

Appraising and assessing reflection in students' writing on a structured worksheet

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Background A variety of teaching and learning techniques intended to engage students in reflection are either in use or are being developed in medical and dental education. In line with evidence-based practice in education, research is needed to appraise the utility and effectiveness of these techniques, so that they may be used with confidence.

Aim To assess whether students completing a 'reflective' learning activity based on a structured worksheet really were reflecting.

Method A qualitative, multi-method approach was taken. Worksheets completed by students were examined for evidence of reflection by researchers using two sets of criteria for the assessment of reflection derived from the literature, and by peer judges using their own

criteria. The opinions of students completing the activity, regarding its acceptability and utility, were elicited by a questionnaire incorporating a 5-point Likert scale.

Results Results from all methods suggest that students completing the activity *were* reflecting. Students' opinions of the activity were mainly positive.

Conclusion The methods employed may be of use to educators wishing to appraise reflective learning activities or, possibly, to assess student reflection.

Keywords Education, dental/ *methods/ standards; Great Britain; learning; *professional competence; students/ standards; writing.

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Introduction

The notion that reflection enhances learning and professional practice has gained increasing currency in recent years. The ideas of Schon,¹ in particular, have been influential and a number of practitioner preparation and accreditation programmes such as those run by the Institute for Learning & Teaching in Higher Education (ILT)² and the English National Board for Nursing Midwifery & Health Visiting (ENB)³ include within their stated aims the development of 'reflective practitioners'. In the UK, the use of a reflective 'progress file' is recommended throughout higher education.^{4,5}

The extent to which reflective practice has become the model for professional education belies the fact that reflection remains a poorly understood concept.^{6,7} There

has been a proliferation of techniques, including diaries, journals, portfolios and reflective logbooks^{8,9} purported to promote reflection in intending and practising professionals, but there is little evidence to show they are effective. The fact that the term 'reflection' is used in a number of different ways, means different things to different people and/or is used without a clear, contextualized definition, means that the notion of 'evidence' has to be approached with caution, but it seems to be required on at least three levels. Firstly, evidence is required to determine whether individuals using so-called 'reflective' techniques really *are* reflecting. Secondly, it is required to establish whether, the use of these techniques over time increases the ability or propensity of individuals to reflect. Thirdly, it is required in order to assess what effect this increased reflectivity has on learning and professional practice.

Whilst all teachers and learners should be able to use reflective activities with confidence, the need for evidence is likely to strike a particular chord in medicine and dentistry, where tightly packed curricula leave no time to waste on techniques of questionable effectiveness and where teachers, familiar with the concept of evidence-based practice, are increasingly likely to ask: 'How do I know that this educational technique works?'

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Key learning points

It is important to appraise the reflective learning tools we introduce in medical and dental education.

Theoretical and empirical models of reflection may be useful in developing these appraisals.

Students completing the structured activity 'A Learning Experience' (ALE) were found to be reflecting.

Educators wishing to provide students with opportunities for structured reflection may consider using ALE.

The appraisal of other reflective techniques and, possibly, the assessment of student reflection using the methods described may be of interest to educators.

The present study

The authors were in the process of developing a progress file for dental therapy students.¹⁰ These students are trained in higher education, usually completing a 27-month, full-time course, at the end of which they qualify dually as dental hygienists/therapists. A major object of the progress file was to provide students with opportunities for reflection (defined as 'deliberate, purposive exploration of experience, undertaken in order to promote learning, personal and professional development and the improvement of practice'). Consultations with students and teachers¹¹ had indicated that some opportunities for reflection already existed on the course but that students tended to use them to reflect in a simplistic, descriptive way rather than in deeper analytical or evaluative ways. If the reflective component of the progress file was to add value to the course, it had to provide opportunities for deeper reflection. Although teachers in the consultations referred to above were sceptical, the literature (particularly the work of Boud *et al.*¹²) suggested that structured learning experiences or activities should be included in the progress file as a means of achieving this deeper reflection. Several 'reflective learning activities' were developed. They involved a mixture of written tasks on structured worksheets, peer observation, group discussion and feedback. This paper reports the appraisal of one of these activities, known as 'A Learning Experience' (ALE). It is concerned with the first level of evidence as described above.

