



An Roinn Oideachais
Department of Education

The Refined DEIS identification model

Social Inclusion Unit
Department of Education
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Acronyms

DCEDIY	Department of Children, Equality, Disability, Integration and Youth
DE	Department of Education
DEIS	Delivering Equality of Education in Schools
DOH	Department of Health
DHLGH	Department of Housing, Local Government and Heritage
DOJ	Department of Justice
DRCD	Department of Rural and Community Development
EAL	English as an additional language
ERC	Educational Research Centre
EROC	Emergency Reception and Orientation Centre
HAP	Housing Assistance Payment
HEA	Higher Education Authority
HP Index	Pobal HP Deprivation Index
HSCL	Home School Community Liaison Scheme
IPAS	International Protection Accommodation Services
NEPS	National Educational Psychological Service
NTRIS	National Traveller and Roma Inclusion Strategy
OECD	Organisation for Economic Co-operation and Development
PASS	Pathway Accommodation and Support System
POD	Primary Online Database
PPOD	Post-Primary Online Database

SEN	Special educational needs
SET	Special education teacher
SNA	Special needs assistant

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Summary

When the Delivering Equality of Opportunity in Schools (DEIS) programme was first established in 2005, schools were identified for inclusion in the programme at primary level based on survey information provided by school principals. The survey included questions on a range of socio-economic variables. At post-primary level, inclusion of schools in DEIS was based on centralised information available at that time: the percentage of students with medical cards, school level retention rates for several cohorts and Junior Certificate achievement data.

Following a review of the DEIS programme, which resulted in the publication of the *Report on the Review of DEIS¹* and *DEIS Plan 2017*, and drawing on the feedback from stakeholders, an objective approach to the identification of schools for inclusion in DEIS was developed. The key data sources used in the DEIS identification process were data from the Department of Education's (the Department) Primary Online Database (POD) and Post-primary Online Database (PPOD), and Central Statistics Office (CSO) data from the National Census of Population as represented in the Pobal HP Deprivation Index for Small Areas (HP index). The HP index provides a method of measuring the relative affluence or disadvantage of a small geographical area using data compiled from the National Census. It is used by several State agencies for the identification of disadvantage, for example in order to target resources to communities most in need.

The initial application of the HP index in the DEIS identification model in 2017 was based on the concept of assessing the percentage of students with a HP index of -10 or below, where -10 represents the HP score that is one standard deviation below the mean and the point at which the label 'disadvantaged' is applied by the authors of the index. When the 2017 DEIS identification model was applied, the criteria used to identify schools for inclusion in the DEIS programme was based on the percentage of students in a school from small areas that had a HP index of -10 or below.

The DEIS Plan published in 2017 noted that further analysis of the DEIS identification model was merited to identify refinements which may improve its accuracy and application in terms of resource allocation. In addition, a considerable undertaking of work was carried out to improve the accuracy of data on the POD and PPOD systems and the mapping process required for linking those addresses to the relevant HP index small areas.

The DEIS technical group set out to identify refinements which would provide a model for identification of schools and allocation of resources under the DEIS programme which would

- (i) prioritise the provision of supports to children with the highest levels of disadvantage and,
- (ii) prioritise schools with the highest levels of disadvantage and,

¹ Detail of background and conclusion of the Report on the Review of DEIS are on pg 9

- (iii) be consistent with the allocation of resources on a sliding scale that reflects the relative level of disadvantage of each school.

A comprehensive and comparative analysis was conducted by the DEIS technical group, including consultation with school management and national parent representative bodies and teacher unions. This extensive analysis, examination and consultation has identified the following refinements which have been added to the existing model.

1. Extension of the scope of disadvantage

The model now accounts for students who are from areas designated borderline disadvantaged, that is, those with a HP index score of between -7.5 and -10. This improves on the single cut-off point of the 2017 version of the model and allows for the disadvantage of schools with high proportions of students who are from borderline disadvantaged areas to be reflected.

2. Weighted approach

Students from areas with a HP index score of -7.5 and below in each individual school are grouped into three groups based on their level of disadvantage and assigned a weighting to reflect the severity of their relative disadvantage:

- those with a HP index score of -20 or below are accorded a status of very disadvantaged,
- those with a HP index score between -10 and -20 are accorded a status of disadvantaged
- those between -7.5 and -10 are accorded a status of borderline disadvantaged.

This allows for the relative severity of disadvantage within an individual school to be reflected in the overall model.

3. Traveller and Roma students

The school enrolment database allows students to voluntarily self-identify their ethnicity. The refined DEIS identification model includes a component to reflect the level of educational disadvantage experienced by students who have self-identified as Traveller or Roma. Where a school has students who have chosen to self-identify on the POD and PPOD systems as Traveller or Roma, these students are assigned a status of disadvantage which ensures that they are considered within the application of the model, independent of the HP index and this is reflected in the school's overall disadvantage score. This is based on analysis which showed that educational and employment outcomes for Traveller and Roma are equated to those of people who come from areas of very high deprivation levels on the HP index.

4. Students residing in International Protection Accommodation Services centres

The refined DEIS identification model includes a component to reflect the level of educational disadvantage experienced by students who reside in International Protection Accommodation Services (IPAS) centres or Emergency Orientation and Reception Centres (EROC). The address information of the centres was matched against the address data on the POD and PPOD systems. The addresses of the centres are accorded a status of disadvantage which reflects that assigned to an established accommodation centre under

the HP index, based on the 2016 census data. This means that where a school has addresses on the POD and PPOD system which match the addresses of IPAS or EROC settings, these addresses are assigned a status of disadvantage which ensures that they are considered within the application of the model, independent of the HP index (as it applies at small area level) and this is reflected in the school's overall disadvantage score.

5. Students experiencing homelessness

The refined DEIS identification model includes a component, within the level of data available at this time, to reflect the level of educational disadvantage experienced by students who are experiencing homelessness.

The Department engaged with the Department of Housing, Local Government and Heritage (DHLG) and with the Dublin Regional Homeless Executive (DRHE) to enable the secure and confidential sharing of the addresses of this State-funded emergency accommodation. These addresses are then matched against the address data on the POD and PPOD systems. Where a school has student addresses on the school enrolment database which match the addresses of the State-funded emergency accommodation overseen by local authorities, these addresses are assigned a status of disadvantage which ensures that they are considered within the application of the model, independent of the HP index (as it applies at small area level) and this is reflected in the school's overall disadvantage score. While the inclusion of this measure does not account for every student experiencing homelessness, it makes use of the data available on State-funded homeless accommodation.

Application of the refined DEIS identification model

In terms of applying the refined DEIS identification model there are two methods being used.

A school's initial disadvantage score was calculated by assigning the weights and summing the proportion of students in each of the three disadvantaged groupings together. Schools' scores were then standardised relative to their respective primary or post-primary score distributions. This provided a standardised disadvantage score for each school.

In addition to the above, the proportion of students with a HP score at or below -10 in each school was computed.

Schools are identified for inclusion in the DEIS programme based on their standardised disadvantage score **and/or** the proportion of students with a HP score at or below -10. Schools with the highest levels of disadvantage under either of these measurements are included in the DEIS programme.

Background

The Review of DEIS and development of a new DEIS identification model

When the Delivering Equality of Education in Schools (DEIS) programme was first established in 2005 schools were identified for inclusion in the programme using different means than currently, and the methods differed at primary and post-primary levels. At primary level a survey of school principals provided data on the percentage of students² in the school with the following characteristics³: – parents who were unemployed; living in local authority accommodation; from lone parent families; of Traveller ethnicity; from large families (more than 5 children); and eligible for free books. At post-primary level⁴ centralised information was used to identify schools for inclusion: the percentage of students with medical cards; school level retention rates for several cohorts; and Junior Certificate achievement data over a period of time.

