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Learning to Teach a Specialist Subject: Using New Technologies and Achieving Masters Level Criteria

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Abstract:

This paper addresses some of the challenges faced in the common module delivery elements of the MOTIVATE project. It examines a number of issues relating to one of the common modules, 'Teaching a Specialist Subject': the nature of the content of the module, namely subject specialist pedagogy; the requirements in Masters level learning and its assessment; the use of new technologies in delivery. The issues are examined separately before considering how these elements can be achieved in combination for successful module delivery. The paper concludes with recommendations for the use of e-portfolios, for assessment purposes, to record and reflect upon contributions to the 'social networking' and collaborative tools made by students during the module.

1 Introduction

As indicated by the formulation of its name (Masters level Opportunities and Technical Innovation in VocAtional Teacher Education), the MOTIVATE project provides a platform for the development and delivery of initial teacher training (ITT) modules at the Masters level, using new and emerging technologies. Changes to the specification of the PostGraduate Certificate of Education (PGCE), brought about by European Union legislation, whereby the label "postgraduate" must signify Masters level components in ITT programmes, have provided the impetus for these developments.

The MOTIVATE project is organised over its two-year lifespan into a number of work packages, addressing in turn: the identification of Masters level criteria; the adaptation and development of the curriculum, with common modules at Masters

level; the investigation of innovative methods of delivery using new technologies; the implementation of the common modules using various 'social networking' and collaborative tools.

This paper will focus on one of the modules developed for common delivery: 'Teaching a Specialist Subject'. In the following sections, the aspects of the project work packages, pertinent to the delivery of that module, will be examined in turn. Firstly, the content of the module is considered: what activities and tasks does a trainee teacher need to carry out in order to learn and be assessed on subject specialist pedagogy? This is followed by a discussion of the qualities and features of the module which make it 'Masters level'. A final topic for examination, separate from the other factors under consideration, is the proposed delivery method, and the nature of the innovative tools used in the on-line environment.

The penultimate section of the paper then examines the various module delivery requirements in combination, and addresses the question: 'How can ITT students learn how to teach a specialist subject on-line, using new collaborative and networking technologies, and still show achievement at Masters level for assessment purposes? Finally, some conclusions are drawn, and recommendations made, to inform the 'course implementation' phase of the project.

2 Learning to teach a specialist subject

This section focuses on the content of the chosen common module, and examines the learning outcomes, which show ability and understanding in the area of 'subject specialist pedagogy.

The professional body in the UK for teachers in the 'lifelong learning' sector is the Institute for Learning, and it has monitored the recent developments of the "professional standards". A priority in these standards is increased emphasis in subject specialist pedagogy in ITT programmes, and the development of the concept of "dual-professionalism", whereby teachers achieve professional status both as subject specialists and as teachers.

The 'Teaching a Specialist Subject' module seeks to develop this professionalism in the teaching sphere, by providing the student with opportunities to learn about the 'nature' of learning in the specialist area.

The module is not intended to provide the first experience of teaching in the specialist area for the student; as stated in the module synopsis: "This module builds on previous generic and subject specialist development in two ways. Firstly, it contributes to the development of more advanced strategies and methods for promoting learning and, secondly, it involves a sharper focus on specific specialist areas and the critical analysis of their pedagogy. The module achieves

these purposes by enhancing the ability to reflect critically on, and to evaluate, teaching and learning; by recognising particular curriculum and professional challenges; and by developing critical responses to these concerns in sophisticated, innovative and creative ways. It places subject specialist pedagogy within an epistemological context and develops a critical awareness of recent literature dealing with teaching and learning in the specialist area. Key learning activities of the module are practical teaching experience and the engagement with other specialists through collaborative practice.”

Subsequently, the module outcomes relate to: analysis of the “epistemological basis of the specialist area”; “key pedagogical principles in the specialist area and their implications for teaching and learning”; the development of “innovative and creative approaches to teaching and learning within the specialist area”; application of “appropriate teaching strategies and methods” and analysis of “new developments impacting on professional practice” in the specialist area; collaboration with other specialists to develop own professional practice.

As will be discussed in the next section, these outcomes are expressed in specific ways, using particular language, to indicate the ‘Masters level’ nature of the module.

3 Masters level requirements

There are several factors which distinguish learning and assessment at Masters level from that at lower academic levels. From Masters level criteria guidelines it is possible to identify a number of Masters level ‘traits’, including the ability to:

- Demonstrate originality in solving problems and applying knowledge
- Critically evaluate current research in the field
- Deal with complex issues both systematically and creatively
- Clearly communicate conclusions to specialist and non-specialist audiences

In the ‘Teaching a Specialist Subject’ module, learning outcomes which typify these Masters level traits are: “Critically analyses the epistemological basis of the specialist area”, and “Critically reflects on and develops innovative and creative approaches to teaching and learning within the specialist area”. Within these outcomes there can be identified elements of ‘originality’, ‘evaluation’, ‘creativity’ and ‘analysis’.