The activity

The ALE was designed to provide a framework within which dental therapy students could reflect on clinical experiences in a structured way. Prompts on the ALE worksheet (Fig. 1) were based on Boud and colleagues' conceptualization of reflection, which includes processes such as: looking back on experiences, attending to feelings, recognizing values and beliefs underlying actions and decisions, considering consequences and implications, exploring alternatives and reconsidering former views. The activity was also influenced by critical incident analysis.¹³ Students would complete the worksheet in private and it would remain in their possession. Discussion of the activity with peers or teachers, either to share learning or to seek feedback, was to be entirely voluntary.

Aims

The aims of the study were:

- 1 to assess whether students using ALE really were reflecting – and if so, how deeply;
- 2 to identify how the activity might be improved, and
- 3 to compare the usefulness of a number of methods for assessing the reflection of students using ALE.

Methods

Choice of methods

The study had a qualitative focus. A multi-method approach was used, which addressed the third aim and enabled triangulation.

A reliable way of establishing whether students completing ALE were reflecting was needed. Students' opinions were likely to be of limited use in this regard. It cannot be assumed that a positive appraisal of a 'reflective' activity by students means that they have reflected. Reflection can be a discomforting experience which may lead students to negatively appraise activities that provide opportunities for it.¹⁴ An approach involving the interpretative analysis of students' written worksheet responses was chosen. Several studies^{15–18} have looked at the written products of reflective techniques (e.g. the entries made in diaries) in this way, using criteria for assessing evidence of reflection derived from various theories and models of reflection.

Three means of assessing evidence of reflection in students' writing were selected and are described

A Learning Experience
Briefly describe what happened. <i>I was treating a patient in the surgery and he was being very difficult using delaying tactics, ie asking questions, wriggling, touching the overhead light, said he had a headache, his mother and older and younger brother were also present and did not seem to help the situation.</i>
Describe your feelings at the time this happened. <i>I felt frustrated with the patient's behaviour and that he did not respond to my coaxing to continue his treatment. I could not abandon the treatment as he already had a cavity cut in his tooth.</i>
Why do you consider this experience to be worthy of reflection ? <i>I should have anticipated his behaviour from noticing the family, older and younger brothers distracted my patient and mother did not seem interested. I could have seen the child on his own or at least without brothers.</i>
What strengths in your clinical practice did this experience demonstrate ? <i>I remained calm and professional and eventually managed to place a temporary filling in his tooth. I did not praise the child or reward him with a sticker. I remained positive and promised a reward for his good behaviour at the next appointment.</i>
What learning needs did this experience reveal to you ? <i>I need to learn more about children's anxieties and to think before I start to treat the patient..</i>
Which one learning need, disclosed by this experience, do you wish to address as a priority ? <i>Consider problems which may arise before the patient enters the surgery.</i>
Decide exactly what you would like to achieve in relation to your selected learning need, before completing 'Target Setting' overleaf.

Figure 1 Example of an ALE worksheet completed by a dental therapy student (Student 3).

below. In addition, students completing the activity were asked for their opinions on it as student acceptance was considered a likely determinant of the future uptake and use of ALE.

Johns' questions

Johns¹⁹ provides a framework of 18 cue questions, intended to help individuals reflect on their experiences

Target Setting			
Target What exactly would you like to achieve ?	Action What are you actually going to do to achieve this ? <i>Tick box when done.</i>	Resources What resources will you require to carry out your intended action ?	Success Criteria How will you know that you have reached your target ?
<i>I would like to learn more about children's anxieties and how to deal with them.</i>	<i>Background reading, observation of other health professionals, observation of child patients in the future.</i> ☐	<i>Ask tutor to recommend books.</i>	<i>I will have prior knowledge on how to manage child patients using delaying tactics.</i>
	☐		
	☐		
Date target set: 05/05/99		Date for reviewing progress: 05/07/99	
Review			
What progress have you made in reaching your target ?			
<i>I have learned new techniques for dealing with children with delaying tactics.</i>			
What impact has this learning had upon your professional practice ?			
<i>I feel more in control of my patients, I now anticipate what may happen before it does.</i>			
Is there any further learning that you wish to undertake in this area?			

