Rubrics for Reflective Learning Journals: A Note on Assessment Concepts

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Abstract

Reflective Learning Journals are used to engage students in the learning process. To motivate students to complete the Reflective Learning Journal it is common practice to allocate marks and it is in this area that problems arise. To address the problems rubrics have been used however, most rubrics are based on assigning marks to very straightforward learning objectives embedded in almost every major assignment, and this is not so easy when evaluating/assessing the writing of a reflective journal. Deriving a rubric to suit a reflective learning journal requires attention to writing analytics rather than traditional learning outcomes. This paper presents a rubric developed from the literature on written self-reflection textual analytics. The approach provides a formula driven method as an objective means to alleviate any perception of subjectivity.

Key words: Reflective learning journals; rubric assessment; self-reflection; textual analytics.

Introduction

In the global environment the job market is changing at a dramatic speed and the demands for university graduates to be ready adapt to meet the demands for flexible knowledge, skills and dispositions are impacting on the manner in which education is conducted. Dewey's (1933) foundational work on teaching and learning suggests that reflection is a large part of the learning process, "*We do not learn from experience... we learn from reflecting on experience*". It seems that this is where critical self-reflection has increasingly been hailed as central to the development of self-regulated learners in preparation for the ability to become flexible learners.

Self-reflection and self-regulated learning have been considered to have an integral role in the learning process (Buzza, Kotsopoulos, Mueller & Johnston, 2013). Prior research has provided some support for the notion that self-reflection can lead to self-regulated learning (Fung, Abdullah & Hashim, 2019). The approach commonly adopted to encourage and support self-reflection comes in the form of requiring students to participate in producing a reflective learning journal or log. Now to be clear, the terms "Reflective Learning Journal" and "Reflective Learning Log" are for the most part synonymous – nothing short of a play on words. However, the key is to be found in the words "Reflective Learning" – since the role of reflection in learning suggests that it is a tool pertinent to the development of critical reflection (Freeman, 2001; Kheng, 2017; Laing, 2023).

The definition of reflection is somewhat diverse, and it can be viewed as ranging from a single perspective to a balanced approach involving multiple relevant perspectives. Aukes et al [2007] emphasised emotional and communication components for personal reflection derived from the aspects of self-reflection, empathic reflection, and reflective communication. For Sobral [2000] the notion of reflection-in-learning was based on reflection from a learning perspective. However, the reflection theories and terms used terms by Dewey, Boud, Schön, Kolb, Moon, and Mezirow do come closer to having some shared ground.

Framing the Reflective Activity

For students to engage meaningfully in the act of reflection, they need to be motivated (Artino, La Rochelle & Durning, 2010; Mann,1999). The expectancy-value model of Wigfield and Eccles (2000) identifies the subjective value of a task to a person and their expectation of performing it successfully as being the main predictors of the task being performed. Reflective processes in learning have been found to have the most impact when they are formative and future-oriented (Boud & Falchikov, 2006). The framing of the reflective process can encourage students to connect their thinking to the wider world (Gibson et al., 2016). It is therefore important to provide a clear and concise explanation of the expectations as well as justification for the activity as to the formative and future benefits.

Motivation and Assessment

Because self-reflection is not something that students are likely to be familiar with it is common that most will find it difficult to achieve the self-reflection in an appropriate and effective manner (Pintrich, 1999). This is where it becomes an important requirement to provide support in the form of assessment guidelines that are in turn linked to the relevance of the activity.

The most frequently used method for assessing students' written self-reflections is analytical rating using rubrics, (Alizadeh et al, 2018; Wald et al, 2012; Moniz et al, 2015; Ottenberg et al, 2016; Michels et al, 2009). The rubric should include '*criteria for rating important dimensions of performance, as well as standards of attainment for those criteria*.' (Jonsson & Svingby, 2007). For these criteria to achieve validity (and especially from the perspective of the students), they should represent the varying levels of competence expected of the students. There is another side to this and that is the need to have a method to enhance inter-rater reliability, the aim is to ensure that all those involved in doing the marking (raters) take into account the same, predefined aspects of performance (Wald et al, 2012, Jonsson & Svingby, 2007, Stemler, 2004). This could be achieved by having very specific instructions for the raters to follow and even a checking or auditing process to assure consistency.

