

Developing Professional Competence through Assessment: Constructivist and Reflective Practice in Teacher-Training

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Abstract

Problem Statement: Traditional forms of assessment such as essays and end of term examinations are still widely used in higher education in Ireland as the sole assessment method. These forms of assessment, while they may be valid and reliable approaches for collecting evidence of the acquisition of theoretical knowledge, rarely afford students the opportunity to apply knowledge to key professional scenarios. In the context of teacher education, if the aim is to develop teacher competence beyond the mere possession of technical skills then appropriate pedagogic and curriculum interventions need to be developed, implemented and evaluated.

Purpose of Study: This paper argues that reflection and experiential learning should be infused through effective assessment strategies and embedded in the training and formation of trainee-teacher attributes. The authors draw on their experience as lecturers and module/course designers for an 'Assessment' module within a teacher-training degree programme in a School of Education in the Republic of Ireland.

Methods: This paper presents the findings of a 4-year study, which adopted a multi-methods approach. The research was conducted using both numerical and qualitative tools. A primary focus of the research used student reflection to generate relevant data suitable for analysis and this was then triangulated with module evaluations and numerical performance data. The paper describes the research that used

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constructivist principles to help foster the development of assessment competence through a cycle of action/critical reflection/revised action within an assessment portfolio design.

Findings and Results: The research demonstrates that a learner-centred approach to assessment not only helps the student/trainee teacher in the development of their own professional competence but also shows teacher educators that they need to experience learning and reflection at a deep level in order to be able to develop the professional competence required of them as future teachers.

Conclusions and Recommendations: Those students who participated in the study expressed their appreciation of the value of portfolio assessment and indicated that they would be prepared to use it in their future professional contexts. The research suggested that a number of recommendations be considered and these include enabling students to make sense of knowledge through reflection, and the design of assessments, which replicate authentic professional scenarios and require decision-making, in order to assist in developing a reflective capacity for appropriate professional judgment.

Keywords: Teacher Training; Assessment; Reflection; Experiential-learning; Competences

It is proposed that predominant, traditional forms of assessment, used in Teacher Training programmes in Colleges of Education and Higher Education in Ireland, often do not make sufficient use of reflection on practice or attach enough relevance to the critical application of knowledge to key professional scenarios to positively impact on future practice of trainee educators.

The authors draw on their experience as lecturers and course designers for the module "Curriculum Assessment". The structure of the portfolio for this particular module has allowed students to become assessment designers, markers, and self and course evaluators. The research findings demonstrate that through a reflective process and constructivist teaching methods, learners were engaged in a deeper form of learning which aided their scope for professional development and the development of professional competencies required for their future careers as educators.

This paper sets out as its primary purpose to demonstrate that, when reflection is incorporated in activities designed to develop trainee-teacher competence, it initiates a process that can be transformative in the long run. It asks the question: can a process of professional reflective practice be initiated through an assessment format that challenges trainee-teacher's existing beliefs and perceptions and encourages reflection on, in and for future action? It is argued that this model not only fosters reflection on practice but also initiates a reflective process for future practice as the outcomes of the research show that participants reconsidered their beliefs (Larrivee,

2000) and the role of stakeholders in the process. The model entailed a process of deconstruction of existing beliefs and reconstruction (Hickson, 2011) after having experienced assessment from the perspective of both stakeholders (student and teacher).

While it is acknowledged that lecturers and students engaging in a reflective portfolio assessment are treading unfamiliar territory that may lead to resistance, non-completion and student and lecturer overload (Tisani, 2008), the learning outcomes achieved through this form of assessment appear to out-weigh some of the common problems associated with this form of assessment such as, for instance, the heavy workload for lecturers and students and the difficulty experienced by students in engaging in deeper forms of reflection.

Context of the research

The research presented in this paper is based on a redesign of an assessment strategy for a module within a teacher education programme (BSc in Education and Training) at a major University in Ireland, designed for those already working in the area of teaching and training and for pre-service teachers and trainers.

Student profiles

The programme is delivered through a dual delivery mode: full-time and part-time. The research population for this study consisted of a total of 104 students, 76 full-time students and 28 part-time students. 73 full-time students (96%) and 26 (93%) completed the whole assessment portfolio presented within this research. The student profiles within both modes differ quite considerably. Part-time students join the course to support their continuing professional development with the acquisition of knowledge and skills and to enhance their professionalism and help them gain a recognised teaching qualification. The majority of the full-time student respondents are made up of school leavers with little or no experience of managing assessment practices as educators. Figures 1 and 2 outline the diversity of experience of utilising and administering assessment in educational contexts between the two student bodies.

