

## Country Reports

### Ireland

#### 1.1 Relevant Policy

In Ireland, education priorities include a focus on science, technology, engineering and maths subjects to increase STEM capacity; as well as measures and funding to tackle educational disadvantage and to promote social inclusion.<sup>1</sup>

Since 2000, Irish students have maintained average or above average levels of performance in comparison to other OECD countries.<sup>2</sup> It is not possible to measure numeracy skills in the vocational sector directly as vocational programmes do not include separate assessment for literacy and numeracy skills.<sup>3</sup> It has been reported that many VET students entering the labour market lack relevant numeracy skills.<sup>4</sup> Literacy skills and numeracy performance for 16-24 years olds is also below the OECD average.<sup>5</sup>

In this context, there has been an extensive review of vocational education and training.<sup>6</sup> To develop and oversee this process, the Further Education and Training Authority (SOLAS) has been established alongside 16 regional Education and Training Boards (ETBs).<sup>7</sup> SOLAS has recently published the Further Education and Training (FET) Strategy for Literacy and Numeracy. The Strategy includes a commitment to embedding numeracy and maths skills within course curriculum; this also applies to apprenticeship programmes.<sup>8</sup> The specific methods adopted to embed numeracy and maths skills into VET programmes, however, has yet to be determined.<sup>9</sup> ETBs contribute directly to supporting and developing numeracy skills, including for individuals that want to enrol and for students already enrolled on vocational programmes.<sup>10</sup>

Structural reform of the vocational system, including the content of vocational programmes, is currently underway.<sup>11</sup> Further education and training qualifications are now assessed according to nine different levels under the rubric of the National Qualifications Framework; levels 1-6 are equivalent to the Junior Certificate and Leaving Certificate and levels 7-9 are equivalent to third level (higher) education.<sup>12</sup> Levels 1-3 include basic numeracy and maths skills as a component part of the award; levels 4 and above place a greater emphasis on mathematics.<sup>13</sup>

There are a number of major reforms in the compulsory education sector that have had an impact on maths in the VET sector. Established in the mid-2000s, Project Maths aims to develop broader mathematical thinking; improve maths teaching and learning approaches; encourage the study of maths at higher education levels; and to promote a 'positive attitude to maths'.<sup>14</sup> A National Centre for Excellence in Mathematics and Science Teaching and Learning has also been established to raise awareness and engagement in maths and to develop teaching skills.<sup>15</sup>

#### 1.2 Institutions and Courses

##### GENERAL SYSTEM

In Ireland, learners may enrol in first level schools from four years of age and schooling is compulsory from six years of age until sixteen years of age.<sup>16</sup> Most first level schools are state funded but privately owned.<sup>17</sup> Second level schools may be voluntary secondary schools (52.6% of total), vocational schools and community colleges (34.8%), or comprehensive schools (12.6%).<sup>18</sup> Voluntary schools are typically privately owned but state funded; vocational schools

<sup>1</sup> <http://www.education.ie/en/Publications/Education-Reports/A-Brief-Description-of-the-Irish-Education-System.pdf>

<sup>2</sup> <http://www.oecd.org/ireland/44592419.pdf>

<sup>3</sup> <http://www.oecd.org/ireland/44592419.pdf>

<sup>4</sup> <http://www.oecd.org/ireland/44592419.pdf>

<sup>5</sup> <http://www.education.ie/en/Publications/Policy-Reports/Further-Education-and-Training-Strategy-2014-2019.pdf>

<sup>6</sup> <http://www.education.ie/en/Publications/Policy-Reports/Further-Education-and-Training-Strategy-2014-2019.pdf>

<sup>7</sup> <http://www.education.ie/en/Publications/Policy-Reports/Further-Education-and-Training-Strategy-2014-2019.pdf>

<sup>8</sup> <http://www.education.ie/en/Publications/Policy-Reports/Review-of-Apprenticeship-Training-in-Ireland.pdf>

<sup>9</sup> <http://www.education.ie/en/Publications/Policy-Reports/Review-of-Apprenticeship-Training-in-Ireland.pdf>

<sup>10</sup> <http://www.education.ie/en/Publications/Policy-Reports/Further-Education-and-Training-Strategy-2014-2019.pdf>

<sup>11</sup> <http://www.education.ie/en/Publications/Policy-Reports/Further-Education-and-Training-Strategy-2014-2019.pdf>

<sup>12</sup> <http://www.fetac.ie/fetac/>

<sup>13</sup> <http://www.fetac.ie/fetac/>

<sup>14</sup> <http://www.education.ie/en/Publications/Policy-Reports/Report-of-the-Project-Maths-Implementation-Group.pdf>