An alternative approach has developed from approaches involving automating textual analysis this provides new possibilities to the assessment requirements. Reflective writing analytics are capable of automatically detecting the presence of reflective elements (Gibson et al., 2017; Kovanović et al., 2018; Ullmann, 2019) as well as the depth of reflection (Liu, Buckingham Shum, et al., 2019; Ullmann, 2019) based on textual features in writing that emanate from NLP. These textual features have been aligned (Cui et al, 2019; Liu, Kitto & Shum (2021).) to factors in a model of reflection and analysed reflection variation across students and over time to assess the quality of written reflection.

The purpose of this paper is to provide a link between a major assignment and a reflective learning journal where the reflection is concerned with the value of the assessment as a learning tool. In essence whilst a major assignment may serve the purpose of challenging students to display what they have learnt in order to complete the assignment the question is somewhat open as to whether they have gained any insights beyond what is measured by the marking of the assignment. Whilst major assignments may carry a summative value for determining the learning and there may be some degree of formative value in performing the set assignment there remains a rather ambiguous assumption as to the learning by the students. This is where the use of the reflective learning journal is considered to provide a useful measure for comparing the expectations against the students' actual perceptions.

Learning Objectives

The learning objectives are aimed at addressing/examining the reflections of students as they refer to the completion of a major assignment. The students are required as part of the major assignment to submit a reflective learning journal.

Expectations / Instructions:

- It is expected that journals will be typed in an MS Word document file.
- The length of discussion required is a maximum of 500 words which is approximately 1 page in length.

In the designing process a number of issues were considered in order to identify the most relevant and appropriate form that the reflective learning journal should take. In essence this is concerned with formulating a consistent method for assessment. The literature is rather diverse in this area and there a number of examples, however, the most insightful is that by Liu, Kitto & Shum (2021). Under their model they identify four factors, which are consistent with prior research, and they are *content, feelings, challenges and changes*. A good way to explore just what is entailed and the relevant means for identifying the components of the reflective writing is through a visual map derived from their work and this is provided in Diagram 1.