Figure 1 (Continued)

and access the information they need in order to learn from them (Table 1). Johns' questions were derived from empirical research into the guidance of nurses reflecting under supervision. They are equally applicable to dental therapy and other health care professions.

Since an 'internal dialogue', consisting of posing and seeking answers to Johns' questions, was deemed a plausible description of the process of reflection on experience, and since Johns' questions accord with Boud *et al.*'s conceptualization of reflection upon which ALE was based (i.e. both involve returning to and describing experiences and attending to feelings before going on to later stages of reflection), it was decided to search the students' worksheet responses for evidence that they had addressed (any or all of) Johns' questions. Since all the other methods considered analysed reflection in terms of 'categories' or 'levels' exhibited (see below), we hoped that using Johns' questions would provide insight into the process of reflection (what questions have comprised this student's internal dialogue?), enabling gaps in students' reflections to be spotted.

Hatton and Smith's criteria

Hatton and Smith¹⁸ define four types of student writing, three of which they characterize as types of reflection. They specify criteria for their recognition that can be summarized as follows:

- 1 **'descriptive'** is not reflective, merely reporting events with no attempt to provide reasons (*I did x; he said y*);
- 2 **'descriptive reflection'** provides reasons (often based on personal judgement), although only in a reportive way (*I did x because y*);
- 3 **'dialogic reflection'** is a form of discourse with one's self, mulling over reasons and exploring alternatives (*I wonder...? perhaps ...? maybe...?*), and
- 4 **'critical reflection'** takes account of the socio-political context in which events take place and decisions are made (roles, relationships, responsibilities, gender, ethnicity, etc.).

Hatton and Smith's criteria were derived from empirical research analysing writing by trainee teachers

Table 1 Johns' questions after 19,26,27

1-0 DESCRIPTION OF EXPERIENCE
1-1 Describe the 'here and now' experience.
1-2 What essential factors contributed to this experience?
1-3 What are the significant background factors to this experience?
1-4 What are the key processes (for reflection) in this experience?
2-0 REFLECTION
2-1 What was I trying to achieve?
2-2 Why did I intervene as I did?
2-3 What were the consequences of my action for: myself? the patient /family? for the people I work with?
2-4 How did I feel about this experience when it was happening?
2-5 How did the patient feel about it?
2-6 How do I know how the patient felt about it?
3-0 INFLUENCING FACTORS
3-1 What internal factors influenced my decision making?
3-2 What external factors influenced my decision making?
3-3 What sources of knowledge did /should have influenced my decision making?
4-0 ALTERNATIVE ACTIONS
4-1 What other choices did I have?
4-2 What would be the consequences of these choices?
5-0 LEARNING
5-1 How do I <i>now</i> feel about this experience?
5-2 How have I made sense of this experience in the light of past experiences and future practice?
5-3 How has this experience changed my ways of knowing: empirics? aesthetics? ethics? personal?

but were considered by the authors suited for use with dental therapy students. Analysing students' worksheet responses using Hatton and Smith's criteria would indicate whether students were reflecting on, or merely describing, experiences and, if reflecting, at what depth or 'level' (from descriptive to dialogic to critical reflection).

Peer judges' criteria

A group of dental therapy students were asked to read worksheets completed by their peers and, **using their own criteria**, judge whether they showed evidence of reflection. By asking the peer judges to use their own

criteria and then give the reasons for their judgements, the aim was to illuminate the students' conception of reflection. In addition, it would provide a check for bias on the part of the researchers using Johns' questions and Hatton and Smith's criteria.

Participants and completion of activity

A total of 26 dental therapy students at three UK dental schools completed ALE. They were selected because they were at points in their training where completion of ALE was appropriate and practical. They were aged between 20 and 48 years and were all female. Eight were part-time students, who were practising dental hygienists.

