

Exploring the impact of a single TPL session on Primary School Teachers’ Domain-Specific Self-Esteem

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Abstract

The introduction of Ireland’s redeveloped Primary School Curriculum positions Digital Technology (DT) as a core area of learning, creating new demands for primary teachers, many of whom lack prior preparation. This study examines whether a single, targeted Teacher Professional Learning (TPL) intervention can enhance teachers’ domain-specific self-esteem in DT. A quantitative pre–post survey design was employed with participants attending targeted workshops. DT self-esteem was measured using an adapted, reliable instrument, and principal component analysis was used to generate a composite score. A paired-samples t-test revealed a statistically significant increase in DT self-esteem following the intervention, with a moderate-to-large effect size. Reduced variability in post-scores indicated greater consistency among participants. The findings suggest that brief, focused TPL interventions can meaningfully enhance teachers’ confidence in DT, supporting their readiness to engage with curriculum reform.

1. Introduction

In September 2025, Ireland introduced a redeveloped Primary School Curriculum, representing the most significant reform of primary education in over two decades. The curriculum is organised around five key learning areas, Arts Education, Language, Social and Environmental Education, Wellbeing, and STEM Education, reflecting a national emphasis on critical thinking, problem-solving, and integrated learning through engaging, pupil-centred approaches (National Council for Curriculum and Assessment, 2025).

Within the STEM curriculum, the Technology strand has been significantly redeveloped, with Digital Technology (DT) integrated across all year levels. This represents a new instructional requirement for primary teachers. However, initial teacher education programmes have not traditionally included substantial preparation in digital technologies, computational thinking, or coding. As a result, many teachers are likely to lack confidence and experience in this area, creating a significant professional learning challenge alongside this curriculum innovation.

In response, the EDTips (Enabling Digital Technology in Primary Schools) project was launched in 2024 to support teacher readiness (Nolan et al., 2024). The project developed a curriculum-aligned MOOC featuring scaffolded lessons, instructional videos, and PRIMM-based pedagogical supports. It also delivered nationwide Teacher Professional Learning (TPL) workshops in 2025, offering hands-on experience with tools such as the BBC micro:bit and Rangers by Tangibl. During these workshops, pre- and post-workshop surveys were conducted using established measures of domain-specific self-esteem (Rosenberg, 1965; Bergin & Reilly, 2005b), which have been widely applied in computing education research (Quille, Bergin, & Mooney, 2015a).

This study examines whether participation in a single targeted TPL workshop can meaningfully enhance teachers' DT self-esteem. Addressing this issue is critical, as digital literacy and computational thinking are increasingly essential competencies, and effective teacher support is central to the successful implementation of large-scale curriculum reform. This study provides evidence on the effectiveness of brief, scalable professional learning interventions in supporting primary teachers' readiness to implement Digital Technology within a newly reformed curriculum.

2. Literature Review

2.1. Out-of-Field Teaching and its Consequences

Out-of-field (OOF) teaching refers to the practice of assigning teachers to subjects for which they have not received formal pre-service preparation or qualifications (Ingersoll, 1999). International research identifies OOF teaching as a widespread issue with significant implications for teacher wellbeing, instructional quality, and student learning (Hobbs & Porsch, 2022). Studies consistently show that OOF teachers experience reduced confidence, difficulties with content mastery, heightened stress, and a diminished sense of professional efficacy, all of which can negatively affect teaching performance and student outcomes (Castorico & Dioso, 2023; Sharplin, 2014; Porsch & Whannell, 2019; Wheeley, Klieve, Park, & Du Plessis, 2023).

In addition, OOF teaching has been linked to lower job satisfaction and increased attrition, suggesting longer-term consequences for workforce stability (Sharplin, 2014). These challenges are often attributed to inadequate subject knowledge, limited pedagogical content knowledge, and insufficient preparation for the specific demands of the assigned subject (Du Plessis, 2015). Such difficulties are further intensified when the subject is newly introduced or undergoing curriculum reform, requiring teachers to rapidly adapt to unfamiliar content while maintaining instructional quality (Castorico & Dioso, 2023).

