An Chomhairle Mhúinteoireachta
The Teaching Council

Final Report of the Review Panel to the Teaching Council following a review of reconceptualised Initial Teacher Education Programmes at the University of Limerick

Bachelor of Technology (Education) Materials and Engineering Technology (LM095)

15 December 2014

Contents

1. Background

1.1 The Teaching Council's Review and Accreditation Function

The Teaching Council is the statutory body charged with setting the standards for entry to the teaching profession and ensuring that these standards are upheld.

In accordance with Section 38 of the Teaching Council Act, 2001, the Council shall:

(a) review and accredit the programmes of teacher education and training provided by institutions of higher education and training in the State,

(b) review the standards of education and training appropriate to a person entering a programme of teacher education and training, and

(c) review the standards of knowledge, skill and competence required for the practice of teaching,

and shall advise the Minister and, as it considers appropriate, the institutions concerned.

The Teaching Council's role in relation to the review and accreditation of programmes of Initial Teacher Education (ITE) is distinct from the academic accreditation which programmes also undergo. Academic accreditation is based on the suitability of a programme for the award of a degree/diploma, whereas professional accreditation for any profession is a judgement as to whether a programme prepares one for entry into that profession.

The review and accreditation of programmes of ITE by the Teaching Council provides an opportunity for Higher Education Institutions (HEIs) to demonstrate that they offer quality programmes of teacher education. It is expected that the graduates of such programmes will achieve programme aims and learning outcomes which are aligned with the values, professional dispositions, and the standards of teaching, knowledge, skill and competence that are central to the practice of teaching.

1.2 Review and Accreditation Strategy

In order to guide its review of programmes, the Teaching Council has published *Initial Teacher Education: Strategy for the Review and Accreditation of Programmes* (hereinafter referred to as the Council's review strategy). That document sets out the process by which programmes are reviewed.

1.3 National Policy Framework

In carrying out reviews, the Council is mindful of its *Policy on the Continuum of Teacher Education* which sets out its vision for teacher education at all stages of the continuum – ITE, Induction, and Continuing Professional Development. Published in 2011, the policy highlights the evolving and dynamic context for teaching and the increasingly complex role of teachers in Ireland today. The policy states that "…the time is now right for a thorough and fresh look at teacher education to ensure that tomorrow's teachers are competent to meet the challenges that they face and are life-long learners, continually adapting over the

course of their careers to enable them to support their students' learning." It further states that innovation, integration and improvement should underpin all stages of the continuum.

In parallel with the development by the Council of its *Policy on the Continuum of Teacher Education*, the Minister for Education and Skills initiated a national consultation process on the theme of improving literacy and numeracy. This culminated in 2011 with the publication of *Literacy and Numeracy for Learning and Life* as the national strategy to improve literacy and numeracy standards among children and young people in the education system. The strategy emphasised teachers' professional development and proposed that the duration of initial teacher education (ITE) programmes should be extended and that programme content should be reconceptualised.

1.4 Accreditation Criteria

The Teaching Council, having established an Advisory Group on Initial Teacher Education, developed criteria to be observed and guidelines to be followed by providers in reconceptualising programmes of initial teacher education at primary and post-primary levels. They were approved by the Council and published in June 2011 as *Initial Teacher Education: Criteria and Guidelines for Programme Providers* (hereinafter referred to as the Council's criteria). These relate to a range of areas, including programme design, areas of study, the duration of programmes, the numbers and qualifications of staff, facilities and resources. As such, they form the bridge between the Council's policy and the development and implementation of reconceptualised programmes. Significantly, the criteria:

- prescribe those areas of study which will be mandatory in programmes, including numeracy and literacy, behaviour management, parents in education, ICT and inclusive education
- set out for the first time the expected learning outcomes for graduates of all ITE programmes
- propose raising the minimum requirements for persons entering programmes of ITE at primary level and a literacy and numeracy admissions test for mature entrants
- require a 15:1 student-staff ratio
- call for the development of new and innovative school placement models, involving active collaboration between HEIs and schools, and an enhanced role for the teaching profession in the provision of structured support for student teachers
- require that student teachers should spend at least 25% of the programme on school placement, and that such placements should be in a minimum of two schools
- require increased emphasis on research, portfolio work and other strategic priorities.

While recognising the inter-related nature of all aspects of programmes of teacher education, the criteria and guidelines are categorised under Inputs, Processes and Outcomes. All three dimensions have an important bearing on the quality of teacher education. The required Inputs and Outcomes are clearly elaborated in the document, while the Processes are less prescriptive to allow HEIs the freedom to develop the processes which best suit their individual situations.

Providers of existing programmes have been asked to reconceptualise their programmes in line with the revised criteria and to submit them for accreditation.

1.5 Particular requirements for post-primary programmes

In November 2011, the Council published *Teaching Council Requirements for Entry onto a Programme of Initial Teacher Education,* which set out the Council's revised subject criteria in draft form. Following a wide ranging consultation process involving all the major education stakeholders, a final set of proposals were developed. These were approved by Council in December 2012, and the Minister for Education and Skills has conveyed his agreement with the Council's views in this area. They have guided providers of post-primary concurrent programmes in determining the subject content coverage which is appropriate. They also guide providers of post-primary consecutive programmes in determining suitability of entrants and which curricular subjects entrants can ultimately be registered to teach. They will also guide PME providers in matching students appropriately to methodology modules.

