

# Digital Learning Framework (DLF) national longitudinal evaluation:

## One year on – Wave 1 report Executive Summary

Jude Cosgrove, Emmet Feerick and Eva Moran

Educational Research Centre  
June 2021



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Educational  
Research Centre

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We are grateful for the support, advice and guidance from the DLF advisory group on the survey design and reporting on the Wave 1 phase of the Digital Learning Framework (DLF) evaluation. Aside from the ERC, the DLF advisory group comprises Chris Kelly, Betty Regan, Tony Shine (DE Teacher Education Policy (Digital) Unit), Séamus Knox and Tony Weir (DE Inspectorate), and Anthony Kilcoyne (PDST Technology in Education (TiE)). The group will continue to advise on the evaluation of the DLF as it progresses into Wave 2 of the longitudinal phase in 2021.

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Finally, our sincere thanks to the school leaders and teachers who completed the Wave 1 surveys and provided us with their views and insights. Their responses provide key findings, and will assist us in identifying and better understanding specific issues as the longitudinal phase of the evaluation progresses in 2021.

## List of acronyms and abbreviations

CPD	Continuing Professional Development
DEIS	Delivering Equality of opportunity In Schools
DE	Department of Education
DES	Department of Education and Skills
DL	Digital Learning
DLF	Digital Learning Framework
DLP	Digital Learning Plan (of schools, to implement the DLF)
DLT	Digital Learning Team (in the school)
DT	Digital Technology/Technologies
ERC	Educational Research Centre
ICT	Information and Communication Technologies
OECD	Organisation for Economic Co-operation and Development
PDST	Professional Development Service for Teachers
SSE	School Self-Evaluation
STEM	Science, Technology, Engineering and Maths
TiE	Technology in Education (a team of the PDST responsible for resources and supports to enable schools to implement the DLF)

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## Executive summary

### E.1 Background

This Wave 1 report on the Digital Learning Framework (DLF) national longitudinal evaluation follows from the baseline report published in late 2019 (Cosgrove et al., 2019). Wave 2 data collection will commence in autumn 2021, allowing a three-year view of schools' progress in implementing the DLF. Prior to the full national evaluation, a trial was conducted in 20 post-primary and 28 primary and special schools in 2017-2018 (Cosgrove et al., 2018a, b).

Note that the **survey data on which this report is based was collected** during autumn 2019 to spring 2020, **just prior to the onset of the COVID-19 pandemic in Ireland**.

The DLF is a resource to guide schools on how to use digital technologies effectively to transform their teaching, learning and assessment practices. It is intended to be used in tandem with the *Looking at Our Schools* school self-evaluation framework (Department of Education and Skills [DES]<sup>1</sup>, 2016), and supports the *Digital Strategy for Schools 2015-2020* (DES, 2015a). Grounded in constructivist principles, the Digital Strategy for Schools and the DLF promote the embedding of digital technologies into a wide range of teaching, learning and assessment activities.

The *Digital Strategy* is guided by findings from the *2013 ICT Census of Schools* (Cosgrove et al., 2014a, b) and builds on previous strategies, including *Investing Effectively in Information and Communications Technology in Schools, 2008-2013* (DES, 2008) and *Building Towards a Learning Society: A National Digital Strategy for Schools* (Butler et al., 2013).

To help support the implementation of the 2015-2020 *Digital Strategy*, a 210-million euro investment in ICT infrastructure grants for primary and post-primary schools was announced in January 2017. All funding has now issued to schools in the form of a lump sum plus per capita allocation, with the final instalment of 50 million euro issued in December 2020.

The relevant Department of Education Circular (CL0077/2020)<sup>2</sup> notes that schools must have a Digital Learning Plan (DLP) updated at least annually in place to be eligible to receive the ICT grant. Consistent with previous years, the grant may be used to purchase various digital technologies infrastructure and equipment. However, technical support and maintenance services are not covered in the list of items that may be purchased using the Grant. Detailed plans for further funding and supports following the completed allocation of the ICT Infrastructure grant will be clarified with the development of a new *Digital Strategy* was announced by the Department of Education in April 2021<sup>2</sup>. Under Project Ireland 2040, the ongoing embedding of the use of digital technologies in teaching, learning and assessment through the Digital Strategy for Schools will be supported through a further investment, under the current National Development Plan, of some 200 million euro up to 2027.

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<sup>1</sup> The Department of Education and Skills was renamed the Department of Education in October 2020. In this report we refer to Department of Education and Skills for publications prior to this time, otherwise we use the term Department of Education.

<sup>2</sup> <https://www.education.ie/en/Press-Events/Press-Releases/2021-press-releases/PR21-04-05.html>

In addition to the ICT grant, the Department funds the provision of broadband connectivity to schools under the Schools Broadband Programme at an annual cost of approximately 13 million euro, and some 98% of schools avail of this programme<sup>3</sup>. Currently, all post-primary schools have high speed connectivity (mostly at 200 MB/s or higher). Around 900 primary schools have 100 MB/s or higher connectivity under the Schools Broadband Plan, while about 680 are in the National Broadband Plan Intervention Area (for connection by end 2022). A new Broadband Enhancement Project for Primary Schools has been commenced, with the aim of having 100 MB/s or higher broadband connectivity in all primary schools by 2022/2023<sup>4</sup>.