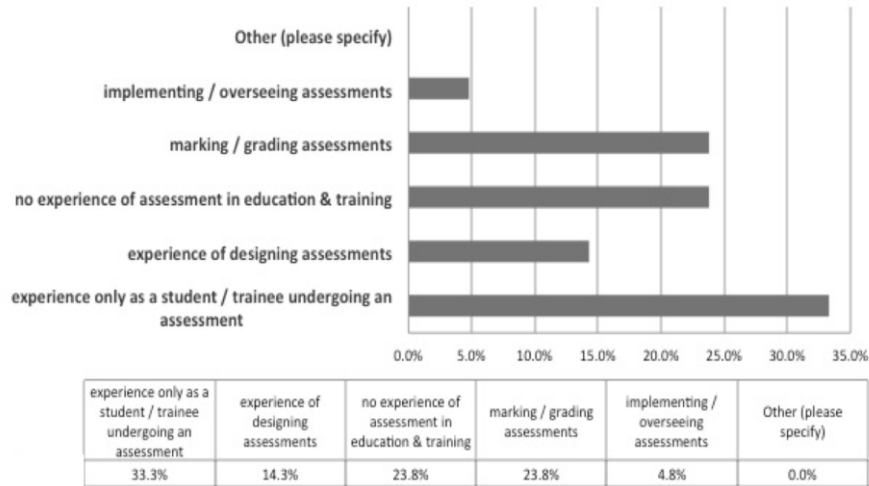


Figure 1: Part-time students' experience of assessment in education and training

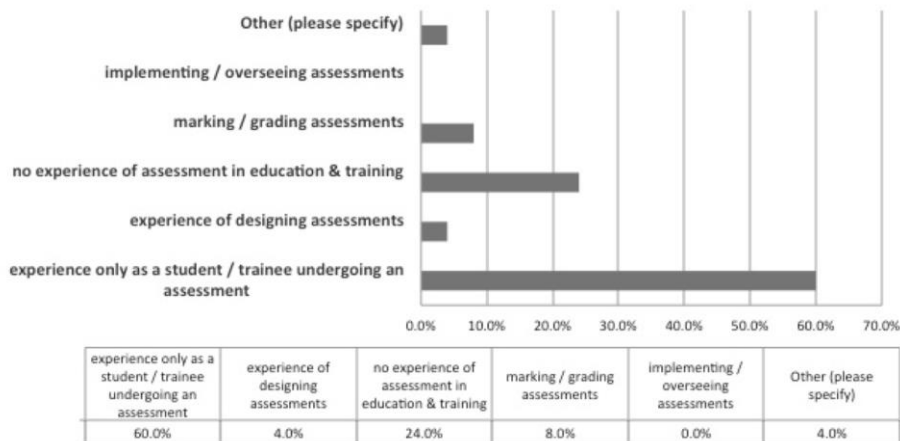


Figure 2: Full-time students' experience of assessment in education and training

The theoretical framework and purpose of the study: The Development of Holistic Professional Competence through assessment

The research set out to increase and/or develop professional competence through student teachers gaining a deep understanding of the processes and products of assessment within a curriculum context. The issue of teachers' professional competence is a thorny one. While often presented in an unproblematic fashion, the concept of competence is closely related to core considerations regarding what the

teacher's role should and will entail in specific work environments. In a European context, the identification of common professional standards to facilitate work mobility has, to some extent, led to emphasizing more objectively observable and quantifiable characteristics of the teaching profession. This model has been driven by concerns with employability of graduates and visibility of institutions (Lemaitre, Le Prat, De Graaf & Bot, 2006) and has emphasised the efficient delivery of comparable learning objectives as a means to increase accountability. On the strength of this market-driven orientation, since the late 1960s and 1970s a competency-based model of teacher training has increasingly gained currency (Van Huizen, Van Oers & Wubbels, 2005). Competency, or rather competencies, constitute the skill base and essentially represent the technical dimension of the teaching profession. Lyotard warns against the risks of Universities becoming subservient to the best *performativity* of the social system (1992, p.48) and teacher education embracing a market driven orientation can irreparably lead to the narrowing of concept from teacher competence and equating it exclusively to a fragmented set of competencies.

Nel Noddings (2004, p.161) argues that 'it is not the job of teachers simply to secure demonstrable learning on a pre-specified set of objectives' and that the teacher role cannot be reduced merely to a set of skills. Skills and competencies should be an essential component of teacher education but a more holistic approach should be taken to ensure that attitudes and personal values are also cultivated. Pre-service teachers should be offered the opportunity to experience professional scenarios that in addition to the development of specific skills helping them to function effectively in the day-to-day teaching activities also challenge their perceptions, foster awareness of their own values and cause attitudinal shifts. It is therefore important that pre-service teachers are introduced to scenarios that reproduce real life contexts that allow them to reduce 'practice shock' (Van Huizen et al., 2005). Such learning scenarios should require them not only to perform skilfully but also to express their creativity, individuality and most importantly their principled judgement. Integrated learning environments and whole learning tasks replicating authentic situations (Janssen-Noordman, 2006) in a structured and sequenced fashion may serve this purpose. Reflection in teacher education is important in the development of existing knowledge and as an aid to cultivate critical thinking (Pennel, Fishman, Yamaguchi & Gallagher, 2007) thus enhancing the development of a life-long reflective attitude in professional practice.

As Schön (1983) suggests, reflection is key in order to facilitate the improvement of practitioners' professional judgments and their understanding of new situations and, according to Lane, McMaster, Adnum and Cavanagh (2014) 'is considered necessary if teachers are to learn from their own teaching experiences and the experiences of others'. Reflection is therefore an essential ingredient of this process, not only for its power to identify, evaluate and address problematic aspects of practice, but also to shape future practice with Threlfall (2014) contending that 'reflection may be viewed as playing a central role in helping students and practitioners achieve their academic and professional aspirations'.

Figure 3 outlines the theoretical model that the revised Assessment Framework is based upon. It demonstrates how knowledge, experience and reflection can help enable the development of competence as practical wisdom.

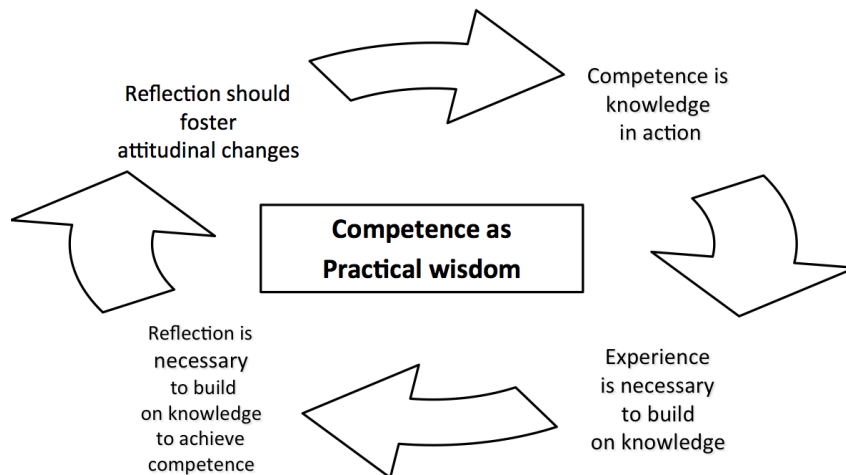


Figure 3: Competence as practical wisdom

Method

Research design

This research set out to determine if a process of professional reflective practice can be initiated through an assessment format that challenges trainee-teacher's existing beliefs and perceptions and encourages reflection on, in and for future action. Based upon the researchers' philosophy to conduct practice-based research, a pragmatic research design approach was chosen. It is within this stance that the research model is situated. Rather than using the simplified and constrained stance represented within either the quantitative and qualitative paradigms, the researchers decided that their own axiological stance together with suitability and do-ability within the research perspective should drive the decision for a choice of research methodology.