The DEIS review process in 2015 and 2016 included a comprehensive examination of the options to allow for the development of an improved methodology for the measurement of schools' levels of disadvantage. In the consultation process for the review, it was clear that schools did not want to return to a survey based approach given the additional administrative burden this put on schools. It was considered unfair to expect schools to gather sensitive socioeconomic data on their school communities. Also, there was a demand for a more responsive methodology; *that is*, one that could reflect demographic and other changes in school communities. This latter point was viewed as critical, given that the social context is a key component in the needs analysis for the DEIS programme. The availability of school data sources through the Department's student databases (Primary Online Database or 'POD' at primary and Post-Primary Online Database or 'PPOD' at post-primary⁵) facilitated the Department in looking at other options. The development of the Pobal HP Deprivation Index (HP Index)⁶ – a theoretically sound and robust method of measuring the relative affluence or disadvantage of a particular geographical area using data compiled from the

² For the purpose of this report, the term 'student' refers to all children and young people in primary, post-primary and out-of-school education

³ Interested readers can find full details in: Archer, P. & Sofroniou, N. (2008). The assessment of levels of disadvantage in primary schools for DEIS. Dublin: ERC.

http://www.erc.ie/documents/deis_assess_disadv_prim_sch.pdf

⁴ See: Weir, S. (2006). A report on the procedures used to identify post-primary schools for inclusion in the School Support Programme under DEIS. Dublin: ERC.

http://www.erc.ie/documents/procedures_for_selecting_post-primary_schools_for_deis.pdf

⁵ The Primary Online Database (POD) and Post-Primary Online Database (PPOD) are nationwide databases of primary school and post-primary school students as they move through the education system. The system allows schools to make online returns and provides the department with some of the information needed in developing and evaluating educational policy. For further information see

<https://www.gov.ie/en/service/66258-primary-online-database-pod/> and

<https://www.gov.ie/en/service/43ddb5-post-primary-online-database-p-pod/>

⁶ See Haase, T., and J. Pratschke. 2017. The 2016 Pobal HP Deprivation Index for Small Areas (SA). <http://trutzaase.eu/wp/wp-content/uploads/The-2016-Pobal-HP-Deprivation-Index-Introduction-07.pdf> .

Central Statistics Office (CSO) National Census – offered significant potential to form a key part of a new methodology.

The DEIS identification methodology that was developed in 2017 provided an objective approach to the identification of schools for DEIS. The key data sources used in the DEIS identification process were the Department of Education's POD and PPOD, together with CSO data from the National Census of population as represented in the HP index at small area level. Individual student address data supplied by schools were anonymised and matched to HP index small areas to accord a relevant deprivation score. From this a school-level aggregate measure of concentrated disadvantage was derived.

The DEIS Technical Group

The DEIS technical group (technical group) established under the DEIS Review process was given a brief to consider relevant criteria for identification of concentrated levels of disadvantage in schools and to examine currently available data sources in order to determine an appropriate methodology for the development of a new assessment framework with options to cater for ongoing identification of newly established schools, including schools established by amalgamation of existing schools.

The technical group includes representation from the Department's Social Inclusion Unit, Statistics Unit, Special Education Section and Inspectorate and senior researchers from the Educational Research Centre (ERC).⁷

The initial work of the technical group included a review of the identification methodology used in 2005/6; new options made possible by developments in data sources both internal to the Department and external publically available data; consideration of the outcome of stakeholder consultations; and the input of additional technical expertise commissioned by the Group. This work led to the development of the objective DEIS identification approach used in 2017.

The DEIS Plan noted that further analysis of the DEIS identification model was merited to identify refinements which may improve its accuracy and application in terms of resource allocation. In the time since the inclusion of further schools in the DEIS programme in 2017, the technical group has continued its work, making improvements to the quality of the data available, considering further refinements to the model and assessing additional variables of educational disadvantage which would enhance the model. The technical group also held consultations with the education partners and external experts in order to inform this process and ensure the model, insofar as possible, reflects educational disadvantage as experienced across primary and post-primary schools.

⁷ Details of the full membership are available in Appendix 1

The work conducted and the findings of that analysis which have resulted in the development of the refined DEIS identification model are summarised within this report.

Supporting students at risk of educational disadvantage

The goal of government intervention to improve opportunities for students is to ensure that educational outcomes are unrelated to social background, as far as is possible. Government intervention to reduce inequity in education can help to improve social mobility and social inclusion, as well as reduce economic inequality. Equity in education means providing equality of opportunity to all students. Improving equity in education means ensuring that every student has an equal opportunity to achieve their potential and that any social or economic constraints that might prevent a student from having equal opportunities are mitigated.

The Department's Strategy Statement 2021-2023⁸, sets out the vision and mission of the Department of an educational system where every child and young person feels valued and is actively supported and nurtured to reach their full potential. In order to achieve this, the Strategy Statement sets out as one of its three high level goals a specific focus on ensuring equity of opportunity. *Goal 2: Ensure equity of opportunity in education and that all students are supported to fulfil their potential*, recognises that equality of opportunity and inclusivity must be fundamental principles in our education system. The successful delivery of this goal means that our school system is open and welcoming for all students, regardless of background, and that in particular, students at risk of educational disadvantage will be supported to achieve their full potential.

Educational disadvantage refers to *the impediments to education arising from social or economic disadvantage which prevent students from deriving appropriate benefit from education in schools*⁹. Contexts that can give rise to this risk include socio-economic disadvantage, being a Traveller or a member of the Roma communities, or accommodation arrangements, including homelessness or residing in an International Protection Accommodation Service (IPAS) setting or Emergency Reception and Orientation Centre (EROC). The DEIS programme complements the wide range of universal supports provided to all schools, DEIS and non-DEIS, to support the inclusion of all students and address barriers to students achieving their potential. Supplementing these universal supports, the DEIS programme provides a targeted and equitable way to address concentrated educational disadvantage that promotes equity and has benefits for students, including their long-term outcomes, which in turn maximises their potential to contribute to society resulting in overall societal and macroeconomic benefits. International research shows that the strength of the relationship between social and economic background and learning outcomes varies substantially across education systems. This suggests that less

⁸ <https://www.gov.ie/en/publication/56137-department-of-education-statement-of-strategy-2021-2023/>

⁹ As defined in Section 32(9) of the Education Act 1998.

favourable outcomes are not inevitable for disadvantaged students and provides a justification for targeting support where it is needed most.

Universal supports for schools to assist students at risk of educational disadvantage

Disadvantage occurs throughout our communities and schools, and resources are provided to all schools to support all children to have the opportunity to reach their potential. The very nature of our school system is predicated on it being publicly funded. Universal provision, that all children can attend school for free, means that no child is excluded from accessing school due to financial disadvantage. The Department provides a wide range of supports to all schools, DEIS and non-DEIS, to support the inclusion of all students and address barriers to students achieving their potential.

In recent years the Department has reduced class sizes at primary level, with new measures announced in Budget 2022 that will result in a general staffing average of 24:1 at primary level in schools outside DEIS Urban Band 1 for the 2022/23 school year. This will be the most beneficial staffing rate provided for schools in the history of the State. These smaller class sizes will support all children, but in particular will support children at risk of educational disadvantage in schools that are not in the DEIS programme.

The State currently spends in excess of 25% of its annual education and training budget (€9.2 billion) on making additional provision for children with special educational needs. This provides a range of supports for students with special educational needs, including special education teachers (SET), special needs assistants (SNAs), assistive technology and school building modifications. SETs and SNAs are allocated based on the profiled educational needs of each school and support early intervention and inclusion. The allocation model for SETs in mainstream settings is based on a school profile which includes a measure of disadvantage.