Directions for completion were supplied with the worksheet. Since personal reflection is a sensitive area and since authenticity and meaning were more valuable in this study than whether findings could be generalized, a naturalistic, non-threatening approach was taken, which replicated the intended **voluntary** sharing of ALE with third parties. Students were told that they should feel free to reflect honestly and openly as there would be no pressure on them to submit their completed worksheets to the researchers. Those who chose to submit were assured of confidentiality. It was considered that a more controlled/controlling approach might cause students to censor their reflections or write them for the researchers. The final part of the activity involved reviewing learning at a future point, determined by the individual, so students were given one term to complete it. At the end of this period students completed a questionnaire to elicit their opinions on ALE and those who wished to do so submitted their worksheets.

Examination of completed worksheets

All submitted worksheets were examined for evidence of reflection by two researchers working independently, using Johns' questions and Hatton and Smith's criteria. Two were selected at random for examination by 20 peer judges.

Using Johns' questions

For each worksheet, taking Johns' questions one at a time, the student's writing was examined for evidence that the question had been addressed. Where this was found, the relevant text was coded accordingly. When all 18 questions had been considered, the entire worksheet was re-read, employing Dey's notion of 'linking data'²⁰, i.e. attempting to link up the 'bits' of

student writing assigned to Johns' questions in the preceding analysis in order to build up a holistic picture of the student's reflective episode, and then considering whether, in the light of the 'whole picture', the coding of individual phrases made sense. This was to safeguard against errors that may have arisen because of the way the coding procedure splinters data. The researchers then compared which of Johns' questions they had judged each student to have addressed and calculated interjudge agreement (IJA) as follows:²¹

$$\text{IJA} = (\text{number of agreements} / \text{number of agreements} + \text{number of disagreements}) \times 100$$

Using Hatton and Smith's criteria

A similar protocol to that above was followed except that the worksheets were examined for evidence of descriptive, dialogic and critical reflection in turn. The researchers compared which levels of reflection they had judged each student to have exhibited. Interjudge agreement was calculated as before.

Examination by peer judges

Twenty dental therapy students (who had not completed ALE themselves and had not formally encountered reflection) from 2 UK dental schools were randomly selected as peer judges. They examined just 2 randomly selected worksheets because of practical considerations. The peer judges read the worksheets and recorded whether, in their opinion, the students completing them had reflected 'thoroughly', 'to some extent' or 'not at all'. They were asked to give reasons for their judgements.

Student-users' opinions

A questionnaire containing 18 positively and negatively framed statements rated on a 5-point Likert scale was given to students completing ALE. Ten of the statements concerned practicalities (e.g. 'Is there enough space to write on the worksheet?') and 8 concerned students' perceptions of acceptability and utility. Modal responses were calculated for each statement.

Results

Examination of completed worksheets

Fourteen completed worksheets (53%) were submitted. They came from all 3 schools. An example of a worksheet completed by a student is given in Fig. 1.

Using Johns' questions

The researchers agreed that a question either was or was not addressed in 182 cases and disagreed in 70 cases, giving IJA of 72% for this method.

Table 2 shows how many of Johns' questions each student was judged to have addressed, ranging from seven (39%) to 16 (89%). A question was only scored for a given student if *both* researchers judged her to have addressed it. No question was addressed by fewer than 25% of students. Questions 1·1, 1·2, 1·4, 2·1, 2·4, 4·1, 5·2 and 5·3 were addressed by over 75% of students; questions 1·3, 2·3, 3·2, and 4·2 were addressed by over 50% of students; and questions 2·2, 2·5, 2·6, 3·1, 3·3 and 5·1 were addressed by over 25% of students.

Using Hatton and Smith's criteria

The researchers agreed that a level either was or was not exhibited in 48 cases and disagreed in 8 cases, giving IJA of 86% for this method.