1.6 Programme overview

From the early 1970s, Thomond College of Education in Limerick provided concurrent postprimary teacher education programmes in physical education, woodwork, metalwork and rural and general sciences. Thomond College was integrated into the University of Limerick in 1991 and responsibility for the teacher education programmes was transferred to the university at that time. In 2009/2010 all undergraduate programmes at the university, including the programme under review, were restructured to ensure compatibility with the European Credit Transfer and Accumulation System (ECTS).

The Bachelor of Technology (Education) in Materials and Engineering Technology programme (LM095) is one of a number of concurrent initial teacher education programmes provided by the University of Limerick. Other concurrent programmes include:
LM094, Bachelor of Technology (Education) Materials and Architectural Technology;
LM090, Bachelor of Science (Education) Physical Education with English, Gaeilge, Geography or Mathematics;
LM092, Bachelor of Science (Education) Biological Science with Chemistry and Physics; and LM096, Bachelor of Science (Education) Physical Science.

Programmes LM094 and LM095 have many similarities – the conceptual framework for both programmes is the same, all education and school placement modules are identical, as are the aims for both programmes. They also share some subject discipline modules.

This report relates to the review of LM095 - the Bachelor of Technology (Education) in Materials and Engineering Technology (hereinafter referred to as "the programme") at the
University of Limerick (hereinafter referred to as "the university.")

The programme is a full-time, four-year course of study comprising 240 ECTS credits with the appropriate balance of time and ECTS credits across foundation and professional studies, subject discipline and school placement. The programme provides 126 ECTS credits (52.5%) for the subject discipline; 54 credits (22.5%) for education and foundation studies and 60 credits (25%) for school placement. The panel is aware of the challenge faced by the programme coordinators when re-designing the programme of maintaining the quality of the subject discipline elements within a reduced timeframe for the subject discipline.

Six of the ECTS credits which are allocated to the subject discipline are considered to relate directly to the teaching of that subject and have therefore contributed to the required credits for foundation studies and professional studies.

For enrolment in the programme, applicants are required to hold the established Leaving Certificate (or an approved equivalent) with at least grade C3 in two higher level subjects and grade D3 in four ordinary or higher level subjects (including Mathematics, English, and Irish or another language). In addition, applicants are required to hold at least the following in the Leaving Certificate (or an approved equivalent):- grade B3 in ordinary level Mathematics (grade D3 in higher level Mathematics also suffices) and grade D3 at higher level (or grade C3 at ordinary level) in one of the following subjects: Applied Mathematics, Physics, Chemistry, Physics with Chemistry, Engineering, Design and Communication Graphics, Technology, Construction Studies, Agricultural Science, Biology. Typically students entering the programme have grades that exceed the minimum entry requirements due to the high competition for the programme. Entry to the programme is primarily through the CAO system.

In 2013-14, the requirement for entry to the Bachelor of Technology (Education) Materials and Engineering Technology was 395 points or higher. Garda vetting is also required.

The following are the numbers of students accepted onto the programme in the last four years:

Bachelor of Technology (Education) Materials and Engineering Technology	
Year	Number of Students
2010 - 2011	63
2011 - 2012	55
2012 – 2013	64
2013 - 2014	52

The majority (over 85%) of the students are male.

Up to 15% of the places on the programme each year are available to mature applicants who apply directly to the university.

On successful completion of the Bachelor of Technology (Education) in Materials and Engineering Technology programme, graduates are entitled to be registered with the Teaching Council to teach the following subjects to Leaving Certificate level:

- Technology
- Engineering
- Design and Communications Graphics.

An applicant who meets the registration criteria for Engineering will also be deemed to have acquired the competency to teach the junior cycle curricular subject Metalwork and Technology.

2. The Review Process

The review of the programme took place between February 2013 and October 2014, in accordance with the Council's review strategy. The process was formally initiated when the Review Panel (hereinafter referred to as 'the panel') was appointed by the Teaching Council's Director, with Professor Áine Hyland as Chairperson.[1] To assist and support the work of the panel, Risteard Ó Broin was appointed as Rapporteur. His functions included liaison with the university, maintaining records of meetings, and drafting and finalising the panel's report in conjunction with the panel Chairperson. The panel was supported by an external expert in the areas of Design and Communication Graphics, Construction Studies, Engineering and Technology. Valuable support was also provided by the Director and staff of the Teaching Council.

Documentation relating to this programme was initially submitted to the Teaching Council by the University of Limerick in February 2013. Following consideration of the documentation and discussions with UL staff during visits in March and July 2013, the panel became aware that the programme had not been reconceptualised in accordance with the Teaching Council's revised guidelines. A meeting took place in the offices of the Teaching Council between senior staff from UL and the Teaching Council on 28 August 2013 at which UL agreed to revise the submission to ensure that it was in accordance with the criteria and guidelines. A revised submission was made in March 2014. The members of the panel were asked to review the documentation and to submit their initial observations, comments or concerns to the rapporteur. In the course of reviewing the documentation, the panel maintained contact on a systematic basis both by e-mail and phone. The Teaching Council also forwarded the documentation to an external subject expert and his written advice on each of the subjects was provided to the panel on 6 May 2014.

