PROMOTING REFLECTIVE PRACTICE AMONGST MA THEMA TICS NOVICE TEACHERS: ARE THE PERCEIVED BENEFITS RELATED TO NOVICES' LEARNING STYLES?

Susan Martin

School of Education, University of Bath

Abstract
Whilst the goal of developing critical reflective practitioners might be appropriate for all novice teachers Kolb's work suggests that learning should be matched to learning style and this raises a question of whether the methods used, largely reflective writing, are appropriate for all novice teachers regardless of their learning style. Determining the extent to which novices' learning styles affect the irifluence of tools used to promote reflective practice is neither simple to investigate nor easy to recognise. Two factors which merit consideration are the extent to which discussion of the 'why' and the 'how' of reflective practice are given adequate attention across the course components and, secondly, the extent to which the potential of reflective writing is not realised because the contextsfor the tasks and assignments do not connect meaningfully with novice teachers' personal theories and experience.

[The views expressed within this paper are those of the author and should not be taken to be representative of the institution to which they refer.]

Background

Work with novice teachers (and with mentors) has raised questions as regards the appropriateness of the tools used for all novice teachers ie irrespective of their personal dispositions to reflective approaches. LaBoskey (1994) has also questioned whether reflective programmes are appropriate for all students or whether it is only suited those who are further towards the pedaogical end of a common-sense/pedagogical thinking continuum. Thus, there is a question as to whether there are tools for promoting reflection that suit the novice, regardless of their location on this continuum or does, for example, the activity for promoting reflection have to be based on more real or concrete terms for novices towards the common-sense-thinker end of the continuum.

Other work with novice teachers on Kolb encouraging them to think about the need to cater for different learning styles has raised questions for me in thinking about the effect and influence of the styles adopted in mathematics university sessions. A further question is whether there are tools for promoting reflection that suit the novice, regardless of their learning style and to what extent these are taken into account, not only in mathematics components but across the course as a whole. In my own mind this raised the question of whether or not, as a result of the approaches I used, I was inhibiting the very thing I was purporting to promote.

Commitment to reflection
The PGCE course at Bath has as its fundamental principle:

to help you [the novice teacher] to develop the skills of a critical reflective practitioner, that is, to help you become a teacher who can reflect on and analyse your own practice, and select effective strategies to use which will facilitate and support pupils' learning. The course as a whole, and its component parts begins from the premise that your professional experience is an important resource for your own learning and continuing professional development.

Novice teachers are encouraged and expected to show evidence of reflection although the documentation, despite stating the philosophy and commitment to this principle, tends to leave novice teachers simply to get on with it Mathematics novice teachers, in particular, feel untrained and often unable to be reflective, or at least not to express this in writing, (something which they often have not done for at least six years and even then 'it wasn't a proper essay').

Not surprisingly then, some novices fmd reflection difficult because of a combination of some or all of the following:

    (a) understanding how to reflect
    (b) understanding why they should reflect
    (c) understanding why the content is significant or valuable for them to reflect on

Korthagen (1988) suggests that reflection should be both integrated and highlighted in courses. That is, the process of encouraging novice teachers to reflect on their work and development should be a common thread for all course components and should be addressed as a method and as a principle underpinning the course. Interestingly, his research also indicated that novices had a continuum of learning styles: from those with an internal orientation, who preferred to learn by reflecting, to those with an external orientation who preferred learning by guidelines and books. The principle of highlighting and making aims explicit is also supported by McIntyre (1988) suggesting that there needs to be a shared, explicit agenda that learning to teach is about generating and testing hypotheses. Novice teachers at Exeter reputedly wear T-shirts with *what? so what?* and *now what?* inscribed on them. (The anecdote did not go as far as relating the effect of wearing these!) There is always a danger, however, that in making explicit what reflection is, there is a danger of doing the reflection for novices or of losing sight of the process as a means to an end.

The PGCE course documentation gives some guidance on what reflection is and what it might look like and anything beyond this in terms of helping novice teachers develop their skills of reflection is left to the domain of individual tutors. The reflective focus of the course is on the product of reflection - assignments and the Professional Development Review (PDR). The PDR is not formally assessed but novices have a tendency to view it as 'summative' assessment. It is perhaps not surprising that novices often focus on and see the process as an end in itself. To what extent are these rather mixed and unclear messages affecting novices' progress in becoming reflective practitioners?