Table 2 shows which levels were exhibited by each student. A level was only scored for a given student if *both* researchers judged her to have exhibited it. All students were found to be reflecting in a descriptive way, 12 (86%) in a dialogic way and 9 (64%) in a critical way. Examples of student text assigned to the different levels during coding are shown in Table 3.

Table 2 Number of Johns' questions addressed, plus Hatton and Smith's levels of reflection exhibited, by 14 students

Student	No. of Johns' questions completing ALE	No. of Johns' questions addressed (out of 18)	Hatton & Smith's levels of reflection exhibited			
Student 3	16	0	1	2	3	
Student 1	15	0	1	2	3	
Student 2	15	0	1	2	3	
Student 4	15	0	1	2	3	
Student 6	15	0	1	2	3	
Student 5	13	0	1	2		
Student 14	12	0	1	2	3	
Student 7	12	0	1			
Student 9	11	0	1	2	3	
Student 13	11	0	1	2	3	
Student 8	10	0	1	2	3	
Student 11	10	0	1	2		
Student 10	7	0	1	2		
Student 12	7	0	1			

0 = descriptive writing; 1 = descriptive reflection; 2 = dialogic reflection; 3 = critical reflection.

Table 3 Examples of students' text judged to be evidence of reflection at Hatton and Smith's various levels

DESCRIPTIVE

During treatment of an adult the patient almost fainted.
 He said that he was desperate for the loo. I asked him to go and come back so that I could finish. He didn't come back.
 A child refused treatment and became upset.
 He was saying that I was wasting his time by taking his medical history.

DESCRIPTIVE REFLECTION

I was not prepared for the restoration to be difficult as I had not studied the radiograph and seen how extensive the caries was.
 Because I was new to the Community I didn't know what to do.
 I felt annoyed and angry that he was venting his frustration at me – it's not my fault.
 I was alarmed as I thought I had explained quite well.

DIALOGIC REFLECTION

Perhaps the child was worried and I didn't realize?
 I feel that I handled it fairly well – although it was mainly my tutor who calmed the patient down – I should have perhaps explained more to the patient.
 I wondered if I had explained to him properly that he should return immediately.
 I need to improve skills at treating children and not be apprehensive about treating them – not all children get upset.

CRITICAL REFLECTION

I was totally focused on the dental treatment and failed to treat the whole patient.
 I didn't realise that the patient's real father had died just a few months before. The patient disliked her stepfather who was trying to comfort her.
 Patient safety must always be top priority.
 In future I will book according to my own abilities and not be pressurised into seeing patients at unsuitable times just because others say I must.

Examination by peer judges

Both students (1 and 5) whose worksheets were examined were deemed to have reflected by all the peer judges. Student 1 was judged to have reflected 'to some extent' by 44% of peer judges, and to have reflected 'thoroughly' by 56% of peer judges. Student 5 was judged to have reflected 'to some extent' by 89% of peer judges, and to have reflected 'thoroughly' by 11% of peer judges.

Peer judges' reasons for judging that a student had reflected '*thoroughly*' included:

The student's emotions of concern came across ...I feel she would be more prepared if the same situation arose again.

She has explained the situation clearly, discussing what happened, what should have happened – how she can stop this happening in the future.

She is asking herself questions; for example, she is wondering if she explained to the patient to return immediately. She is analysing herself.

Their reasons for judging that a student had only reflected '*to some extent*' included:

She sets herself certain goals [but] does not make any acknowledgement of her personal attitude – how does she come across to the patient?

She appreciates that this is a situation which should not occur again [but] does not seem to have rechecked on desirable actions she could employ prior to commencing treatment.

Student-users' opinions

A total of 18 questionnaires (69%) were returned. This represents a 100% response from 2 schools. No questionnaires were received from the third school (though they were confirmed posted by a teacher). It was not practical to re-administer the questionnaire at the third school. Modal responses to the eight questionnaire statements concerning the acceptability and utility of ALE are shown in Table 4.

Discussion

Were students completing ALE really reflecting, and if so, how deeply?