## E.2 The Digital Learning Framework (DLF)

The notion of 'embedding' is core to the implementation of the DLF. The Framework (DES, 2017a, b, p. 15) defines embedding digital technology as 'Moving beyond ICT integration, where digital technology is seamlessly used in all aspects of teaching, learning and assessment to enhance the learning experiences of all students.'

The DLF is organised along two dimensions and eight domains, consistent with the School Self-Evaluation (SSE) framework, *Looking At Our School* (DES, 2016a, b):

- *Teaching and Learning Dimension* (consisting of the four domains of learner outcomes; learner experiences; teachers' individual practice; and teachers' collective/collaborative practice).
- *Leadership and Management Dimension* (consisting of the four domains of leading learning and teaching; managing the organisation; leading school development; and developing leadership capacity).

Within each of the eight domains of the DLF, there is a set of standards, accompanied by statements of *effective* and *highly effective* practice.

In addition to providing professional learning workshops and seminars and follow-up supports to schools for implementing the DLF, the PDST Technology in Education (TiE) team has developed an integrated suite of resources at [www.DLPlanning.ie](http://www.DLPlanning.ie). There is also [www.webwise.ie](http://www.webwise.ie), an Internet safety initiative managed by the PDST, which promotes awareness of online safety issues and good practice among students, their parents and teachers.

## E.3 Objective and design of the DLF evaluation

The objective of the DLF evaluation is to **evaluate the implementation of the Digital Learning Framework from the multiple perspectives of school Principals, Digital Learning Team leaders, teachers and learners over a three-year period (2019-2022)**. The design of the evaluation is longitudinal and mixed-method, involving a baseline phase and two longitudinal data collection phases.

The sample is designed to be nationally representative of *both* schools and teachers. The Wave 1 school sample of 150 primary schools, 100 post-primary schools and 32 special schools is drawn from the baseline school participants (1,524 primary schools, 320 post-primary schools, and 64 special schools). Within each sampled school, the Digital Learning Team Leader or Principal is invited to complete a school survey, and each teacher is invited to complete a teacher survey. This same sample will be followed through to Wave 2, allowing a three-year

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<sup>3</sup> <https://www.education.ie/en/Press-Events/Press-Releases/2021-press-releases/PR21-04-05.html>

<sup>4</sup> Department of Education, personal communication, April 28 2021.



perspective on the implementation and impacts of the DLF. The Wave 1 samples are broadly representative of their respective populations and sampling weights are applied in all quantitative analyses.

Throughout the report, the term 'DLT leader' is used as shorthand to refer to DLT leaders or Principals.

The evaluation of the DLF is overseen by an advisory committee group of representatives from the Department of Education's Teacher Education (Digital) Policy Unit, the Inspectorate, the PDST and the ERC. The advisory group provides guidance and advice on all key stages of the DLF evaluation, particularly survey content and reporting.

Wave 1 questionnaires for Digital Learning Team (DLT) leaders and teachers were developed by the ERC (in both Irish and English). Question types were both closed (tick box) and open (text response). Various questionnaire indices or scale (summary scores based on sets of thematically linked questionnaire items) were derived from the survey responses. All index scores range from 0-100 and so may be directly compared. Higher index scores are indicative of a more positive outcome. The text responses, meanwhile, were submitted to thematic analysis.

Due to low survey response rates at the last quarter of 2019, the survey window was extended into spring 2020. This resulted in sufficient response rates to deem the DLT leader survey nationally representative. However response rates from teachers were lower than desired across all three school types. Therefore, although the *sample* was designed to be nationally representative, the low teacher *response rates* mean that the DLF wave 1 teacher survey data cannot be considered nationally representative. Also, primary and special schools have been combined into a single group for analysis due to the small number of respondents in the special schools group. Therefore, when the term 'primary schools' is used in this report, it should be understood to mean 'primary and special schools'.

#### E.4 Digital Learning Team (DLT) leader (or Principal) perspectives

DLT leader surveys were received from 60 out of 100 post-primary schools and from 109 out of 182 primary and special schools. At post-primary level, a large majority of respondents were Principals (52%) or Assistant/Deputy Principals (35%). At primary level, 58% of respondents were Principals, 23% were Assistant/Deputy Principals. (Other respondents indicated that they were class teachers or SETs.) Asked about the composition of their school's Digital Learning Teams, DLT leaders reported that DLTs tended to consist of staff members who volunteer – and hence are likely to already be 'digitally savvy'.

Around nine in ten schools were focused on the Teaching and Learning dimension of the DLF, which is to be expected, given that the focus for school self-evaluation (SSE) from 2016 to 2022 is the dimension of Teaching and Learning. Post-primary schools were more likely (93%) than primary schools (73%) to have incorporated their Digital Learning Plan (DLP) into SSE activities.