<sup>15</sup> <http://www.nce-mstl.ie/>

<sup>16</sup> <http://www.education.ie/en/Publications/Education-Reports/A-Brief-Description-of-the-Irish-Education-System.pdf>

<sup>17</sup> <http://www.education.ie/en/Publications/Education-Reports/A-Brief-Description-of-the-Irish-Education-System.pdf>

<sup>18</sup> <http://www.oecd.org/edu/school/49624509.pdf>

and community colleges are managed by Vocational Education Committees (VECs) and state funded; comprehensive schools are managed and funded by the state.<sup>19</sup> State funded schools provide a state prescribed curriculum.<sup>20</sup> Secondary level education is compulsory from 12-15 and comprises the junior cycle. The junior cycle leads to the State Junior Certificate; maths is one of three core subjects examined.<sup>21</sup>

At post-compulsory levels, students have the option to continue their studies at second level schools; most schools offer an initial transition year of study with a broad curriculum as part of the senior cycle (15-18 years of age).<sup>22</sup> Learners follow one three different programmes of study in the senior cycle leading to the Leaving Certificate Established, the Leaving Certificate Vocational Programme (LCVA) or the Leaving Certificate Applied Programme (LCA).<sup>23</sup>

Third level education routes include universities; institutes of technology and specialist colleges, for example, hotel and catering colleges; and specialist institutes for professions such as law and medicine.<sup>24</sup> These routes all lead to degree level, although there are earlier leaving points, for example, National Certificate and National Diploma qualifications offered by some of the Institutes of Technology.<sup>25</sup>

## VOCATIONAL COURSES

There are two routes that offer vocational education and training within the senior cycle. The LCVA programme offers a blend of academic subjects studied on the Leaving Certificate Established alongside at least two vocational and technical modules and three further modules on 'Enterprise Education, Preparation for Work and Work Experience'.<sup>26</sup> The LCVA is accepted for entry to third level courses.<sup>27</sup> The LCA is a two-year programme that offers vocational education and training as practical preparation for entering the job market.<sup>28</sup> The LCA does not offer direct entry to third level courses; however, students may pursue Post Leaving Certificate courses.<sup>29</sup> Just over a third of students study for the LCVA (34%), while only a small minority study for the LCA (6%); the remaining 60% of students study for the Leaving Certificate Established.<sup>30</sup>

Further education and training options include apprenticeships, traineeships, the Youthreach programme and Post Leaving Certificate courses.<sup>31</sup> National standards-based apprenticeships are available for 26 different technical and industrial careers; on successful completion of the course, students are awarded a National craft certificate accredited by the Further Education and Training Awards Council (FETAC).<sup>32</sup> Courses typically last for four years and comprise both on-the-job and off-the-job training; the latter includes study in mathematics and other technical disciplines.<sup>33</sup> The minimum entry requirement is the Junior Certificate or equivalent; approximately 10-15% of school leavers follow the apprenticeship route.<sup>34</sup>

Traineeships offer on-the-job training for jobseekers; traineeships may last from six months to two years.<sup>35</sup> Training programmes are standards-based and cover a wide range of industries, for example, retail and legal secretary traineeships.<sup>36</sup> Programmes are developed by employers, union representatives and the FAS (the National Training and Employment Authority) and accredited by FETAC.<sup>37</sup> Youthreach specifically targets unemployed young people (15-20 years old) who have no formal qualifications or vocational training.<sup>38</sup> Youthreach offers a two-year full-time programme of education, training and workplace experience; a training allowance and further subsidies are available to participants over 16 years of age.<sup>39</sup> There are currently 6,000 places on the programme nationwide.<sup>40</sup>

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<sup>21</sup> <http://www.oecd.org/edu/school/49624509.pdf>

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<sup>24</sup> <http://www.education.ie/en/Publications/Education-Reports/A-Brief-Description-of-the-Irish-Education-System.pdf>

<sup>25</sup> <http://www.education.ie/en/Publications/Education-Reports/A-Brief-Description-of-the-Irish-Education-System.pdf>

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Post Leaving Certificate (PLC) courses provide ‘intensive’ vocational education and training to individuals that have completed the Senior Certificate or who can demonstrate an equivalent level of competence.<sup>41</sup> PLC courses are offered in a wide range of disciplines; over 2,100 courses are provided in 200 different centres of learning.<sup>42</sup>

