

## TESTING THE VALIDITY OF THE IEI: THE CASE OF IRELAND AND NORTHERN IRELAND

<sup>1</sup>Iyengar, R.

### Article Info

**Keywords:** education systems, policy analysis, International Education Index, COVID-19, access, quality, equal opportunity

### Abstract

The COVID-19 pandemic has highlighted the need for countries to review and improve their education systems to ensure equitable access to high-quality education. To support this effort, a new policy analysis tool called the International Education Index (IEI) has been developed, consisting of nine indicators and 54 questions that cover topics such as institutional frameworks, education strategies, digital skills and infrastructure, access to social services, adherence to international standards, legal frameworks, data gathering, and international partnerships. The IEI was tested on Ireland and Northern Ireland as case studies to assess its validity. The results showed both countries to have national policies that support the implementation of quality education. However, there were identified gaps that need improving. The IEI offers a holistic method that produces valuable policy metrics to foster discussion, support collaboration within and between countries, and identify progress towards ensuring inclusive and equitable quality education and lifelong learning opportunities for all.

### Introduction:

The COVID-19 pandemic has challenged education systems worldwide. The crisis has revealed strengths and weaknesses in how countries deliver education and highlighted the importance of adapting programs to meet the changing educational landscape. As countries begin to recover from the pandemic, there is a need to assess their education systems to ensure that they support access, quality, and equal opportunity. To achieve this, a new policy analysis tool, called the International Education Index (IEI), has been developed to assess national policies and identify areas that need improvement. The IEI is composed of nine indicators and 54 questions that cover topics such as institutional frameworks, education strategies, digital skills and infrastructure, access to social services, adherence to international standards, legal frameworks, data gathering, and international partnerships. Ireland and Northern Ireland were used as case studies to examine the validity of the IEI. The results showed that both countries have policies that support quality education implementation. However, the IEI identified gaps in their policies that need improvement. The IEI offers a comprehensive method for assessing education systems,

<sup>1</sup> Maynooth University, Co. Kildare, Ireland

producing valuable policy metrics for collaboration, and identifying how to ensure inclusive and equitable quality education and lifelong learning opportunities for all.

### **Measuring education systems and policies post-pandemic**

The move to digital learning during the pandemic highlights the strengths and weaknesses in national education systems. A lack of digital infrastructure, skills, technologies and policies left many education systems unprepared to cope with the crisis (O'Sullivan et al., 2021). As a result, key stakeholders are now discussing the future of education and what is essential for delivering quality education. The United Nations Educational, Scientific and Cultural Organization (UNESCO, 2020), *Futures of Education after COVID-19: Regional Dialogue* report posits priority areas education systems should focus on with inclusive education to bridge educational and learning gaps. Other reports concentrate on building resilient education systems adaptive to future crises (Public Policy and Management Institute, 2021). In line with reframing education policies, the International Commission on the Futures of Education published nine ideas for public action, including commitments to strengthening education as a common good and valuing the teaching profession and teacher collaboration (UNESCO, 2020). In academia, similar themes emerge in publications such as 'Rethinking community participation in education post-Covid-19' (Iyengar, 2021) and *Higher Education's Response to the Covid-19 Pandemic: Building a more Sustainable and Democratic Future* (Harkavy et al., 2021). Central to all these reports and articles is the need to reflect on national education policies that support inclusion, equality, innovation, digitalisation and employment.

Through a systematic review of research and policy, the IEI framework comprises nine indicators that support the improvement of post-pandemic education systems and are essential for countries to deliver high-quality education. These indicators include institutional frameworks, education strategies, twenty-first-century skills, access to basic social services, adherence to international standards on education, legal frameworks, data gathering and information availability and international partnerships. They relate specifically to how governments approach policy decisions, social and economic considerations, and the core aspects of educational needs in the twenty-first-century. By assessing countries' policies around these core indicators, the IEI offers a holistic method that produces valuable policy metrics to foster discussion and support collaboration within and between countries.

### **Existing education measurement systems**

Some of the most notable education measurement systems include the Organisation for Economic Co-operation and Development's (OECD) *Programme for International Student Assessment (PISA)* and *OECD Indicators*. Participation in PISA is voluntary; students' test scores account for the national mean score. These scores determine if 15-year-old learners can apply what they have learned in education to real-life situations (socio-emotional skills). PISA covers science, reading, mathematics and innovative subjects, including collaborative problem-solving and financial literacy (OECD, 2017). The OECD Indicators offer data on human and financial resources invested in education, measuring the output, outcomes and impact of education systems; participation and progression within education entities; and input into education systems or the learning environment (OECD, 2020).

The IEI contributes to the measurement of education systems by focusing on policy. Current models centre on evaluating specific countries, groups or target areas. For example, PISA looks at students aged 15 and focuses on particular subjects. The IEI uses a macro-system approach to measure education through policy analysis, providing a framework to assess how education policy and political structures can support quality education. The framework evaluates institutions, policies and operational systems that broadly inform access, quality and equality in education governance, concentrating on several key factors determining educational outcomes. The IEI's approach provides a comprehensive overview of key areas where national policies can be developed, providing a basis for further assessment. It does not rank countries but instead captures what policies exist, identifying gaps and focusing on needed improvements.