The panel met on 12 May to discuss the application. Following that meeting, the panel decided to seek further clarification from the university in relation to certain aspects of the programme. In particular, the panel wished to get a clearer description of the modules, as an inconsistency in how modules were coded and described in the documentation was noted. Moreover, because of the integrated nature of the technology programmes and the considerable amount of overlap across subject content, the panel wished to ensure that the content for each programme was in full compliance with the Teaching Council's subject requirements. To ensure clarity in all these areas, a set of templates, designed by the panel, was sent to the university on 21 May 2014. The templates sought a uniform description of the modules and clarification about the allocation of ECTS credits in the following areas: school placement, foundation and professional studies and discrete subject disciplines. The university was requested to return the completed templates to the panel on or before 20 June 2014.

The university responded with a comprehensive set of documentation and completed templates as requested. The supplementary documents confirmed the degree to which each module contributed to overall subject content and the number of ECTS credits allocated to the various modules in each dimension of the programme.

The panel then arranged to meet with personnel from the university on Wednesday, 2 July 2014. At the meetings , further information was provided to the panel in the following areas:

- the system of leadership of teacher education programmes in the university
- the role of research and policy development in teacher education programmes
- further details about school placement
- details about how the two technology programmes (LM094 and LM095) were reconceptualised and further information about how subject content is integrated across the two programmes.

[1] Details of the Review Panel membership are included in Appendix I

At the meetings the panel also received clarification about the assessment of various modules, details about the content of the Foundation Studies component, and further information about how literacy and numeracy are addressed.

As regards the structures of the university and leadership roles, clarification was provided on the role of the University Teacher Education Board (UTEB) which is chaired by the Deputy President and Registrar, Professor Paul McCutcheon. The panel was also informed that two new professors have joined the Dept. of Education and Professional Studies within the past year – Professor Cybil Erduran, Professor of STEM education, and Professor Paul Conway, the newly appointed Professor of Teacher Education. A third professor, Professor Marie Parker-Jenkins is responsible for doctoral studies.

The course directors of LM094 and LM095, Dr. Donal Canty and Dr.Niall Seery, made a PowerPoint presentation at one of the meetings, providing information about the rationale and educational philosophy guiding the teacher education technology programmes. The presentation clarified how the technology programmes are co-ordinated, designed and delivered, and the relationship between course contact time and students' independent learning. The process of internal review and reconceptualisation was also described. The presentation clarified a number of issues which had not been clear in the original written presentation.

A presentation was also made about the capstone project that final-year students are required to undertake. After the meetings, the panel viewed some examples of the capstone projects completed by students of the LM095 programme in previous years. The visit schedule is included in Appendix 2.

The panel also gave consideration to the report of a panel in 2010, chaired by Professor Áine Hyland, which reviewed UL's Bachelor of Science (Education) in Physics and Chemistry programme (LM096), and specifically, those recommendations which were included in that report which were pertinent to the education elements of the programme. The panel was aware in particular that the issue of staff/student ratio in the Department of Education and Professional Studies (DEPS) had caused concern in 2010. The Teaching Council report on LM096 in 2010 noted that the staff/student ratio in the Department of Education and Professional Studies was in excess of 1:40 - well in excess of the average staff/student ratio in the university at that time. The report strongly recommended that the staff/student ratio should be reviewed and should be, at a minimum, on a par with the average ratio across UL.

In subsequent correspondence with the Teaching Council, UL "recognised the comparatively high staff/student ratio in the Department of Education and Professional Studies as related to teacher education provision". It assured the Teaching Council that "The University Executive is working on a revised Resource Allocation Model which can serve to address the disparities in resources between Departments".

In view of the ongoing correspondence in 2010 and 2011 about staff/student ratio, the panel was concerned to read in the documentation relating to LM096 that the ratio in DEPS appeared to be still in the region of 1:40. The panel met with the Registrar, Professor Paul McCutcheon and the Assistant Registrar, Dr. Pat Phelan, on 16 October 2014 to discuss this and other overarching issues relating to the provision of the ITE concurrent programmes at UL. At the meeting the Registrar informed the panel that steps have been taken systematically by UL to increase the number of staff and improve the staff/student ratio in DEPS since 2010. He explained the formula by which staff/student ratios are computed and compared throughout the university. He stated that the ratio in DEPS has improved from 1:40 in 2010 to 1:25 in the 2012/13. In 2010, there were 15 full-time staff in DEPS there are now 24 full-time staff, including three at professorial level.

3. Publication of this Report

The Teaching Council routinely makes information available to the public in relation to its functions and activities and, in line with that practice, this report will be available on the Council's website, www.teachingcouncil.ie.

4. Documentation

As outlined in 2. above, documentation relating to the programme was initially submitted to the Teaching Council by the University of Limerick in February 2013. Revised documentation consisting of the completed Teaching Council Pro Forma and five volumes of appendices totalling over 500 pages in respect of each of the programmes, was subsequently submitted in March 2014 by the University of Limerick in hard copy and electronic format. This section of the panel's report refers to the latter submission.