Over 90% of schools at both primary and post-primary levels had either begun or completed their DLPs. At both primary and post-primary, DLT leaders reported that teaching staff were consulted with extensively about the development of the DLP; however, school management boards were consulted more frequently at post-primary than at primary level. At both primary and post-primary levels, parents were consulted relatively extensively on the DLP, in contrast to

students, who were extensively consulted in fewer than 10% of schools. This latter finding indicates that the students have not been widely consulted in informing schools' DLPs.

Very high levels of implementation of digital technology-related policies and guidelines were reported by DLT leaders at both primary and post-primary level. Over 90% of respondents reported having policies or guidelines on acceptable use of technology in school, acceptable use of the internet in school, and online safety. There is also evidence of extensive consultation with teachers and school management boards on these policies and guidelines, though less consultation with parents and students.

A majority of DLT leaders (about 80% at primary and 90% at post-primary) had visited the PDST's DLPlanning.ie website, although website visits were not very frequent. However, of those who had visited the DLPlanning.ie website, they reported having visited all sections at some point, suggesting that all sections had some relevance for a majority of respondents.

DLT leaders' levels of comfort and familiarity with DTs<sup>5</sup> were moderate to high, particularly at post-primary level (with scale means of 65 for primary schools and 74 for post-primary schools). Similarly, participants expressed a very positive view of DTs for supporting learning<sup>6</sup> (with scale means of 75 at primary and 76 at post-primary; see Figure E1.1).

Respondents' participation in CPD or professional learning in the area of DTs was high. For example, in the two years prior to the survey, at primary level, 78% of DLT leaders had attended a relevant summer course and at post-primary level, 83% had participated in relevant workshops. Two in five (40%) primary respondents and 69% of respondents at post-primary reported availing of in-school PDST support.

A majority of respondents (75% at primary level and 69% at post-primary level) indicated that their school was partly at, mostly at or all at the level of effective practice as described in the DLF (across all statements). Just 6% of post-primary and 7% of primary respondents indicated that they were mostly or all at levels of highly effective practice, while 11% of primary respondents and 9% of post-primary respondents indicated that their school was all or mostly below the statements of effective practice.

DLT leaders' views on the level at which their school was at in terms of embedding DTs into teaching, learning and assessment were measured on a scale ranging from 'Emerging' to 'Highly Advanced'. Post-primary respondents rated their schools as being at a higher level of embedding than primary schools: 78% of post-primary respondents described the level of embedding as intermediate to highly advanced, compared to 44% of primary schools.

Respondents' ratings of their schools' use of DTs on these two measures (level of practice and level of embedding) were generally quite closely aligned to one another.

DLT leaders reported that teachers' access to school-owned computing devices was high – around 90% at both primary and post-primary levels. A little over half of DLT leaders (55% at both primary and post-primary) indicated that all pupils in the school had regular access to a

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<sup>5</sup> As measured by levels of agreement with statements such as 'I feel comfortable using digital devices that I am less familiar with'; 'If I need new software, I install it by myself'.

<sup>6</sup> For example, 80% or more of respondents at both primary and post-primary levels agreed or strongly agreed that 'DTs enable students to access better sources of information', and that 'DTs help students develop greater interest in learning'.

school-owned computing device. The type of devices available for students differed across primary (with more common use of iPads) and post-primary (with more common use of desktops). Rates of home access for pupils to their own computing device were lower, particularly at primary level.

Technical support and maintenance was most commonly provided by a mixture of internal and external sources (as opposed to being all external or all internal). Technical support was rated by DLT leaders as being more effective at post-primary than primary level, with scale means of 71 and 54, respectively. Responses on this scale varied substantially across schools. At post-primary level technical support effectiveness was not statistically significantly associated with enrolment size or mode of technical support and maintenance provision (i.e. internal, external, or a mixture). At primary level, smaller schools reported internal technical support and maintenance more frequently than larger schools, which in turn reported external technical support more frequently than smaller schools. Although not statistically significant, the least effective technical support was reported in smaller primary schools (with 120 or fewer pupils enrolled).

On a scale measuring DLT leaders' views on their school's level of DT infrastructure and connectivity required for teaching, learning and assessment, primary (47) and post-primary schools (53) had scores in the moderate range. A large majority of both primary and post-primary schools rated the availability of computing devices for teaching, learning and assessment as good, very good or excellent. For many of the other items, such as age and condition of computing devices, availability of suitable software and awareness of suitable software there was considerable variation across schools at both primary and post-primary levels.

Primary and post-primary schools also obtained scale means in the moderate range (50) on a scale measuring teacher and student engagement in DTs. There is a strong relationship between scores on the infrastructure and connectivity scale and the DT engagement scale ( $r=.55$  at primary and  $.51$  at post-primary).