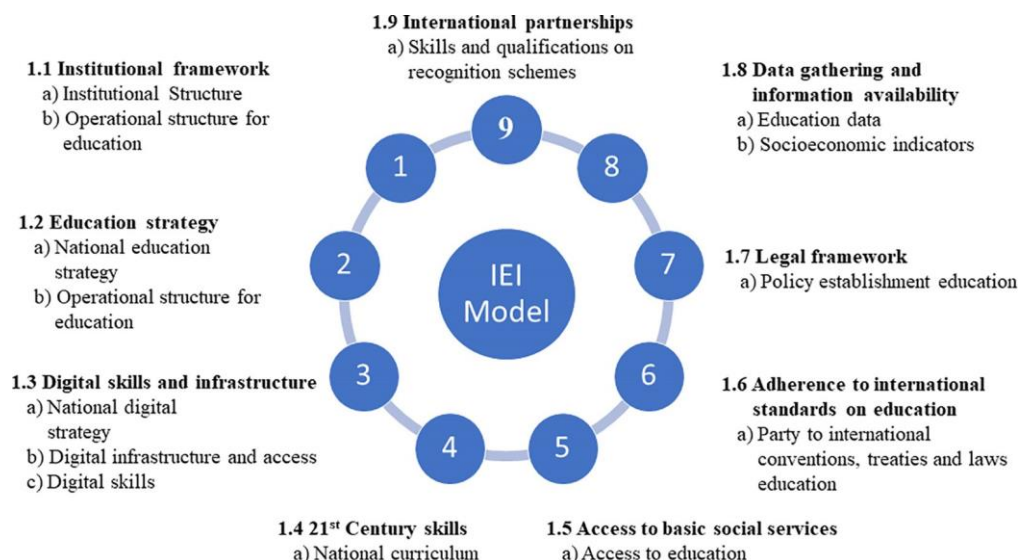
## METHODOLOGY

### Developing the international education index

The IEI was developed by adapting an existing model for understanding complex global issues created by the Economist Intelligence Unit (EIU). Commissioned by the UN, the *Measuring Well-governed Migration: The 2016 Migration Governance Index* (MGI) (EIU, 2016) is an analytical framework that analyses contemporary migration issues. The MGI was developed using a multistep process. In the first step, a survey of secondary research was conducted on current migration policy assessment frameworks and key topical issues. Next, the EIU created a draft analytical framework to understand or ‘benchmark’ migration governance. This draft framework was then refined during a one-day workshop with technical experts, where five main overarching domains and key indicators for each were finalised (EIU, 2016).

Using this process and the structure of the MGI, researchers developed the IEI. The development of the analytical framework included several steps. Researchers drafted an analytical framework after conducting secondary research on national education systems and how these systems are measured. This framework was reviewed by academic and industry experts at Maynooth University and Microsoft Ireland Education Department and modified according to feedback. The resulting framework comprises 54 questions across nine indicators explicitly related to what a quality education system should look like in the twenty-first century. The nine key indicators and definitions are listed alongside Figure 1, which illustrates each indicator and associated subcategories. The complete set of descriptors and related questions are in [Appendix](#).

1. *Institutional framework*: this asks if an institutional framework is in place which formulates and implements policies, laws, regulations and procedures. Such a framework is required to enact measures addressing education issues effectively. This indicator looks at the national institutional framework that works to design and implement education policies.
2. *Education strategy*: this indicator measures national education strategies related to inclusion, equity and quality education. It assesses if there are national policies that ensure that all people can participate in society fully.
3. *Digital skills and infrastructure*: this indicator relates to policies that ensure that technology and ICT systems are supported to enable governments, businesses and individuals to participate, inform and deliver across various economic and social areas. Access to technology and ICT creates opportunities for job creation, service delivery and improvement in living standards. This indicator focuses on policies that support a digitally enabled society.
4. *Twenty-first century skills*: twenty-first century skills prepare people for the digital future and are essential in modern job markets. These skills also help with socioeconomic mobility and are crucial to escaping poverty. This indicator assesses the policy systems which focus on three broad categories of skill development: learning skills, literacy skills and life skills
5. *Access to basic social services*: this indicator examines the policies that ensure everyone has a right to basic education. Access to education enables socioeconomic mobility upward and is a key to escaping poverty
6. *Adherence to international standards on education*: this indicator examines policies that ensure compliance with international conventions, treaties and laws that are the foundation for efficient education systems and governance.
7. *Legal framework*: this indicator measures countries’ legal frameworks on education.



**FIGURE 1** Nine indicators and associated subcategories. [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

8. *Data gathering and information availability*: this indicator looks at the essential need to understand education trends better, ensuring well-functioning education systems. This requires reliable and transparent data on education.

9. *International Partnerships*: this indicator measures the transferability of education and professional degrees and equal access to education for non-national students.

### Country selection and scoring model

To test the use and validity of IEI, a policy analysis of Ireland and Northern Ireland was conducted using the key indicators and the related questions. The IEI utilised a numerical value scoring system, and each question was scored on a ranking system from zero to two. Zero indicates that the question was not met, one that it was partially fulfilled, and two that it was fully satisfied. The highest score a country can receive is 108, and countries can be placed into three categories based on their score: developed (73–108), emerging (37–72) and nascent (0–36). This scoring system was developed to mirror the one used in the MGI. The number of questions under each indicator varies, which affects the total number a country can score in each category (see Table 1).

Researchers completed the IEI for Ireland and Northern Ireland mainly using primary sources, such as published government documents. When an answer was unclear, they contacted official sources such as government departments to seek clarification. After completing the IEI, researchers scored each question on a scale of zero to two, with zero for obligations not met, one for partially met and two for fully satisfied.

One team member conducted the initial IEI analyses, which the other members reviewed to mitigate potential bias in the scoring, analysis and results. They also used reflexivity throughout the research process, including when scoring the IEIs, to reduce biases influencing the analysis and results.

The following sections present the results of the IEI analysis for Ireland and Northern Ireland. Because of the extent of data collected in the IEI, it is impossible to represent it in its entirety in this article. Instead, the researchers offer information that gives a broad overview of the findings. The completed IEIs for Ireland and Northern Ireland are available in the Supplemental Materials.

### Limitations of the IEI

Policy tools or techniques to evaluate and implement policies have limitations and may pose more significant challenges at the micro-level. In the case of the IEI, the nine indicators can

**TAB L E 1** Question and score breakdown

Indicator	Number of questions	Total score value
Institutional framework	6	12
Education strategy	11	22
Digital skills and infrastructure	8	16
Twenty-first century skills	4	8
Access to basic social services	6	12
Adherence to international standards on education	6	12
Legal framework	5	10
Data gathering and information availability	6	12
International partnerships	2	4
Total questions and possible score	54	108

be characterised differently across countries. Some questions may be relevant in specific contexts but not in others, for example, developed vs. developing nations. Second, the standard or model of what constitutes a perfect score of two may elicit specific biases from the person conducting the IEI analysis. With this, it is imperative that persons using the IEI use reflexivity. As this is the pilot policy analysis tool, more consideration and collaboration on these issues are warranted in the future.