### 1.3 Practice and Pedagogy

A recent, small-scale study concluded that maths teaching in Ireland is typically delivered using a didactic approach to learning that focuses on rote learning specific mathematical procedures in order to achieve good examination results<sup>43</sup>. This approach to learning offers limited scope for questioning, discovery and exploration in mathematics learning<sup>44</sup>. A recent Department for Education and Science (DES) review highlighted the ‘*lack of tutor hours devoted to numeracy*’ within the vocational sector.<sup>45</sup> There are also limited opportunities for numeracy skills to be contextualised through on-the-job training; many VET learners do not have access to work experience and most workplace supervisors lack the necessary pedagogical training.<sup>46</sup>

There are a number of initiatives developed to engage young people in mathematics learning; many of these initiatives are administered by Education and Training Boards (ETBs). The Newbridge Youth and Training Development Centre, for example, works closely with the Kildare and Wicklow Education and Training Board to develop core literacy and numeracy skills among young people who left school without gaining the Junior Certificate.<sup>47</sup> The Centre is accredited as a Further Education and Training Awards Council (FETAC) Centre; trainees are able to gain level 3-4 FETAC qualifications in mathematics.<sup>48</sup>

The programme recognises common barriers that prevent trainees engaging with maths, and encourage learners to revisit the basics of maths before attempting to progress further.<sup>49</sup> A number of different learning approaches are used. These include raising learner awareness of their own use of maths; extensive one-to-one work in a group setting; tailored resources and vocationally contextualised activities working with tutors in, for example, engineering or ceramics classes; and flexible use of learners’ own experiences to establish relevance.<sup>50</sup> The young people on the programme move from a level of disaffection which leads them to ‘close down’ when maths is discussed, to trainees who are engaged and able to see how they use maths in their everyday activities.<sup>51</sup>

A further initiative that supports maths learning is the Tallaght Probation Project Service Provision.<sup>52</sup> While the programme targets young adults (18-35 years of age) within the criminal justice system, it offers a good example of innovative maths learning through the use of the ‘writeon’ software package.<sup>53</sup> This software allows individuals to develop numeracy and maths skills at their own pace, using individual assessments and planning to support independent learning through carefully structured activities.<sup>54</sup> Tutors also work closely with learners to address any emotional barriers to maths learning; for example, each learner discusses their experience of formal schooling in ‘*deep down detail*’.<sup>55</sup> The use of ‘writeon’ has been effective in enabling learners to understand their learning needs.<sup>56</sup> Most learners move quickly through NFQ Levels 1-2; some, but not all, learners move on to NFQ Level 3.<sup>57</sup> Success at working with ‘writeon’ also enables learners to consider further formal assessment and accreditation.<sup>58</sup>

### 1.4 Key Points of Learning

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<sup>43</sup> [http://eprints.nuim.ie/5054/1/Anne\\_Brosnan\\_Vol-I\\_20140620135145.pdf](http://eprints.nuim.ie/5054/1/Anne_Brosnan_Vol-I_20140620135145.pdf)

<sup>44</sup> [http://eprints.nuim.ie/5054/1/Anne\\_Brosnan\\_Vol-I\\_20140620135145.pdf](http://eprints.nuim.ie/5054/1/Anne_Brosnan_Vol-I_20140620135145.pdf)

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<sup>47</sup> [https://www.nala.ie/sites/default/files/publications/numeracy\\_report\\_0.pdf](https://www.nala.ie/sites/default/files/publications/numeracy_report_0.pdf)

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<sup>49</sup> [https://www.nala.ie/sites/default/files/publications/numeracy\\_report\\_0.pdf](https://www.nala.ie/sites/default/files/publications/numeracy_report_0.pdf)

<sup>50</sup> [https://www.nala.ie/sites/default/files/publications/numeracy\\_report\\_0.pdf](https://www.nala.ie/sites/default/files/publications/numeracy_report_0.pdf)

<sup>51</sup> [https://www.nala.ie/sites/default/files/publications/numeracy\\_report\\_0.pdf](https://www.nala.ie/sites/default/files/publications/numeracy_report_0.pdf)

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<sup>54</sup> [https://www.nala.ie/sites/default/files/publications/numeracy\\_report\\_0.pdf](https://www.nala.ie/sites/default/files/publications/numeracy_report_0.pdf)

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<sup>56</sup> [https://www.nala.ie/sites/default/files/publications/numeracy\\_report\\_0.pdf](https://www.nala.ie/sites/default/files/publications/numeracy_report_0.pdf)

<sup>57</sup> [https://www.nala.ie/sites/default/files/publications/numeracy\\_report\\_0.pdf](https://www.nala.ie/sites/default/files/publications/numeracy_report_0.pdf)

<sup>58</sup> [https://www.nala.ie/sites/default/files/publications/numeracy\\_report\\_0.pdf](https://www.nala.ie/sites/default/files/publications/numeracy_report_0.pdf)

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