

Engaging in reflection: Error logs and the developing students' skills

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Abstract

Background: For a number of years, the Royal Pharmaceutical Society of Great Britain and the National Patient Safety Agency have recommended that a register of errors (or error log) is kept in each pharmacy. This register should record errors and assist in the management of risk in all aspects of pharmacy practice. The main learning process involved is one of reflection.

Aim: To explore the attitudes of pharmacy students on completing and reflecting on dispensing error register.

Method: Four focus group discussions involving twenty-six level six pharmacy students. University ethics approval was obtained

Results: A number of themes emerged from the study which provide an insight into the learning that students have achieved and how this can be encouraged in future cohorts.

Conclusion: Students require more encouragement and support to begin developing their reflective skills in particular highlighting the benefits of completing the task.

Keywords: *Reflection, errors, student attitudes, pharmacy, register*

Introduction

For a number of years, the Royal Pharmaceutical Society of Great Britain (RPSGB) and the National Patient Safety Agency (NPSA) have recommended that a register of errors is kept (error log) in each pharmacy. This log should identify, record and assist in the management of risk in all aspects of pharmacy practice (National Patient Safety Agency 2004; Royal Pharmaceutical Society of Great Britain 2000). Any error that has occurred in the supply of medicines, either an over-the-counter purchase or by dispensing is required to be entered into the log. The 'error log' is then reviewed by a designated member of the pharmacy team to determine if procedures need to be amended, for example protocols may need to be revised or staff may need additional training (Department of Health 2001).

The main learning process involved in keeping an error log is one of reflection. Without this process the error log simply becomes a mechanistically composed list of actions that were incorrect executed. The ability to be reflective in practice is the key skill to changing this mechanised list into an important and necessary learning activity. Reflective practice is a concept that has been associated with improving professional practice for some time (Cheetham and Chivers 1996) and advocated by the RPSGB in its CPD reflection and review strategy (Royal Pharmaceutical Society of Great Britain 1999).

It is important to ensure that the content of pharmacy programme reflects the working situations and circumstances

of the working environment, as this increases student motivation and engagement in the learning process during their undergraduate programme (Taylor and Harding 2007; Trigwell, Prosser, and Waterhouse 1999). As a consequence, Level six (Year 3) Liverpool John Moore University (LJMU) pharmacy students in the academic year 2006-07 were asked to compile a list of their dispensing errors after receiving feedback from their dispensing practicals. Students were encouraged to review and reflect on their errors to determine what patterns were developing and what actions they could take to reduce the number of errors. Completion of the error logs was not mandatory; however emphasis was placed on professional development and competency in the dispensing process in order to pass the dispensing examination at the end of the academic year.

Informal student feedback indicated that those students who completed the error logs developed an understanding of their skill requirement for dispensing and the need to change their method of approaching the activity. In addition, of the students that failed their dispensing practical examination, 80% (14/17) had not made any entries or reviewed their error record.

A search of the literature revealed that very little empirical evidence to support the use of reflection to enhance learning, what the attitudes of students to the process of reflection might be and what support was required to engage in reflection. The aim of this study was to explore the attitudes of pharmacy students on completing and reflecting on dispensing error logs.

Method

Using focus group discussion methodology the study explored students' attitudes regarding the completing of error logs at the beginning and end of the academic year and what, if any, learning had been achieved. Approval from the University ethics research committee was obtained before recruitment commenced.

Participants for the focus group discussions were recruited from Level six students (year three) registered and attending the MPharm programme at the LJMU School of Pharmacy during 2007-08. Students were given a brief description of the project at suitably identified lectures and then emailed an invitation plus a copy of the information leaflet and consent form. Those who returned a signed consent form were purposively sampled to ensure diversity.

Each of the four focus group discussions, which involved a total of 26 participants, lasted no longer than 60 minutes. All were conducted at a suitable venue within LJMU, comprised no more than seven students and were audio-recorded with the permission of the participants. After a brief introduction, participants were asked their opinion on a number of questions relevant to the introduction of error logs, its influence on their skills and competencies and what could be done to encourage engagement and reflection (see Table I). As is the nature of group discussion, other questions that naturally arose from the discussion that were relevant to the aim of the research were incorporated into subsequent group discussions. The recorded focus group discussions were professionally transcribed and subject to framework analysis approach (Pope, Ziebland, and Mays 2000) using NVIVO software.

Table I: Focus group discussions schedule

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- What do we mean by error logs?
 - How do you think they are used in pharmacy practice?
 - Why do you think they were introduced into pharmacy practice?
 - Have you or your fellow students completed any?
 - What are your or their experiences?
 - What did you or your fellow students learn from completing them?
 - What was good about them?
 - What was not so good about them?
 - What would you change?
 - What have they indicated to you about your dispensing skills?
 - If you have completed them, do you feel more confident about your dispensing skills?
 - Has completing the error logs helped you in other ways?
 - Should all students in Level 3 have to complete them?
 - Do you think they should be part of the coursework to encourage students to complete them?
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Findings

A number of themes emerged from the study which provide an insight into the learning that students have achieved and how this can be encouraged in future cohorts.