### Findings: country descriptive summaries

Table 2 and Figure 2 visually depict the scores for Ireland (94) and Northern Ireland (81) on the IEI. The scoring system shows that both countries fall within the developed category, indicating that they have national policies that support the implementation of quality education. The following section describes the country's context and how the countries performed on the indicators, **Ireland**

#### Education context

Ireland, a member of the European Union (EU) and party to international treaties relating to education, has a developed education system, scoring 94 on the IEI. In 2018/2019, the number enrolled full-time in primary, post-primary and higher education was 1,167,999<sup>1</sup> (Lawlor & Burke, 2020). The categorisation of school ethos in primary and post-primary levels is Catholic, Church of Ireland, multid denominational and 'other'. In 2019, 47% of 25–64-year-olds attained third-level education. This attainment rate was higher among women (51%) than men (43%) (OECD, 2019). **Indicator summary**

#### Institutional framework

*Score 12/12*

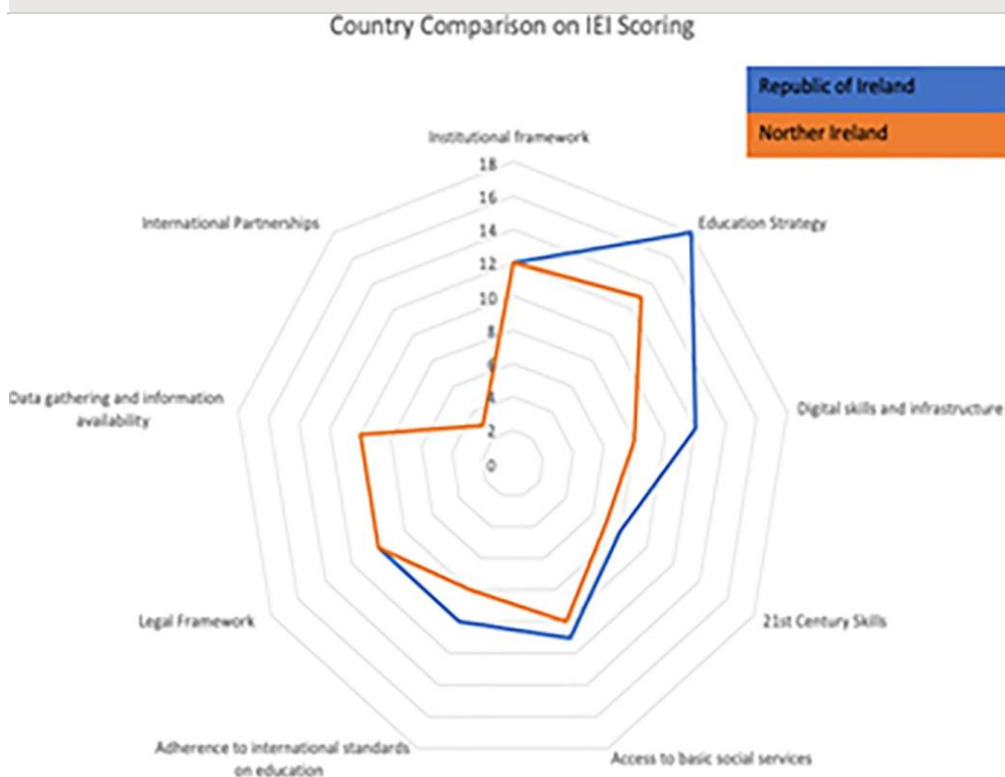
Ireland received high scores on the Institutional Framework indicator owing to several core features of the education system. The Department of Education and Skills (DES) regulates education in Ireland. DES' framework includes coordination across 11 other government departments (Department of Education (DES), 2019a) and an inter-ministerial coordination mechanism on education, the Committee on Education, Further and Higher Education,

**TABLE 2** Score breakdown by category

Indicator	Republic of Ireland	Northern Ireland
-----------	---------------------	------------------



Institutional framework	12/12	12/12
Education strategy	18/22	13/22
Digital skills and infrastructure	12/16	8/16
Twenty-first century skills	8/8	7/8
Access to basic social services	11/12	10/12
Adherence to international standards on education	10/12	8/12
Legal framework	10/10	10/10
Data gathering and information availability	10/12	10/12
International partnerships	3/4	3/4
Total	94	81



**FIGURE 2** Country comparison of International Education Index (IEI) scoring. [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

Research, Innovation and Science (Government of Ireland, 2021). This committee informs legislation and policy, ensuring the education system benefits society and is internationally recognised for its research, innovation and science. DES also publishes several publicly available reports annually around topics such as education strategies and evaluating education processes (Department of Education (DES), 2021a).

#### Education strategy

##### *Score 18/22*

The government of Ireland has several education policies and strategies, including the Action Plan for Education, which details DES' yearly goals and planned outcomes. The latest Action Plan for Education was published in 2019 (Department of Education (DES), 2019a). The government is developing the 2021 Action Plan, based on the Department of Further and Higher Education, Research, Innovation and Science, Statement of Strategy 2021–

2023 (Department of Further and Higher Education, Research, Innovation and Science, 2021). This strategy has many different aspects, including overhauling the apprenticeship system, creating new legislation to reform higher education governance and advancing North–South cooperation in higher education and research (Department of Further and Higher Education, Research, Innovation and Science, 2021).

Gender equality is an important consideration. The primary education legislation briefly addresses gender, and the Action Plan grapples with gender balance in the workplace for senior academic level jobs in Higher Education (Department of Education (DES), 2019a). However, the DES Statement of Strategy 2019–2021 does not mention gender (Department of Education (DES), 2019b).

Ireland also focuses on disability inclusion in education through the National Disability Inclusion Strategy, 2017–2021. This strategy addresses assistive technologies, aiming to provide adequate technologies so those with disabilities can continue educating and working (Department of Justice, 2017). Ireland is also party to the United Nations Convention on the Rights of Persons with Disabilities, ratified on 20/03/2018 (UNTC, 2018), which also falls under the adherence to international standards on education.