This 'third way' represented a flexible and practical way forward with the research design (Tashakkori & Teddlie, 2003, p.ix). In support of this approach, Darlington and Scott (2002) note, that in reality, a great number of decisions of whether to take a quantitative or qualitative research approach are based not on philosophical commitment but on a belief of a design and methodology being best suited to purpose. The pragmatic paradigm has what Tashakkori and Teddlie (1998) and Creswell (2003) see as intuitive appeal, permission to study areas that are of interest, embracing methods that are appropriate and using findings in a positive

manner in harmony with the value system held by the researcher (ibid). Pragmatism in this context is not just a philosophy but also an approach.

Within this approach, the data gathering instruments were utilised to gather qualitative data and to a lesser extent some numerical information. The numerical data were used to identify trends within the research and offer global patterns, which could then be scrutinised further using qualitative methods. Using this approach it deemed the study a 'pragmatic, multiple-method design' study, which used a 'within-stage' meta-design where numerical and qualitative approaches are mixed *within one or more of the stages of research*. Four primary data gathering tools were used to generate the results within the overall study.

- **Student Reflection Diaries** - offering qualitative commentary and reflection in and on past and future action.
- **Surveys** - administered online through Survey Monkey®. The surveys used both quantitative and qualitative questions.
- **Performance patterns** - using results from students before and after 'feedback' had been given.
- **Extant Data** - linking supplementary knowledge as a data pillar such as the cyclical nature of grounded research adding and subtracting from the literature.

Research sample

The research study focused on the outcomes of a four-year process. A total of 250 surveys were analysed and 104 students involved as respondents within the various phases of the research. This practitioner-based research focused on the question of the 'student experience' thus adding another (often neglected) voice to the research. The research used evaluative processes and triangulation of the data aimed at seeking a common truth between the methods employed within the process. Furthermore this reflective research process also sought to enquire if a revised assessment model could help students develop a positive attitude towards assessment, initiate reflective processes (not only on action but for future action) and equip themselves with knowledge, transferable not only outside of the module (course) but also to professional contexts of practice.

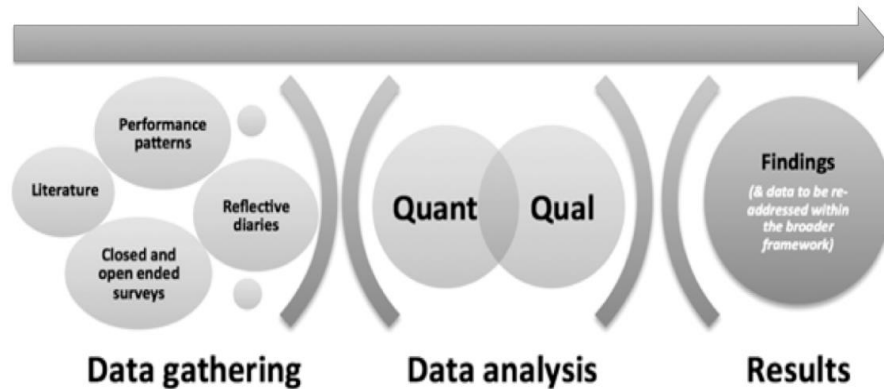


Figure 4: Research timeline

Research Instrument and Procedure

Online Surveys. These blended both quantitative and qualitative elements, which helped data to converge. The surveys used quantitative methods to identify trends, which were further explored through the open-ended responses. Surveys within the research used questions to elicit statistics though these statistics were only used for identifying trends. Many of these trends were processed through text analysis software such as SPSS V.10 and Survey Monkey® and further represented through the emerging visual method of wordclouds. It should be stressed that any quantitative elements to the surveys were purely about gaining an insight into the phenomena, and are not meant to be comparative or presented as a true follow-up study. Statistical validity and reliability tests were not required as the data was used in a non-parametric manner. Significant reliance on the quantitative aspects of the surveys would involve large data sets with huge samples using conventional statistical testing. Instrument validity and reliability (both internal and external) therefore was not an issue with these surveys. Contamination bias was not relevant as there were no control groups, though bias should be acknowledged through the qualitative approach. Researcher bias should be recognised, as the primary data-gathering instrument within qualitative research is the researchers themselves. Validity was reinforced through a qualitative 'check' on a sample of questionnaire replies ensuring that respondents were interpreting items in the way intended.

Reflection Diaries. This data was entirely qualitative: students gave opinions, views and descriptions of the practical aspects of their experience of assessment as well as their own personal observations. The diaries had two functions: firstly to act as a pedagogic tool to help encourage the student to begin the process of personal reflection (discussed within this paper), but also to act as a validity tool within the research process itself. The nature of the diary entries provided the study with vivid and rich descriptions of the context in which the assessments and the learning experiences were taking place. According to Denzin (1989), 'thick descriptions are

deep, dense, detailed accounts...thin descriptions, by contrast, lack detail, and simply report facts' (p.83). Analysis of the Reflective Diaries within the research approach used a framework analysis process and is discussed under data collection.

Extant Data. The extant data itself was drawn through the multi-method approach; this formed an organic core (that was subject to change) but was added to as the data emerged. The Literature review process was fluid due to the timeline attached to the various research design methods. Therefore, most of the relevant reviewed literature presented finds its way into, and becomes *integrated* with, other data pillars, i.e. the Reflection Diaries and the Surveys. This closely reflects the nature of the method and the role and place of the literature and extant data within it. This is an approach often described within the Grounded Research paradigm (Glaser and Strauss, 1967).