Diagram 1.
Reflective Writing Map
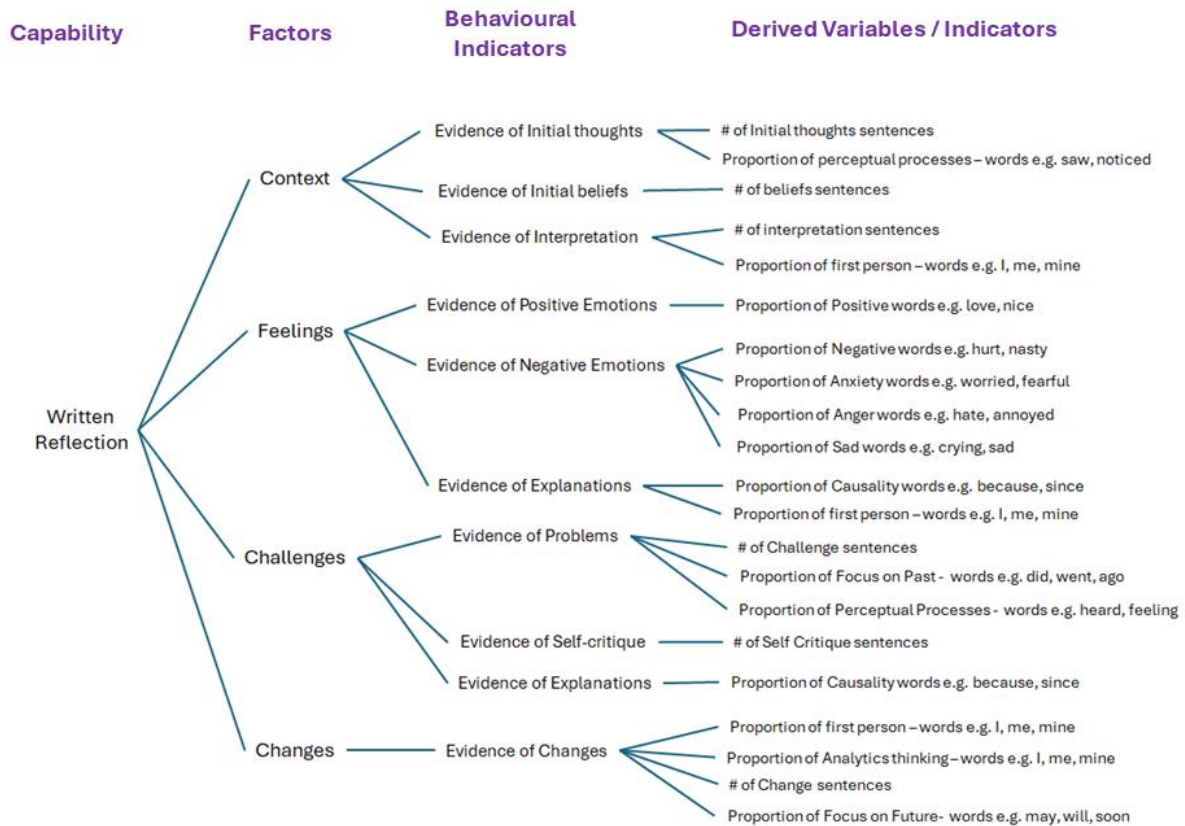
Source: Adapted from Liu, Kitto & Shum (2021).

Whilst the approach to evaluating reflective writing is a valuable starting point the approach was based on having a analytical language computer application to complete the task. This is all very interesting and may be useful in circumstances where the reflective learning journals of a large number of students are being evaluated, however, it becomes prohibitive when a small number of students has to be evaluated. Time and costs become an important issue both for the academic staff and integrity of the student staff relationship. Accordingly, the approach developed in this case was tailored to accommodate the use of readily available computer applications such as MS Word and MS Excel. To meet this level of minimisation a template for the reflective learning journal was developed and provided to students (Appendix A).

Using the find function in MS Word (Diagram 2) provides the count for the number of key words as indicated in Diagram 1 and the word count for the entire journal enables the calculation of proportions as per the textual analytics.

Diagram 2.
Find Function in MS Word

The rubric developed for this particular type of Reflective Learning Journal draws on the work of Liu, Kitto & Shum (2021) with variations required to accommodate the nature of the reflection activity. Thus, the basic rubric is presented in Table 1.

Table 1.
Reflective Learning Journal - Rubric

Construct/Factor	Critical-Reflector	Reflector	Non-Reflector
Context	Highlights aspects of the learning activity with links to prior knowledge, beliefs or assumptions. Explains the reason for this association.	Highlights aspects of the learning activity with links to prior knowledge, beliefs or assumptions.	Merely describes the learning activity.
Feelings	Shows evidence of personal feelings (positive &/or negative), about the experience and explains the cause for such feelings and connects them to challenges.	Shows some evidence of personal feelings, thoughts, reactions. But does not explain why they felt this way.	Shows little or no evidence of personal feelings, thoughts, reactions.
Challenges	Provides evidence of the impact of one or more problems on goals, and shares ideas on how to address them.	Provides evidence of one or more problems and explains why and how they were challenging.	Provides no evidence of any problems encountered.
Changes	Provides evidence of learning opportunities from own and other perspectives, and/or considers how change is likely to lead to future benefits.	Provides evidence of potential solutions or learning opportunities.	Provides no evidence of potential solutions or learning opportunities.

Source: Adapted from Liu, Kitto & Shum (2021).