Students' attitudes

Students recalled that after completing the first one or two error logs, the process was time consuming with little benefit as the error logs just 'point out what you already know and you think how stupid is that'. They described it as an activity they felt they should complete because it was suggested as a 'good idea' but had no real grasp for the reasoning behind the introduction of the error logs to the module.

All the focus group participants remarked how easy it was to complete the error logs, with the template that was available on Blackboard™. A few of the participants, who realised that noting their errors was something they would have to complete when in practice, said that it gave them an opportunity to experience and appreciate what was involved in the process prior to starting practice.

As the semester progressed the students' attitudes towards completing the error logs changed. This change in attitude was linked to their apprehension that they benefited from the activity.

Yeah. I think at first people thought it was a bit of a waste of time, but when you actually know that you're benefiting from it and when you know that you're learning then it's a worthwhile experience.

Not every one finds reflection easy and questioning if they are undertaking the process correctly is a nature question that arises (Rainer 1978; Walker 1985). It is important that the learner can be helped to understand that advantages and benefits of reflection (Strange 1992). This may be in the form of teaching reflection (Eastcott and Farmer C 1992) or reducing the barriers to undertaking reflection (Hatton and Smith 1995).

Advantages and disadvantages

The discussion between the participants highlighted a number of advantages of completing and reflecting on the error logs.

For some students it was more a mechanical review of 'reinforcing what you've got wrong' in their dispensing sessions. For others it was a task, which they had little understanding why they were doing it, but they thought they had to complete. '...filled them in and then never looked at them again'. Interesting, a number of these students did remark that they did find it beneficial even though they had no real idea of the objective of the exercise. However, for the majority of students it was a matter of making sense of the feedback.

It gives you a chance to like go over the prescriptions, because if I didn't have the error logs when I got the feedback sheets back I probably wouldn't really look at them.

A range of behaviours were identified that had emerged from reflecting on the error logs, these included developing a checklist and identifying patterns of errors. Others utilised the learning from their reflections and took this forward to the next practical sessions as well as helping them identify gaps in their knowledge it was seen as an aide-memoire when revising for the dispensing examination.

It's easier, before you go into an exam you can just see exactly what's there. It's a good, simple, quick reflection, isn't it, of your work.

Participants considered that there were a number of disadvantages regarding completing the error logs. Finding the time to filling out the error logs was seen as the main problem of the activity. Students at the beginning of semester one considered that they may be wasting their time completing the error logs. However, those who found benefit in the activity considered that the time was well spent.

Hopefully in comparison you don't waste that much time or spend that much time doing them - compared to what you would spend going through all of them later on.

The process of reflection requires time (Barnett 1994; Walker 1985) and it is not easy for learners to allocate time for reflection, given all the other demands on their time both academic and social (Wildman and Niles 1987). In addition, the MPharm Level 3 curriculum is very crowded and there is a need to review and give students time and space to reflect (Thorpe 1993).

Students noted that there was a lot of repetition when completing the logs, as similar errors were being made. Although a number of students remarked, laughingly, that it '... depends on the number of errors that you make'. However, others indicated that the repetition 'helps you stamp out' the error. Not everyone recognised that completing error logs was a positive or beneficial activity. One student noted that completing the log emphasised what you had got wrong and this could lead to you being more cautious and wary.

I think you don't want to be too wary all the time because you'd never get anything done, would you? I think that's a bad thing about the error logs, because its showing you what, like, exactly you can get wrong and the next time you get something like that you're going to panic....

This last point refers to the suggestion that reflection can be a circular process within which development of the individual does not progress (Moon 1999). To minimise the possibility of this occurring it is important that time is made available to students both at the start of the semester and during the course of the academic year to actively encourage and scrutinise student's attempts at reflection.

Achieved learning

Whilst the participants of the focus group discussions did not directly refer to the learning that had been achieved it was implicit in some of the statements that they made. The types of learning ranged from the ability to undertake a simple review of what had happened to the more complex reflection on their abilities and self-identity.

For some, completing the error logs had influenced their learning behaviour, in terms of reviewing a task, which they would not have done in the past. A number of students indicated that during the course of the module they had found that completing the error at particular times was more beneficial to the learning than if they left it to the last minute.

By developing a set of criteria the students were moving away from a mechanised list of errors to forming a conceptual map of their dispensing procedure which with each error needed amending to ensure the error was not repeated

I think it makes you think more about how you've got to have in your head a specific set of instructions you go through to make sure that you've checked everything, because when I hand something in I don't hand it in until I'm pretty sure that there's no mistakes on it but you always comes back with one or two little errors.

Completing and reflecting on their error logs had influenced some students' ideas of their self-worth. They considered it a confidence boost when they identified that their errors were reducing as the year progressed.

