing knowledge/prescribed goals using self-determined processes, and minimal reliance on recommended structures.	Uses reflective practice to develop and expand existing knowledge/prescribed goals using self-determined structures and processes.
E. PROBLEM SOLVING <i>Student synthesises and analyses data to create solutions in a range of clinical contexts</i>	Attempts to analyse an issue of minimal significance as a basis of reflection. Needs high degree of guidance to connect existing knowledge & personal opinions.	Analyses an issue of minimal significance as a basis of reflection. Moderate degree of guidance required to connect existing knowledge and personal opinions.	Analyses an issue of moderate significance as a basis of reflection. Needs limited guidance to connect existing knowledge & personal opinions.	Thoroughly analyses an issue of high significance as a basis of reflection. Independently connects existing knowledge and personal opinions.	Skillfully analyses an issue of high significance as a basis of reflection. Independently and skillfully connects existing knowledge and personal opinions.
F. COMMUNICATION <i>Student communicates knowledge and understanding through interpersonal communication and teamwork</i>	Uses mainly 'lay' language and/or requires considerable guidance to communicate specified knowledge and understanding.	Uses some discipline-specific language to demonstrate self-selected knowledge and understanding from a stated perspective and for a specified audience.	Uses discipline-specific language to demonstrate knowledge and understanding from a scholarly perspective for a specified audience	Uses discipline-specific language to demonstrate knowledge and understanding from several perspectives for a self-selected audience	Uses sophisticated discipline-specific language choosing appropriate genre to extend knowledge and understanding, from diverse perspectives for a range of audiences.

Adapted from WSD Framework developed by Sue Banderneke and John Wilson, by Cathy Snelling and Sophie Kerenicolas.

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