Having the rubric as the starting point for the evaluation of the textual analysis the calculations as derived from the Excel Spreadsheet allows for numeric values to be derived. The numeric values are then converted by way of transformation to accommodate the assessment marking allocation. This brings the value of the marks into alignment with the traditional levels associated with High Distinction (Excellent); Distinction (Very Good); Credit (Good); Pass (Fair); and Fail (Poor).

Table 2.
Assessment Marking Allocation

Student ID	10	8	6	4	2	
	Excellent	Very Good	Good	Fair	Poor	
Context						
Feelings						
Challenges						
Changes						Mark

Assessment is based upon the allocation of the values assigned to the underlying variables which influence the factors learning and scaled according to the relevant value achieved. The values achieved are used as indicators in the Assessment Marking Allocation Table in order to determine the final Mark relevant to the total of 10 marks for the Reflective Journal. In this way the method follows a more objective approach with the lecturer/ assessor merely applying mathematical calculations (already built in to the Excel Spreadsheet) rather than any form of subjectivity in the final awarding of marks.

Summary

Examples of the application of the formula to the marking and the application of the analytical evaluation combined with the calculations derived from the Excel Spreadsheet for the three sample Reflective Journals are provided in Appendix B, C, D, and E.

The only limitation noted with this approach has to do with the provision of the sample template as this seemed to lead students to the assumption that less was more and that they could get away with very short and meaningless sentences. Another issue which came from this was the use of key words especially the first-person pronouns which some students just used in an attempt to distort the analysis in their favour.

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Appendix A:

Reflective Learning Journal Template

There is no right or wrong way to reflect on your practice. Different people learn in different ways and while one person may learn by reflecting on a positive outcome, another may find it most useful to focus on a situation they found challenging.

The following are subheadings with prompts to help you complete your reflection. Some prompts will be more relevant than others depending on your experience in completing the major assignment.

Context of the Reflective Journal?
- What was the focus of the reflection e.g. the intended learning outcomes of the major assignment!
- How did you view the requirements of the major assignment!

Was the major assignment a positive or challenging experience?
- What feelings would you use to describe your experience from doing the major assignment!
- Even when things go right, they can still be challenging. Think about the outcomes of the experience and whether you feel you could have made improvements.
- What challenges did you encounter! e.g. any problems
- What were the positive things about the major assignment!

What happened?
- What did you feel during the event?
- What did you feel afterwards?

Looking back
- Are you satisfied with how you completed the assignment?
- If not, why not?
- Do you think you worked effectively?
- Did this assignment provide you with any knowledge or understanding for undertaking similar activities in the future?

Looking forward
- If you were confronted with a similar situation in the future, would now be able to do anything differently?
- What did you learn from this experience (your reflection on it)?
- Do you think what you have learned from this has prepared you for any future situations?
- Did this experience help you understand the learning objectives?

Appendix B:

Sample Reflective Journal 1

Context of the Reflective Journal?
- The purpose of this reflective journal was simply to link the learning outcomes of the major assignment to what I had to do to complete it.
- The requirements of the major assignment were clearly stated.

Was the major assignment a positive or challenging experience?
- The major assignment had a number of complex issues which did not seem to be covered by the lectures.
- This major assignment was not useful from what it required.
- The problems with it were that it had too much going on to come up with a solution that would fit.
- The most positive thing about the major assignment is that it does not take much to get a pass mark.

What happened?
- I felt this should have been given more time and more information made available to students.
- After completing and submitting the major assignment I felt relieved it was over.

Looking back
- I am satisfied with how I completed the assignment.
- Given the time constraints and all the other assignments I had to do at the same time it was an effective use of my time.
- I did not get any more knowledge or understanding that could be useful in the future.

Looking forward
- What I now know is to just answer the requirements of the learning objectives.
- The important thing to look for is the learning objectives.

Navigation	Navigation	Navigation	Navigation
I	felt	annoyed	noticed
5 results	2 results	1 result	1 result

Word Count = 228 words

Appendix C:

Sample Reflective Journal 2

Context of the Reflective Journal?
- The requirements of the major assignment are what this journal is about.