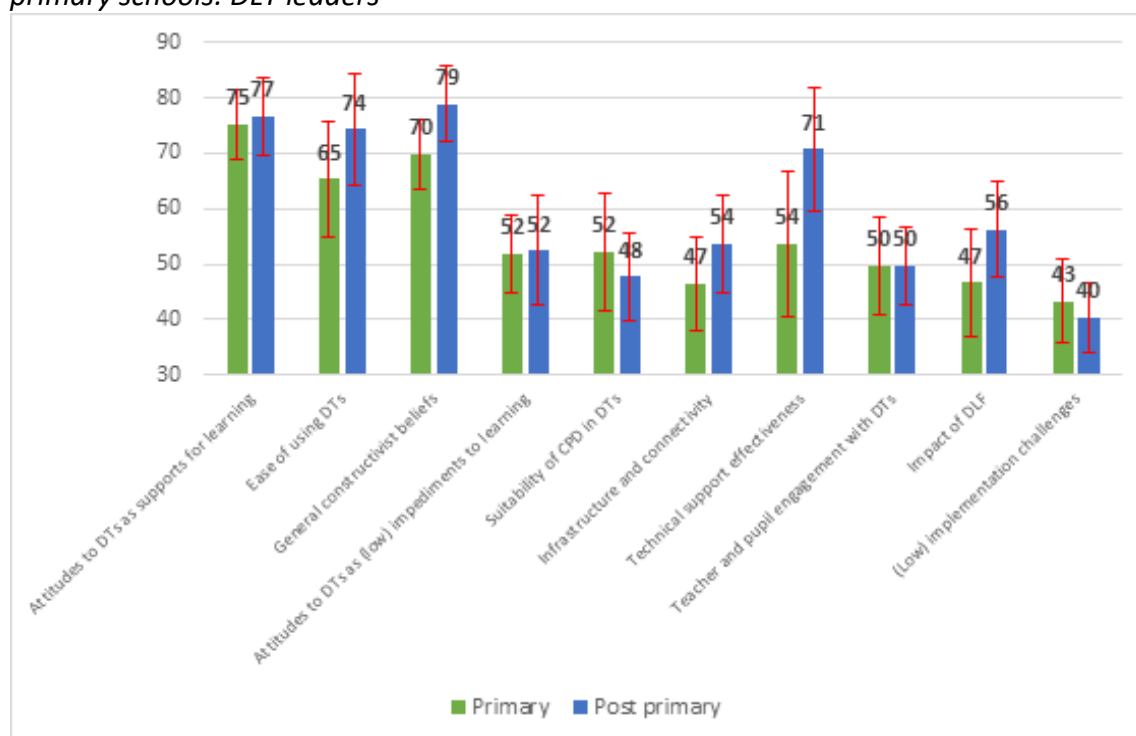
On a scale measuring the impact of having implemented the DLF since baseline, post-primary DLT leaders reported a higher mean score than primary school DLT leaders (57 and 47, respectively). Interestingly, the area of highest perceived impact at both primary and post-primary related to decisions relating to DT infrastructure. Moderate levels of impact in teaching and learning practices and collaborative practices were found at both levels, with the latter being higher at post-primary level. Notably, perceived impact on assessment was low at both levels: 65% of primary respondents and 45% of post-primary respondents reported no change or a minor change in this area.

Implementation challenges covered a range of areas. According to DLT leaders, dedicated time for implementation, DT infrastructure, provision of leadership by school management, sharing learning across staff, and staff competency levels in using DTs for TLA, represent significant challenges in many schools.

The various DT scale means associated with DLT leader responses (see Figure E1.1) did not differ significantly across schools of different enrolment size, DEIS status, or (in the case of post-primary schools) sector. This could be interpreted to mean that schools do not differ to one another with respect to these scales when it comes to their implementation of the DLF. It

should be noted that these indices are subjective perceptual measures rather than objective empirical ones.

*Figure E1.1. Wave 1 survey scale means and standard deviations for primary and post-primary schools: DLT leaders*



*Note. Red bars display the standard deviations. These indicate, approximately, the interval within which the scale scores of two-thirds of respondents lie.*

## E.5 Teachers' perspectives

In total, 443 teachers from 71 post-primary schools completed a survey, and 495 teachers from 117 primary and special schools completed a survey. Among primary respondents, 17% of respondents were DLT leaders, 41% reported being on the DLT, and 42% reported not being on the DLT. These figures were 25%, 24% and 51% respectively, among post-primary respondents. This indicates a wider involvement in the DLT among staff in primary schools, which could be related to the lower average enrolment sizes at primary level.

Respondents generally reported a low level of usage of the DLPlanning.ie website, with approximately 40% of primary teachers and 52% of post-primary teachers never having used the website. These levels are lower than those reported by DLT leaders (see Section E.3). Teachers who did use the website tended to use many parts of it, suggesting that many aspects of the website were found to be useful, provided the website is visited in the first place.

In terms of teacher professional learning relating to DTs, summer courses (39%) and in-school PDST support (27%) were attended most frequently by primary school respondents. At post-primary, the most frequently attended professional learning activities over the last two years were in-school PDST support (49%) and workshops (38%).

By far the most popular method of DT knowledge sharing reported by teachers at both primary and post-primary was informal, occurring throughout the school day. However, the results

indicated a divergence between primary and post-primary respondents regarding how widespread more formal and organised methods of DT knowledge sharing are. While exactly half of primary respondents reported using cloud document storage or shared folders to share DT learning and resources, four in five (81%) post-primary respondents did this. These differences in using cloud storage or shared folders may be related to the systems infrastructure associated with larger schools. Post-primary respondents were also more likely than primary respondents to use formal peer mentoring (46% vs 31%), and email, messaging, or social media to share DT knowledge (80% vs 62%).