#### Digital skills and infrastructure

*Score 12/16*

Recognising the increasing need to address digitalisation, Ireland has a national science, technology, engineering and mathematics (STEM) education strategy to make Ireland a leading European country in STEM by 2026 (DES, 2017). DES is responsible for digital engagement and design. For STEM education to be successful, educators need access to STEM training. Ireland has STEM training and professional development for primary, secondary and vocational education and apprenticeships; however, this is not compulsory for teachers, and there are gaps in preparation (DES, 2017).

Ireland has a National Digital Strategy focusing on digital engagement. This strategy seeks to increase citizen engagement through two main actions: skills development and awareness-raising of the benefits of being digitally literate. Also, by engaging with businesses and the private sector, the initiative aims to ‘get more businesses utilizing digital’ (Department of the Environment, Climate and Communications, 2013).

When exploring digital infrastructure, schools or households lack equal broadband access. Ireland's National Education and Research Network manages a centralised Schools Network for broadband. This network connects all primary and post-primary schools to the infrastructure for the internet. However, it only offers the network connection, which is utilised by companies supplying broadband (Ireland's National Education and Research Network, 2021). The government's National Broadband Plan does, however, aim to create universal connectivity in Ireland (Department of the Environment, Climate and Communications, 2021).

#### Twenty-first century skills

*Score 8/8*

Ireland is preparing a New Digital Strategy for Schools. This strategy integrates technologies into classrooms and school activities to make technologies an intricate part of the holistic education system. This initiative underscores the twenty-first-century skills of pupils and teaches skills such as ‘communication and collaboration, critical thinking and analytic reasoning, research skills, creativity, problem-solving and teamwork’ (Department of Education (DES), 2021a). The National Strategy for Higher Education to 2030 also focuses on twenty-first-century skills, such as ‘core skills such as quantitative reasoning, critical thinking, communication skills, team-working skills and the effective use of information technology’ (DES, 2011).

#### Access to basic social services

*Score 10/12*

According to the Education (Welfare) Act (2000), education in Ireland is compulsory from age 6 to 16 or until students have completed three years of secondary-level education. This Act does not mention non-nationals

specifically (Government of Ireland, 2000a); however, under the Equal Status Acts (2000), admission policy cannot discriminate on the grounds of nationality or legal status (Government of Ireland, 2000b). According to the Equal Status Acts, schools and educational institutions cannot discriminate across nine grounds: gender, marital status, family status, age, disability, sexual orientation, race, religion and membership of the Traveller community (Government of Ireland, 2000b).

Adherence to international standards on education

*Score 10/12*

Six primary international treaties and conventions address education. Ireland is a member party to four of the six treaties: the International Convention on International Convention on Economic, Social and Cultural Rights (United Nations Treaty Collection (UNTC), 1976a), the Convention on the Elimination of All Forms of Discrimination against Women (United Nations Treaty Collection (UNTC), 1976b), the United Nations Convention on the Rights of the Child (UNTC, 1992), and the United Nations Convention on the Rights of Persons with Disabilities (UNTC, 2018). Ireland recognises the Global Convention on the Recognition of Qualifications concerning Higher Education, which the UN adopted in 2019. However, no country appears to have ratified the treaty to date (UNESCO, 2019). Ireland is not a signatory of the United Nations Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families (United Nations Treaty Collection (UNTC), 1990).

Legal framework

*Score 10/10*

Ireland has national legislation for regulating education. A comprehensive list of enacted legislation since the state's existence is on DES' website. Some of these policies include the Education Training Boards Act (2013), the Education (Admissions to Schools) Act (2018) and the Institutes of Technology Act (2006) (Department of Education (DES), 2021b).

Ireland has legislation regulating both primary and post-primary schools. The Education Act of 1998 ensures formal provision for the education 'of every person in the State, including any person with a disability or who has other special educational needs'. The Act governs 'primary, post-primary, adult and continuing education and vocational education and training' (Government of Ireland, 1998) (DES, 2004).

Data gathering and information availability

*Score 10/12*

The Central Statistics Office (CSO), a statutory body, publishes regular data on education in Ireland. The education statistics focus on an overview of education, primary level education, secondary-level or further education, examination statistics, tertiary-level statistics and critical indicators (Central Statistics Office, 2021). This data can be divided by male and female, but no other genders are mentioned.

The CSO conducted the last national census in Ireland in 2011. The census form asks questions related to education, including 'what is the highest level of education/training (fulltime or part-time) which you have completed to date?' and 'Have you ceased your full-time education?' (Central Statistics Office, 2011).

There is also a question about household broadband access on the census form. According to data published by the CSO, 'In 2019, 91% of households have an internet connection, increasing two percentage points since 2018. Data for 2019 indicates that fixed broadband is the most common type of internet access in the household (84% compared with 47% using mobile broadband). Note that more than one type of internet connection may be used in households' (Central Statistics Office, 2019).

International partnerships

*Score 3/4*



Ireland does not allow all international students equal access to university education. Although non-EEA (European Economic Area) nationals can apply for university education, international students' fees are higher. Costs are higher for international students than Irish nationals, EU Member State nationals, EEA nationals, those from the UK, the Swiss Federation, and several other categories of persons eligible for the Free Fees Initiative. Under this initiative, eligible persons pay 3000 euros per year for higher education (Education in Ireland, 2021).

## **Northern Ireland**

### **Education context**

Northern Ireland, a member of the United Kingdom of Great Britain and Northern Ireland, predominantly has a developed education system, scoring 81 on the IEI. In 2020/2021, the estimated number of full-time primary school students was 173,300 and the number in post-primary schools was 148,900 (NISRA, 2020). The number of Northern Ireland domiciled students enrolled at UK higher education institutions was 63,500, and 148,000 pupils were enrolled in Northern Ireland further education colleges (NISRA, 2020).