It is also necessary to examine the requirements for valid and reliable assessment at Masters level. Regarding validity requirements, it is essential that the evidence presented by the student, the final 'submission' of work for assessment, actually demonstrates the required depth, scope, criticality, and engagement with underpinning theory, to meet the masters level criteria, and to show achievement of the module outcomes. Reliability issues focus on consistency in interpretation of masters level achievement, and equivalence in standards (word counts, etc). Both validity and reliability can be achieved by the development of moderation processes between participating project partners.

In the next section the nature of the evidence of learning generated by engagement with the new technologies will be examined. It will then remain to judge how well that evidence provides valid proof of achievement of the learning outcomes at masters level.

4 Using New Technologies

The Motivate project sets out to utilise a range of new technologies, including WIKIs, blogs, virtual learning environments and 'virtual worlds'. Teacher training students will also have access to particular applications and examples of the technologies. In particular, for common module delivery, use will be made of the Blackboard and Moodle virtual learning environments, both providing WIKIs and blogging facilities, along with other networking systems, discussion forums and communication tools.

Associate On-line is a Moodle-based environment, providing access to a network of practicing teachers in a wide variety of disciplines, and is directly relevant to the common delivery of the 'Teaching a Specialist Subject' module.

There is also expertise among the MOTIVATE project partners in the development of the virtual world, Second Life, for educational purposes, and it is envisaged that participants in the second phase of the common module delivery will have the opportunity to experiment with this type of virtual environment.

Although it is not within the scope of this paper to present the findings of research into the use of 'collaborative' technologies in an educational setting, there has been much written about "communities of practice", learning in a social context, and social networking.

There are undoubted benefits of learning collaboratively within a community of other learners, but in such an environment there must be steps taken to ensure that

individual achievement can be recognised and assessed. The final sections of the paper address these issues.

5 Integrating the issues: content, technology, Masters level

One of the findings of the earlier VELVITT project was that the engagement with technology should be a compulsory element of the module assessment schedule, in order to ensure full participation in collaborative on-line tasks. Where activities in the virtual learning environment were not part of the formal assessment, students tended to view them as optional, and often did not contribute (because it was not necessary to pass the module).

Therefore, it is intended that the assessment tasks of the Teaching a Specialist Subject module will specify the nature of the required engagement with the technology. However, it remains to consider how the module content can be covered at Masters level, while simultaneously making effective usage of the technologies. The following suggestions are for appropriate activities using some of the technologies to enable students to show their achievement of the module outcomes.

The discussion board facilities can be used to pose questions such as “What is the most difficult concept you have learnt in your subject area?”; “What is the most effective way of teaching.....?”; “What is special about teaching your subject?” This will promote debate and the sharing of experience, contributing to coverage of outcomes relating to epistemology and pedagogy in particular.

A wiki might be developed to provide a ‘database’ of teaching and learning methods and their suggested application in the specialism.

The ‘Associate On-line’ Moodle development can enable collaboration with other specialists, using the “Find a Buddy” and “Find a Professional Twin” facilities. It can also be used to contribute to and benefit from a teaching resource bank for the student’s specialist area.

Undoubtedly these activities provide students with an opportunity to generate evidence of their knowledge and ability in the relevant area of study, but will that evidence be at the Masters level, and will their claim to ownership of the learning be compromised by the contributions of others?

6 Conclusions and Recommendations

In order for students to successfully complete the Teaching a Specialist Subject module they must provide for assessment purposes evidence to show their achievement of the module outcomes. Furthermore, this evidence must be able to be judged in the assessment process to be valid (the content is relevant for purpose), sufficient (there is enough evidence presented) and authentic (the evidence is attributable to the person being assessed).

The main issues for concern in generating evidence through activities involving collaborative technologies are validity and authenticity. Taking the example of the collaborative production of a wiki, an individual's contribution may, in isolation of the other contributions, be judged to be not valid for assessment purposes. It may be insufficiently focused on the topic or it may not satisfy Masters level criteria. Perhaps another contributor has already made a more pertinent point, but if the assessor takes this into account there is a problem with authenticity.

It is therefore recommended that students collect evidence of their engagement with the collaborative technologies in a central, individualised electronic repository or e-portfolio. The evidence can then be supplemented with additional commentary and reflection, which will provide the student with the opportunity to critically analyse and evaluate their own and others' contributions (making reference to authoritative sources from their research and background reading). Thus, the e-portfolio will provide the assessor with a sound basis for appropriate judgement of both validity (regarding content and level) and authenticity of the individual student's work.