I njluence of novices' baggage or personal theories

There is little dispute over the influence and effect on novices' training of the personal theories that they bring to their training (Feiman-Nemser and Buchmann 1985, Hoover 1994, Boud, Keogh and Walker 1985). Generally, students don't so much change their beliefs and theories but become more confident in those they bring to their training. There are many citations of the need for training to take account of where the novice is at but perhaps less reference to and understanding of the specifics of how this can be put into practice, the general principle being to in some way help novices to be aware of, engage and interact with their own preconceptions. However, it perhaps is not quite so bleak: a picture as portrayed here (see later).

The use of writing as a medium for developing reflection

There appears to be an assumption that writing not only develops the ability but is also an appropriate means of assessing someone's capability for it At best there is a mismatch of agendas since what is being assessed is the ability of the novice to explore and evaluate their own practice with a view to improving it and not the ability to reflect per se, although that perhaps becomes the inevitable focus in the assessment process. But this does raise a question of what flexibility there is for novice teachers to express themselves as they feel is appropriate for them.

Hoover (1994) has similarly questioned the appropriateness of writing to promote reflection suggesting that 'comparing descriptive 'shapshots' of classroom practice to their evolving philosophies can afford novice teachers with a mirror of their teaching performance '" and an avenue to deliberate and explore the congruence between what they espouse in theory versus their daily actions. In none of the writing completed as a course requirement for the supervisors' reading and review were preservice teachers challenged toward critical levels of thought' (p 91)

Zone of Proximal Development

The zone of proximal development (ZPD) concerns the relation between learning and development Learning should be matched to an individual's developmental level. The ZPD is crucial not only for determining where an individual is at but also for where they are going eg two people may 'look alike' in terms of what they achieve on their own but their potential may be very different ie their zone of proximal development Given a general developmental pattern, it is possible to determine the likely zone of proximal development for an individual.

Vygotsky's principle of the ZPD, therefore, provides a useful concept for thinking about the overall development of novice teachers during their training. Moreover, if certain factors or modes can be found to influence the process of learning how to reflect then the concept of the ZPD can also be an aid to facilitating reflection amongst novices in the sense of knowing what tools or approaches might be appropriate at any particular phase and for any individual. Thus, in order to help novice teachers

in their development, we need to know what the next stage for the novice is likely to be and therefore need to know (a) where they are currently at and (b) where they have come from. Whilst the rhetoric may sound straightforward the reality is such that the numbers of novices and the limited university contact time suggests that it is perhaps more realistic to expect that mentors in schools might develop and acquire the relevant knowledge. Nevertheless there remains the issue of whether or not there are tools which are useful for promoting reflection on a more universal basis.

The focus of the paper then is on how to facilitate the practice of reflection amongst novice teachers and notably raises more questions than it provides answers.

Sample

Novice teachers were selected on the basis they they were making good all round progress on the course and were known, on the basis of work done in university sessions, to have different learning orientations. The sample of six novice teachers (four male, two female) were interviewed shortly after their first block teaching placement (January) and also supplied three of their assignments (one of which was an assignment on Kolb's learning styles) together with their Professional Development Review for further data. Each interview was around an hour in length and focused on the following research questions giving particular emphasis to the novices' perceptions of how their ideas and beliefs had changed, if at all, during the course to date and what they thought had influenced these changes:

1 To what extent does the focus on the purposes (the why) and principles (the how) of
   reflection in the course components help novice teachers?
2 To what extent do novices perceive the foci of reflection as useful?
3 Are there particular methods that are conducive to helping mathematics novice teachers to think
   about their practice?
   If so, what factors (eg learning orientations) and modes (eg writing) influence the success of these?

There is clearly an inherent difficulty in the approach used because whilst interviews with novices were intended to elicit their views on reflection, their own stance, their development and the course's facilitation of this, their perceptions themselves were a reflection of how reflective they were as individuals. There is a further caveat in the assumption that what they say is true. It is not unusual for novices to say that they are not reflective and do not value reflection when what they say and write may indicate otherwise. To some degree, it is a subjective matter of judgement.

