

0629

The development of teaching strategies to support Mathematics and Science PGCE students with M level writing

Maarten Tas, Sue Forsythe

University of Leicester, Leicestershire, United Kingdom

Background

Since 2005 PGCE courses have been awarded at two different levels in many English Universities, the Post Graduate certificate of education at Masters Level (the Masters degree to be completed at a later stage) and the Professional Graduate certificate of education at Honours level. In 2007 the UK government published the intention for teaching to become a Masters profession. It therefore makes sense to advise all PGCE students to write their assignments at Masters level.

Because the majority of Mathematics and Science students do not experience academic writing in the realm of Social Science in their undergraduate studies, it puts the majority at a distinct disadvantage compared to the rest of the PGCE cohort who come with degrees in English, the Humanities, Social Science. In a PGCE programme in the UK there is very little time to further develop the skill of academic writing to support Mathematics and Science PGCE students.

The project reported in this paper set out to develop the skill of academic writing of Mathematics and Science PGCE students. The first part of this collaborative study focused on peer-assessment of a synopsis for the second assignment¹. The effectiveness of this teaching strategy and other forms of support such as formative feedback of the first assignment and discussing exemplar assignments was analysed by evaluating student questionnaires, semi-structured interviews and comparison of pass rates at Masters level with the year group before. Seventy nine percent of the Mathematics and Science students of the 2008-2009 reached Master level credit, which was an increase of 24% compared to the cohort of 2007-2008.

1. *Tas, M. and Forsythe S. (2010) Peer Assessment to Support PGCE Mathematics and Science Students Preparing for Assignments at Masters Level. Pedagogical Research in Higher Education, in press*

Research Questions

- How effective is the peer-marking and formative assessment by the Mathematics tutor of a practice assignment?
- How effective are the sessions on marking exemplar assignments using level descriptors and a library session with the objective to learn how to locate research material?
- How effective are the forms of support which were already part of the course design?
- What other forms of support are recommended by other initial teaching education (ITE) tutors?

Methods

Students' feedback from questionnaires and semi-structured interviews and features of assignments (including grades) will be analysed and evaluated. Analysis of semi-structured interviews with ITE tutors from different institutes will reveal other forms of successful teaching strategies.

Frame

The main focus of this study is to find the most effective interventions to support Mathematics and Science PGCE students with writing assignments at Masters level within the short period they have for training at the university.

To determine the effectiveness several measures will be taken into account:

- The responses of students to questionnaires using the 'Likert' scale and semi-structured interview regarding
 - o The interventions they experienced
 - o Other interventions which could be tried
- Comparison of Mathematics and Science assignments and possible alignment with the different interventions
- Comparison of grades and Masters level pass rate of the 2009-2010 cohort with the 2008-2009 cohort

Research findings

Because of the very recent requirement of writing at Masters level for students following a PGCE course there is not much literature on the disadvantage that Mathematics and Science teacher trainers may have, and what extra support would be most helpful. From the study done with the cohort of Mathematics and Science students (2008-2009) at the PGCE course at Leicester University it was clear from questionnaires and semi-structured interviews that peer-assessment of the synopsis for their second assignment was very useful. Other forms of support were found helpful as well. Of all the suggestions for other possible interventions the majority of students preferred marking exemplar assignments using level descriptors and the assessment of a practice assignment. It was decided that the library session with the objective to learn how to locate research material be put into the programme of 2009-2010 Science, because several students in the interviews expressed having problems with finding the required literature for their assignments.

References

1. *Tas, M. and Forsythe S. (2010) Peer Assessment to Support PGCE Mathematics and Science Students Preparing for Assignments at Masters Level. Pedagogical Research in Higher Education, in press*