There were some apparent contradictions in the submitted documentation which provided a significant challenge for the panel to comprehend and analyse. Supplementary documentation was provided in June at the request of the panel and this helped to clarify some aspects of the submission.
Key areas of focus were:

4.1 Inputs

- Conceptual Framework
- The Programme
- Programme Aims
- Programme Design
- Areas of Study
- Teaching, Learning and Assessment Strategies
- School Placement
- The Duration and Nature of the Programme
- Student Intake
- Staffing
- Facilities
- Student Support and Guidance Systems
- Communication and Decision-Making Structures
- Financial Resources

4.2 Processes

- Teaching, Learning and Assessment Approaches
- Engagement of Student Teachers with the Programme
- Engagement of Student Teachers with Staff and with other Student Teachers
- Progression within the Programme
- Personal and Social Development
- Development of Professional Attitudes, Values and Dispositions
- Lifelong Learning
- Reflective Processes

4.3 Outcomes

- Knowledge-Breadth/Knowledge-Kind
- Know-How & Skill-Range/Know-How & Skill-Selectivity
- Competence-Context/Competence-Role
- Competence-Learning to Learn
- Competence-Insight

5. Overall Findings

Having regard to the initial application from the university, together with the supplementary material provided, the written advice of the external subject expert in Construction Studies and Design and Communication Graphics and the meetings with staff of the university, the panel adjudges that the programme LM095 Bachelor of Technology (Ed) in Materials and Engineering Technology satisfies the criteria set down by the Teaching Council in its Criteria and Guidelines and in its curricular subject requirements in respect of Technology, Engineering and Design and Communication Graphics.

Accordingly, it recommends to the Teaching Council that the programme be granted accreditation, subject to the stipulations which are set out in Section 8 below.

The commendations in Section 6 relate to areas of particular strength which the panel has identified. With regard to the recommendations in Section 7 below, the panel submits that the Teaching Council should require the university to set out, within twelve months of receiving the final review report, its proposals for implementing the recommendations. It further recommends that the Teaching Council should prioritise those areas to be accorded particular attention when the programme falls due for re-accreditation.

The stipulations in Section 8 relate to areas which the panel believes to be of such strategic importance to the programme that accreditation should be subject to those stipulations being met. Therefore, the panel recommends that the Teaching Council should require the University of Limerick to set out and submit to the Teaching Council, within two months of receiving the final review report, its proposals for implementing the stipulations. The panel has been assured by the staff of the programme that these stipulations will be responded to in a positive manner within the timeframe indicated.

In the case of the national issues raised in Section 9 of this report, the panel recommends that the Council engage in dialogue on those issues at national level.

The panel proposes that accreditation of the programme would have a lifespan of five years.

6. Commendations

Having regard to:

1. the Pro Forma documentation which was submitted
2. the supplementary material received
3. advice received from the curricular subject specialist who supported the review process and
4. information gleaned during the visits to the University of Limerick and subsequent engagement with programme staff,

the panel has noted a number of particular strengths of the programme, as follows:

6.1 Inputs

6.1.1 Conceptual Framework

The conceptual framework indicates that the programme is based on sound educational philosophies and values. The case for concurrency is strongly advanced, although the argument that early specialisation may not always be in the best interest of the profession is not mentioned. The vision presented of the 'professional teacher in Irish schools' as one who is characterised by critical thinking and inquiry, and whose work is rooted in research and evidence, is appropriate. The integrated approach to educational studies, as a particular strength of concurrent programmes, is well articulated. The approach to the specialist area Engineering Technology and its "potential to develop and deliver outcomes of autonomy, creativity, problem solving, self-actualisation, critical reflection, appraisal and communication skills", demonstrate an awareness of the potential educational value of the subject.

6.1.2 Programme Aims

The aims of the programme are set out in terms of the knowledge, skills and competences that students should acquire. The ethos of the programme is one which espouses a broad educational approach (creativity, problem solving, critical reflection, communication) above a narrow vocational approach to technologically-based subjects.

6.1.3 Programme Design

Sample student timetables indicate that the programme is designed with a judicious balance of lectures, project work, practical sessions and students' independent study time. Students' skills, knowledge and dispositions are incrementally developed over the four years. The macrostructure diagram showing the progression and development of subject content and pedagogy over the four years of the programme, which was graphically presented by PowerPoint presentation to the panel during its visit to the university on 2 July, clarified issues which were unclear in the initial written submission.

6.1.4 Areas of Study

It is commendable that there are several references to reflective practice in both the foundation studies and school placement components of the programme. For example, students are encouraged to make key decisions about their teaching practice in the module 'School as an Institution'. It is suggested that the six-step School Self-Evaluation (SSE) process should further inform this reflective practice so that graduates will be fully prepared to engage in the required SSE process when they begin working in schools.

6.1.5 Teaching, Learning and Assessment Strategies

Some of the learning outcomes note that student teachers will identify opportunities to develop literacy and numeracy, plan for literacy and numeracy in teaching and learning, and discuss strategies for the effective integration of literacy and numeracy within their subjects. It is commendable that these particular learning outcomes feature in both the disciplinary modules and the Foundation Studies modules. Also positive, is the fact that student teachers are required to demonstrate skills in the teaching of literacy and numeracy within their subject specialism during their periods on school placement.

6.1.6 Support for students

The panel commends UL's comprehensive support and guidance system for students. It particularly commends the support systems for students who may require additional help with mathematics and science.

6.1.7 The Capstone Project

The panel was impressed by the examples of capstone projects completed by students of previous years, which were on display during its visit to the university. These projects are fine examples of the integration of theory and practice and provide an opportunity for students to demonstrate their skills across a range of areas of learning.

6.1.8 School Placement

The principles, procedures and supports for school placement are systematically outlined and discussed both in the main submission from the university and in the specific school-placement documentation received by the panel. The procedures to develop positive relationships with schools are particularly commendable. The Teaching Council has determined that 60 ECTS credits be allocated to school placement, and that requirement is being met. The school placement component includes in-school work, preparation for school placement and provision for students to reflect critically on their practice.

6.1.9 Student Intake

While a majority of the students enter the programme through the CAO applications system, the panel commends the university for its policy on the recognition of prior learning and on its policy to increase access for students who come from disadvantaged and minority backgrounds.