### **Indicator summary**

#### **Institutional framework**

*Score 12/12*

The Department of Education (DENI), accountable to the Northern Irish Assembly, is responsible for designing and coordinating overall education policy or a strategic plan for primary and post-primary education (Perry, 2016). The higher education division of the Department for the Economy (DfE) is tasked with formulating policy and administering funding to support research and education related to higher education (Department for the Economy (DfE), 2021a). DENI is also responsible for publishing reports on education. It produces annual reports on children and young people, curriculum and learning, good relations and social change, and statistics and research (Department of Education (DENI), 2021).

#### **Education strategy**

*Score 13/22*

The Education Authority's (EA) Interim Strategic Plan 2017–2027 is Northern Ireland's leading national education strategy for primary and secondary schools. It focuses on five 10 year strategic priorities, including meeting the learning needs of children and young adults, providing exceptional education support and ensuring that people have the skills to carry out their jobs successfully (Education Authority, 2017). The DfE's primary higher education strategies, Graduating to Success and Access to Success, expired in 2020, and it is unclear if new approaches are being developed (Department for the Economy (DfE), 2021c).

Northern Ireland has several laws addressing social inclusion and disability (Department for Communities (DIC), 2021a), such as the Disability Discrimination Act (2005). This Act addresses education (National Archives, 1995). Additionally, Northern Ireland is developing a New Disability Strategy to 'tackle inequalities and obstacles that affect the everyday lives of disabled people' (DIC, 2020). The current legislation does not appear to address assistive technologies. As the New Disability Strategy is still being developed, it is unclear if it will address assistive technologies.

#### **Digital skills and infrastructure**

*Score 8/16*

Northern Ireland has a national digital strategy, the Digital Transformation Strategy 2017–2021. However, this strategy focuses on the Public Service (Department of Finance, 2017). Although not part of the Digital Transformation Strategy 2017–2021, some government initiatives relate to digital education, such as the C2k project managed by the EA. This project 'provides the infrastructure and services to support the enhanced use of ICT in grant-aided schools across Northern Ireland' (Education Authority, 2021a). The C2k's Education Network provides various services, including WiFi, data and administration systems, online learning platforms and a

dedicated Education Cloud (DENI, 2021). Northern Ireland does, however, have a national skills strategy that includes digital skills—the Skills Strategy for Northern Ireland – Skills for a 10× Economy. It has three primary objectives: ‘addressing skills imbalances, creating a culture of lifelong learning, and enhancing digital skills and developing a digital spine’ (Department for the Economy (DfE), 2021b).

In Northern Ireland, infrastructure for digital access is not equal across schools or households. However, all grant-aided schools access digital services through the C2k's Education Network, a government initiative (DENI, 2021). There does not appear to be assistance for higher education institutions or vocational courses. In 2019, the Northern Ireland Statistics and Research Agency (NISRA) reported on broadband access. In 2018/2019, 85% of households had broadband access, and 84% had access to home internet (NISRA, NI Profile, Key Statistics in Northern Ireland, 2020).

#### Twenty-first century skills

*Score 7/8*

The curriculum in Northern Ireland accounts for twenty-first century skills. Primary school education incorporates language and literacy, mathematics and numeracy, arts, the world around us, personal development and mutual understanding, and physical education. The secondary schools focus on a programme called Learning for Life and Work, and this programme concentrates on employability, personal development, local and global citizenship and home economics. (DENI, 2021). These curricula also include cross-curricular skills (communication, using mathematics and using ICT) and other skills (creativity, collaborating, self-management, information management and problem solving; DENI, 2021).

#### Access to basic social services

*Score 10/12*

Under the Education and Libraries (Northern Ireland) Order 1986, primary and secondary education is compulsory for all non-national and nationals living in Northern Ireland, and pupils have equal access to primary and secondary education (National Archives, 1986). However, citizens do not have equal access to higher education. For example, tuition fees vary in publicly funded universities, depending on the learner's country of residence (Nidirect, 2021).

In Northern Ireland, people of all abilities have the same access to education. The EA has a new framework for addressing Special Educational Needs that is guided by specific legislation, including the Special Educational Needs and Disability Act (Northern Ireland) 2016 (National Archives, 2006b). The EA is also working to provide ‘information and guidance for parents, carers and schools to support improved outcomes for children and young people with special educational needs’ (Education Authority, 2021b). Additionally, further and higher education institutions ‘have a responsibility not to discriminate against students on the grounds of sex, sexual orientation, race, religious belief and political, opinion, age, or disability’ (European Commission for Northern Ireland, 2021).

#### Adherence to international standards on education

*Score 8/12*

Of the six primary international treaties and conventions addressing education, Northern Ireland is a member of the International Convention on International Covenant on Economic, Social and Cultural Rights (United Nations Treaty Collection (UNTC), 1976a), the Convention on the Elimination of All Forms of Discrimination against Women (United Nations Treaty Collection (UNTC), 1976b), the United Nations Convention on the Rights of the Child (United Nations Treaty Collection (UNTC), 1990) and the United Nations Convention on the Rights of Persons with Disabilities (UNTC, 2009). It is not a party to the United Nations Convention on the Protection of the Rights of All Migrant Workers (UNTC, 1990) and Members of Their Families or the United Nations Global Convention on the Recognition of Qualifications concerning Higher Education (OGL, 2021).

#### Legal framework

*Score 10/10*

Northern Ireland has national legislation regulating education and specific legislation for handling primary and secondary education. This legislation includes the Education Act (Northern Ireland) 2014 (National Archives, 2014), the Education (Northern Ireland) Order 2006 (National Archives, 2006a) and the Education and Libraries (Northern Ireland) Order 1986 (National Archives, 1986). There is also legislation regulating STEM education in secondary schools. Success through STEM aims to ‘help to empower future generations through science, technology, engineering and mathematics to grow a dynamic, innovative economy’ (DENI, 2009).

## Data gathering and information availability

*Score 10/12*

Northern Ireland publishes data related to education regularly and DENI publishes multiple types of statistics on education, including school performance, pupil suspensions and expulsions and school leavers (DENI, 2021). A portion of this data is divided by gender. For example, the Statistical Bulletin: Year 12 and Year 14 Examination Performance at Post-Primary Schools in Northern Ireland 2015–16 provides statistics broken down by gender (DENI, 2017).