Was the major assignment a positive or challenging experience?
- I didn't feel there was anything positive from doing the major assignment other than getting marks.
- The greatest challenge was doing it in the time allowed.

What happened?
- While doing it I felt it was just a matter of answering the questions.

Looking back
- I am glad I have completed the assignment it was just one more thing to do.
- Not sure how this assignment provided any knowledge or understanding for activities in the future – except maybe the final exam.

Looking forward
- If a similar question or questions come up in the final exam, I now have some idea of how to answer them.
- What I learnt is I need to prepare for the final exam and that learning objectives are a good place to start.

Navigation	Navigation	Navigation
i	felt	maybe
5 results	1 result	1 result

Word Count = 152 words

Appendix D:

Sample Reflective Journal 3

Context of the Reflective Journal?
- I was aware that the major assignment had been designed to test the skills and abilities of students like myself - to apply the knowledge that we had acquired to solving the problems embedded in the scenario. Reflecting on the processes and actions required to deal with the anger and disappointment that I had previously found to overwhelm me in completing other major assignments in other courses would be a new learning experience for me.

Was the major assignment a positive or challenging experience?
- I recognise how I drew on the knowledge from my active participation in researching and writing the major assignment. The learning processes I experienced not only served my need to produce an effective solution to the issues in the major assignment, but the challenges had a positive effect on my confidence, I felt emancipated by the whole experience.

What happened?
- As I reflected on my planning and actions in completing the major assignment it became apparent that my learning had taken a new direction towards recognising the value of knowledge and how to work through the requirements to overcome constraints. In each phase, this new understanding enabled me to explore ways to deal with logically analysing the issues and finding the solutions I needed.
- I really enjoyed the readings and the calculations that were part of the assignment and I am pleased to see that this has given me a greater understanding of the full picture – that is how all the topics fit together to enable me to get my head around the requirements and interpret the relevant details.

Looking back
- I once felt anger at all the complex information contained in the major assignment but I now appreciate that it has provided me with some new insight into the topics and issues covered. This was just a snap shot of the possible problems awaiting me and has alerted my perception to what can confront me when I am working. Having found this positive side of the major assignment I am now rid of the handicap of my negative feelings.

Looking forward
- Moving forward I can now focus on developing my knowledge and finding effective ways to enhance my ability to apply what I have learnt to future experiences. Perhaps this reflection has helped me in learning where I started from, as well as learning how I can be better prepared.

Navigation	Navigation	Navigation	Navigation	Navigation
I	felt	anger	recognise	insight
14 results	2 results	2 results	1 result	1 result

Navigation	Navigation	Navigation	Navigation	Navigation
me	my	confidence	emancipated	appreciate
9 results	9 results	1 result	1 result	1 result

Word Count = 398 words

Appendix E:

Extract of Excel Spreadsheet Marking

	S1	S2	S3
Total # Words	228	152	398
Max # Words	500	500	500
	45.6%	30.4%	79.6%

		S1	S2	S3
Context		2.736	1.52	9.552
		0.456	0.304	2.388
		3.192	1.824	11.94
Feelings		2.736	1.824	9.552
		2.736	1.824	9.552
Challenges		0.912	0.608	0.796
		0.912	0.304	1.592
		1.824	0.912	2.388
Changes		2.28	1.824	11.94
		0.456	0	0.796
		2.736	1.824	12.736

S1	10	8	6	4	2	
	Excellent	Very Good	Good	Fair	Poor	
Context				X		
Feelings				X		
Challenges					X	
Changes				X		**Mark**
				12	2	3.5

S2	10	8	6	4	2	
	Excellent	Very Good	Good	Fair	Poor	
Context					X	
Feelings					X	
Challenges					X	
Changes					X	**Mark**
					8	2

S3	10	8	6	4	2	
	Excellent	Very Good	Good	Fair	Poor	
Context	X					
Feelings	X					
Challenges				X		
Changes	X					**Mark**
	30			4		8.5