Final Report of the Review Panel to the Teaching Council following a review of the proposed Initial Teacher Education programme at School of Education, National University of Ireland, Galway

BA Education (Computer Science and Mathematical Studies) NUI Galway

June 2019

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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 2011 & 2017 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, and 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 subject's entrants can ultimately be registered to teach. They will also guide PME providers in matching students appropriately to methodology modules.

1.6 Programme overview

This report relates to the review of the following programme provided by **NUI Galway,** – **BA Education (Computer Science and Mathematical Studies)** hereinafter referred to as 'the programme'.

2. *The Review Process*

The review of **BA Education (Computer Science and Mathematical Studies)** took place between January and June 2019, 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 Sheelagh Drudy, as Chairperson.[1] To assist and support the work of the panel, the Rapporteurs functions included liaison with NUI Galway, maintaining records of meetings, and drafting and finalising the panel's report in conjunction with the panel Chairperson. The panel was also supported in its deliberations by external subject experts and by the Director and staff of the Teaching Council.

Documentation relating to the application was submitted to the Teaching Council by NUI Galway in January 2019. Due to the ongoing process to devise subject criteria in relation to Computer Science, the School of Education at NUI Galway requested that the Teaching Council consider accrediting the Mathematics and Education components of the BA Education (Computer Science and Mathematical Studies) programme on 08 April 2019. The panel was formed on 20 May and met initially on 30 May 2019. A draft report was issued to NUIG on 06 June, a response was received from NUIG on 19 June. The panel met for a final assessment of the programme on 21 June and recommended it to Council for accreditation on 01 July 2019. When the Computer Science criteria are finalised and published by the Teaching Council, the Computer Science component of programme, as currently submitted, will then be assessed for accreditation.

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

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*

The documentation submitted in January 2019 by NUI Galway was in accordance with the template provided by the Teaching Council in the Pro Forma and Guidelines which accompany the Council's review strategy. 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 documentation that was submitted the panel adjudges that the programme satisfies the criteria set down by the Teaching Council in its *Criteria and Guidelines* and in its curricular subject requirements in respect of the curricular subject Mathematics. Accordingly, it recommends to the Teaching Council that the programme be granted accreditation, subject to the stipulation which is set out in Section 8 below.

The commendations in Section 6 below relate to areas of particular strength which the panel has identified.

With regard to the recommendation in Section 7, the Panel submits that the Teaching Council should require the college to set out, within six months of receiving the final review report, its detailed proposals for implementing the recommendation. 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 stipulation in Section 8 relates to a point which the panel believes to be of such strategic importance to the programme that accreditation should be subject to this stipulation being met. Therefore, the panel recommends that the Teaching Council should require NUI Galway to set out and submit to the Teaching Council, within one month of receiving the final review report, its time bound proposals for implementing the stipulation.

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

6.   *Commendations*

Having regard to:

1. the Pro Forma documentation which was submitted
2. advice received from the curricular subject specialists who supported the review process

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

6.1   *Engagement with the review process*

NUI Galway co-operated fully with the review process. The module descriptions provided are informative and the programme protocols are well described.
The Panel commends the way in which NUI Galway responded to clarifications sought and to initial recommendations made by the Panel.

6.2   *Conceptual Framework*
The well-articulated conceptual framework and its guiding principles throughout all of Section 1 of the pro forma provide a well-balanced and appropriately integrated programme which ensures that all of the mandatory elements for the Education components of the ITE programmes are met. The Panel notes and commends the programme providers engagement and involvement with the NCCA Computer Science programme.

The Panel notes that the Education components of the programme are based on or build on the existing Education modules of the other post-primary concurrent B.Ed. programme, the BA Mathematics and Education provided by NUI Galway. As these components of the Programme, including programme aims, design, areas of study, teaching, learning and assessment strategies, school placement, the duration and the nature of the programme, student intake, staffing, facilities, student support and guidance systems, communication and decision-making structures and financial resources have already been commended and approved by the Teaching Council in its earlier accreditations, the Panel accepts that these components meet all the requirements of the Council.