Beyond pedagogical and organisational challenges, the literature highlights the psychological and identity-related dimensions of OOF teaching. Hobbs (2013) conceptualises OOF teaching as a "boundary-crossing" process that disrupts established practices and necessitates the renegotiation of professional identity. Empirical studies similarly indicate that teaching outside one's area of expertise is associated with reduced confidence and self-efficacy, reflecting tensions in teachers' sense of competence (Paolucci, Ní Ríordáin, & O'Dwyer, 2021; O'Meara & Faulkner, 2021). Collectively, these findings suggest that the consequences of misassignment extend beyond instructional concerns to encompass broader psychological and professional impacts.

Taken together, these pedagogical and psychological challenges highlight the importance of understanding the role of teachers' self-evaluations, directing attention to how constructs such as self-esteem may shape their experiences in OOF contexts.

2.2. Self-Esteem from Global to Domain-Specific: Implications for Computing

Early conceptualisations treated self-esteem as a unitary, stable evaluation of global self-worth (Rosenberg, 1965), yet this view has been widely critiqued for its limited explanatory power, with global self-esteem often showing weak relationships with performance outcomes (Baumeister, Campbell, Krueger, & Vohs, 2003). In response, multidimensional models reconceptualised self-evaluations as hierarchical and domain-specific (Marsh & Shavelson, 1985). Empirical work demonstrates that self-perceptions are differentiated across domains (Marsh, 1990) and that domain-specific self-concepts are more predictive of domain-relevant outcomes than global self-esteem (Marsh & Craven, 2006; Valentine, DuBois, & Cooper, 2004).

This perspective is extended by contingencies of self-worth theory, which emphasises that self-esteem depends on success in personally valued domains (Crocker & Wolfe, 2001), as well as by self-determination theory, which highlights tensions between contingent and intrinsic self-evaluation (Ryan & Deci, 2000). However, such frameworks remain relatively broad, limiting their applicability in highly specialised educational contexts.

Consequently, research has shifted toward finer-grained constructs, particularly within academic do-

mains. Subject-specific self-concepts are empirically distinct and hierarchically organised (Marsh, 1990; Marsh, Trautwein, Lüdtke, Köller, & Baumert, 2005). These findings indicate that explanatory power increases as constructs align more closely with the specific domain of performance.

In computing, this has led to the use of self-concept and self-efficacy to capture task-specific competence beliefs (Bandura, 1997; Bong & Skaalvik, 2003). Computer self-efficacy is associated with programming performance and learning outcomes (Compeau & Higgins, 1995; Cassidy & Eachus, 2002), with earlier studies linking self-efficacy to programming success (Ramalingam, LaBelle, & Wiedenbeck, 2004; Bergin & Reilly, 2005a) and to engagement-related behaviours in programming contexts (Loksa et al., 2016). These constructs are often used as operational proxies for domain-specific self-evaluations, particularly when internalised within learner identity.

Empirical work by Quille and Bergin (2018) reinforces this position, demonstrating that programming self-efficacy predicts student success in introductory computing and contributes to broader patterns of engagement and retention. Their findings highlight the contextual and pedagogical formation of these beliefs, rather than their dependence on fixed ability. Moreover, such beliefs are closely tied to identity formation and participation in computing (Carlone & Johnson, 2007; Gee, 2000), influencing persistence in the field (Lewis, Yasuhara, & Anderson, 2011).

However, increasing reliance on narrowly defined constructs introduces conceptual challenges. Although self-efficacy offers strong predictive precision, it contributes to fragmentation across related constructs, with substantial overlap observed between self-efficacy, self-concept, and broader self-evaluative beliefs (Bong & Skaalvik, 2003; Judge, Erez, Bono, & Thoresen, 2003). This convergence risks reducing self-esteem to competence-based judgements, thereby neglecting its broader evaluative and affective dimensions.

In sum, the literature reflects a shift from global to highly specific self-evaluations, with precision increasing alongside predictive power. Quille and Bergin's work exemplifies this trend in computing education but also highlights an ongoing tension between methodological precision and theoretical coherence, indicating the need for more integrative frameworks that reconcile global and domain-specific perspectives.

2.3. Computer Science Curriculum Reform in Ireland

Computer Science curriculum reform in Ireland has been driven by increasing societal and economic demands for digital competence and computational thinking. National policies, including the Digital Strategy for Schools 2015–2020 and the Digital Strategy for Schools to 2027, position digital learning as central to teaching, learning, and assessment, framing computer science as a core component of contemporary education (Department of Education and Skills, 2015; Department of Education, 2022).