Data Analysis

The rationale for using multiple methods is connected to issues of truth, validity and triangulation. In a study such as this there are multiple viewpoints and also multiple layers of exploration, which need to be represented. These layers are not always on the same level. Therefore different approaches suit different levels, such as the local and global, or micro and macro. In the case of this research the macro is the Extant data and the Performance measures and the micro is the students' own views, experiences and feelings of the process/experience. Between this is also the 'meso' perspective and the researchers' own teaching practices and research interventions. Jennifer Mason (2006) makes a case for this choice of approach to the data. She suggests that there are two reasons: that 'social experience and lived realities are multi-dimensional' and this being the case, our comprehension of phenomena is lessened, 'and may be inadequate if we view these phenomena only along a single dimension' (ibid, p.10). Secondly she suggests that from the social aspect (and multi-dimensional aspect) lives are lived, experienced and enacted simultaneously on macro and micro levels. She goes on to pose an interesting analogy between multiple methods and dualism related to the micro-macro.

The idea of micro-macro is of course a social scientific construction, and to a greater or lesser (and always contested) extent it may be seen to mirror other social scientific dualisms, including public versus private, sociocultural or collective versus individual, structure-agency, object-subject, structure- field-habitus, and even quantitative-qualitative (Mason, 2006, p.12).

Rather than focusing on the theoretical contradictions that relate to the nature of triangulation and parallels, Mason subscribes to the notion of 'qualitative thinking' in the context of a starting point rather than a framework, 'and as a way of transcending boundaries rather than reinforcing them' (ibid). Using multiple methods to converge data is simply logical thinking and it is 'ultimately more helpful to think in terms of multi-dimensional research strategies that transcend or even subvert the so-called qualitative-quantitative divide' (ibid). The triangulated approach helped ensure the validity of the data. The research presented here used this concept of convergent validation (Jick, 1979) as a method of triangulation to ensure validity. Bouchard

(1976, p.268) suggested that the 'convergence or agreement between two methods enhances our belief that the results are valid and not a methodological artifact (sic)'. This type of triangulation is labeled by Denzin (1978, p.302) as the 'between (or across) methods' type. Bias will always be present in research, it is inevitable, but as long as one acknowledges this then the truth can be formulated with this in mind.

Furthermore, the research process utilised Creswells' six-stage (2003, pp.191-193) approach to analysing data for qualitative research and formed the original basis for the main approach to analysis. Within the analysis of the qualitative data (the opened responses of the Survey Monkey® Online Surveys and the data drawn from the Reflection Diaries) a Framework Analysis approach was used. This analysis method added flexibility during the analysis process in that it allowed the researchers to collect all the data and then analyse it as well as allowing the data to be analysed during the collection process. In the analysis stage the gathered data was sifted, charted and sorted in accordance with key issues and themes (Srivastava & Thomson, 2009). This analysis involved a five-step process: Familiarisation; Identifying a thematic framework; Indexing; Charting; and Mapping and interpretation (Ritchie & Spencer, 1994). These themes are highlighted in the Results section of this paper.

The design of a constructivist & reflection-enhancing portfolio

The literature on discovery learning, knowledge creation, experiential learning and especially the work of people such as Piaget (1972) and Freire (1970) influenced the redesign of the assessment format. John Dewey (1916, 1938) suggested that knowledge emerges only from situations in which learners have to draw them out of meaningful experiences.

When redesigning the assessment for the module *Curriculum Assessment*, the fostering of a sustainable reflection process was considered an essential element of the revised format. Such a format was intended to address not only current attitudes towards assessment but also to allow student-teachers to develop an enhanced understanding of assessment so that they could help themselves to develop their future professional practice. This reflection-in-action coupled with reflection-on-action are key features of the portfolio assessment approach used in the redesign of the Curriculum Assessment module. Furthermore, both forms of reflection are seen as central to developing professional competence of teachers working in or intending to work in educational settings. These reflection methods aim to enhance trainee-teachers' knowledge, skills and attitudes to delivering assessments in their future educational environments therefore leading to reflection-for-future action.

A constructivist approach to the design of the portfolios was chosen for its emphasis on the developmental processes and the incremental and co-operative construction of knowledge by students and teachers and on meaning-making (Cannella & Reiff, 1994, pp.27-38). The specific subject had an additional layer of complexity as the process inbuilt in the portfolio had a dual purpose, namely fostering assessment competence while assessing students through the very same means by which they were developing such competence. Portfolio assessment stems

from a constructivist theory of knowledge (Biggs & Tang, 1998) and is based on the premise that meaning cannot be imposed or transmitted by direct teaching but created by the students through their learning activities. Also, it encourages the learners' ability to review, revise and re-do. Teachers and learners need the time and space to actively reflect upon the content as well as the context. It is this reflective element that allows learners to work at their own pace without the time constraints usually associated with assessment.

Assessment portfolios, provided that they are not constructed simply as a collection of artefacts assembled together (Tisani, 2008), but are regarded, instead, as a 'purposeful collection of student work that tells the story of the student's efforts, progress or achievement in a given area' (Arter & Spandell 1992, p.36) represent the most suitable form of assessment to develop knowledge, skills and attitudes progressively and reflectively at the same time (Regehr & Norman, 1996).

The portfolio consisted of four tasks as shown by Figure 5. The model was designed to experience different elements of assessment from the perspective of the teacher as well as that of the student. A dialogical cycle between assessment design and improvement of the design via responding to the feedback received, informs the design of the portfolio model. The response to feedback is a reflective exercise that encourages the student to critically consider his/her strengths and weaknesses and identify options for improvement.