Northern Ireland collects on households with broadband access. For example, the NISRA published PfG 2016–21 Measurement Annex—Proportion of premises with access to broadband services at speeds at or above 30 Mbps, which assessed which households have broadband services at specific speeds (NISRA, 2018). The Northern Ireland Statistics and Research Agency also provides statistics on broadband and the internet in NI: IN PROFILE, Key statistics on Northern Ireland (2021). A section of this report looks at internet and broadband access by households (NISRA, 2020).

## International partnerships

*Score 3/4*

International students do not have equal access to higher education. For example, tuition fees vary, as was discussed under the indicator *Access to basic social services*. Owing to Brexit, participation in international schemes with common qualification frameworks is still under negotiation. Professional qualification partnerships depend on free trade agreements with individual countries and Memorandums of Understanding. Northern Ireland is a member of the National Frameworks of Qualifications aligned with the European Union, which focuses on mutual recognition of further and higher education (Anonymous, 2021).

**DISCUSSION**

The IEI policy analysis tool pilot identifies opportunities and challenges for education policy in Ireland and Northern Ireland. Each country demonstrates developed education systems but still has areas to improve. In Ireland, there are significant policy gaps in the indicator of international partnerships. These gaps create unequal access to higher education for marginalised people and international students with higher costs and *state grants for those living in Ireland for three years*. These policies impact refugees and asylum seekers who are recognised as international students and must pay international fees until they have lived in Ireland for 3 years. The education strategies in Ireland also do not fully account for gender, which can broadly impact girls and women in education, including increasing female presence in male-dominated subjects such as STEM. Comparatively, Northern Ireland can improve in areas such as access to digital skills and infrastructure. Both are essential to full participation in society, economy and democracy in the twenty-first century. Northern Ireland must develop a digital strategy for education to ensure access to digital skills and the needed infrastructure for technologies.

Countries globally faced similar problems during the pandemic but experienced them significantly differently, with many young people unable to access education, especially in low-income countries that did not have the technologies or infrastructure to move education online. This pilot demonstrates a further need for public officials to understand national education systems and how policies must shift to meet societal change since COVID-19.

This tool can help identify variables influencing decisions and actionable outcomes to improve existing systems. For example, on a top-down or institutional level, governments and universities can ensure more bespoke admission conditions for lower-income refugees and asylum seekers to access higher education and funding to attend.

Researchers and policymakers can use the IEI in different contexts beyond Ireland and Northern Ireland. As the tool is a pilot, these communities of individuals can draw on it as a foundation for specific contexts or collaborate to enhance the existing model. For instance, the study's limitations show that some questions may be more significant in certain countries than others. The more countries processed through the IEI will enable a broader dataset from which to draw and increase the model's applicability to most contexts.

## REFERENCES

Anonymous. (2021). *Department for the Economy*. (S. Clark, Interviewer).

Central Statistics Office (CSO). (2011). *'Census', Dublin: Government of Ireland*. [https://www.cso.ie/en/media/csoie/census/documents/census2011forms/English\\_Household\\_form\\_wit\\_do\\_not\\_complete\\_stamp-Census\\_2011.pdf](https://www.cso.ie/en/media/csoie/census/documents/census2011forms/English_Household_form_wit_do_not_complete_stamp-Census_2011.pdf)

Central Statistics Office (CSO). (2019). *Information society statistics - households 2019*. Dublin: Government of Ireland. <https://www.cso.ie/en/releasesandpublications/ep/p-isshh/information societystatistics-households2019/householdinternetconnectivity/>

Central Statistics Office (CSO). (2021). *Education Statistics*. Dublin: Department of Education. <https://www.cso.ie/en/databases/departamentoeducation/>

Department for Communities (DIC). (2020). *New disabilities strategy*. Belfast: Northern Ireland Government. <https://www.communities-ni.gov.uk/articles/new-disability-strategy>

Department for Communities (DIC). (2021). *Disabilities*. Belfast: Northern Ireland Government. <https://www.communities-ni.gov.uk/articles/disability> [Accessed 24.09.2021]

Department for the Economy (DfE). (2021a). *A skills strategy for Northern Ireland – Skills for a 10x economy*. Belfast: Northern Ireland Government. [https://consultations.nidirect.gov.uk/dfe-skills-and-business-development-group/skills-strategy-for-northern-ireland/user\\_uploads/full-version-skills-strategy.pdf](https://consultations.nidirect.gov.uk/dfe-skills-and-business-development-group/skills-strategy-for-northern-ireland/user_uploads/full-version-skills-strategy.pdf)

Department for the Economy (DfE). (2021b). *Higher education strategies for Northern Ireland*. Belfast: Northern Ireland Government. <https://www.economy-ni.gov.uk/articles/higher-education-strategies-northern-ireland>

Department for the Economy (DfE). (2021c). *Higher education division*. Belfast: Government of Northern Ireland, <https://www.economy-ni.gov.uk/articles/higher-education-division>

Department of Education (DENI). (2009). *Success through STEM*. Belfast: Northern Ireland Government. <https://www.education-ni.gov.uk/articles/stem-strategy>

Department of Education (DENI). (2017). *Statistical bulletin: Year 12 and year 14 examination performance at post-primary schools in Northern Ireland 2015–16*. Belfast: Northern Ireland Government.