Additional measures and supports such as school book grants and access to the Department's National Educational Psychological Service (NEPS) are available for all schools. Other measures are in place to support students who hold a medical card, such as exemptions from fees for State examinations and school transport scheme charges. In addition to supports for school age children, the Department provides education policy and Inspection supports to the Early Childhood Care and Education programme which is a universal two-year programme provided to all children of the eligible pre-school age.¹⁰

¹⁰ This includes supports funded through the Department of Education only. There are also resources funded by the Department of Children, Equality, Disability, Integration and Youth, the Department of Social Protection, the Department of Further and Higher Education, Research, Innovation and Science and others to support families and support children to achieve their potential throughout the education continuum.

The DEIS Programme – targeted supports for schools with high concentrations of students at risk of educational disadvantage

The DEIS programme is the Department’s main policy initiative to respond to educational disadvantage. The DEIS programme focuses on targeting additional resources at those schools with the highest concentrations of students who are at risk of educational disadvantage. This is based on the existence of a ‘multiplier effect’, meaning that students in these schools have been found to have less positive educational outcomes, even taking account of individual social background. Smyth et al. (2015) note in *Learning from the Evaluation of DEIS* that there is a strong evidence base in the Irish context that the social class mix of a school matters, in particular in those urban schools with higher levels of children at risk of educational disadvantage which provides a rationale for providing targeted supports to these schools¹¹.

The DEIS Plan published in 2017 set out the vision for future interventions in the critical area of educational disadvantage policy and built on what had already been achieved by schools that have benefitted from the additional supports available under the initial DEIS programme, introduced in 2005.

The DEIS Plan includes five key goals:

- the implementation of a more robust and responsive assessment framework for the identification of schools and effective resource allocation;
- to improve learning experiences and outcomes for pupils in DEIS schools;
- to improve the capacity of schools leaders and teachers to engage, plan and deploy resources to their best advantage;
- to support and foster best practice through inter-agency collaboration;
- to support the work of schools by providing research, information, evaluation and feedback.

In the 2021/22 academic year there are 884 schools (687 primary and 197 post-primary) in the DEIS programme serving over 180,000 students. This represents approximately 20% of the overall school population. These schools were identified for inclusion in the programme in 2006 with a subsequent additional extension of the programme in 2017. Schools in the programme avail of access to supports such as home-school community liaison (HSCL) coordinators, reduced class sizes for Urban Band 1 schools, DEIS grants, enhanced school book grants, priority access to continuing professional development for teachers, enhanced access to leadership posts and access to the School Completion Programme¹². The Department’s Inspectorate supports DEIS schools in planning and through advisory visits.

¹¹ Smyth E., McCoy S. & Kingston G. (2015). *Learning from the Evaluation of DEIS*, Dublin, The Economic and Social Research Institute.

¹² <https://www.gov.ie/en/policy-information/4018ea-deis-delivering-equality-of-opportunity-in-schools/#supports-to-deis-schools>

DEIS identification model 2017 and the need for further analysis

DEIS identification model 2017

The key data sources used in the DEIS identification process are the Department of Education's POD, PPOD Databases and CSO data from the National Census of Population as represented in the HP index for small areas which is a method of measuring the relative affluence or disadvantage of a particular geographical area (*see section below*). These data are combined with student data supplied by schools, anonymised and aggregated to small area, to provide information on the relative level of concentrated disadvantage present in the student cohort of individual schools. All schools were considered using the model and there was no requirement for schools to gather data or submit an application.

In 2017, as a proof of concept of the model and in recognition of the need to extend the DEIS programme to additional schools, 79 schools, that were assessed as having the highest levels of concentrated disadvantage, were included in the DEIS programme, with a further 30 re-classified from DEIS Urban Band 2 to DEIS Urban Band 1 status on the basis of the new DEIS identification model. This additionality to the DEIS Programme came into effect from September 2017.

The HP Deprivation Index

The Pobal HP Deprivation index¹³ provides a method of measuring the relative affluence or disadvantage of a small geographical area, using data compiled from the National Census. It is used by several State agencies for the identification of disadvantage, for example, in order to target resources to communities most in need. Ireland is divided into approximately 18,500 small areas, each covering on average just under 100 households. Each area is assigned a HP deprivation index which serves as an indicator of relative affluence or deprivation. The HP index is based on the combination of three components of demographic profile, social class composition and labour market situation. More specifically, measures that are combined in the HP Index are related to demographic growth, dependency ratios, education levels, single parent rate, overcrowding, social class, occupation and unemployment rates.

The use of the index in the context of educational disadvantage is consistent with its use across a broad range of Government Departments and agencies including Department of Health (DOH), Department of Rural and Community Development (DRCD), Department of

¹³ See Haase, T., and J. Pratschke. 2017. The 2016 Pobal HP Deprivation Index for Small Areas (SA). <http://trutzaase.eu/wp/wp-content/uploads/The-2016-Pobal-HP-Deprivation-Index-Introduction-07.pdf>
To view a map detailing the relative Pobal HP index deprivation levels of each small area in the State see: <https://maps.pobal.ie/WebApps/DeprivationIndices/index.html>

Children, Equality, Disability, Integration and Youth (DCEDIY), Pobal and the Higher Education Authority (HEA). The adoption of the HP index for the identification of schools for inclusion in the DEIS programme allows for a consistent approach in the allocation of resources across Departments to combat the consequences of deprivation, whether through education, health or other resourcing models of service provision. It is also consistent with the view of the Department of Public Expenditure and Reform, under the Civil Service Renewal Strategy 2030 ambition for *continuous improvement of the lives of the public through well-designed policies and efficient and effective services, which are informed by data and policy insights*¹⁴.

A census-based approach to resourcing schools and providing targeted funding to those most in need is used in many other OECD countries. The OECD has noted that the use of census based approaches provides integrity to the system and reduces the reporting burden on schools. It also notes that the use of the best combination of indicators can overcome deficiencies in accuracy in targeting individual students¹⁵. The HP index uses ten indicators across three components of demographic profile in order to provide an accurate measure to small area level (with a small area constituting on average just under 100 households).

Analyses undertaken by the technical group in relation to the initial development of the identification model identified a significant correlation (*that is*, a strong relationship) between the HP index and educational outcomes, particularly in urban areas. The HP index data used in the current application of the refined DEIS identification model is from the 2016 National Census. The model is designed to be flexible and it is anticipated that following future National Censuses, the subsequent updated HP index can be incorporated into future iterations of the model. The CSO will conduct the next National Census on 3 April 2022. The census had been scheduled to take place in 2021 but following a Government decision, it was postponed for one year due to the impact of the COVID-19 pandemic¹⁶. The update of the HP index is commissioned by Pobal following the completion of the National Census. The construction of the HP index takes several months and begins once all census data have been prepared by the CSO.

The need for further analysis

The DEIS Plan noted that further analysis of the DEIS identification model was merited to identify refinements which may improve its accuracy and application in terms of resource allocation. The plan states that the improved data on the socio-demographic profile of schools resulting from the new identification model will have an impact not only on the assessment of schools for inclusion in the programme but also on the scaling of resources to

¹⁴ Department of Public Expenditure and Reform, 2021, *Civil Service Renewal Strategy 2030 – ‘Building on our Strengths’* <https://www.gov.ie/en/publication/efd7f-civil-service-renewal-2030/>

¹⁵ OECD (2021), "Towards equity in school funding policies", OECD Education Policy Perspectives, No. 41, OECD Publishing, Paris, <https://doi.org/10.1787/6a3d127a-en>

¹⁶ <https://www.cso.ie/en/csolatestnews/pressreleases/2020pressreleases/pressstatementpostponementofcensus2021/>

allow for more graduated levels of support. This in turn allows for the ultimate objective of allocating resources to best meet the identified need of individual schools.