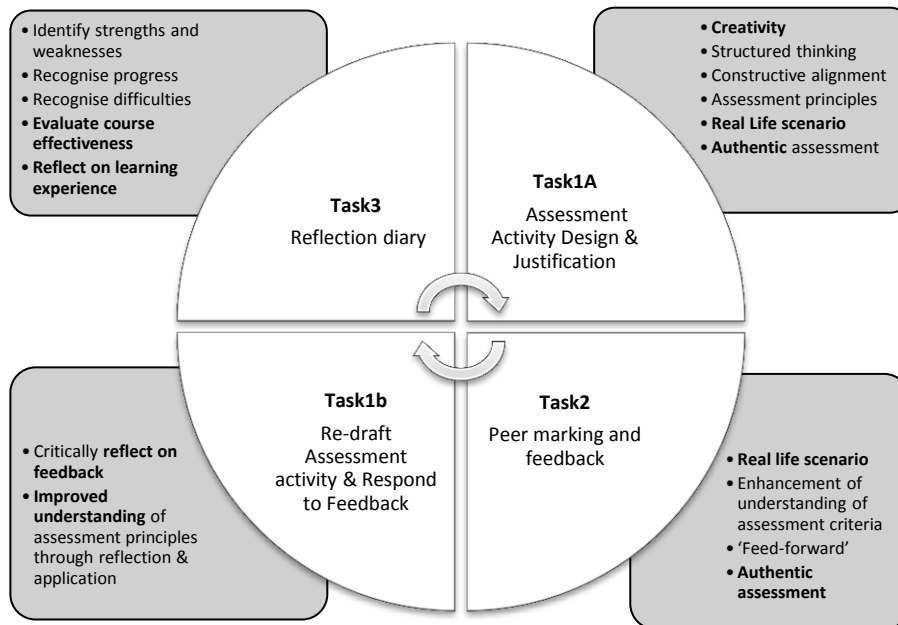


Figure 5: Assessment Framework

Task 1 is subdivided into two tasks, Task 1a and Task 1b. Task 1a is the first task students complete and consists of the design of an assessment activity for a syllabus and a potential group of students identified by the students themselves. This task requires students to match the learning objectives for the chosen syllabus with an assessment activity that is suited for the specific group of students. Students are asked to prepare guidelines, design and structure an assessment activity and specify assessment design choices, guided by specific marking criteria. This task simulates a real-life scenario and allows students to express their creativity. It also raises students' awareness of key assessment concepts such as transparency, clarity and fairness and also constructive alignment and validity. By designing an assessment activity, these concepts are embedded in practice and the experience gained enables students to transfer the knowledge acquired to current and future professional contexts. Task 1b is a re-drafting activity in response to the feedback received from peers as part of Task 2. The redrafting of the assessment activity requires students to react constructively to the feedback received and to critically reflect on the advice in order to decide what changes should be made to improve the quality of the original assessment design.

For Task 2, students mark and provide feedback to peers on their Task 1a. They bear the responsibility for giving useful advice and ensuring that their evaluation is fair and transparent. This task enables students to assume a dual role at once: that of teacher and of student. Task 1b is not a straightforward task. Students receiving feedback advising them on how to redraft their assessment activity are not simply asked to implement the recommendations received, but to first make a decision on the pedagogical soundness of the advice received from peers and then to implement what, on reflection, they consider appropriate.

Finally Task 3 is a reflection diary in which students are asked to record after the completion of each task their thoughts on what they have learnt from the specific task, what difficulties they have encountered and what aspects of the tasks they felt should be improved for further presentations.

Results

As part of the assessment portfolio students were required to complete a reflection diary. After each task, students were asked to reflect on the difficulties they had encountered, on their strengths and on what they had learnt from preparing the specific task. At the end of the module they were also asked to reflect on the module as a whole and to offer advice on improving its structure and design. Considering that the reflections were contributing to the overall module mark, the reliability of the information collected from this source could be questioned and for this reason data collected from the diary was triangulated with data collected from the questionnaire and from the analysis of performance trends. Reflective diaries are often completed in an either perfunctory or compliant fashion when their scope and value is not fully appreciated by students. Yet, the overall picture that emerges from diaries from both groups is that of an honest, albeit mostly emotional, response to a challenging learning process. On the whole, the data collected from reflective diaries reconfirm the positive view expressed in relation to the learning experience in the online questionnaire, but also provide further detail to identify further specific differences between the two groups.

Table 1:
Qualitative Findings Drawn From The Surveys and Reflection Diaries

<i>Core themes</i>	<i>Full-time Students</i>	<i>Part-time Students</i>
Relevance to professional practice		I have found this module very relevant to my work
		I am going to change my work practice
		It reinforced my professional practice
		I am going to use my assessment activity in my work context
		I could apply what I had learned at lectures
Linking theory and practice	I have learned how to link theory and practice	I could apply what I had learned at lectures
	I learned how to create an assessment	I had the opportunity to apply what I had learned from lectures
	I learned to apply other elements of my learning from other modules into this assignment	I have experienced Kolb's cycle
	I learned how to give clearer instructions in assessment design	With this module I have experienced Bloom's higher levels
		This module was a case of experiential learning
	I have gained practical experience in designing assessment	
		I am in a better position to design assessment
Reflection on learning objectives	Even though the language of SLOs (Specific Learning Outcomes) is simplistic, the work behind devising these objectives is very complex	The learning outcomes of this module were fully met
		I have learned the value of learning objectives
Reflection on feedback	My understanding of assessment and feedback are greatly improved.	I have learned that feedback is a great tool to progress
	It is hard to give relevant and helpful feedback	I have learned that feedback can be positive
	I've learned how important it is to give and receive feedback	I have learned that it is important to reflect on feedback received
	Taking feedback (even if constructive) is difficult	I have learned to accept constructive criticism
	It's time consuming to give feedback	