At post primary level, reform is most evident in the introduction of Leaving Certificate Computer Science and the expansion of Junior Cycle short courses in areas such as coding and computational thinking (National Council for Curriculum and Assessment, 2017, 2018). These developments mark a shift from earlier conceptions of ICT as a support skill to recognition of computer science as a distinct disciplinary field requiring specialised content and pedagogical knowledge. At primary level, computer science is embedded across the curriculum within the redeveloped Primary Curriculum, where “being a digital learner” is identified as a key competency, particularly within the Mathematics, Science and Technology learning area (National Council for Curriculum and Assessment, 2020). The technology component of this curriculum is referred to here as Digital Technology (DT). This approach places increasing responsibility on generalist teachers to integrate DT content, often without substantial pre-service preparation.

Despite strong policy ambition, DT reform has significant implications for teachers' professional roles. International research indicates that curriculum expansion has contributed to increased out-of-field (OOF) teaching, particularly at post-primary level, where teachers without formal qualifications in computing are often assigned to Computer Science or related DT subjects (Ingersoll, 1999; Hobbs & Porsch, 2022). The specialised and rapidly evolving nature of DT intensifies challenges commonly associated

with OOF teaching, including reduced confidence, increased stress, and concerns about instructional quality (Sharplin, 2014; Hobbs & Porsch, 2022). At the same time, national policy frameworks emphasise the importance of digital learning and curriculum reform within Irish education, reinforcing the centrality of DT in contemporary teaching and learning (Department of Education and Youth, 2025).

These challenges are not only structural but also psychological. Research indicates that teachers' engagement and persistence are shaped more strongly by domain-specific self-concept and self-efficacy, than by global self-esteem (Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995). In computing contexts, lower domain-specific self beliefs are associated with reduced willingness to innovate and greater risk of disengagement (Bergin & Reilly, 2005a; Quille & Bergin, 2018). While national professional learning supports are available through many outreach programmes and Oide, the national support service for teachers and school leaders, they frequently occur alongside, rather than prior to, curriculum implementation, requiring teachers to develop DT expertise while already delivering the subject (Boeskens, Nusche, & Yurita, 2020).

Overall, computer science curriculum reform in Ireland provides a salient context for examining the interaction between OOF teaching and domain-specific self-esteem. DT represents a timely and appropriate focus for investigating how curriculum change influences teachers' psychological readiness to enact reform, with implications for instructional quality, professional wellbeing, and sustainability of the teaching workforce.

2.4. Teacher Professional Development in Computing in Ireland: Evidence of Impact

Irish research on teacher professional learning/continued professional learning (TPL/CPD) in computing presents a consistently positive picture of professional development during a period of rapid curriculum reform, subject novelty, and significant levels of OOF teaching (McGarr, McInerney, Exton, & Power, 2020; Ó Gallchóir & McGarr, 2022), with similar patterns observed in broader UK and Ireland studies (Sentance et al., 2022).

However, this body of research has been situated almost entirely at post primary level, reflecting the introduction of Leaving Certificate Computer Science and associated Junior Cycle developments (National Council for Curriculum and Assessment, 2017, 2018). While not directly focused on primary education, this literature provides important insights into how professional development can support teachers' competence, confidence, and professional identity during the early stages of computing curriculum enactment (McGarr et al., 2020; O'Donnell, 2024).

Studies examining the rollout of Leaving Certificate Computer Science indicate that well designed and sustained professional development can enhance teacher confidence, pedagogical practice, and professional identity, even where teachers initially lack formal qualifications in computing (McGarr et al., 2020; McGarr, Goos, McInerney, Johnston, & Fleming, 2022). Commissioned national research evaluating Oide, formally the Professional Development Service for Teachers (PDST), initiatives found that participating teachers reported increased confidence in teaching computer science, alongside observable shifts towards inquiry based and problem solving pedagogical approaches. Notably, these benefits extended to teachers teaching computer science out-of-field, with structured CPD supporting both subject understanding and pedagogical effectiveness (McGarr et al., 2020).

Early research on the introduction of post-primary computer science suggests improvements in teacher preparedness and reduced anxiety when teaching a new subject (Quille & Bergin, 2018). Teachers highlighted the role of CPD in clarifying curriculum and assessment, contributing to increased confidence during initial implementation. Further research on teachers involved in national CPD provision highlights their development of significant pedagogical expertise and evolving professional identities linked to leadership roles, while also pointing to challenges in sustaining these contributions within existing structures (O'Donnell, 2024).