In order to achieve this, and as a first step in the overall process, the address data on the POD and PPOD system needed to be as accurate as possible and this has been facilitated through enhancements to the databases to support schools in submitting accurate address information. As a second step, further analysis was also undertaken to examine other variables known to be strong predictors of educational disadvantage in the context of resource allocation.

The DEIS Plan is based on the premise that if we are to have the maximum possible impact on providing opportunities for students most at risk of educational disadvantage, then our extra resources must be targeted as closely as possible at those students with the greatest level of need. The implementation of the refined DEIS identification model, will be followed by the next phase, involving a further programme of work to create a more dynamic resource allocation model where levels of resources more accurately follow the levels of need identified by the refined DEIS identification model.

Improvement of the accuracy of student address data

The accuracy of student address data is vital to the process of assessing a school's level of concentrated disadvantage. An extensive detailed analysis on the quality of the data has been undertaken to support this. It is important to note that at all stages student data is anonymised and the process is conducted in line with general data protection regulations.

In order to match a HP index small area score to each student address¹⁷, using the data from the POD and PPOD systems, each address is mapped where possible to an Eircode or one small area as outlined in the Pobal HP deprivation index map. Each address is then assigned the relevant HP index score of their small area. A concentrated deprivation score is then calculated for the schools through the accumulation of the individual HP index scores of its overall enrolment.

The initial responsibility of ensuring accurate addresses are input into the Primary Online Database (POD) and the Post-Primary Online Database (PPOD) systems lies with the schools themselves. The Department has communicated this message to the school system since the initial application of the new DEIS identification model in 2017. The initial steps taken by the Department since 2017 to improve upon the DEIS identification model were to support the improvement of the accuracy of the address data returned by schools on the POD and PPOD system.

Eircode lookup function for POD and PPOD

In order to support schools to provide accurate address information in their annual enrolment returns, the Department added an automated Eircode lookup function to the POD and PPOD systems. This has been in place for schools entering information for their new entrants from September 2019. This function allows schools to more easily enter an Eircode for each student and in turn allow for a more effective and accurate geocoding of addresses.

Enhanced mapping of address data from POD and PPOD

The initial process of mapping addresses from the 2018 POD and PPOD data was carried out, following a tender process, by a location intelligence solutions provider called Gamma using their Autoaddress verification API solution. This process mapped the addresses which were entered on the POD and PPOD systems. This work was then quality assured by a team within the Department by the Statistics and Social Inclusion Units. The quality assurance process involved identifying those addresses which were not linked to a single HP index small area and, using information from geographical information software, manually geocoded. If geographical data was found of higher accuracy (Eircode, single small area) using secondary automated geographical information systems or manual

¹⁷ Individual student data was anonymised throughout the process

address matching, it was substituted for the address and rechecked for further quality control. The new address data provided by schools annually on the POD and PPOD is now geocoded internally and quality assured as above by the Department.

Students resident in Northern Ireland

There are a small number of students in the Irish school system who are resident in Northern Ireland. These students do not have addresses which can be mapped to a HP index small area. The technical group agreed a proposal, where this may be a factor on whether schools meet the criteria for DEIS or not, a measurement would be used in respect of those students. This measure uses the All-Island 2011 Deprivation Index as a baseline and tracking forward using the 2016 HP Deprivation Index and the 2017 NI Multiple Deprivation Index Measure, to provide a more up-to-date disadvantaged score for the relevant schools. The reason for using the All-Island 2011 Deprivation Index as a baseline is that this is the last deprivation index which used the same measures across both Ireland and Northern Ireland.

Improvement of Address Data Quality

Following the application of the Eircode lookup function, the address mapping and quality assurance processes, 91.5% of primary and 91.3% of post-primary students are linked to an Eircode or to a single small area. A further 7.9% of primary students and 7.6% of post-primary students are linked to two or three small areas. For these cases, the average of the two or three HP deprivation scores is used in the model. As the HP index measures relative deprivation, the score of adjoining areas tends to vary gradually and not in large jumps, meaning the scores being averaged tend to be close in value, and this, combined with the low number of students involved, means the impact on the model is minimal. The technical group agreed that the address data had a level of accuracy which was more than sufficient at which to use student addresses from the POD and PPOD as a key data source to inform the model to assess schools for inclusion in the DEIS programme.

Quality Assurance on the application of the refined model to the POD and PPOD data

At each stage of the process, quality assurance checks have been carried out to ensure that at all times the process is secondary checked. Within the Department the mapping of address data and aggregation of the student HP index data was quality assured in advance of transfer to the ERC for the application of the refined DEIS identification model syntax. The data is securely transferred to the ERC under the data sharing agreement between the Department and the ERC. Within the ERC, the application of the syntax to the data is secondary checked by a second senior researcher in the ERC prior to the return of findings to the Department.

Consultation with Education Stakeholders

The review of the DEIS programme that took place in 2015 and 2016 involved a comprehensive consultation process with education partners, the community and voluntary sector, other Government Departments and agencies and with education academics and practitioners. Written submissions were also invited from education partners in June 2015 and were published on the Department's website. The "*Report on the Review of DEIS*" was subsequently published in 2017.

From this consultation process, and as outlined in the DEIS Plan, it was clear that schools wanted a change to the DEIS identification process that would reduce the administrative burden on school principals, address principals' concerns about the collection of sensitive data and provide for a more responsive methodology. This feedback, together with the availability of the HP index and school data sources through student enrolment databases (POD and PPOD) facilitated the Department's move to develop a new objective model.

As part of the process of refining the model, the Department has held two significant engagements with the education partners, comprising teacher unions, parents' representative groups and management bodies.

The first of these, held in March 2020, discussed the technical elements of the application of the HP index within the model. Education partners who were unable to attend were subsequently issued a copy of the presentation. At that stage all the education partners were invited to provide written submissions. Seven submissions were received. Those received generally welcomed the use of the HP index as a base data source for the model. Elements recommended by the education partners for further consideration by the technical group within the refinement of the model were:

- Traveller and Roma students
- students resident in IPAS and EROC settings
- the impact of housing issues and homelessness in particular
- the impact of crime
- the needs of students for whom English is an additional language
- a sliding scale of supports to address disadvantage

The second engagement with education partners took place in October 2020. This provided an update on progress by the Department in relation to the issues raised in March as well as a discussion on implementation of the model. The Department provided a general overview of research conducted by the technical group into the points raised at the initial consultation. It also outlined that it may not be possible to address all of the issues raised within the DEIS programme and that some issues would need to be addressed through provision of universal resources to schools to ensure all students are supported.

Throughout the process, the technical group's considerations were also informed by feedback in relation to the DEIS programme included in research and papers from advocacy groups, such as the Better Options Brighter Futures National Advisory Council paper,

*Addressing Child Poverty: Towards a National Child Poverty Action Plan.*¹⁸ The first-hand experiences described in the representations received from schools were also noted; schools which on a daily basis are seeking to meet the needs of students at risk of educational disadvantage in order to ensure that every child in their school has an equal opportunity to achieve their potential.

Throughout the process of refining the DEIS identification model, the technical group ensured that the input from those who would be most affected by the application of the model was given due consideration. This was to ensure that, as far as possible, the refined DEIS identification model can provide an objective and independent means of identifying schools serving high concentrations of students at risk of educational disadvantage. It is this information, together with other relevant research and data, which informed the analysis conducted by the technical group for the refined model.