Table 1: Continued

Core themes	Full-time Students	Part-time Students
Personal development	I've learned to critically evaluate	I gained confidence in myself
	I found peer and self assessment difficult but for what I gained I would not change it	This module was an empowering experience This module has provided me with deep personal learning
Reflection on roles and attitudinal change	I learned how much time goes into designing assessment	I have realised that my perception of assessment was narrow and traditional
	I've learned how to take feedback (good or bad). It gives an insight into how others see your work	It made me realise how important assessment is for our students It made me think about how other people may interpret the feedback I give them
	I found it difficult to be both a teacher and a student	I have learned the importance of writing instruction for students' benefit
	The assignment pushed me out of my comfort zone	
	By seeing other's mistakes I've learned to improve my own work	
	The portfolio made me more aware of the need to plan	
	I feel that even with the same assessment criteria everyone grades differently	
I focus more on learning criteria now		

Not surprisingly part-time students made most of the comments linking their professional practice with¹ the outcomes of the module. The comments on this theme emphasise the transferability and applicability of the knowledge they acquired to their professional contexts. In relation to comments linking assessment theory and practice, full-time students focus on the cross-curricular relevance of this module but their comments are very generic in terms of explaining how the establishment of a

¹ Comments made in other sections of the table by ET3 students also refer to professional practice but their predominant relevance to another theme led to listing under a different heading than "Relevance to Professional Practice".

link between theory and practice has been achieved. Part-time students use the assessment theories they have been presented with at lectures to explain how they have experienced the link between theory and practice and emphasise their improved ability to design assessment activities. Feedback seems to elicit very similar reflections from both groups. Comments highlight an enhanced understanding of the value of feedback but also an appreciation of the difficulty in giving and receiving criticism. Personal development appears to be a stronger feature of comments by part-time students. All students in this group were adults returning to education, in some cases, after a long absence from formal learning environments. The confidence-building and empowering dimensions of the learning experience appear to be valuable aspects of the assessment for these students.

The most significant outcome that emerged from the reflection diaries and questionnaire responses was the attitudinal change in both groups. The portfolio tasks required students to embrace the teacher and student roles and this appears to have caused an attitudinal change. Being required to embrace both roles provided a greater capacity-enhancing experience than could be achieved in a course *about* assessment approaches and strategies. The comments by full-time students denote an enhanced awareness of the complexity of the teacher's role as planner, assessor and mentor providing constructive criticism and support. Part-time students question their beliefs in relation to the role of assessment and how it impacts on students. The need for becoming an empathetic teacher who designs instructions for the benefit of students and is careful about how feedback comments are received and interpreted is expressed in the comments by this group of students. On the whole, the assessment experience appears to have had a deep effect on student learning and development. However, the research-informed model was not without faults. Table 2 summarises some of the shared concerns expressed by the students.

Table 2:*Recurring Negative Comments From Surveys and Reflection Diaries*

<i>Core themes</i>	<i>Full- time students</i>	<i>Part-time students</i>
Reflection on module structure and delivery	<p>I found it hard to keep track of the amount of work involved</p> <p>I found the word count difficult</p> <p>I was unsure as to whether to explain the activity design in an essay style or not</p> <p>I found it difficult to write a non-essay²</p> <p>I felt overloaded</p> <p>I found it hard to choose a topic for my assessment activity</p> <p>As a student I need more clarification on this form of assessment</p>	<p>The instructions we received were too wordy</p> <p>The instructions in the workbook were not always clear</p> <p>The language used should be more first-timer friendly</p> <p>Task 1 scheduled too early</p> <p>Not enough guidance in relation to marking</p> <p>I would have liked more guidance on how to structure reflections</p> <p>There was a lot to be taken in</p>
Reflections on marking and feedback	<p>I think the level of feedback we had to provide was too in-depth for our inexperience</p> <p>I would not allow people who are unqualified to mark someone else's work</p>	<p>The feedback I received from peers was too vague</p> <p>I received contrasting feedback/marks</p> <p>I would have liked to have the assignment marked by the lecturer</p> <p>I found it difficult to word feedback accurately</p> <p>Marking guidance was too rushed</p>
Embracing the teacher's role	<p>I found it hard to mark something I didn't have enough understanding of</p> <p>I felt I was not qualified to mark fellow classmates work</p> <p>I found it difficult to make sure that the student followed the guidelines when I was marking.</p>	<p>I felt uneasy with marking fellow students</p> <p>I found the portfolio daunting at the beginning</p> <p>I did not have a knowledge of the topics I was marking</p> <p>I only administered assessment and never designed before</p>

There appears to be a general consensus between both groups in terms of the difficulties encountered. The part-time students are practitioners and, from the entries in their reflection diaries, appear to be less concerned about their lack of

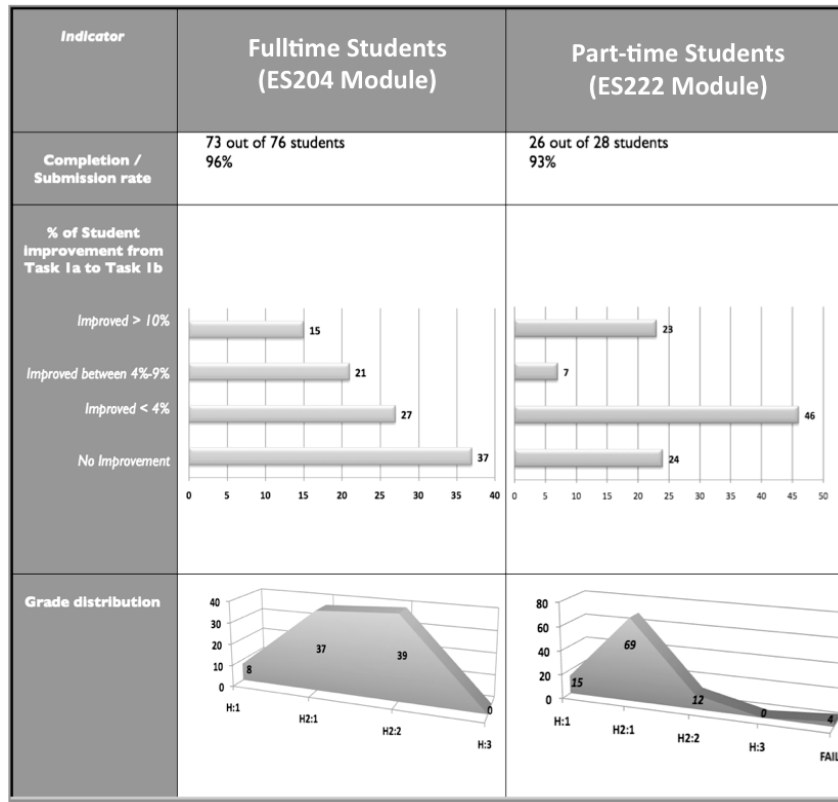
² The term "non-essay" was used by one of the students in his comments. As essays constitute the most common form of assessment used on the degree, this student signals that he found it difficult to depart from a familiar assessment format.