6.1.10 Leadership of ITE programmes

The panel commends the University of Limerick for its recent appointment of a Professor of Teacher Education and a Professor of STEM Education.

7. Recommendations

Having regard to:

1. the Pro Forma documentation which was submitted
2. the supplementary material which was received by the panel
3. advice received from the curricular subjects specialist who supported the review process and
4. information gleaned during the visit to the University of Limerick and subsequent engagement with programme staff,

the panel has noted a number of areas of the programme which it believes should be developed. They are as follows:

7.1 Curriculum and Assessment Issues

The panel recognises that the programme includes a module entitled Curriculum Studies (Appendix C of the Pro Forma submission: Foundation Studies module samples) which focuses on philosophical and sociological aspects of curriculum and national curriculum policy. In view of the proposed introduction of short courses to be developed at school level, and the introduction of school-based assessment at junior cycle, the panel recommends that the programme should explicitly address the theory and practice of curriculum and syllabus design as well as the theory and practice of pupil assessment, including the use of standardised testing, in the relevant Professional Studies and School Placement modules.

7.2 History of Technological Developments

Students should learn more about significant historical developments in technological developments from the industrial revolution to the age of artificial intelligence to assist them in putting technology, construction and engineering subjects in a wider societal context.

7.3 Capstone Projects

The panel was pleased to note that the capstone projects will continue to be part of the assessed student experience in the reconceptualised programme but questioned whether the reduced ECTS credits allocated to such projects will have a negative impact on the depth and quality of the projects. It therefore recommends that this be reviewed by programme staff.

7.4 Reading Lists

The extent to which the programme is informed by contemporary research is not apparent from the recommended reading for some of the modules. The reading lists should be up-todate and should include contemporary papers, podcasts, articles and website links to developments in education and relevant STEM subjects.

7.5 Teaching, Learning and Assessment Strategies

National strategies and compliance areas for schools including the National Strategy to Improve Literacy and Numeracy, School Self-Evaluation (SSE), Senior Cycle key skills, the Junior Cycle Framework and the Teaching Council's Policy on the Continuum of Teacher Education, should be given greater emphasis in the modules throughout the four years of the programme. The inclusion of these issues in several modules would support integration and give emphasis to their national importance.

7.6 Literacy and Numeracy

The debate currently being promoted by the UL programme leaders regarding the national directives to enhance 'literacy and numeracy' across all school subjects is important. This debate should involve students and should bear in mind that the National Strategy states that ITE providers must:

- Ensure that development opportunities in literacy and numeracy feature as a priority
- Develop student teachers' ability to apply current knowledge in the use of current assessment for formative, diagnostic and summative purposes in literacy and numeracy
- Develop student teachers' ability to apply current knowledge in digital literacy and how ICT may be used to support and enrich learning in literacy and numeracy, as appropriate to their subject specialism
- Ensure that all teachers are required to demonstrate satisfactory skills in the teaching of literacy and numeracy as relevant within their subject specialism during the school placement component of their ITE
- Ensure that all teachers complete mandatory units in the development of literacy and numeracy across the curriculum.

7.7 School Placement

The overall allocation of ECTS credits for school placement is in compliance with the Teaching Council guidelines. Currently, students spend some time on observation in senior classes of primary schools, which is acceptable, but it would be preferable if the time spent teaching in post-primary classes were increased, particularly for final-year students. It is recommended that the university should works purposefully towards achieving the Teaching Council's desired target of 200 to 250 hours for all programmes.

7.8 School Placement Handbook

Currently, the university provides a generic School Placement Handbook for all ITE students (on concurrent and consecutive ITE programmes) which gives details about many aspects of the school-placement experience and answers some of the students' frequently asked questions. It is recommended that the handbook be re-configured to have separate handbooks for the concurrent and consecutive programmes. The handbook should also make more clear to students the need to demonstrate a wide range of teaching strategies during their time in schools. Further guidance about how students can develop literacy and numeracy in their teaching also needs to be included.

7.9 Title of the Programme

The panel notes that the title of the programme - Bachelor of Technology (Education) in Materials and Engineering Technology - does not include the titles of all the Leaving Certificate subjects which it prepares students to teach. Since the Teaching Council favours the inclusion of the relevant Leaving Certificate subject titles in the title of the degree, it is recommended that UL consult with the Teaching Council with a view to revising the title of the programme.

7.10 Leadership of the ITE programmes

The panel is of the view that given the number of students enrolled in initial teacher education programmes in UL and the stated importance of those programmes in the university's portfolio of programmes, the newly appointed professors of teacher education and STEM education should be actively involved in the leadership and delivery of the initial teacher education and t research should inform the design and content of these programmes.

While the structures seem to allow for considerable interaction between all staff engaged in ITE, it was apparent that the necessary level of interaction may not have occurred prior to the preparation of Pro Forma submissions for accreditation on this occasion. There needs to be a greater sharing of the responsibilities among programme coordinators.

8. Stipulations

Having regard to:

1. the Pro Forma documentation which was submitted
2. the supplementary material which was submitted
3. advice received from the curricular subject specialists who supported the review process and
4. information gleaned during the visits to the university and subsequent engagement with programme staff,

the panel has noted the following area(s) which it considers must be addressed to the satisfaction of the Council as a matter of priority and, at the latest, within two months of the final report being received. The panel notes that following receipt of the draft report of this panel, the University of Limerick indicated that it has already begun to address these stipulations.