¹⁸ <https://www.gov.ie/pdf/?file=https://assets.gov.ie/213580/928533d9-413d-4848-951f-80d21c515f65.pdf#page=null>

Analysis to identify refinements to the DEIS identification model

Analysis on how the model can reflect the composition of educational disadvantage

The initial application of the HP index in the DEIS identification model in 2017 was based on the concept of assessing the percentage of students in a school with a HP index of -10 or below, where -10 represents the HP index score that is one standard deviation below the mean and the point at which the label 'disadvantaged' is applied by the authors of the index. In broad terms, approximately one-sixth of the population falls one standard deviation or more below the mean. The schools identified in 2017 for inclusion in the programme were selected based on the percentage of students from small areas that had a HP index of -10 or below.

The strengths and limitations of this method were considered by the technical group. A strength of any and all models using the HP index is that they are based on high-quality, theoretically sound, and sensitive data (*that is*, can effectively distinguish between different levels of disadvantage across schools). A strength of the "-10 cutpoint" model is that it is intuitive. However, a significant limitation of this method was that students were either considered disadvantaged or not based on a single "cut off" point, (*that is*, a student must be from an area with a HP index of -10 or below to be considered disadvantaged). Analysis of the distribution of HP index scores within schools showed that schools could have a significant proportion of students with a HP index of -9 or -8, yet this would not be reflected in their measured level of disadvantage. This observation indicated that more fine-grained use of the data needed to be explored in order to provide a more sensitive measure, one that better captured the differences in distributions of HP index scores across schools. A second, related issue was that the overall composition of the school disadvantage profile, (*that is*, the proportion of relative disadvantage within schools was not taken into account); the model was not "weighted" to account for relative levels of disadvantage. It was therefore agreed that alternative options should be explored.

Specifically, the task undertaken by the DEIS technical group was to develop a model for identification of schools and allocation of resources under the DEIS programme that would:

1. Prioritise the provision of supports to students with the highest levels of disadvantage by including as many students as possible with very low HP index scores (-20 or lower, *that is*, the score associated with the most disadvantaged 2-3% of the distribution);
2. Permit DEIS to be administered at the level of the school and prioritise schools with the highest levels of disadvantage, by providing an accurate classification of schools in terms of level of concentration of disadvantage;
3. Be consistent with the allocation of resources on a sliding scale that reflects the relative level of disadvantage of each school.

A comprehensive and comparative analysis was conducted by the ERC on alternative approaches to measuring schools' levels of concentrated educational disadvantage taking into account the three principles outlined above. In all, eight options were examined and tested. Each option was examined with respect to its fit to the three principles above, with the technical group reviewing the outcomes and guiding the direction of the work of the ERC.

These analyses found that there was little, if any, evidence of any of the options being systematically biased against rural schools, smaller schools, Irish-medium schools or single-sex schools. The analyses also found that an approach which incorporated a weighting based on educational disadvantage at an individual level would, as might be expected, provide the best fit to principle 1. An approach which gives the greatest weight to students from areas with the highest levels of disadvantage and extends the scope of disadvantage to include students from areas with more moderate disadvantage at a lower weight in the overall measurement of the schools' overall levels of concentrated educational disadvantage was initially considered a good fit to the principles.

Following further assessment by the technical group, which focused both on overall fit and fit to schools of differing enrolment sizes and distributions of HP index scores, an approach which combined both the weighted approach and an approach based on the percentage of students with a HP index of -10 or below was established and assessed. This *combined* approach has the benefit of providing a better fit to schools with atypical distributions of HP index scores without diminishing the model's applicability under principle 1.

The final model chosen was thus viewed as providing an optimal fit since it takes into account (a) high proportions of students from disadvantaged areas as per the 2017 application of HP index, thereby allowing maximum continuity, and also (b) weights the relative severity of disadvantage within a school.

Analysis of other variables and the enhancement of the model

The HP index is based on the combination of three components of demographic profile, social class composition and labour market situation, combining measures related to demographic growth, dependency ratios, education levels, single parent rate, overcrowding, social class, occupation and unemployment rates. As previously stated, its use in the identification of schools for inclusion in the DEIS programme is confined to providing data at the small area level in which a student lives. On a limited number of variables, more information is available at the individual student level. One such variable is ethnicity. Data on POD and PPOD, and the annual school enrolment census, provides information on the numbers of students in a school who have self-identified as Traveller or Roma. Also, the address information on POD and PPOD can be used to determine the numbers of students in a school living in IPAS or EROC accommodation or in State-funded emergency homeless accommodation.

While analyses for the technical group have shown a strong relationship between the HP index and educational outcomes, it is recognised that demographic changes particularly

involving congregated settings within a small geographical area, such as the establishment of an IPAS or EROC setting or an increase in families requiring emergency homeless accommodation, may occur between National Censuses and may not be reflected in the HP index. The technical group assessed ways in which the DEIS identification model might be enhanced to ensure that, as far as possible, groups of students at risk of educational disadvantage who would be more likely to be impacted by changes between National Censuses can be taken into account as part of the overall model. In particular, the group considered where there were changes to congregated dwellings which would have a potential large impact on adjacent schools based on a multiplier effect. In considering this issue, the technical group examined both the overall quality of the data underpinning any model enhancements, and the extent to which any enhancements resulted in an improvement to the model. That is, the technical group agreed that only high-quality and reliable data should be considered for inclusion, and that any enhancements should, without rendering the model overly complex, result in a greater inclusion of these sub-groups of students.

Below is a summary of the analysis conducted by the technical group to enhance and validate the model in relation to each of these categories of students.

Traveller or Roma students

An initial analysis of the application of the DEIS identification model at school level, showed that when using HP index as a sole indicator of educational disadvantage, the deprivation score did not align with the concentrations of Traveller and Roma students enrolled in some schools. Therefore, the technical group explored an additional methodology to reflect the educational disadvantage impacting on those students.

An ethnic identifier is available on the POD and PPOD and the annual school enrolment census where parents/guardians of students can identify on a voluntary basis as Traveller, Roma or other ethnic background. This identifier in the annual school enrolment census is currently used to provide an increased rate of capitation to schools in respect of the enrolment of Traveller students.

The National Traveller and Roma Inclusion Strategy (NTRIS) 2017 – 2021¹⁹ recognises that “Travellers and Roma are among the most disadvantaged and marginalised people in Ireland”. An analysis of the DEIS identification model at school level showed that when using the HP index as a sole indicator of disadvantage, the level of educational disadvantage of Traveller and Roma students may not be fully captured. On average, the HP index uses data from just under 100 households in a small area to calculate a deprivation score based on the combined information for the inhabitants of that small area. From research, Traveller and Roma individuals experience more significant deprivation and are at high risk of educational

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<https://www.justice.ie/en/JELR/National%20Traveller%20and%20Roma%20Inclusion%20Strategy,%202017-2021.pdf/Files/National%20Traveller%20and%20Roma%20Inclusion%20Strategy,%202017-2021.pdf>

disadvantage. Therefore for the purposes of a model that aims to measure the levels of concentrated disadvantage experienced by school enrolments, the level of disadvantage experienced by Traveller and Roma students may be underestimated when using the HP index. This could occur, for example, where the HP index small area in which a number of Traveller or Roma students were living was not classified as disadvantaged.