<https://www.education-ni.gov.uk/sites/default/files/publications/education/Revised%20-%20Year%2012%20and%20Year%2014%20examination%20performance%20at%20post%20primary%20schools%20in%20Northern%20Ireland%202015%2016.pdf>

Department of Education (DENI). (2021). *Publications*. Belfast: Northern Ireland Government. <https://www.education-ni.gov.uk/publications?search=&Search-exposed-form=Go>

Department of Education (DES). (2004). *A brief description of the Irish education system*. Dublin: Government of Ireland. <https://www.education.ie/en/publications/education-reports/a-brief-description-of-the-irish-educationsystem.pdf>

Department of Education (DES). (2017). *Department of Education and Skills, STEM education policy statement 2017–2026*. Dublin: Government of Ireland. Retrieved from <https://www.education.ie/en/The-Education-System/STEM-Education-Policy/stem-education-policy-statement-2017-2026-.pdf>

Department of Education (DES). (2019a). *Action plan for education 2019*. Dublin: Government of Ireland. <https://assets.gov.ie/24356/56207ef5c4ea4a9896ca0c5caed10579.pdf>

Department of Education (DES). (2019b). *Statement of strategy 2019–2021*. Dublin: Government of Ireland. Retrieved from <https://www.gov.ie/en/publication/56137-department-of-education-statement-of-strategy-2021-2023/>

Department of Education (DES). (2021a). *Enacted legislation*. Dublin: Government of Ireland, <https://www.education.ie/en/The-Education-System/Legislation/>

Department of Education (DES). (2021b). *Minister Foley announces development of a new digital strategy for schools, 2021*. Dublin: Government of Ireland, <https://www.gov.ie/en/press-release/d32fc-minister-foley-announces-development-of-a-new-digital-strategy-for-schools/>

Department of Finance. (2017). *A strategy for digital transformation of public services 2017–2021*. Belfast: Northern Ireland Government. <https://www.finance-ni.gov.uk/sites/default/files/publications/dfp/Digital%20Transformation%20Strategy%202017-21.pdf>

Department of Further and Higher Education, Research, Innovation and Science. (2021). *Statement of strategy 2021–2023*. Dublin: Government of Ireland. <https://www.gov.ie/en/organisation-information/3f066-statement-of-strategy-2021-2023/>

Department of Justice. (2017). *National Disability Inclusion Strategy, 2017–2021*. Dublin: Government of Ireland. <http://www.justice.ie/en/JELR/dept-justice-ndi-inclusion-strategy-booklet.pdf>

Department of the Environment, Climate and Communications. (2013). *Doing more with digital: National Digital Strategy for Ireland: Phase I - digital engagement*. Dublin: Government of Ireland. <https://www.gov.ie/en/publication/f4a16b-national-digital-strategy/>



- Department of the Environment, Climate and Communications. (2021). *National Broadband Plan*. Dublin: Government of Ireland. <https://www.gov.ie/en/publication/c1b0c9-national-broadband-plan/>
- Economist Intelligence Unit (EIU). (2016). *Measuring well-governed migration: The 2016 migration governance index 2016*. London: The Economist Intelligence Unit. [https://www.iom.int/sites/g/files/tmzbd1486/files/our\\_work/EIU-Migration-Governance-Index-20160429.pdf](https://www.iom.int/sites/g/files/tmzbd1486/files/our_work/EIU-Migration-Governance-Index-20160429.pdf)
- Education Authority. (2017). *Interim strategic plan 2017–2027*. Belfast: Northern Ireland Government. [https://strategicplan.eani.org.uk/documents/EA\\_Strategic\\_Plan\\_2017.pdf](https://strategicplan.eani.org.uk/documents/EA_Strategic_Plan_2017.pdf)
- Education Authority. (2021a). *Digital transformation in schools*. Belfast: Government of Northern Ireland, <https://www.education-ni.gov.uk/articles/digital-transformation-schools>
- Education Authority (2021b). *Special educational needs (SEN)*. Belfast: Government of Northern Ireland. <https://www.eani.org.uk/parents/special-educational-needs-sen>
- Education in Ireland. (2021). *Non-EU undergraduate tuition costs*. Education in Ireland, <https://www.educationinireland.com/en/How-Do-I-Apply-/Tuition-Costs-Scholarships/Fees-for-Non-EU-Students/Non-EU-Undergraduate-Tuition-Costs.html>
- European Commission for Northern Ireland. (2021). *Employers and service providers*. Further & higher education providers. <https://www.equalityni.org/FHE>
- Government of Ireland. (1998). *Education act*. Dublin: Government of Ireland. <http://www.irishstatutebook.ie/eli/1998/act/51/enacted/en/html>
- Government of Ireland. (2000a). *Education (welfare) act*. Dublin: Government of Ireland. <http://www.irishstatutebook.ie/eli/2000/act/22/enacted/en/html>
- Government of Ireland. (2000b). *Equal status act*. Dublin: Government of Ireland, <http://www.irishstatutebook.ie/eli/2000/act/8/section/7/enacted/en/html#sec7>
- Harkavy, I., Bergan, S., Gallagher, T., & van Land, H. (2021). Universities must help shape the post-COVID-19 world. In S. Bergan, T. Gallagher, R. Munck, & H. V. Land (Eds.), *Higher education's response to the Covid-19 pandemic: Building a more sustainable and democratic future* (Vol. 25, pp. 21–30). Council of Europe Higher Education Series.
- Ireland's National Education and Research Network. (2021). *Schools network*. HEAnet, <https://www.heanet.ie/schools>
- Iyengar, R. (2021). Rethinking community participation in education post-Covid-19. *Prospects*, 51, 437–447. <https://doi.org/10.1007/s11125-020-09538-2>
- Lawlor, D., & Burke, S. (2020). *Education in Ireland: Statistical snapshot*. Dublin: Houses of the Oireachtas. [https://data.oireachtas.ie/ie/oireachtas/libraryResearch/2020/2020-04-03\\_1-rs-infographic-education-in-ireland-a-statistical-snapshot\\_en.pdf](https://data.oireachtas.ie/ie/oireachtas/libraryResearch/2020/2020-04-03_1-rs-infographic-education-in-ireland-a-statistical-snapshot_en.pdf)