8.1 Staff/Student Ratio

At the meeting in UL on 16 October, the panel was informed that the staff/student ratio in the Department of Education and Professional Studies is approximately 1:25 which is significantly in excess of the ratio of 1:15 as set out in the Council's *Criteria and Guidelines*. Therefore, based on current student intake levels, it would be necessary to increase the numbers of DEPS staff to achieve the 1:15 ratio. Alternatively, the university might decide to maintain current staffing levels, in which case student intake levels would need to be reduced. The panel stipulates that the university should submit clear proposals to address the shortfall, to the satisfaction of the Council. Such proposals should make explicit the rubric being used to calculate the staff/student ratio.

8.2 Design of the programme – submission of a student handbook

The initial documentation submitted for this programme was difficult for the panel to decipher as module titles and codes were not always consistent. Moreover, some module descriptors were incomplete. These inconsistencies initially led the panel to question the extent of integration and co-ordination of the programme. Where a programme is designed and delivered by academic staff from different disciplines across the university it is particularly important that the programme documentation is clear and consistent and that the overall rationale and coherence of the programme is made explicit to students.

The panel therefore stipulates that a concise, user-friendly student handbook (of about 30 pages maximum) should be prepared for this programme by the Programme co-ordinator, and made available to the Teaching Council, setting out clearly:

- The programme ethos and rationale (this should include the material showing the progression and development of subject content and pedagogy over the four years of the programme as explained to the panel by the programme co-ordinator on 2 July)
- The programme aims
- The programme Learning Outcomes (education and subject outcomes)[2]
- Explanation of the ECTS including definition of a Credit Unit
- Sequence of Modules

The handbook should include, in relation to the first semester, a short description of each module which should adhere to the template for module descriptors which has been developed by the Council.

[2] The panel noted that the Programme Learning outcomes in the written documentation as submitted included virtually no subject learning outcomes.

8.3 Design and Communication Graphics (DCG)

References to the development of design and innovation skills across the programme need to be strengthened. The panel believes that the treatment of these higher-order skills should be specifically referenced and much more explicitly stated in the relevant module descriptors and learning outcomes. The DCG teacher needs to be able to facilitate critical thinking in respect of developing innovative and creative design solutions by students. This requires the concepts of 'design' and 'innovation' to be more developed as an ethos of the programme.

8.4 Foundation Studies

The Foundation Studies modules addressing the historical background to Irish education should be reviewed in order to strengthen this aspect of the programme. The panel noted that in some of the sample examination papers provided, the History of Education examination question appears to be optional. As History of Education is a compulsory area of study in the Teaching Council Criteria and Guidelines, its assessment should also be compulsory.

8.5 DES Syllabus for the Junior and Senior Cycles

The extent to which the programme addresses the DES junior and senior cycle syllabi needs to be made more explicit throughout the programme.

9. National Issues

Having regard to:

1. the Pro Forma documentation which was submitted
2. the supplementary material which was submitted
3. advice received from the curricular subject specialists who supported the review process and
4. information gleaned during the visit to university and subsequent engagement with programme staff,

the panel has noted the following issues which it believes merit further attention by the Teaching Council and/or other national stakeholders.

9.1 Curriculum Design and Assessment

In the context of the proposed changes to the Junior Certificate programme, and of international best practice, all teacher education programmes should be required to make visible their approach to curriculum design and assessment. In practical terms, this requires a greater emphasis on the processes by which curriculum is designed, the theory and practice of formative and summative assessment and on the uses and limitations of testing. Arising from this, the Teaching Council's criteria and associated Pro Forma and Guidelines should be kept under review, having regard to the evolving context for the junior cycle and other areas of the curriculum at national level.

9.2 Duration of Concurrent ITE Programmes

The panel is aware of the heavy workload imposed on students in concurrent initial teacher education programmes where two subject disciplines are studied to degree level (level 8) within a timeframe of four years (240 ECTS credits). The Teaching Council criteria require 120 ECTS credits to be applied to the education elements of the programme leaving just 120 ECTS credits for the subject disciplines. This is particularly onerous for students who have not previously studied the subjects in question and are encountering the subject disciplines *ab initio* in a university environment. The panel is also aware that in the case of some of the subject discipline modules in this programme (LM095) the amount of contact hours and the ECTS credits allocated, are less than were available in the past.

The panel recommends that the Teaching Council reconsider the duration and credit allocation of concurrent ITE programmes for post-primary teachers where more than one subject discipline is being studied.

Appendix 1 - Review Panel Membership

Independent Review Panel Chair

Professor Áine Hyland is Emeritus Professor of Education and former Vice-President of University College Cork. She is a member of the European Universities Association Institutional Evaluation team and has been involved in reviews of universities in Italy, Turkey, North Cyprus, BosniaHerzegovina, Slovakia, Portugal and Romania. She is author of A Review of the Structure of Teacher Education Provision in Ireland, a Background Paper published in June 2012, and Transition from Second to Third Level, published in September 2011.

Teacher Education Expert

Professor Seán Farren is a former member of the School of Education at the University of Ulster, where he is currently a Visiting Professor. He is also a former Member of the Northern Ireland Assembly and former Minister of Higher and Further Education in the NI Executive. In recent years he has been involved in developing research partnerships with universities in East Africa through the Irish-Africa Research Capacity Building project. He has published widely on curriculum development and the history of Irish education.