The ERC and the Department's Statistics Unit conducted analysis to examine the levels of disadvantage experienced by Traveller and Roma students in Ireland. This analysis examined outcomes of people of Traveller and Roma ethnicity in employment and education in order to guide decision-making on the optimal treatment of Traveller and Roma students in the model. The ERC examined selected findings from the 2016 National Census related to Traveller outcomes in employment and education and considered how these compared to outcomes in areas with varying degrees of deprivation. The ERC's review concluded that employment and education outcomes of Travellers were consistent with very high levels of disadvantage. The Department's Statistics Unit analysed Leaving Certificate sittings for students in the 2011, 2012 and 2013 post-primary entry cohorts (*that is*, who completed Leaving Certificate in 2016 to 2019) and compared the numbers and probability of a student sitting the Leaving Certificate if they identified as a Traveller with students from different levels of disadvantage. This analysis also concluded outcomes were consistent with those students from disadvantaged small areas.

Therefore, on the basis of the evidence available, the technical group agreed to assign a HP index score to students who self-identified as Traveller or Roma which would ensure that they were considered within the application of the model, independent of the HP index (as it applies at small area level) and this will be reflected in the school's overall disadvantage score. A re-analysis of the model, using the revised criteria showed that its application is now more sensitive to Traveller and Roma ethnicity as an indicator of educational disadvantage, and hence more inclusive in this sense. This enhancement was therefore incorporated into the model.

Students resident in International Protection Accommodation Service centres

Where an IPAS or EROC setting, or a centre accommodating refugees under the Irish Refugee Protection Programme (commonly referred to as *Direct Provision* or *Emergency Reception and Orientation* centres (EROC) respectively) was in existence at the time of the last census, this is captured and the HP index for that small area will reflect the inhabitants of that area. However, a number of IPAS or EROC settings have opened since 2016. An initial analysis of the application of the DEIS identification model at school level, showed that when using the HP index as a sole indicator of educational disadvantage, the deprivation score did not align with the concentrations of students resident in IPAS or EROC settings enrolled in some schools. As a result, the deprivation score may not accurately reflect the educational disadvantage experienced by those students who are resident in IPAS or EROC settings which have been established since the National Census in 2016. Therefore, the technical group explored an additional methodology to reflect the level of educational disadvantage impacting on those students.

Where an IPAS or EROC setting opens, typically the children from the centre are enrolled across a number of local schools. In some cases, a large cohort of the children attend one school, although it is more common for these children to attend multiple schools in the community. Schools have access to supports outside of the DEIS programme to support these students such as Special Education teaching supports, English as an Additional Language (EAL) supports and NEPS supports. Given the large numbers of residents in any one setting, and that children attend local schools, it was considered prudent to ensure that the individual experience of educational disadvantage of students resident in IPAS or EROC settings would be captured under the refined DEIS identification model.

In the absence of other objective measures which would reflect the level of disadvantage of students residing in an IPAS or EROC setting which was set up between census wave, the application of a HP index score which is reflective of the small areas where IPAS or EROC settings were established at the time of the 2016 National Census was considered. Following an analysis of the HP index of small areas in which long standing centres are located, a HP index score reflective of an existing established centre was deemed to be applicable to all IPAS and EROC settings, unless the centre was already located in a HP index small area with a lower HP index score.

In order to accurately identify the location of centres, the Department's Social Inclusion and Statistics Units engaged with the DCEDIY to work from an up-to-date list of all centres, with the Eircodes of their locations. These addresses were then matched against the anonymised address data on the POD and PPOD systems and accorded a new HP index score within the application of the model. This means that where a school has student addresses on the POD and PPOD system which are IPAS or EROC settings, these addresses will be considered in the application of the model, independent of the HP index (as it applies at small area level) and this will be reflected in the school's overall disadvantage score.

While it was noted that there may be different levels of educational disadvantage among children who are resident in IPAS or EROC settings, in the absence of other objective measures, this proposal was accepted by the technical group as a suitable measure to account for the establishment of a centre between National Censuses. In accepting this, the technical group noted the additional supports available to schools who have students enrolled who reside in IPAS or EROC settings (*i.e.* relating to EAL, Special Education and NEPS).

Students experiencing homelessness

In the context of the DEIS identification model, the impact of homelessness was also considered by the technical group. There is a wide range of research which highlights the negative effects of a non-stable home environment on the ability of children to achieve their potential from education. The loss of stable housing can be accompanied by a loss in possessions and a break-up of the social supports for children. This can lead to negative impacts for children moving through important developmental processes in developing relationship and learning social roles. In the Irish context, *"Home Works: A Study on the Educational Needs of Children Experiencing Homelessness and Living in Emergency*

Accommodation” (Scanlon and McKenna, 2018)²⁰, highlighted that children living in homeless accommodation experience a unique set of difficulties which negatively impact on their ability to achieve their potential from their educational experience. Many homeless accommodation settings for families have established since the 2016 National Census.

Official homelessness data is produced by Local Authorities through the Pathway Accommodation and Support System (PASS). The data produced captures details of individuals in State-funded emergency homeless accommodation, arrangements that are overseen by Local Authorities and informs the monthly Homeless Report published by the Department of Housing, Local Government and Heritage (DHLGH). The Department engaged with the DHLGH and with the Dublin Regional Homeless Executive to enable the secure and confidential sharing of the addresses of this State-funded emergency accommodation. These addresses were then matched against the anonymised student address data on the POD and PPOD systems.

An initial analysis of the DEIS identification model at school level, showed that when using HP index as a sole indicator of disadvantage, the deprivation score may not always accurately reflect the educational disadvantage experienced by those students who are residing in State-funded emergency homeless accommodation, as this accommodation has mainly been established since the National Census in 2016. Therefore, the technical group explored additional methodology to reflect the educational disadvantage impacting on those students.

In order to fully capture the extent of the educational disadvantage effects of homelessness within the DEIS identification model, where a school has student addresses on the school enrolment database that match the addresses of the State-funded emergency homeless accommodation overseen by local authorities, these addresses will be considered within the application of the model, independent of the HP deprivation index (as it applies at small area level) and this will be reflected in the school’s overall disadvantage score.

While the inclusion of this measure does not account for every student experiencing homelessness, it makes use of the data available at this time in relation to State-funded homeless accommodation. This proposal was accepted by the technical group to account for the impact of homelessness in line with available data within the model.

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https://www.childrensrights.ie/sites/default/files/submissions_reports/files/Home%20Works%20Study%20on%20the%20Educational%20Needs%20of%20Children%20Experiencing%20Homelessness%20-%20Full%20Report.pdf

Other variables considered but not included in the model

The technical group considered other possible refinements in response to feedback provided during the consultation process and in representations from schools. However, after reviewing the data and evidence for each of the other potential refinements, the technical group concluded that, at this point in time, it was either not possible to incorporate the refinement due to data validity/quality issues, and/or that its inclusion would not enhance the model. The Department, however, recognises that each of the area/issues below could have an impact on schools, and will continue to consider ways to support affected schools through universal supports to address educational disadvantage and committing to cross-Departmental whole of Government approaches to tackle specific issues.

Students for whom English is an additional language

The Department has observed that many of the representations received from schools for inclusion in the DEIS programme, cite high numbers of students with English as an additional language (EAL) needs. Additional teaching support is provided to schools who cater for children with English as an additional language through the general staffing allocation and the SET model. Schools with high concentrations of students with EAL needs can also submit an appeal for additional teaching support. However, as part of a full validation of the model, consideration was given as to whether EAL should also be factored into the DEIS identification model.

A brief review of a selection of relevant research conducted by the ERC was considered in relation to associations between migrant status, home language and achievement. The ERC noted that from this review, findings suggest that while migrant students tended to have less positive educational outcomes than native students, differences in these outcomes are often no longer statistically significant, once the language of the home and/or socio-economic status is taken into account. In the studies reviewed, findings regarding home language and its association with achievement were more complex than those regarding migrant status. Emerging evidence from PIRLS 2016 and PISA 2018 indicates that home language is not significantly associated with reading achievement once student socio-economic and other variables are considered; however further detailed examination is needed. Overall the review conducted by the ERC of a selection of data and research in this area indicated that socio-economic status composition differences are likely a key factor in explaining differences between students from different language backgrounds.