Regarding the level of embedding of DTs in teaching, learning and assessment (TLA), post-primary teachers were more likely than primary teachers to indicate that they were at an Advanced/Highly advanced level (6% primary vs 25% post-primary). This difference is significant, and it may be due in part to different expectations between primary and post-primary respondents regarding what constitutes a high level of embedding. In any event, it is planned to follow up on this finding during Wave 2 of the study.

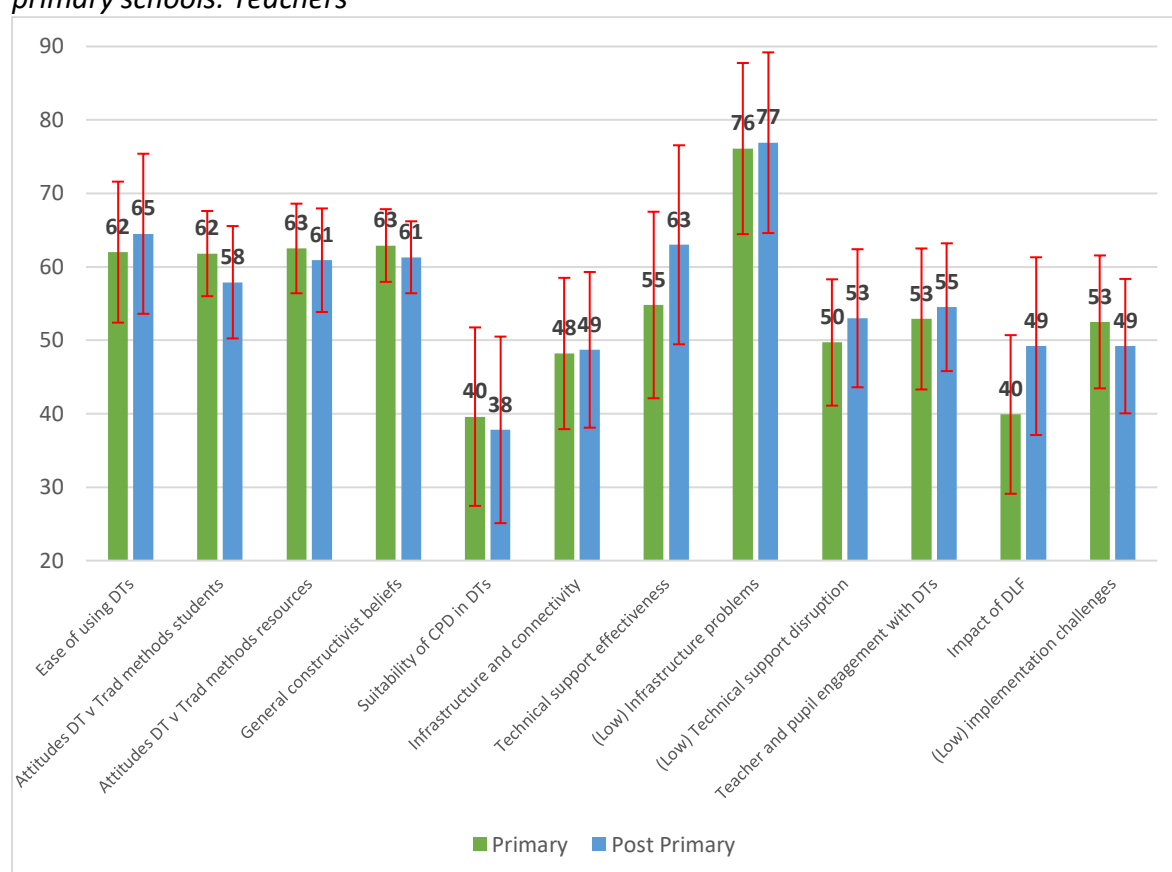
Mean scores on the DT infrastructure and connectivity scale were almost identical across primary and post-primary level (see Figure E.2). However, there were some differences between primary and post-primary schools with regard to which specific aspects of DT infrastructure and connectivity were most highly rated. For example, one-quarter of primary schools rated the availability of digital devices as Excellent, compared to 13% of post-primary schools. Conversely, while broadband speed was rated as Excellent by one quarter (24%) of post-primary respondents, just one-tenth of primary respondents gave it this rating. The age and condition of computing devices ranked prominently as an infrastructural issue for respondents at both levels: 36% of respondents at primary and 34% at post-primary rated this as Fair or Poor.

The mean score on the technical support effectiveness scale at post-primary (63) was higher than at primary (55). At primary level, schools with a very small enrolment ( $\leq 60$ ) scored significantly lower on this scale than schools with medium and large enrolment sizes. Many respondents signalled the importance of technical support, with about three in ten agreeing or strongly agreeing with the statement “Availability of technical support is a key barrier to my schools’ implementation of the DLF”.