All methods of text analysis used found evidence of reflection in students' writing on ALE worksheets. Analysis using Hatton and Smith's criteria showed most students to be reflecting at deeper as well as descriptive levels. Although the submitted worksheets may not have been representative, these findings indicate that ALE does provide students with the opportunity to reflect deeply on clinical experiences. Student users' opinions of ALE were generally positive and confirmed its utility, though they should not be generalized.

Table 4 Student users' opinions of ALE: modal responses to questionnaire statements rated on a 5-point Likert scale (strongly agree, agree, no opinion, disagree, strongly disagree)

Statement	Modal response
The activity provided me with a valuable learning experience	Agree
The activity helped me to determine my learning needs	Agree
The activity made me realise the importance of target-setting	Agree
I did <i>not</i> like completing the activity	No opinion
The activity did <i>not</i> help me to communicate with my peers	No opinion
The activity did <i>not</i> help me to identify my strengths and weaknesses	Disagree
I think this activity is <i>not</i> useful in my training	Disagree
The activity helped me communicate with my tutor	Disagree

This study has not established that ALE was itself causing students to reflect: it may have been merely recording or 'capturing' the process (which may itself be useful as a memory aid or to facilitate the sharing of learning experiences with peers). Nor has it shown that all students given ALE will necessarily take the opportunity to reflect. Without conducting control group and longitudinal studies, it is not possible to say whether ALE has any impact, lasting or otherwise, on the ability or propensity of students to reflect. Some writers suggest that reflection involves metacognitive skills which can be fostered through such structured learning.¹² Others believe that 'reflective practice needs always to be guided'.²² It would seem that activities such as ALE may have a role to play in encouraging and facilitating reflection, but in themselves are unlikely to turn students into reflective practitioners. The latter requires input by teachers in terms of providing support and guidance, raising expectations of reflective behaviour and serving as model reflective practitioners. In this regard, tutorials involving discussion prompted by students' completion of ALE or similar, with Johns' questions to guide teacher intervention, might be helpful.

How might ALE be improved?

Of the questions most frequently addressed by students (questions 1·1, 1·2, 1·4, 2·1, 2·4, 4·1, 5·2, 5·3), most were descriptive and/or involved the students' personal perspective, and two (1·1, 2·4) were explicitly prompted on the worksheet. In contrast, the questions least frequently addressed by students (2·2, 2·5, 2·6, 3·1, 3·3, 5·1) tended to be analytical (involving reasoning and identification of influencing factors) and/or involved the perspective of others (i.e. patients) and none were explicitly prompted on the worksheet. It appears that two of the factors that determine whether or not a question is addressed concern (perhaps unsurprisingly) how explicitly the question is asked and how 'difficult' it is in terms of processing or effort required to access the information. (Motivational factors may also affect which questions students address.) These findings suggested that the worksheet might be improved by the inclusion of more explicit prompts on the following: reasons for events, factors influencing actions and decisions, patients' feelings and students' feelings after a period of time.

Critique of methods

While the non-threatening approach taken may have helped to ensure that the data gathered was authentic, it

resulted in a worksheet submission rate of just 53%. We can only speculate as to why students chose not to submit their worksheets because they were not required to give reasons. However, if the 14 submitted worksheets (which showed students reflecting on difficult and distressing experiences, concerns, fears, feelings of inadequacy and instances of bad practice amongst peers and teachers such as inadequate supervision²³) were typical, it is perhaps understandable that, even with confidentiality assured, 12 students preferred to keep their sheets to themselves.

Assessments of students' reflections made on the basis of their writing may not be accurate. There is a risk that reflection takes place but cannot be detected in the text – or that an artful piece of writing in a 'reflective style' suggests to the reader that more reflection has taken place than is actually the case.^{16,18} However, there is evidence that using text analysis to assign students to broad reflective levels gives results consistent with other methods (e.g. interviews).¹⁵ To safeguard against over-reporting students' reflection in this study, we were stringent in only scoring a given question or level for a particular student when *both* researchers judged it to have been addressed or exhibited.