Although this evidence base does not derive from primary school contexts, and there appears to be little prior research in this area, it offers important lessons for the expansion of computing and DT education

across educational sectors. It demonstrates how sustained, collaborative, and identity affirming professional development can support teachers navigating curriculum reform, especially where OOF teaching is prevalent and specialist preparation is limited. These insights provide a useful foundation for considering how professional learning might support primary teachers as computing related curriculum reform continues to develop.

Thus, this paper aims to investigate the following question:

Can a single intervention have a positive impact on teachers' self-esteem in Digital Technology?

3. Methodology

3.1. Research Design

This study employed a quantitative pre-post survey design to investigate whether participation in a single TPL workshop could increase primary teachers' self-esteem in the DT strand of the redeveloped Irish primary curriculum. A pre-post design was selected because it enables direct measurement of change in participants' self-esteem over a short intervention period, providing a clear indicator of whether the TPL workshop produced an immediate impact on teachers' self-esteem in DT. The quantitative approach enables the production of standardised, comparable data across participants and facilitates statistical analysis of patterns and variations in self-esteem rating.

3.2. Participants

Participants in this study were primary school teachers who attended EDTips TPL workshops held between February and November 2025 across various locations around the country. The group represented a broad spectrum of teaching experience, and the majority (82%) reported having some prior exposure to DT related content, either through classroom teaching or involvement in extra-curricular activities. Participation in the research was entirely voluntary, and only teachers who completed both the pre- and post-survey were included in the final analysis. The survey also collected demographic information, including years of teaching experience, class level taught, and previous engagement with technology-based instruction, to provide contextual insight into the participant cohort. As participation was voluntary, the sample may be subject to self-selection bias, with participants potentially more positively disposed towards DT or professional learning.

3.3. The EDTips TPL Intervention

The TPL workshop formed part of the national Research Ireland EDTips project (Nolan et al., 2024), which aims to support teachers in implementing the newly introduced DT strand. Each TPL workshop introduced participants to the EDTips online learning environment. Teachers engaged with scaffolded lesson plans, sample activities, and videos based on the PRIMM pedagogical model. Hands-on activities were included using the BBC micro:bit and the Rangers by Tangible offline toolkit, enabling teachers to experience practical, classroom-ready exemplars. The TPL workshop lasted approximately two hours and was designed as a short, domain-specific self-esteem building intervention rather than a comprehensive training programme. The TPL workshop will be referred to as the 'intervention' in later sections of this paper.

3.4. Instruments

Teacher self-esteem in Digital Technology was assessed using a structured survey instrument administered immediately before and after each workshop. In this study, domain-specific self-esteem is operationalised as teachers' evaluative judgement of their competence and confidence in DT, reflecting overlap with self-efficacy constructs in applied educational contexts. The self-esteem items were adapted from the validated measures developed by Bergin and Reilly (2006), ensuring strong alignment with established approaches to assessing domain-specific teaching self-esteem (Bergin & Reilly, 2005a; Quille & Bergin, 2018, 2019). To ensure the adaption of the scale was fit for purpose, Cronbach's alpha was run on the 10 items giving a good internal consistency of 0.904. Each item used a Likert-type response scale, enabling participants to rate their perceived self-esteem in DT along a graded continuum. Iden-

tical items were included in both the pre- and post-intervention surveys, allowing for direct comparison and the calculation of change scores. The pre-survey also incorporated a set of demographic questions designed to contextualise the sample, explore potential patterns associated with teachers' backgrounds, and identify barriers that might influence participation in TPL opportunities.

3.5. Data Collection Procedures

At the commencement of the intervention, teachers were invited to complete a pre-intervention survey online using Microsoft Forms. Participation in the questionnaire was voluntary, and participants were informed of their right to withdraw from the study at any time without penalty. Completion of the pretest survey required an average of 8 min and 13 s. Following completion of the intervention activities, a post-intervention survey was administered using the same online platform. The post-intervention survey required an average of 4 min and 4 s to complete. In December 2025, the survey data was exported from the survey platform for subsequent analysis.