Given that the SET and EAL teacher supports are available to schools based on literacy outcomes and high concentrations of EAL students, and the findings of the research review above, the technical group considered that the DEIS model in targeting socio-economically disadvantaged students, will also identify those students at greater risk that are based within EAL groups. On this basis, the technical group agreed to maintain a focus on socio-economic disadvantage; therefore EAL factors continue to be supported in all schools and not exclusively within DEIS.

Students living in areas impacted by high levels of crime

Noting its inclusion in representations received from schools and all-of-Government approaches to tackling the issue in certain regions, the technical group also considered the impact on students of residing in areas experiencing high levels of crime in the context of the refinements to the DEIS identification model.

A review of relevant research was conducted by the Department, and supported by the ERC in the provision of literature, in relation to the impact of residing in areas experiencing high crime on the educational outcomes for students. This is not a subject which has been examined in detail in the Irish context, however research was considered from across a range of jurisdictions. As a result, it was difficult to draw any definitive conclusions from the review in relation to the impact of crime on Irish students. However, studies such as the Greentown Project²¹ and the DOJ-commissioned scoping report into community safety and wellbeing in Drogheda²² highlight the adverse effects of crime and violence on children's wellbeing. The Department engaged with the DOJ in order to understand what relevant data was available and how it could be best used, and also with the Central Statistics Office in an effort to utilise available data on crime to provide an enhancement to the model. The Department also engaged with the project lead on the Greentown Project, University of Limerick School of Law Adjunct Professor in Youth Justice Dr. Sean Redmond.

Recorded crime data from the Garda Pulse System are produced on a quarterly basis by the CSO²³ and are available to Garda subdivision level. However, analyses by the technical group found that there would be a difficulty in applying this in a fair and equitable way to individual school level. As there are only just over 550 Garda subdivision areas and approximately 18,500 HP index small areas, within a Garda subdivision area there can be a number of HP index small areas which can have varied levels of affluence or deprivation. There can also be a number of different schools on which crime will have varying levels of impact. The technical group found that there was too much variation within the Garda subdivision areas to objectively establish an effective correlation between the data available and the impact of crime on specific schools. For example, while records may show a high level of crime in a Garda subdivision area, this may be localised within the subdivision to specific areas. However, if this data were to be used within the DEIS identification model it would assume a similar impact across all the subdivision area and not provide for an equitable or suitable additional element to measure the impact of crime on students at school level.

Therefore, at this time, the technical group accepted that unfortunately it is not possible to integrate the effects of crime on students within the DEIS identification model. The Department does however recognise the impact that living in areas that experience high

²¹ https://www.justice.ie/en/JELR/Pages/Greentown_Research_Project

²² <https://www.gov.ie/en/publication/c9386-scoping-report-into-community-safety-and-wellbeing-in-drogheda/>

²³ Recorded Crime statistics are compiled exclusively from administrative records created and maintained by An Garda Síochána, Ireland's National Police and Security Service, on their incident recording system PULSE (Police Using Leading Systems Effectively).

levels of crime can have on students and their development. In this regard the Department has committed to supporting cross-Departmental approaches to support students in specific areas.

Social Housing

The Housing Assistance Payment (HAP) scheme²⁴ is a form of social housing support provided by the Local Authorities for people who have a long-term housing need. The scheme is administered by the local authorities, which pay the landlords directly. A person/family must apply for the HAP scheme. Any household that qualifies for social housing support can apply for HAP. Qualification criteria for social housing support is set by individual local authorities and includes a specified income threshold which varies depending on local authority area²⁵. Once their application is approved, the person/family can access the HAP where there is suitable housing available.

The technical group considered whether the inclusion of data on the HAP scheme as an additional element in the model would enhance the model in identifying those at risk of educational disadvantage and found that it would not be suitable to include. One reason for this is that its inclusion may lead to 'double counting'. To qualify for HAP an individual or family must first meet the income threshold to qualify for Social Housing supports. The HP index is a multi-variate index which uses indicators to measure the level of deprivation in a small area. The variables used to construct the model include:

- unemployment rates
- % of population with primary school education only
- % of households headed by un-skilled or semi-skilled workers
- Mean numbers of persons per room
- % of households with a child under 15 years headed by a single parent

Each of these variables are indications of measures of the likelihood of a household to meet the income threshold to qualify for the HAP scheme or to experience issues related to housing. Including a measure to reflect access to the HAP scheme in addition to these variables risks 'double counting', as the conditions to qualify for HAP would be reflected in the HP index variables already.

A second issue is the application of different income thresholds by different local authority areas. This approach is contradictory to one of the main benefits of the DEIS identification model which is applied uniformly across the State. The thresholds for qualification are influenced by the relative rent costs in the relevant local authority areas. Therefore adding a

²⁴ <http://hap.ie/>

²⁵ For example: The maximum income threshold (3 adults and 4 or more children) for a household applying to Galway County Council is €30,000 (<https://www.galway.ie/en/services/housing/lahousing/>) whereas the maximum income threshold for the same size household in Cork City Council is €42,500 (<https://www.corkcity.ie/en/council-services/services/housing/social-housing-options-applications/what-is-social-housing-support-.html>).

weighting or a mechanism to reflect access to the HAP could be at odds with the uniformity of the refined DEIS identification model.

Therefore, at this time and with the data available, the technical group accepted that the inclusion of an element on the HAP scheme would not be an enhancement on the refined DEIS identification model, because (a) the variables captured within the HP index are those which are indications of the likelihood of meeting the income threshold for the HAP scheme, and (b) the thresholds for HAP are influenced by the relative rent costs in the relevant local authority areas and hence it is not applied uniformly nationwide.

The application of the refined DEIS identification model to school enrolment data from POD and PPOD

The steps in the application of the refined DEIS identification model to the school enrolment data on POD and PPOD may be described as follows:

1. The anonymised address data from the annual return provided on the POD and PPOD systems by primary and post-primary schools for the 2021/22 school year was mapped to match the student addresses to their relevant HP index small area. Schools do not need to apply.
2. At school level, the numbers of addresses matched to a HP index small area with a HP index score of -7.5 and below are grouped into 3 groups based on their level of disadvantage and assigned a weighting to reflect the severity of their relative disadvantage.

HP index score	Disadvantage Grouping	Weighting assigned per student
-7.5 to -10 (-10 < HP ≤ -7.5)	Borderline disadvantaged	0.5
-10 to -20 (-20 < HP ≤ -10)	Disadvantaged	1
-20 and below (HP ≤ -20)	Very disadvantaged	2

3. Three additional groupings of students are also assigned a disadvantage grouping and considered within the application of the model:
 - a. Students who have been self-identified on the school census and POD and PPOD systems as being Traveller or Roma
 - b. Where a school has student addresses on the school enrolment database which match the addresses of State-funded emergency homeless accommodation overseen by local authorities
 - c. Where a school has student address on the school enrolment database which match the addresses of IPAS and EROC settings.
4. Under the data sharing agreement between the Department and the ERC this information was securely transferred from the Department to the ERC for the

purpose of the application of the refined DEIS identification model syntax²⁶ to the data in order to provide the Department with the resultant findings.

Calculation of school 'standardised disadvantage score'

5. A school's *initial* disadvantage score is calculated by assigning the weights and summing the proportion of students in each of the three disadvantaged groupings together.
6. Schools' scores were then standardised relative to their respective primary or post-primary score distributions. This provided a standardised disadvantage score for each school.