Teaching Council Member

Patrick Mc Vicar was nominated to the Teaching Council by the post-primary school management organisations of ACCS, JMB and ETBI. He recently retired from his position as Principal of Pobalscoil Chloich Cheannfhaola, Falcarragh, Co. Donegal. He is a previous member of the Association of Community & Comprehensive Schools (ACCS) Executive Committee, where he chaired the Education sub-committee. He served on a number of NCCA committees including Course Committees for Technical Graphics, Design & Communication Graphics and the Board of Studies for Technological Subjects. At Teaching Council, he is a member of the Education, Registration and Disciplinary sub-committees and serves on the Post-primary Applications Panel.

Inspector from the Department of Education and Skills

Carmel Donoghue is senior Post-Primary Science Inspector at the Department of Education and Skills. She has a variety of experience in research, curriculum, teaching and inspection. Her work involves a range of evaluation models of teaching and learning, as well as whole-school evaluations, including management and leadership.

Rapporteur

Risteard Ó Broin was, until recently, a member of the Inspectorate of the Department of Education and Skills. Initially he worked as a District Inspector and later at Divisional level. In addition to conducting whole-school evaluations, he contributed to policy formulation and implementation in a variety of settings throughout the education system including the area of initial teacher education. Prior to being appointed an inspector, he taught at primary level in a number of schools and also served as a principal teacher of a large school for a period of seven years.

Appendix 2 - Visit Schedule

Review of ITE Programmes at the University Of Limerick

Schedule of meeting Wednesday 2 July 2014

09.30–10.00 Meeting with Professor Mary O'Sullivan, (Dean of Education and Health Sciences) and with Dr. Oliver McGarr, (Head of the Department of Education and Professional Studies.

10:00–11:00 Meeting with the acting co-ordinator of the University Teacher Education Board, (UTEB) Dr Pat Phelan, Associate Registrar.

School Placement meeting
Dr. Geraldine Mooney Simmie, (Education Mentoring and Coordinator for UL's school placement experience)
Dr. Oliver McGarr, (Head of Education & Professional Studies)

11.00–11.30 Tea/Coffee

11.30–13.00 LM094 and LM095 programmes

Dr. Oliver McGarr,	(Head of Education & Professional Studies)
Dr. Seamus Gordon,	(Head of DMT Department)
Dr. Niall Seery,	(Course Director LM095)
Dr. Donal Canty,	(Course Director LM094)

13.00 – 14.00 Lunch: Review Panel members to discuss outcomes of the meetings

Schedule of meeting Thursday 16 October 2014

09:00-11:00 Meeting with Senior Management

Prof. Paul McCutcheon,	(Vice President and Registrar)
Prof. Edmond Magner,	(Dean of Faculty of Science and Engineering)
Dr. Pat Phelan,	(Associate Registrar)

11.00–11.30 Tea/ Coffee

11.30–12.00 LM094 and LM095 programmes

Dr. Oliver McGarr,	(Head of Education & Professional Studies)
Dr. Seamus Gordon,	(Head of DMT Department)
Dr. Niall Seery,	(Course Director LM095)
Dr. Donal Canty,	(Course Director LM094)

Appendix 3 - Teaching Council Registration: Curricular Subject Requirements (Postprimary). Effective for registration on or after 1 January 2017

Design and Communication Graphics (DCG)

In order to meet the registration requirements set down in the Teaching Council [Registration] Regulations in respect of the curricular subject of Design and Communication Graphics (DCG), an applicant must meet **all** of the following criteria:

1.

(a) Applicants must hold a Technological/Engineering degree-level qualification, which includes the study of graphical communications and design techniques up to and including third-year level or higher (or modular equivalent).

(b) The qualifying degree must be equivalent to at least Level 8 on the National Framework of Qualifications (NFQ) and with a minimum pass[3] result in all examinations pertinent to the subject of DCG.

(c) The qualifying degree must carry at least 180 ECTS (European Credit Transfer System) credits (or equivalent) with the specific study of the application of graphical communications and design comprising at least 60 ECTS credits (or equivalent) and with not less than 10 ECTS credits (or equivalent) studied at third-year level or higher (or modular equivalent).

2.

The study of DCG during the degree must show that the holder has acquired sufficient knowledge, skills and understanding to teach the DCG syllabus[4] at all levels up and including the highest level in postprimary education (see www.curriculumonline.ie). To meet this requirement the degree must include the study of all of the following:

(a) The Application of Plane and Descriptive Geometry[5]
(b) Applied Graphics[6]
(c) Design Communication[7]
(d) Computer-Aided Design[8].

3. Applicants must also have completed a programme of post-primary initial teacher education (age range 12-18 years) in which the theory, methodology and practice of teaching DCG forms the central aspect. The course must be equivalent to a minimum of 120 ECTS credits (or equivalent)[9] [10].

Technical Graphics

An applicant who meets the registration criteria for **Design and Communications Graphics** will also be deemed to have acquired the competency to teach the Junior Cycle curricular subject **Technical Graphics.**

[3] which includes pass by compensation.

[4] as approved by the Minister for Education & Skills, and published by the National Council for Curriculum and Assessment (NCCA).

[5] This may include the use of projective systems.

[6] This may include Dynamic Mechanisms, Structural Forms, Geological Geometry, or Surface Geometry.

[7] This may include Graphic Illustration and Information and Communications Technology.

[8] This may include Assembly Drawing.

[9] Applicants who have commenced a programme of initial teacher education prior to 01/09/2014 carrying less than 120 ECTS credits may be exempted from this requirement at the Council's discretion.