3.6. Data analysis techniques

Data analysis was conducted to establish whether a single intervention could positively impact teachers' self-esteem in DT. In December 2025 data from the surveys was collated, comprising 50 pre-intervention and 49 post-intervention surveys. Prior to analysis, data were screened for completeness, outliers, and consistency. Only fully matched pre- and post-responses were retained. This resulted in a final matched sample of $n = 41$ participants. No extreme outliers were identified, and Likert-scale responses were treated as approximately continuous, consistent with established practice in self-esteem research, particularly where multiple items are combined to form a composite scale.

3.6.1 Domain-Specific Self-esteem Measurement

In this study, a domain-specific DT self-esteem instrument was employed, drawing on this established adaptation approach within computing education (Bergin & Reilly, 2005a; Quille, Bergin, & Mooney, 2015b). The scale operationalises DT self-esteem as a unidimensional construct reflecting an individual's overall evaluative judgement of their competence and confidence in DT. DT self-esteem is understood here as a unidimensional evaluative construct encompassing perceptions of competence and confidence within the DT domain.

Consistent with this conceptualisation, the instrument comprises multiple observed items designed to function as parallel indicators of a single underlying construct. Each item reflects variations in perceived competence, confidence, or self-doubt in DT, rather than measuring distinct subdimensions. As such, the items are expected to exhibit substantial intercorrelations, reflecting shared variance attributable to overall DT self-esteem.

Negatively worded items were reverse coded prior to analysis to ensure that higher scores consistently indicated higher levels of DT self-esteem. Internal consistency of the scale was assessed using Cronbach's alpha to confirm the reliability of the instrument.

The same instrument was administered in both pre- and post-intervention surveys. The adapted items were as follows:

- On the whole, I am satisfied with my DT progress.
- At times, I think that I am no good at all at DT.
- I feel that I have a number of good DT qualities.
- I am able to complete DT tasks as well as most other colleagues.
- I feel that I do not have much DT ability to be proud of.
- I certainly feel useless at DT at times.
- I feel that I am a person of worth, at least on a level plane with other colleagues.

- I wish I could have more respect for my DT ability.
- All in all, I am inclined to feel that I am a failure at DT.
- I take a positive attitude towards my DT ability.

3.6.2 Principal Component Analysis (PCA)

Principal component analysis (PCA) was employed to reduce the ten self-esteem items to a single composite score representing overall DT self-esteem for each participant, a commonly used dimensionality reduction technique for summarising correlated variables into a smaller set of components (Abdi & Williams, 2010; Jolliffe & Cadima, 2016). Sampling adequacy and factorability were assessed prior to PCA using standard diagnostic tests. The same set of items was used in both the pre- and post-intervention surveys.

Given the aim of assessing change over time, PCA was conducted on the combined (pooled) dataset consisting of both pre- and post-intervention responses. Pooled PCA involves performing a single analysis across all observations to identify a common component structure shared across conditions (Jolliffe & Cadima, 2016). This approach is appropriate in pre-post designs, as it ensures that the same weighting of items is applied at both time points, thereby enabling meaningful comparison of scores over time (Abdi & Williams, 2010; Tabachnick & Fidell, 2019).

The resulting principal component scores were used as the overall measure of DT self-esteem in subsequent analyses.

To assess whether the intervention resulted in a statistically significant change in DT self-esteem, a paired-samples t-test was conducted on pre- and post-intervention composite scores. This test is appropriate for repeated measures designs where the same participants are measured at two time points.

In addition to statistical significance, the magnitude of the effect was assessed using Cohen's *d* for paired samples. Effect sizes were interpreted using conventional thresholds (small ≈ 0.2 , medium ≈ 0.5 , large ≈ 0.8), providing an estimate of practical significance independent of sample size.

Prior to analysis, assumptions of normality for the difference scores were assessed through visual inspection of distribution plots and statistical tests of normality.

4. Results

This section presents the results of the study examining the impact of a single intervention on teachers' self-esteem in DT. Principal component analysis identified PC1 as a composite measure of DT self-esteem, which was used in all subsequent analyses. In our case, the more positive a PC1 score, the higher the DT self-esteem. Subsequently, the lower or more negative the PC1 score, the lower the DT self-esteem. The results are organised into descriptive statistics, inferential analysis, and a summary in relation to the research question.

4.1. Descriptive statistics

A total of 41 participants were included in the analysis. Descriptive statistics for PC1 scores before and after the intervention are presented in Table 1. The mean pre-intervention PC1 score was -0.64 (SD = 2.55), increasing to 0.64 (SD = 1.71) post-intervention, indicating a clear positive shift in DT self-esteem. The median similarly increased from -0.25 to 0.94, supporting this upward trend.