experience. However, as with their full-time counterparts, they experienced unease with being assessors of their peers. In both cases however the difficulty seems to arise with being asked to take a dual role as teacher and student and being faced with a considerably new learning experience and assessment format (Tisani, 2008). Ball (1993) argues that teaching is made up of many paradoxes with which the teacher must come to terms. The format of this portfolio appears to have given a head start to the students in terms of beginning to experience educational decision-making and application of their personal judgment. This was a challenge, but most students, in the overall evaluation of the module, commented positively on the assessment format adopted for this module and acknowledged the learning value of the overall experience.

In relation to the course delivery and structure, both groups felt overwhelmed by the quantity of work involved and the complexity of the structure. The lecturer invested time and energy in providing guidance and this, while well intentioned, resulted in an information overload, expressed particularly by part-time students. The difficulties encountered however seem to indicate that students have engaged with the tasks and experienced a “practice shock” normally witnessed in authentic work environments. The anxiety caused by being asked to let go of the student role is expressed in comments emphasising the lack of experience or being “unqualified” for taking on a professional role. On the whole the Reflection diaries offer some evidence of substantial learning beyond simply the technical dimension of assessment. This reflects the concept of Competence as Practical Wisdom as shown previously in Figure 3.

The complexity of the portfolio, which could have resulted in a great level of unpredictability and confusion for both students and lecturer (Biggs, 1999), did not prevent the majority of students (96% of full time students and 93% of part-time students) from successfully completing all the assessment portfolio activities.

Figure 6 : Summary of performance trends



Furthermore, Figure 6 shows performance trends consistent with those recorded for other modules completed by both groups of students thus indicating that, despite the difficulties experienced, students were able to perform according to their usual standards. The part-time students tend to perform at a higher end of the grade-band spectrum and the full-time students tend to produce more distributed performance patterns.

Discussion and Conclusion

This research shows that, despite the widely documented challenges posed by portfolio assessment, it may be effective in promoting deeper learning. In this research, portfolio assessment offered a framework for the acquisition of knowledge in a structured and applied fashion. Knowledge was not simply transmitted and its acquisition verified through assessment. Students were allowed to construct a personal understanding of the topic studied through experiencing various aspects of assessment and embracing different dimensions of the teaching profession.

Assessment is a powerful driving force behind many forms of learning. Because of its power over learning it is crucial to ensure that assessment promotes rather than

hinders learning. Furthermore, learning should continue beyond assessment and it should meet the needs of the present while preparing students to meet their own future learning needs (Boud, 2000, p. 151).

The implications of these findings look firstly to the trainee teacher where the development of professional competence is at the heart of their future careers. Secondly the research proves that engagement with the curriculum drives the process of developing this competence in a structured reflective process. Curriculum developers within teacher education could look towards this model as its strength lies in the parallel process of learning and teaching leading to the holistic development of professional competence. The research demonstrates that the inclusion of reflective processes within assessment can shift the students' focus from assessment to learning.

By being asked to create specific assessment activities for particular, chosen cohorts the students engaged in an exercise that replicated real-life scenarios and though this generated a practice-shock experienced normally by trainee-teachers, it also gave the students the opportunity to relate to the module content in an engaged and personal manner. This experience enabled students to recognise how assessment works in authentic settings and how these experiences might be reproduced and drawn upon in their on-going professional lives. Further elements of the process, such as redrafting the assessment activity, provided opportunities for students to understand and absorb constructive feedback and to critically reflect on this in order to improve assessment design.

Similarly, the attitudinal changes which resulted from engaging in the various tasks of the module presented opportunities for the students to reflect on the role of the teacher in assessment design. Students gained an understanding of the complexity of this role and of the importance of designing assessment approaches and feedback mechanisms that are beneficial to the student and which are mindful of the impact of such approaches on students. These experiences can also contribute to the development of trainee-teacher competence and capacity building.

The research suggests that the following should be considered in order to foster *reflective practice* in relation to assessment through teacher education programmes.

- Students should be enabled to make sense of knowledge through reflection
- Assessments replicating authentic professional scenarios and requiring decision-making should be designed in order to develop a reflective capacity for appropriate professional judgment
- Students should be engaged in application of knowledge thus maximising the sustainability of learning fostered through reflective forms of assessment beyond their formal education experience
- A balance between learning potential and viability needs to be found in order to ensure the long term sustainability of reflective assessment practices

This research has had a profound impact on the teacher education programmes within the School of Education. The next phase of the research is now looking at the impact of the feedback process and how this dovetails with professional competence. The notion of feedforward as a pedagogic tool is emerging as a strong feature of the new research. The design of assessment processes built into the curriculum of teacher education programmes that use constructivist principles and have reflection as their core is a concept worth investigating further. According to Gardner (2009, p.181) there is agreement that critical reflection essentially encourages rigorous exploration of professional practice experience, and can be used for both learning and research. The research has proved that it not only helps the student/trainee teacher in the development of their own professional competence through the 'competence as practical wisdom' vignette (see Figure 3), it also shows teacher educators that they need to experience learning and reflection at a deep level in order to understand themselves as life-long learners and to be able to develop the professional competence required of them as future teachers.