Well that's a good experience. If you look at the first one and then look at the last one, you can see that it reduces in size, so that in itself is a confidence boost...you know that you're improving and you're learning so I suppose that's a good part of it.

For others it was a direct reference to how they viewed themselves as health-care professionals.

I feel a bit more professional.

They tell me most about the care I can take.

The learning that is referred to above is in the main an outcome of descriptive reflection (Hatton & Smith 1995) in that students are reflecting on the description or feedback of the dispensing sessions. This, according to Hatton and Smith (1995) involves a low level of reflective sophistication. However, a number of students were utilising the next level of reflection, 'dialogic reflection' which involves the ability to step back from the events and reviewing their attitudes and level of expertise that they consider a pharmacist to have.

Encouraging other students

When asked how future students could be encouraged to take up completing and reflecting on the error logs, students noted that more information, in the form of a short lecture and an example of how to complete an error, would be helpful. However, a couple of students indicated that they liked the openness and flexibility of the situation as it gave them the opportunity to do it in their own way.

Every participant remarked that by making the activity a module coursework assignment would make all students have to complete the exercise.

... mandatory because a few people...lazy people might not...if its left to themselves...do you fill in an error log or do you do your course work...deadline, that's due in on Friday, you know. It's probably those people that don't fill them in now who need to.

An interesting idea came from one group of participants who suggested that peer reviewing others prescriptions and errors in a small group session would aid their learning and encourage others to take up the activity.

Although, another way to do it is give us somebody else's script so that we can mark their script with the template. And then they have to make an error log based on that. And then we'd also be able to see someone else's mistakes and then get feedback on our own.

Reflection is usually considered as an individual skill or activity however working with others can facilitate learning to reflect and can deepen and broaden quality of reflection (Moon 1999). For this to occur it is important that all learners are engaged in the process. Developing peer-learning groups (either formally or informally) can provide the encouragement to develop a number of skills that facilitate reflection in others (Eastcott & Farmer C 1992; Knights 1985). For example, challenging questions, be aware of and challenge psychological and emotional barriers to reflection. Being helpfully supportive to others in the reflective process can be a learning process just as much as being reflect itself (Francis 1995; Hatton & Smith 1995). However, the disadvantage is that group work can be a hiding place for those who no wish to engage with learning or reflection. A mix of working with others and alone would maximise learning.

Discussion

The findings from the focus groups discussion have provided a number of key issues regarding students' attitudes towards engaging in reflection, these are summarised in Table II.

Table II: Summary of the key issues to engage students in reflection

To encourage engagement

- Students require a comprehensive description of the activity and what the intended outcomes are.
- Students need convincing of the benefit of the activity, as they are concerned that they may waste their time undertaking the activity.

Once engaged students quickly begin to see the benefit from the activity. However, the degree of benefit can vary from student to student as can the type of benefit, for example, from simply changing learning behaviour to more complex qualitative shifts in self perception.

At the start of the semester students were given an outline of what was required to undertake the completion of the error logs and several examples of completed error logs were available via Blackboard. However, given the above statements, it is possible that students require more direction regarding what is required of them. Perhaps a workshop that focuses on 'modelling reflection' (Gibbs 1988) would be beneficial so that students can learn by watching and listening and see what is trying to be achieved in relation to reflection and the skills and abilities required. For this to be successful it is important that the facilitator of that workshop has skills to actively listen and attend to what is being said (Boud, Keogh, and Walker 1985). There would be a need to support and encourage students to take a deepening reflective process as the semester progresses. The role of facilitator would therefore change over the course of the academic year as students will initially require support and guidance but later require encouragement to deepen their reflectivity (Heron 1989).

A number of initiatives have been undertaken following the findings of this study these include:

- A review of the reflection activity at the introduction lecture given at the start of the academic year.

- A lecture is under development that outlines what is meant by reflection and its primacy in life-long learning and professional development.
- A workshop is under development that reviews the skills required for reflection.
- A review of students' error logs during the course of both semester one and two.
- A group meeting with staff involved in the module to discuss how to encourage student reflection.

There are a number of limitations to the study which have to be taken into account when considering the study's findings. As in the nature of a qualitative approach the findings from the study are not generalisable to the large student cohort, however the findings do give some indication of student participants' attitudes to completing and reflecting on error logs. These may not be reflective of the remaining cohort as those students who participated may not be representative of the student cohort. In addition, the participants of the focus group discussions self-selected themselves for the study, which may bias the findings to those students who have completed and reflected on their error logs.

To conclude the study has indicated that during the course of the academic year Level three pharmacy students began to appreciate the benefits of reflecting on their error logs. The initial reason for not completing the activity was the lack of time involved given the perceived benefit they would receive. Their perception of the benefits to be gained from completing and reflecting on the error logs became more evident. Students require more encouragement and support to begin developing their reflective skills in particular highlighting the benefits of completing the task.

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