The use of Johns' questions was based on the assumption that reflection is a process of self-questioning. This is plausible but it is acknowledged that 'reflection' will be viewed by many as pertaining more to professional stance or artistry⁷ than to 'internal dialogue'.

The study suggests that both Johns' questions and Hatton and Smith's criteria can serve as satisfactory research tools for assessing reflection in student writing. Hatton and Smith's criteria resulted in high IJA (which compares favourably with similar methods^{15,16}), were quick to use and provided information about the levels of reflection in evidence. Johns' questions resulted in a lower but, for activity appraisal purposes, still acceptable, IJA and were more time consuming. However, they enabled the identification of gaps in students' reflective processes, which in turn suggested how the activity might be improved. With both methods, the fact that the ALE worksheet encouraged students to write concisely made the researchers' task more difficult.

It can be seen from Table 2 that the number of Johns' questions a student has addressed does not accurately predict the levels of reflection she will exhibit (although all students addressing 15 or more of Johns' questions were reflecting critically, whereas neither of the students addressing fewer than 10 were). This is because Johns' questions are not weighted and some may be more central, others more peripheral, to the reflective process; some also overlap (understandably

since they were developed to guide supervised reflection and include 'clarifying' items).

The criteria used by peer judges were subjective, based on common sense, intuition or ideas about reflection picked up informally. Although they were not derived from any recognized theory or model, they produced findings broadly consistent with those of the other methods. It is interesting that some peer judges spontaneously referred to self-questioning as a feature of reflection.

Assessment of student reflection

The appraisal of ALE involved assessing the process and levels of reflection evidenced in the students' writing. The relative ease with which it was possible to do this using Johns' questions and Hatton and Smith's criteria (and the high IJAs noted, especially for the latter) led to the suggestion that this might be a suitable way for teachers to assess students' reflections.

There are reasons why formal assessment of reflection is desirable: it could indicate whether courses are succeeding in developing reflective practitioners¹⁵ and might serve as an incentive for sceptical or unmotivated students (and teachers) to engage in reflection.^{11,23,24} However, it might also be counterproductive, resulting in apprehension amongst students that prevents them from engaging with and learning from their experiences, perhaps even inhibiting development of the qualities and skills required for reflection.^{6,17}

It might be possible to find a 'safe' way of assessing students' reflective skills (analysis, evaluation, empathy, imagination and so on) which did not require students to expose their intensely personal reflections. This might concentrate on the process of reflection rather than on its content or outcomes and/or might involve reflection on non-personal material such as clinical 'problem scenarios' (sources of which could include teachers' experiences or even, with permission, ALE or similar worksheets of previous students). However, this would only be a partial solution. Assessment of reflective skills in this way misses the point that, at the heart of reflective practice lies the ability and willingness to reflect on precisely those personal experiences the individual finds most difficult. Nor would it provide students with formative feedback on their own troublesome experiences.

As long as the formal assessment and monitoring of students' reflections remain problematic and uncommon, it is especially important to be sure that any reflective learning activities we provide them with have been appraised to make sure they work. Regardless of whether students' reflections are assessed, providing

them with Johns' questions would ensure that they knew the right questions to ask themselves, whilst providing them with criteria such as Hatton and Smith's would ensure that they knew what was expected of them in terms of depth and degree of criticality. Such suggestions are in accordance with much of the GMC's emphasis on new guidance on undergraduate medical education.²⁵

Conclusion

This study has shown that students completing the activity 'A Learning Experience' were reflecting. The activity is worth consideration by educators wishing to provide students with opportunities for structured reflection. Analysis of completed worksheets using Hatton and Smith's criteria, together with analysis using Johns' questions, enabled qualitative judgements to be made about the reflection evidenced and provided insights into the process of reflection, indicating how the activity might be improved. The appraisal of other 'reflective' techniques and, possibly, the assessment of student reflection using these methods may be of interest to educators.

Contributors

ESD and HF obtained funding for the project. All authors were involved in the development of the reflective activity. BP and TW designed and carried out the study, analysed the data and wrote the first draft of the paper. All authors were involved in correcting and refining the final version of the paper.

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