Results

Commitment to reflection

All novices were very much aware of the onus on them to reflect and the expectation that this should pervade the whole course. Four thought it a good idea but only one thought that the course

documentation was helpful in this respect However, no indication was given by any of the extent to which they had perused useful sections and appendices of the various handbooks. Only one novice cited the process of reflection or the results of being asked to think or explore particular areas and issues as useful. For the most part, novices perceived the focus or content of the assignments as useful but they were divided in the sense of whether, even in retrospect (in discussion during interview) they thought them of any value to their development Two novices were of the view that school placements were where the majority of their learning had taken place and was where they had expected it to take place. Assignments, tasks and sessions (across the course) were thought, by these two novices, to be of little consequence except inasmuch as they were useful for their own direct teaching eg using Logo which had hitherto been unfamiliar territory to them and, if they had not been asked to do the assignment, would proably have steered away from using it in the classroom. These two novices were of a *practical* learning orientation and seemed to only appreciate activities that had immediate benefits for their classroom teaching.

Influence of novices' baggage or personal theories
Novices found it difficult to be aware of any preconceptions they had about teachers, teaching and mathematics and the influence of these on their teaching. In the case of the two *practical* novices it was clear that their expectation of the course was to enable and equip them to get on with the job of teaching and not to hang around doing a lot of observing when they knew what they would fmd before they carried out the tasks! The three novices with more *logical* orientations were more open to learn, considered themselves to have no preconceptions and had come on the course with absolutely no idea how to teach. Although this seems somewhat tenuous they did have open minds and were willing to learn. One in particular unravelled how some of his ideas and beliefs had changed during the course of the year, and decided that he must be reflective although he was fairly certain initially that he wasn't as he was never aware of thinking about anything, and concluded 'I must do it while I'm eating my dinner'.

The use of writing as a medium for developing reflection
Some concern was expressed about the validity of having to write everything down. For one novice, who did not fmd articulating his thoughts a problem, it seemed inappropriate to expect everyone to be able to write their thoughts down. There was some indication that there was a tension between reflection and formal assessment. It was not so much that individuals' thoughts should not be used to make an assessment of them but that fonnal assessment and the notion of 'getting it right' (or saying the right things) militated against any creativity.

It was interesting to note contradictory stances of novices. Whilst one in particular was in fact 'saying the right things', discussion portrayed that this was more going through the motions required of them rather than any attempt to explore their own views. Thus writing may not only not be the most appropriate mode for individuals to express their beliefs but it may well be one which does not

reflect the individual's real stance.

Tools conducive to reflection

Although the two *practical* novices seemed to be the least reflective and least appreciative of any value associated with reflection this was not true for cases which related either to the classroom or particularly their own teaching where they reached more sophisticated levels of reflection. The last mathematics assignment on assessment and learning indicated clearly thought out approaches on how and why they would carry out assessment in their classrooms. For both novice teachers these assignments were different in kind from their previous ones both in terms of reflection and applying their fmdings to their own practice. Other novices outside this particular sample fell into the same category of struggling to see the value of and operate in a reflective mode but appeared to have no problems when the focus was 'familiar' to them or relevant to their agenda.

External triggers

Four of the six novices in the sample recognised the value and function of what might be termed external triggers which had caused them to (re-)think through certain issues or aspects of their teaching. In the case of one novice these triggers were considered to be essential for starting him off as he needed pointing in the right direction and then 'he was away'. For him it was a voluntary thing, the only encouragement needed was a starting point unlike another novice who need such triggers sometimes to cause him to start evaluating out of persuasion more than choice. In his case, it was harder to get him going or to induce some notion of conflict between what he said and what he did. For example, he was persuaded by his mentors to change the way he was teaching, from very closed to more open. He was willing to do this but found it difficult to recognise and acknowledge that he wasn't doing it although in retrospect it was clear to him that he wasn't ('In my frrst lesson, not one of the pupils spoke!')