While mean scores on measures relating to DT infrastructure were relatively high, between a quarter and a third of respondents at both levels reported encountering issues with certain aspects of infrastructure more than once per week. Again, primary schools with a very small enrolment ( $\leq 60$ ) scored significantly lower on the (low) infrastructure problems scale than medium and large primary schools, indicating they experienced greater levels of infrastructure problems.

Results indicated that post-primary respondents used DTs in a more varied and more frequent manner in their TLA than primary respondents. In particular, post-primary respondents were more likely to use DTs to communicate with students, and to support peer-to-peer assessment, than their primary counterparts.

*Figure E1.2. Wave 1 survey scale means and standard deviations for primary and post-primary schools: Teachers*



*Note. Red bars display the standard deviations. These indicate, approximately, the interval within which the scale scores of two-thirds of respondents lie.*

The picture at primary and post-primary levels was broadly similar with respect to teacher and student engagement with DTs (i.e. the perceived extent to which teachers and students engaged generally with digital technologies on a set of items with responses ranging from excellent to poor). Additionally, at post-primary level, non-DEIS schools had higher average scores than DEIS schools on the teacher and student engagement with DTs scale (56 vs 49).

Teachers reported largely positive views about the use of DTs for TLA. A majority of respondents at both levels believed that using DTs enables students to better engage in collaborative learning (72% primary; 69% post-primary); helps students work at a level appropriate to their needs (78% primary; 78% post-primary); and enables students to access better sources of information (89% primary; 85% post-primary). However, most post-primary respondents (68%) Agreed or Agreed strongly that DTs encourage copying material from published internet sources, reflecting a specific concern at post-primary level in relation to the use of DTs for student learning. Also, despite widespread endorsement of the use of DTs for TLA, 47% of primary respondents reported that they found the large number of apps to choose from confusing.

Encouragingly, majorities of post-primary teacher respondents indicated that due to their work on the DLF, there was Moderate change or Significant change in the following areas: sharing of documents or resources among teachers; collaborative practices among teachers; and students' interest and engagement in learning activities, among others. Less change was reported by

primary respondents overall compared with post-primary respondents; however, a majority of primary respondents indicated that there was moderate or significant change in Decisions relating to enhancing DT infrastructure, and Emphasis on the use of DTs in school policies or guidelines.

Both primary and post-primary respondents reported experiencing significant challenges in implementing the DLF in a few key areas, in particular, relating to DT infrastructure, time for staff to implement the DLP, and issues concerning the fit between the aims of the DLF and the structure of the standardised assessments.

#### E.6 Differences in DLT leader (Principal) and teacher perspectives

At both primary and post-primary levels, DLT leaders had higher scores on a scale measuring constructivist beliefs compared to teachers, and the difference was more pronounced at post-primary (18 scale points) than primary level (7 points).

Post-primary DLT leaders also had a particularly high score on the DT ease with digital devices scale, compared with post-primary teachers, as well as primary teachers and DLT leaders, whose scores were similar to one another.

At both primary and post-primary levels, teachers had higher scores on the DT student and teacher engagement scale than DLT leaders. In contrast, DLT leaders at both levels were more likely to have a higher score on the DLF impact scale than teachers, indicating a higher perceived impact of DLF implementation among DLT leaders than among teachers.

Similarly, DLT leaders at both primary and post-primary levels reported higher perceived suitability of CPD in DTs than did teachers, though there was a lot of variation in teacher reports (as indicated by the standard deviation). Also at both levels, DLT leaders reported lower levels of challenges in implementation than teachers.

At least some of the differences observed between DLT leaders and teachers are plausibly related to their different roles in the implementation of the DLF in their schools, while some of the differences observed across primary and post-primary levels can be attributed to curricular, structural, or infrastructural differences between the two levels.

#### E.7 Changes, progress and challenges since baseline

Wave 1 included a longitudinal analysis by comparing baseline and Wave 1 survey responses. Only a year separates the baseline and Wave 1 data collection phases, so substantial and widespread change was not generally expected.

Changes in four indicators (measures) were assessed – the first two indicators, level of embedding DTs in teaching, learning and assessment, and level of engagement of teachers and students with DTs, may be interpreted as **DLF impact measures**, while the second two, schools' DT infrastructure and connectivity, and schools' adequacy of technical support, may be interpreted as (some) **enablers of DLF implementation**.

At primary level, no change was observed in the level of embedding at baseline and at Wave 1; in contrast, at post-primary level, an overall increasing trend was observed, with post-primary ratings tending to move from 'developing' to 'intermediate' levels.



However, at primary level, there was a significant increase in the mean level of engagement with DTs by teachers and pupils from baseline (43) to Wave 1 (50); rates of engagement at post-primary were around the same at Wave 1 (49) as they were at baseline (47). Measures of DT infrastructure and connectivity, and of technical support effectiveness, did not change between baseline and Wave 1 at either primary or post-primary.

Three sets of regression models were carried out at each of primary and post-primary levels. This permitted a multivariate analysis of change in three DLF-related outcomes over time, i.e. student and teacher engagement with DTs, level of impact of DLF implementation on TLA, and level of practice with respect to embedding DTs in TLA.