6.3   *Programme Learning Outcomes*
The Panel commends the overall Programme Learning Outcomes for Education, Mathematical Studies and Computer Science.

6.4   *School Placement*
The School Placement is well designed and is progressive and incremental in its delivery, meeting the Teaching Council requirements. The programme aims, while set out under 7 discrete headings are adequately aligned with the learning outcomes for graduates of ITE programmes as published under Outcomes Section 3 of the *Teaching Councils ITE Criteria and Guidelines for Programme Providers* Document. The Panel commends the procedure, to which the School has committed, that one of the three visits in 4th year will be carried

out by a second tutor who, among other contributions to the formative development of the student, will act as a moderator of the overall school placement mark.

6.5   Processes

The Panel notes and commends the exit strategy for the BA Education (Computer Science and Mathematical Studies) programme. Should a student decide during the course that they do not wish to pursue a career in teaching, the School of Education will comply with the University academic policy and procedures. The University asserts that there may be a possibility to enter the BA Mathematics and Education (GY109) or General Arts (GY101). However the student may have to undertake additional modules for credits.

The Panel approves and recommends that the Council accredit the processes undertaken in the Programmes.

6.6   Outcomes

The outcomes of the Education and Mathematics components and the subject components are satisfactory and meet the requirements of the Council.

7.   Recommendations

Having regard to:

1.   the Pro Forma documentation which was submitted
2.   advice received from the curricular subject specialists who supported the review process and

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

Staffing

The Panel notes the provision of the list of staff who will contribute to the different parts of the programme. It also notes the allocation of an additional sum by the Higher Education Authority in a communication to the University President in support of salary costs associated with an academic appointment in the priority subject areas of Computer Science. This will no doubt be helpful in the delivery of the BA in Education in Computer Science and Mathematical Studies.

The panel recommends that NUIG School of Education develop a detailed staffing schedule for the effective implementation of the programme, having regard to the staff-student ratio set out by the Teaching Council in its Criteria and Guidelines.

8. *Stipulations*

Having regard to:

1. the Pro Forma documentation which was submitted
2. advice received from the curricular subject specialists who supported the review process and

The panel has noted an area of the programme which it considers must be addressed as a matter of priority and, at the latest, prior to the deadlines set out in each of the stipulations/prior to commencement of the programme.

8.1. *Computer Science Requirements*

The Panel commends the programme's aim of providing fully qualified teachers of the new curricular subject Computer Science. However, until such time as approved subject specific criteria for Computer Science are available, the Panel cannot accredit the Computer Science component of the programme.

As the Education and Mathematics components of the programme have been recommended for accreditation, the programme would meet the registration requirements for education and one subject, therefore graduates of the programme are eligible to register as post-primary teachers with the Teaching Council.

The Panel notes that staff of the School of Education at NUI Galway are cognisant that the subject criteria for Computer Science have, at the date of submission of their Proforma, not yet been finalised. It also notes that NUI Galway intends to ensure all prospective students and students commencing studies on the BA Education (Computer Science and Mathematical Studies) are aware of the accredited Mathematics and Education components of the programme. NUI Galway intends that students will be notified when accreditation for the Computer Science element is obtained.

The Panel requires that NUI Galway makes explicit reference to the accreditation status of Computer Science in all literature relating to the programme in advance of the commencement of the course and that it ensures that each prospective student is aware of the situation at the commencement of the programme.

The Panel has made NUI Galway aware that the Teaching Council is currently working towards publication of subject specific requirements for Computer Science and that the Council will arrange as soon as is feasible for a review of the Computer Science elements of the programme by the Panel (with the advice of a subject specialist) after these criteria are published. Each student should be notified by NUI Galway as soon as this process is completed.