Variability in scores decreased following the intervention. The pre-intervention scores showed a wide range (min = -7.31, max = 3.86), whereas the post-intervention scores were more constrained (min = -2.38, max = 4.58), indicating greater consistency among participants after the intervention.

Overall, the mean increase in PC1 scores was 1.28.

4.2. Statistical Analysis

Firstly, we assessed the normality of the data. To do this, we assessed the normality of the changes between pre and post. The change scores did not significantly deviate from normality, Shapiro-Wilk $p =$

Statistic	Pre-Intervention	Post-Intervention
N	41	41
Mean	-0.64	0.64
Standard Deviation	2.55	1.71
Minimum	-7.31	-2.38
25 th Percentile	-2.45	-0.37
Median	-0.25	0.94
75 th Percentile	1.01	1.52
Maximum	3.86	4.58

Table 1 – Descriptive statistics before and after the intervention.

.146, so a paired-samples t-test was considered appropriate.

A paired samples t-test was conducted to examine whether the change in PC1 scores was statistically significant (Table 2).

Results showed a significant increase in PC1 scores following the intervention, $t(40) = -4.98$, $p < .00001$, which would seem to indicate an improvement in DT self-esteem. The effect size was then calculated which was moderate to large (Cohen's $d = 0.78$), suggesting that the observed change is both statistically significant and practically meaningful.

Statistic	Value
N	41
t	-4.98
Degrees of Freedom	40
p-value	< .00001
Cohen's d	0.78
Mean Change	1.28

Table 2 – Statistical test results for the intervention.

4.3. Visualisation of Results

Figure 1 illustrates the distribution of PC1 scores representing DT self-esteem for pre- and post-conditions, shown as boxplots (median, interquartile range, and range). Black dots indicate means ($\pm$ SD). DT self-esteem increased significantly from pre- to post-condition ($p = 0.000013$, Cohen's $d = 0.78$). The figure visually reinforces the statistical findings, showing an upward shift in the distribution of scores. The post-intervention condition exhibits a higher median and mean, along with reduced variability relative to the pre-intervention condition.

4.4. Summary of Findings in Relation to the Research Question

This study sought to answer the research question:

"Can a single intervention have a positive impact on teachers' self-esteem in Digital Technology?"

The results provide evidence supporting this hypothesis. PC1 scores, representing DT self-esteem, increased significantly following the intervention, with a mean increase of 1.28. Both descriptive and inferential analyses indicate a consistent upward shift in scores, accompanied by reduced variability.

The statistically significant result ($p < .00001$), combined with a moderate-to-large effect size (Cohen's $d = 0.78$), suggests that the intervention had a meaningful and measurable impact on participants' DT self-esteem. Overall, these findings indicate that even a single intervention can produce improvements in teachers' DT self-esteem.

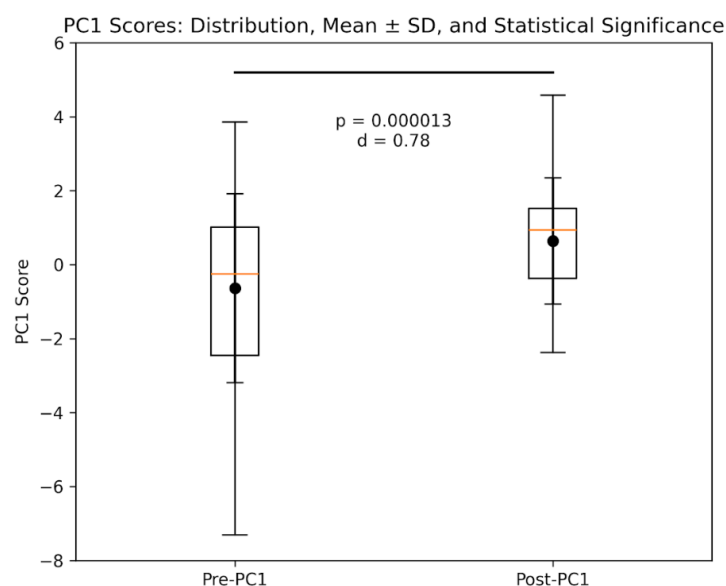


Figure 1 – Distribution of PC1 scores representing DT self-esteem for pre- and post-conditionse

5. Discussion

5.1. Overview of Findings

This study examined whether a single intervention could positively influence teachers' self-esteem in Digital Technology (DT). The findings demonstrate a statistically significant improvement in DT self-esteem following the intervention. PC1 scores, representing DT self-esteem, increased substantially from pre- to post-intervention, with a moderate-to-large effect size (Cohen's $d = 0.78$). These results indicate that the observed change was not only statistically significant but also practically meaningful.