[10] Applicants who have completed a specialist concurrent degree in DCG must meet all of the requirements as detailed above. This course should be equivalent to a minimum of 240 ECTS credits.

Technology

In order to meet the registration requirements set down in the Teaching Council [Registration] Regulations in respect of the curricular subject of Technology, an applicant must meet **all** of the following criteria:

1.

(a) Applicants must hold a degree-level qualification, with Technology studied up to and including third year level or higher (or modular equivalent).

(b) The qualifying degree must be equivalent to at least Level 8 on the National Framework of Qualifications (NFQ) and with a minimum pass[11] result in all examinations pertinent to the subject of Technology.

(c) The qualifying degree must carry at least 180 ECTS (European Credit Transfer System) credits (or equivalent) with the specific study of Technology comprising at least 60 ECTS credits (or equivalent) and with not less than 10 ECTS credits (or equivalent) studied at third-year level or higher (or modular equivalent).

2. The study of Technology during the degree must show that the holder has acquired sufficient knowledge, skills and understanding to teach the Technology syllabus[12]at all levels up to and including the highest level in post-primary education (see www.curriculumonline.ie). To meet this requirement the degree must include the study of all of the following:

(a) Product Design and Manufacture[13]
(b) Materials Technology and Processing[14]
(c) Applied Electronic and Control Systems[15]
(d) Information and Communications Technology
(e) Manufacturing Systems[16]
(f) Structural & Mechanical Systems.

3. Applicants must also have completed a programme of post-primary initial teacher education (age range 12-18 years) in which the theory, methodology and practice of teaching Technology forms the central aspect. It must include a detailed knowledge of the Health & Safety requirements and associated pedagogical approaches. This course must be equivalent to a minimum of 120 ECTS credits (or equivalent)[17] [18].

[11] which includes pass by compensation.
[12] as approved by the Minister for Education & Skills, and published by the National Council for Curriculum and Assessment (NCCA).
[13] This must include engagement with the design of artefactcs to include the integration of mixed technologies,thedevelopment of craft knowledge and skills,and the use of associated graphic communication techniques and Computer- Aided Design.
[14] This must include the development of skills in the processing of a variety of materials including the use of Computer- Aided Manufacture. A particular focus on Health & Safety must be demonstrated.
[15] This must include engagement with applied electronic and control systems suitable for use in the second level educational system.
[16] This must include project and quality management.
[17] Applicants who have commenced a programme of initial teacher education prior to 01/09/2014carrying less than 120 ECTS credits may be exempted from this requirement at the Council's discretion.
[18] Applicants who have completed a specialist concurrent degree in Technology must meet all of the requirements as detailed above. This course should be equivalent to a minimum of 240 ECTS credits.

Engineering

In order to meet the registration requirements set down in the Teaching Council [Registration] Regulations in respect of the curricular subject of Engineering, an applicant must meet **all** of the following criteria:

1.

(a) Applicants must hold a degree-level qualification, with Engineering studied up to and including third-year level or higher (or modular equivalent).

(b) The qualifying degree must be equivalent to at least Level 8 on the National Framework of Qualifications (NFQ) and with a minimum pass[19] result in all examinations pertinent to the subject of Engineering.

(c) The qualifying degree must carry at least 180 ECTS (European Credit Transfer System) credits (or equivalent) with the specific study of Engineering comprising at least 60 ECTS credits (or equivalent) and with not less than 10 ECTS credits (or equivalent) studied at third-year level or higher (or modular equivalent).

2. The study of Engineering during the degree must show that the holder has acquired sufficient knowledge, skills and understanding to teach the Engineering syllabus[20] at all levels up to and including the highest level in post-primary education (see www.curriculumonline.ie). To meet this requirement the degree must include the study of all of the following:

(a) Product Design and Realisation[21]
(b) Materials Technology and Processing including Decorative and Finishing Techniques[22]
(c) Power, Energy and Control[23]
(d) Information and Communications Technology (as applicable to Engineering) (e) Structural & Mechanical Systems.

3. Applicants must also have completed a programme of post-primary initial teacher education (age range 12-18 years) in which the theory, methodology and practice of teaching Engineering forms the central aspect. It must include a detailed knowledge of the Health & Safety requirements and associated pedagogical approaches. The course must be equivalent to a minimum of 120 ECTS credits (or equivalent)[24] [25].

Metalwork and Technology (Junior Certificate)

An applicant who meets the registration criteria for **Engineering** will also be deemed to have acquired the competency to teach the Junior Cycle curricular subject of **Metalwork**.

[19] which includes pass by compensation

[20] as approved by the Minister for Education & Skills, and published by the National Council for Curriculum and Assessment (NCCA).

[21] This must include engagement with the design and realisation of artefacts to include the integration of mixed technologies, and the use of associated graphic communication techniques and Computer Aided Design.

[22] This must include engagement with the design and realisation of artefacts to include the integration of mixed technologies, and the use of associated graphic communication techniques and Computer Aided Design.

[23] This must include engagement with control systems which incorporates electronic, pneumatic and computer control.

[24] Applicants who have commenced a programme of initial teacher education prior to 01/09/2014 carrying less than 120 ECTS credits may be exempted from this requirement at the Council's discretion.

[25] Applicants who have completed a specialist concurrent degree in Engineering must meet all of the requirements as detailed above. This course should be equivalent to a minimum of 240 ECTS credits.