A common element in these situations is the fact that they were all real for the person involved and therefore more meaningful. For some novices it seems reflection only becomes tangible when a scenario is perceived to be either relevant or real to them. It is not insignificant that two of the four novices interviewed thought the (Ko1b) assignment 'fictitious' and that Ko1b was a myth. Difficulty in locating suitable literature and discussions with staff in their schools had led to this impression, giving some credence to their suspicions that university components are somewhat removed from reality.

In conclusion

From a personal point of view this research has raised a question over the usefulness of writing as a universal aid to reflection as a means for furthering novices' development, particularly in those cases where what is written (and appears to be reflective) is counter to novices' practice. Moreover, as long as reflection is assessed largely in the written mode novices will continue to focus on the

product, simply because it is assessed while the course focus is on the process.

Novices' ability to reflect appears to some degree to be influenced by learning orientations. That is, different learning orientations may influence the perceived need for or value of reflection and thus the degree to which novice teachers are willing and able to engage in such activities. However, it seems that there are perhaps more significant factors such as:

> external triggers
>
> the extent to which novices see themselves as learners
>
> the extent to which activities are perceived as real and/or relevant by
>> novices

Despite a commitment to the philosophy of encouraging reflection where writing is the main mode by which it is (ideally) encouraged and assessed my own view is that the most significant moments (for novices and for myself) are quite often in areas where we least anticipate or expect them to occur. Ironically, perhaps, I suspect that the data gathering process for this small study provided some of the most significant moments of and for reflection for both researcher and researched.

References

Ball, D L (1988) Unlearning to Teach Mathematics. For the Learning of Mathematics 8(1): 40-48. Boud, D, Keogh, R and Walker, D (1985) What is Reflection in Learning? **in** Boud, D, Keogh, R and Walker, D (Eds) Reflection: Turning Experience into Learning. London, Kogan Page.

Feiman-Nemser, S and Buchmann, M (1985) The First Year of Teacher Preparation: Transition to Pedagogical Thinking? (Research Series no. 156). East Lansing: Michigan State University, Institute for Research on Teaching.

Hoover, L A (1994) Reflective Writing as a Window on Preservice Teahcers' Thought Processes. Teaching and Teacher Education 10(1): 83-93.

Johnston, S (1994) Conversations with Student Teachers - Enhancing the Dialogue of Learning to Teach. Teaching and Teacher Education 10(2): 71-82.

Kolb, D A (1984) Experiential Learning: Experience as the Source of Learning and Development. Englewood Cliffs, New Jersey, Prentice-Hall.

Korthagen, F A J (1988) The Influence of Learning Orientations on the Development of Reflective Teaching **in** Calderhead, J (Ed) Teachers' Professional Learning. Lewes, Falmer Press.

LaBoskey, V K (1993) A Conceptual Framework for Reflection in Preservice Teacher Education in Calderhead, J and Gates, P (Eds) Conceptualising Reflection in Teacher Development. London, Falmer Press.

McIntyre, D (1988) Designing a Teacher Education Curriculum from Research and Theory on Teacher Knowledge **in** Calderhead, J (Ed) Teachers' Professional Learning. Lewes, Falmer Press.

Moreira, C (1994) Using a Vygotskian Theoretical Perspective to Facilitate Prospective Secondary Mathematics Teachers' Professional Development. Paper presented at BSRLM Conference, London Institute of Education, December.

Rieber, R Wand Carton, A S (Ed) (1987) The Collected Works ofL S Vygotsky. Volume 1: Problems of General Psychology. New York, Plenum Press.

Rogoff, Band Wertsch, J V (Eds) (1984) Children's Learing in the 'Zone of Proximal Development'. New Directions for Child Development No 23. San Francisco, Jossey-Bass.

Tharp & Gallimore (1988) Rousing Minds to Life. Teaching, learning and Schooling in Social Context. New York, CUP.

Valsiner, J (1984) Construction of the Zone of Proximal Development in ADult-Child Joint Action: The Socialization of Meals **in** Rogoff, Band Wertsch, J V (Eds) Children's Learning in the 'Zone of Proximal Development'. New Directions for Child Development No 23. San Francisco, Jossey- Bass.

Vygotsky, L S (1978) Mind in Society: The Development of Higher Psychological Processes in Cole, M, John-Steiner, V, Scribner, Sand Soubennan, E (Eds) Cambridge, Massachusetts, Harvard University Press.