Calculation of the proportion students in a school with HP index score of -10 or below

7. In addition to the above, the proportion of students with a HP index score at or below -10 in each school was computed.

Schools are identified for inclusion in the DEIS programme based on their standardised disadvantage score *and/or* the proportion of students in their school with a HP index score at or below -10.

²⁶ Details of the syntax are at Appendix 2.

Example of application of the model to a sample school

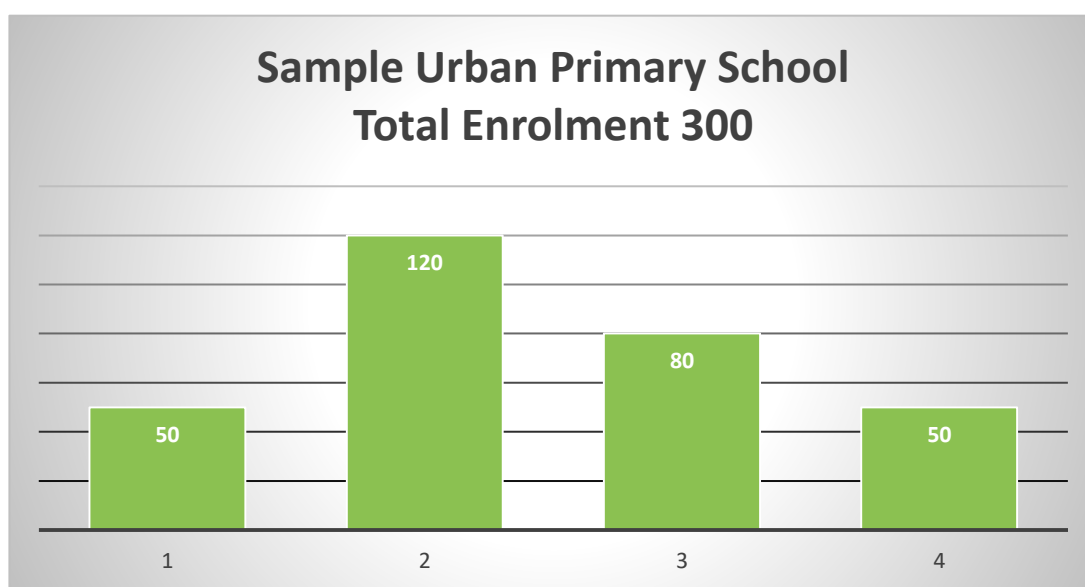


Figure 3: Sample of an urban primary school with the refined DEIS identification model applied.

Standardised disadvantage score

The above sample school has a total of 50 students are assigned to the 'very disadvantaged' grouping (HP index score of -20 or below). This grouping will be given a double weighting in the calculation of the initial weighted disadvantage score (*that is*, 50 will be considered as 100).

There are a total of 120 students who are assigned to the 'disadvantaged' grouping (HP index score of -10 to -20). This grouping will be given a single weighting in the calculation of the initial weighted disadvantage score.

There are a total of 80 students whose addresses are assigned to the 'borderline disadvantaged' grouping (HP index score of -7.5 to -10). This grouping will be given a weighting of 0.5 in the calculation of the initial weighted disadvantaged score (e.g. 80 will be considered as 40).

The 50 students with a HP index score of over -7.5 are not given any weighting in the model as students in this group are not considered at risk of educational disadvantage and do not fall directly within the scope of DEIS.

The three weighted amounts are added together and divided by the overall enrolment of the schools to give the initial weighted score $((100 + 120 + 40) / 300 = .87)$

Using the initial weighted score, the school is then standardised relative to the disadvantage scores of their relative primary or post-primary schools to assign a standardised disadvantaged score. This school would be at least one standard deviation from the mean.

Proportion of students with a HP index score of -10 or below

The above sample school has a total enrolment of 300 students of which 170 are in the disadvantaged or very disadvantaged groupings. This means that the proportion of students in this school with a HP index score of -10 or below is 56.6%.

Conclusion

This paper provides an overview of the refined DEIS identification model and the considerable undertaking of consultation, analysis, validation and quality assurance undertaken through the process of its development and application.

The refined DEIS identification model builds on the 2017 version, extends the scope of disadvantage captured and accounts for the severity of disadvantage through the application of a weighted process in tandem with the approach used in 2017. It also takes into account the educational disadvantage experienced by Traveller and Roma students, students residing in IPAS and EROC settings and those who are living in emergency homeless accommodation. The refined model provides schools with two opportunities to meet the criteria for inclusion: either through the standardised disadvantage score or the proportion of pupils in the school with a HP index score of -10 or below.

This model provides a measure of educational disadvantage for all schools and allows for policy makers to identify those schools with the highest levels of disadvantage for inclusion in the DEIS programme. This means that those schools most in need are provided with additional, targeted resources to complement the universal resources allocated by the Department to schools to address educational disadvantage.

Appendices

Appendix 1 – DEIS Technical Group

DEIS Technical Group 2018 to date	
Department of Education Social Inclusion Unit	Mary Cregg (Principal Officer)
Department of Education Social Inclusion Unit	Micheál Killilea (Assistant Principal Officer)
Department of Education Social Inclusion Unit	Susan Mulhall (Assistant Principal Officer) <i>until Dec 2020</i>
Department of Education Statistics Unit	James O'Brien (Statistician)
Department of Education Inspectorate	Brendan Doody (Assistant Chief Inspector)
Department of Education Special Education Unit	Kieran Rogers (Assistant Principal Officer)
Department of Education Special Education Unit	Terry Reynolds (Assistant Principal Officer) <i>until Sept 2021</i>
Educational Research Centre	Jude Cosgrove (CEO Educational Research Centre)
Educational Research Centre	Lorraine Gilleece (Research Fellow)

Appendix 2 – Syntax of the Refined DEIS identification model

High level description of the SPSS syntax used by the ERC in the revised DEIS identification model

1. Read-in Excel file provided by the Department to SPSS (note separate files are provided for primary and post-primary levels and analysis steps are applied separately for each level)
2. Compute the proportions of students in three HP groups (HP score ≤ -20 ; $-20 < \text{HP} \leq -10$; $-10 < \text{HP} \leq -7.5$)
compute $\text{propmin20} = \text{Nmin20} / \text{TotalEnrolment}$.

compute $\text{propmin2010} = \text{Nmin2010} / \text{TotalEnrolment}$.

compute $\text{propmin1075} = \text{Nmin1075} / \text{TotalEnrolment}$.

compute $\text{centmin10} = \text{propmin10} * 100$.
3. Compute a z-standardised weighted disadvantage score by applying agreed weights to the proportions of students in each category:
compute $\text{weightHP3} = (\text{propmin20} * 2) + (\text{propmin2010} * 1) + (\text{propmin1075} * 0.5)$.

desc var weightHP3 /save.
4. Use agreed thresholds to determine if a school is eligible for DEIS on the basis of its weighted disadvantage score; i.e., categorise the weighted disadvantage score
recode $\text{zweightHP3} < \text{REDACTED}>$ into $<\text{variable name}>$.
5. If the school's disadvantage score does *not* exceed the agreed threshold to make it eligible for DEIS, check if the percentage of students with HP scores at or below -10 exceeds an agreed value. A school is eligible for DEIS either if the weighted disadvantage score exceeds an agreed threshold OR if the percentage of students with HP scores at or below -10 exceeds an agreed value.
6. Produce a single rank order of schools identified for DEIS on the basis of school disadvantage score plus an adjustment where the percentage of students with HP scores at or below -10 exceeds the agreed threshold.
7. Translate SPSS file into Excel for transfer to Department.