The models were built in three stages: school characteristics (e.g. enrolment size, DEIS status) were entered as controls; next, Wave 1 covariates were entered; and finally, baseline inputs were included.

Results confirmed that different factors are at play in predicting successful DLF implementation at primary and post-primary levels. This is not surprising since primary and post-primary schools differ significantly in terms of average enrolment size, curricular, teacher and assessment characteristics. However, across both primary and post-primary, DT infrastructure/connectivity and consultative approaches emerged as significant enablers of successful implementation of the DLF.

At primary level, the regression models indicate that more successful implementation of the DLF is associated with, and hence may need to be enabled by, multiple factors, including the school's infrastructure and connectivity, consultative leadership (consultation on the DLP), presence or absence of DLF implementation challenges, and the extent to which the DLT leader felt that CPD on the DLF was constructivist and targeted to the goals of the DLF. At post-primary level the regression results suggest that attitudes and beliefs of the DLT leader have a significant and substantive bearing on successful implementation of the DLF, along with a consultative approach to the development of the DLP, and the presence of infrastructural and connectivity supports.

#### E.8 Themes emerging from DLT leaders' (Principals') and teachers' text responses

In analysing reasons provided by respondents for having (largely) chosen the Teaching and Learning dimension of the DLF, the commentary indicates that the promotion of teacher collaboration and shared practice is a high priority for post-primary schools, while at primary level, improving learner outcomes is seen as a key priority. This is consistent with findings reported in Sections E.5 and E.6, above.

It also emerged that schools are using multiple and largely informal means to establish their school's level of effective practice – a key outcome of DLF implementation. While it is clear that schools are implementing many good practices to identify and monitor levels of effective practice, it would appear that further guidance would be of benefit, in order to promote a more uniform understanding of levels of effective and highly effective practice for assessment and monitoring purposes.

The DLF baseline report identified differences in the understanding of “DT embedding” across schools and between teachers as a potential challenge in monitoring progress in DLF implementation. These differences in understanding became clearer in the responses to the



question asking what it meant to “embed” DTs in teaching, learning, and assessment. While many primary and post-primary respondents described embedding in a manner consistent with that of the DLF (see Section E.2), it was also common for respondents’ comments to reflect a more functional approach, particularly at post-primary level. At post-primary, the most common response to this question mentioned that embedding simply meant *using* DTs in TLA. This could be related to the highly structured curriculum and State examinations at post-primary level, which in turn may work against a more flexible, constructivist approach to TLA embodied in the DLF.

At both levels, and across teachers and DLT leaders, the DLPlanning.ie website was widely praised as a useful resource (though perhaps not very widely used by teachers). Respondents particularly liked the videos of effective and highly effective practice, the DL planning guidelines document and DL planning templates.

DLT leaders were asked what changes to DLF documents and other supporting materials would better enable them to implement the DLF in their school. At primary level, the most common response was that more DLP or lesson plan samples would be helpful, with over one in four respondents mentioning this (28%). A fifth of responses fell into the “other” category. These responses were varied, and no common themes could be found among them. This reflects an overarching theme of specificity – schools and teachers have very different needs, and that the supports they need are highly dependent on their particular situation. A number of DLT leaders at post-primary level expressed a desire for an online interactive DLP document, since it was felt that the ability to change and interact with the DLP plan document online would enable schools to continuously improve and adapt their DLP to their needs as they progressed with their DLP implementation.

Respondents were asked to name up to three things which would best enable them and their school to implement the DLF. Two themes occurred particularly often among primary DLT leader respondents. These were *Well-maintained DT infrastructure and devices*, and *Appropriate and practical CPD/training/demonstrations*. The former of these was present in almost half of responses (45%) at primary level and this theme indicates a need for both infrastructural improvements as well as supports to maintain them. In a number of responses, this was the only theme present, suggesting the primacy of well-maintained infrastructure and devices in the process of embedding DTs in TLA. It is notable that both infrastructure and needs-specific training are seen by primary teachers as key enablers of successful DLP implementation. This finding is corroborated by the regression analyses described in the previous section. A broadly similar pattern was observed at post-primary, with *Continued/More support and training*, and *More/better/newer devices* being the two most common themes.

An interesting difference between primary and post-primary levels is the frequency with which the theme of *Purchasing help and funding* featured in the responses. At primary level, this was the third most common theme, and was present in about a quarter of all comments (24%). At post-primary level, however, this theme occurred in only 11% of comments. This suggests that some schools, particularly at primary level, may not be sufficiently aware of, or supported in, the purchase of DT resources.

Many respondents at both levels held positive attitudes towards the use of DTs in teaching and learning. A key enabler of this, according to the respondents, included “digital champions” within schools, who were seen as very helpful in advancing the schools’ use of DTs. Many

respondents, especially at primary level, expressed positive sentiments about the potential of DTs to enable student-centred learning and collaboration between students.

Reliable broadband and equipment which teachers could rely on were other key enablers of positive attitudes towards the use of DTs, with some teachers commenting that morale was impacted in schools where staff had learned not to rely on faulty or unreliable equipment.