- National Archives. (1986). *The education and libraries (Northern Ireland) order*. legislation.co.uk, <https://www.legislation.gov.uk/nisi/1986/594/contents>
- National Archives. (1995). *Disability Discrimination Act 1995*. legislation.co.uk. <https://www.legislation.gov.uk/ukpga/1995/50/contents>
- National Archives. (2006a). *Education (Northern Ireland) order*. legislation.co.uk. <https://www.legislation.gov.uk/nisi/2006/1915/contents>
- National Archives. (2006b). *Special educational needs and disability act (Northern Ireland)*. legislation.co.uk. <https://www.legislation.gov.uk/nia/2016/8/contents>
- National Archives. (2014). *Education Act (Northern Ireland)*. legislation.co.uk. <https://www.legislation.gov.uk/nia/2014/12/contents>
- Nidirect. (2021). *Tuition fees*. Nidirect government services. <https://www.nidirect.gov.uk/articles/tuition-fees>
- Northern Ireland Statistics and Research Agency (NISRA). (2018). *PfG 2016–21 measurement annex - proportion of premises with access to broadband services at speeds at or above 30 mbps*. Belfast: Northern Ireland Government. <https://www.nisra.gov.uk/publications/pfg-2016-21-measurement-annex-proportion-premises-access-broadband-services-speeds-or>
- Northern Ireland Statistics and Research Agency (NISRA). (2020). *NI Profile, key statistics in Northern Ireland*. Belfast: Northern Ireland Government. [https://www.nisra.gov.uk/sites/nisra.gov.uk/files/publications/NI%20IN%20PROFILE%20-%20February%202020\\_0.pdf](https://www.nisra.gov.uk/sites/nisra.gov.uk/files/publications/NI%20IN%20PROFILE%20-%20February%202020_0.pdf)
- OGL. (2021). *United Nations global convention on the recognition of qualifications concerning higher education. Foreign, commonwealth and development*. Office. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1004152/MS\\_4.2021\\_Global\\_Convention\\_Recognition\\_Qualifications\\_Higher\\_Education.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1004152/MS_4.2021_Global_Convention_Recognition_Qualifications_Higher_Education.pdf)
- Organisation for Economic Co-operation and Development (OECD). (2017). *PISA 2015 assessment and analytical framework: Revised edition*. Paris: OECD Publishing. <https://www.oecd.org/education/pisa-2015-assessment-and-analytical-framework-9789264281820-en.htm>
- Organisation for Economic Co-operation and Development (OECD). (2019). *Education at a glance 2019*. OECD. [https://www.oecd.org/education/education-at-a-glance/EAG2019\\_CN\\_IRL.pdf](https://www.oecd.org/education/education-at-a-glance/EAG2019_CN_IRL.pdf)
- Organisation for Economic Co-operation and Development (OECD). (2020). *Education at a glance 2020: OECD indicators*. OECD. <https://www.oecd.org/education/education-at-a-glance-19991487.htm/?refcode=20190209ig>
- O'Sullivan, K., Clark, S., MacLauchlan, M., & Marshall, K. (2021). A just digital framework to ensure equitable achievement of the sustainable development goals. *Nature Communications*, 12, 6345. <https://doi.org/10.1038/s41467-021-26217-8>

- Perry, C. (2016). *Research and information service research and information service*. Belfast: Northern Ireland Government. <http://www.niassembly.gov.uk/globalassets/documents/raise/publications/2016-2021/2016/education/4416.pdf>
- Public Policy and Management Institute. (2021). *Education and youth in post=COVID-19 Europe-crisis effects and policy recommendations*. Vilnius: Public Policy and Management Institute. [https://www.europarl.europa.eu/RegData/etudes/STUD/2021/690872/IPOL\\_STU\(2021\)690872\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2021/690872/IPOL_STU(2021)690872_EN.pdf)
- United Nations (UN). (1948). *Universal declaration of human rights*. United Nations. <https://www.un.org/sites/un2.un.org/files/udhr.pdf>
- United Nations (UN). (2020). *Policy brief: Education during COVID-19 and beyond*. New York: United Nations. [https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2020/08/sg\\_policy\\_brief\\_covid-19\\_and\\_education\\_august\\_2020.pdf](https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2020/08/sg_policy_brief_covid-19_and_education_august_2020.pdf)
- United Nations Educational, & Scientific and Cultural Organization (UNESCO). (2013). *The global learning crisis: Why every child deserves a quality education*. Paris: UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000223826>
- United Nations Educational, & Scientific and Cultural Organization (UNESCO). (2019). *Global convention on the recognition of qualifications concerning higher education*. UNESCO. <https://en.unesco.org/generalconference/40>
- United Nations Educational, Scientific and Cultural Organization (UNESCO). (2020). *The futures of education after COVID-19: Regional dialogue synthesis report*. Beirut: United Nations Educational, Scientific and Cultural Organization. [https://en.unesco.org/sites/default/files/synthesis\\_report\\_future\\_of\\_education\\_webnair\\_1.pdf](https://en.unesco.org/sites/default/files/synthesis_report_future_of_education_webnair_1.pdf)
- United Nations Educational, & Scientific and Cultural Organization (UNESCO). (2021). *Quality and learning indicators*. LearningPortal: <https://learningportal.iiep.unesco.org/en/issue-briefs/monitor-learning/quality-and-learning-indicators>
- United Nations Treaty Collection (UNTC). (1976a). *Convention on international covenant on economic, social and cultural rights*. United Nations. [https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg\\_no=IV-3&chapter=4](https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=IV-3&chapter=4)
- United Nations Treaty Collection (UNTC). (1976b). *Convention on the elimination of all forms of discrimination against women*. United Nations. [https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg\\_no=IV-8&chapter=4](https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=IV-8&chapter=4)
- United Nations Treaty Collection (UNTC). (1990). *United Nations convention on the protection of the rights of all migrant workers and members of their families*. United Nations. [https://treaties.un.org/Pages/showDetails.aspx?objid=080000028004b0a9&clang=\\_en](https://treaties.un.org/Pages/showDetails.aspx?objid=080000028004b0a9&clang=_en)

United Nations Treaty Collection (UNTC). (1992). *United Nations convention on the rights of the child*. United Nations. [https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg\\_no=IV-11&chapter=4&clang=\\_en](https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=IV-11&chapter=4&clang=_en)

United Nations Treaty Collection (UNTC). (2018). *United Nations convention on the rights of persons with disabilities*. United Nations. [https://treaties.un.org/Pages/showDetails.aspx?objid=080000028017bf87&clang=\\_en](https://treaties.un.org/Pages/showDetails.aspx?objid=080000028017bf87&clang=_en)