Independent Review Panel Chair   Professor Sheelagh Drudy

 Professor Drudy is Professor Emeritus of Education at University College Dublin. She is a former teacher, educational researcher and teacher educator. She was a member of the first Teaching Council appointed by the Minister in 2005. She has been an external examiner at a number of Higher Education Institutions and has been involved in quality assurance reviews in various HEIs. She was a member of the Educational Sciences Working Group, TUNING Project 'Tuning Educational Structures in Europe'. She has chaired and participated in panels which have reviewed a series of initial teacher education programmes for the Teaching Council. She was a member of the National Council for Special Education and chaired its Research Committee 2013 - 2018.

Mr Patrick Mc Vicar

Patrick Mc Vicar is a former post-primary school principal and a former member of the Teaching Council, where he served on the Education and Registration committees. Currently a member of the Association of Community & Comprehensive Schools (ACCS) executive, he has served on a number of NCCA and NCSE committees and working groups.

Ms Joan Russell

Joan Russell is Director of Schools, Education & Training Board Ireland (ETBI). She was a member of the Teaching Council 2010 -2014 and was a member of the National Council for Special Education (NCSE) 2010 - 2015. She has also served on a number of NCCA committees for curriculum development and review. Joan is the National Coordinator for the *Instructional Leadership Programme*, a professional development programme, which focuses on the enhancement of the pedagogical practice of teachers.

Appendix 2 - Teaching Council Registration: Curricular Subject Requirements (Post-primary) Effective for registration on or after 1 January 2017

Mathematics
*In order to meet the registration requirements set down in the Teaching Council [Registration] Regulations in respect of the curricular subject of Mathematics, an applicant must meet **all** of the following criteria:*
1. (A) Applicants must hold a degree-level qualification, with Mathematics 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 pass1 result in all examinations pertinent to the subject of Mathematics.

(c) The qualifying degree must carry at least 180 ECTS (European Credit Transfer System) credits (or equivalent) with the specific study of Mathematics 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 Mathematics during the degree must show that the holder has acquired sufficient knowledge, skills and understanding to teach the Mathematics syllabus (www.curriculumonline.ie). To meet this requirement the degree must include the study of all of the following essential areas to a minimum of 40 ECTS credits (or equivalent): 2 to the highest level in post-primary education.

Essential areas of study
(a) Analysis3 - minimum of 10 ECTS credits
(b) Algebra4 - minimum of 10 ECTS credits
(c) Geometry5 - minimum of 5 ECTS credits
(d) Probability and Statistics6 - minimum of 5 ECTS credits

The remaining 20 ECTS credits (or equivalent) may be in any of the above essential areas, or be drawn from the following optional areas:

Optional areas of study
(e) Dynamical Systems and Chaos
(f) Calculus of Variations
(g) Numerical Analysis or Computational Mathematics
(h) Mathematical Modelling
(I) Discrete Mathematics
(j) History or Philosophy of Mathematics
(k) Mathematical Logic
(l) Set Theory and Cardinality

3. Applicants must also have completed a programme of post-primary initial teacher education (age range 12-18 years) carrying a minimum of 120 ECTS credits (or equivalent) 7.

The programme should include a module(s) on the teaching of Mathematics carrying a minimum of 5 ECTS credits (or equivalent) 8.

1 which includes pass by compensation.
2 as approved by the Minister for Education & Skills, and published by the National Council for Curriculum and Assessment (NCCA).
3 This must include modules in Differential and Integral Calculus in one and several variables, and may include modules in Differential Equations, Complex Analysis, Abstract Analysis, Measure and Integral, or Topology.
4 This must include modules in Linear Algebra, and may include modules on Abstract Algebra (Groups, Rings, and Fields), Cryptology, Coding Theory, or Number Theory.
5 This must include a module or modules in Euclidean and Non-Euclidean Geometry and may include modules in Differential Geometry, Algebraic Geometry, or Topology.
6 This must include modules in Probability and Statistical Inference and may include modules in Combinatorics or Stochastic Processes.
7 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.
8 Applicants who have completed a specialist concurrent degree in Mathematics must meet all of the requirements as detailed above. This course should be equivalent to a minimum of 240 ECTS credits.