Asked about the kinds of CPD supports that would enable successful continued implementation of the DLF (DLP), both DLT leaders and teachers commented that professional development (frequently referred to as 'training') which is specific to subjects, class levels, and teacher knowledge level in DTs was preferred. Demonstrations of particular apps and software were also frequently referenced.

Many respondents stressed the need for ongoing professional development, rather than sporadic workshops or in-service days. Some respondents attributed this lack of a consistent approach to poor planning and leadership at the school level or a lack of buy-in among some staff, whereas others noted that progress in the DLF was not possible until issues around unreliable WiFi or insufficient access to enough up-to-date devices were remedied.

## E.9 Implications

The **Wave 1 findings are highly consistent with recent national research**, including the DLF baseline evaluation, an Inspectorate report on the use of DTs in TLA (Department of Education, 2020), and recent research that has examined the impact of the Covid-19 pandemic on schooling at primary and post-primary levels (Burke & Dempsey, 2020; Devitt et al., 2020; INTO, 2020; Mohan et al., 2020). A recent OECD country note for Ireland confirms that comparatively, schools in Ireland were relatively under-prepared for ICT-based learning prior to the onset of the Covid-19 pandemic (OECD, 2020c, Figure 2).

With respect to the forthcoming new Digital Strategy for Schools, the current Department policy to achieve cross-policy alignment is noted and welcomed<sup>7</sup>. Two particular **policies/initiatives** seem worth highlighting **with a view to strategic alignment** in light of the DLF Wave 1 findings:

- The forthcoming **new Literacy and Numeracy Strategy** and supports for its implementation could represent an important opportunity for the Department of Education to further align policies, funding and CPD supports relating to curriculum, teaching, learning, assessment and DTs into a coherent set.
- It would seem important to establish early and strategic links between any **forthcoming Digital Strategy for Schools** (announced April 5, 2021<sup>8</sup>) and changes or reforms arising from the **Senior Cycle review**, in particular relating to **assessment or examination reforms**. The OECD (2020a, p. 10) has noted that "any changes made to senior cycle will have limited possibilities to succeed if the current assessment approaches are not reviewed accordingly".
- The **forthcoming Digital Strategy for Schools** should also **prioritise the key enablers identified in this study**, i.e. adequate levels of infrastructure and connectivity; effective

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<sup>7</sup> The Digital Strategy will also link into wider Government policies such as the National Digital Strategy/skills strategies; Further & Higher Education Literacy, Numeracy & Digital Literacy Strategy; National Broadband Strategy (Department of Education, personal communication, June 1, 2021).

<sup>8</sup> <https://www.education.ie/en/Press-Events/Press-Releases/2021-press-releases/PR21-04-05.html>

technical support; consultative and collaborative leadership; high levels of collaboration among teachers; active promotion of and advocacy for the DLP in the school; and CPD that is sustained and tailored to local need.

With respect to **measurement and monitoring**:

- A Finnish **Innovative Digital School Model** (Ilomäki & Lakkala, 2018) is proposed as a potentially useful guiding structure for the analysis of the DLF Wave 2 results. This model fits well with existing DT policy and strategy in Ireland, is founded on extensive research on school improvement and change relating to DTs, and has practical applications at the system, school and policy levels.
- There is a need to further research to explore and **validate measures of levels of effective/highly effective practice associated** with the DLF during Wave 2, perhaps in a collaboration between the ERC and Inspectorate and/or PDST.

**In light of Covid-19, the Wave 1 findings, and other national research**, three DT-related priorities emerge for the **Department of Education to consider**:

- The development and implementation of appropriate DT funding (and funding supports), technical support and maintenance, and CPD plans.
- Raising awareness at system level of various information and resources already available particularly as they related to procurement/purchase and CPD, both national and international. The [OECD](#) has a range of country case studies, toolkits and other resources that may be useful at system and school level.
- A focus on equity, prioritising supports for smaller, rural schools, schools with high concentrations of educational disadvantage, children with special educational needs, and children with a first language other than English or Irish.

The following are proposed as **some of the priorities for the second and final longitudinal data collection wave of the DLF national evaluation**:

- Gathering the views of young people on using digital technologies in teaching, learning and assessment
- Establishing the key longer-term changes that have occurred in schools in using digital technologies in teaching, learning and assessment in response to COVID-19
- Gathering information on how DTs are being used to support priority groups of students (children in educationally disadvantaged homes and communities, children with special educational needs)
- Investigating barriers and enablers to DT-based assessment in more depth
- Identifying practices that promote the use of DTs in knowledge creation and collaborative teaching and learning
- In the context of the DLF, explore the decision-making processes guiding schools' DT-related spending
- Gathering school views on what supports should be prioritised in order to maintain and build on the initial successes of DLF implementation
- In the context of the DLF, establishing the needs and priorities of schools with poor levels of infrastructure, connectivity and technical support
- Further examining how schools are interpreting the DLF's effective/highly effective levels of practice, potentially through a validation study in collaboration with the PDST or the Inspectorate, in order to enhance assessment and monitoring at system and school levels into the future.

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