In addition to this increase, a reduction in variability was observed, indicating greater consistency in participants' scores following the intervention. Collectively, these findings provide strong evidence that even a brief intervention can have a measurable impact on teachers' DT self-esteem.

5.2. Interpretation of Results

The observed increase in PC1 scores suggests that the intervention positively influenced teachers' perceptions of their self-esteem in DT. The upward shift in both mean and median values indicates that the improvement was broadly distributed across participants, rather than driven by a small subset.

The reduction in variability is particularly noteworthy. Pre-intervention scores showed considerable dispersion, reflecting variation in confidence levels among participants. Post-intervention, the narrower distribution indicates a convergence toward more similar levels of DT self-esteem. This suggests that the intervention may have been effective not only in increasing overall confidence but also in supporting participants with lower initial self-esteem.

These findings are consistent with existing research demonstrating that professional learning experiences can enhance teachers' self-esteem. The results of this study extend this evidence by suggesting that even a single, focused intervention may be sufficient to produce meaningful improvements in domain-specific self-esteem.

5.3. Implications for Practice

The findings have important implications for teacher professional development in DT. The apparent significant improvement observed after a single intervention suggests that relatively short, targeted programmes can be effective in enhancing teachers' domain-specific self-esteem.

This has practical value for educational settings where time and resources are limited. Rather than requiring extensive or long-term training, well-designed short interventions may provide a scalable and

efficient way to support teachers. Increased DT self-esteem may, in turn, encourage greater engagement with digital tools, more frequent integration of DT into classroom practice, and increased willingness to adopt innovative approaches.

The reduction in variability also highlights the potential of such interventions to promote greater equity among teachers by supporting those with lower initial domain-specific self-esteem

5.4. Limitations and Future Research

Some limitations should be acknowledged. The absence of a comparison condition limits the extent to which observed changes can be attributed exclusively to the intervention, as alternative explanations (e.g., maturation or external influences) cannot be ruled out. In addition, the modest sample size constrains the generalisability of the findings.

Future research should aim to replicate these findings with larger and more diverse samples to strengthen generalisability. Adopting a longitudinal design would allow for stronger causal inference and provide insight into whether the observed improvements are sustained over time.

Further work is also needed to identify which elements of the intervention are most effective and how gains in DT self-esteem translate into changes in teaching practice and student outcomes.

6. Conclusion

This study set out to examine whether a single, targeted Teacher Professional Learning (TPL) intervention could positively influence primary teachers' self-esteem in Digital Technology (DT) within the context of Ireland's newly redeveloped primary curriculum. The findings demonstrate a statistically significant and practically meaningful improvement in teachers' DT self-esteem following participation in the EDTips workshop. The observed increase in composite self-esteem scores, alongside reduced variability, indicates that the intervention was effective not only in raising overall self-esteem but also in supporting teachers with initially lower levels of confidence.

These findings contribute to the growing body of research highlighting the importance of domain-specific self-evaluations in shaping teachers' engagement with new curricular areas. In the context of DT, where many primary teachers are required to teach unfamiliar content, enhancing self-esteem appears to play a crucial role in supporting readiness to engage with and implement curriculum reform. The results suggest that even brief, well-designed professional learning experiences can have a meaningful impact on teachers' perceived competence and confidence in this domain.

From a practical perspective, the study underscores the potential of short, scalable TPL interventions to support large cohorts of teachers during periods of curriculum change. Given the time and resource constraints often faced in educational systems, such approaches offer a feasible and efficient strategy for strengthening teacher readiness in emerging subject areas like DT.

While further research is required to explore the long-term sustainability of these effects and their translation into classroom practice and student outcomes, this study provides encouraging evidence that targeted professional learning can play a key role in supporting teachers' psychological preparedness for curriculum reform. Ultimately, strengthening teachers' domain-specific self-esteem represents an important step towards ensuring the successful implementation of Digital Technology within primary education.

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