References

- Arter J. A. & Spandell, V. (1992). Using portfolios of student work in instruction and assessment. *Educational Measurement: Issues and Practice* 11 (1) 3-44.
- Ball, D. L. (1993). With an eye on the mathematical horizon: Dilemmas of teaching elementary school mathematics. *The Elementary School Journal* 93, 373-397.
- Biggs, J. (1999). *What the student does: Teaching for quality learning at university*. Buckingham: Open University Press.
- Biggs, J., & Tang, C. (1998). Assessment by portfolio: Constructing learning and designing teaching. In P. Stimpson, & P. Morris (Eds.), *Curriculum and Assessment for Hong Kong: Two components, one system* (pp. 443-462). Hong Kong: Open University of Hong Kong Press.
- Bouchard, T. J., Jr. (1976). Unobtrusive measures: An Inventory of uses. *Sociological Methods and Research*, (4), 267-300.
- Boud, D. (2000). Sustainable Assessment: rethinking assessment for the learning society. *Professional Education*, 22 (2), 151-167.
- Cannella, G. S., & Reiff, J. C. (1994). Individual constructivist teacher education: Teachers as empowered learners. *Teacher Education Quarterly*, 21(3), 498-429.
- Creswell, J. (2003). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Thousand Oaks, California: Sage Publications.
- Darlington, Y. & Scott, D. (2002). *Qualitative Research in Practice: Stories from the field*. Australia: Allen and Unwin.
- Denzin, N. K. (1978). *The research act: A theoretical introduction to sociological methods*. New York: McGraw-Hill.

- Denzin, N. K. (1989). *Interpretive interactionism*. Newbury Park, CA: Sage.
- Dewey, J. (1916). *Democracy and Education. An introduction to the philosophy of education* (1966 edn.). New York: Free Press.
- Dewey, J. (1938). *Experience and Education*. New York: Collier Books.
- Freire, P. (1970). Cultural action for freedom. *The Harvard educational review. Monograph series, no. 1*. Massachusetts: Cambridge.
- Gardner, F. (2009). Affirming values: using critical reflection to explore meaning and professional practice. *Reflective Practice: International and Multidisciplinary Perspectives, 10* (2) 179-190
- Glaser, B.G. & Strauss, A. L. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago: Aldine Publishing Company.
- Hickson, H. (2011). Critical reflection: reflecting on learning to be reflective. *Reflective Practice, 12* (6), 829-839.
- Janssen-Noordman, A., Merrienboer, J., Van Der Vleuten, C. & Scherpbier, A. (2006). Design of integrated practice for learning professional competences. *Medical Teacher, 28* (5), 447-452.
- Jick, T. D. (1979). Mixing qualitative and quantitative methods: Triangulation in action. *Administrative Science Quarterly, 24*, 602-611.
- Lane, R., McMaster, J., Adnum, J., & Cavanagh, M. (2014). Quality reflective practice in teacher education: a journey towards shared understanding. *Reflective Practice: International and Multidisciplinary Perspectives, 15*:4, 481-494.
- Larrivee, B. (2000). Transforming teaching practice: becoming the critically reflective teacher. *Reflective Practice, 1* (3), 293-307.
- Lemaitre, D., Le Prat, R. De Graaf, E. & Bot L. (2006). Editorial: Focusing on competence. *European Journal Education 31* (1), 45 -53.
- Liotard, J. (1992). *The Post-modern Condition: A Report on knowledge*. Manchester: Manchester University Press.
- Mason, J. (2006). Mixing Methods in a Qualitatively-Driven Way. *Qualitative Research, Vol. 6*, No. 1, 9-26.
- Noddings, N. (2004). "Is teaching a practice?" In *Education and Practice. Upholding the Integrity of Teaching and Learning* (pp. 159-170). Oxford: Blackwell Publishing
- Pennel, W.R., Fishman, B. J. Yamaguchi, R. & Gallagher, L. P. (2007). What makes professional development effective? Strategies that foster curriculum implementation. *American Educational Research Journal, 44* (4), 921-958.
- Piaget, J. (1972). *Psychology and Epistemology: Towards a Theory of Knowledge*. Harmondsworth: Penguin.

- Regehr, G. & Norman, G. R. (1996). Issues in cognitive psychology: implications for professional education. *Academic Medicine* 71 (9), 988-1001.
- Ritchie, J. & Spencer, L. (1994). Qualitative data analysis for applied policy research. In A. Bryman, & R. G. Burgess (Eds.), *Analyzing qualitative data* (pp.173- 194). London: Routledge.
- Schön, D. (1983). *The Reflective Practitioner: how professionals think in action*. London: Temple Smith.
- Srivastava, A. & Thomson, S. B. (2009). Framework Analysis: A Qualitative Methodology for Applied Policy Research. *JOAAG, Vol. 4. No. 2*.
- Tashakorri, A. & Teddlie, C. (2003c). *Handbook of Mixed Methods in Social and Behavioral Research*. Thousand Oaks, CA: Sage Publications.
- Tashakkori, A. & Teddlie, C. (Eds). (1998). *Mixed methodology: combining the qualitative and quantitative approaches*. Thousand Oaks, CA: Sage Publications
- Threlfall, S.J., (2014). E-journals: towards critical and independent reflective practice for students in higher education. *Reflective Practice: International and Multidisciplinary Perspectives*, 15:3 pp.317-332.
- Threlfall, S. J., (2014). E-journals: towards critical and independent reflective practice for students in higher education. *Reflective Practice: International and Multidisciplinary Perspectives*, 15:3, 317-332.
- Tisani, N. (2008). Challenges in producing a portfolio for assessment: in search of underpinning educational theories. *Teaching in Higher Education*, 13 (5), 549-557.
- Van Huizen, P., Van Oers B. & Wubbels T. (2005). A Vygotskian perspective on teacher education. *Curriculum Studies*, 37 (3), 267-290.