The Usefulness of Research Evidence for Improving Teaching: Insights from a Secondary Analysis of a Survey of Teachers

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Abstract
In England, there is pressure for teachers to use evidence in their work. Teachers' views on perceptions of the usefulness of research evidence could affect their willingness and ability to adapt research findings into teaching practice. This study uses data (N=3,982) from an existing survey of teachers in England to examine their views on research findings and identify key factors predicting teacher perceptions of the usefulness of research findings. The findings highlight that around 40% of teachers consider research evidence of no value for their teaching or have no experience in using research findings. The strongest predictor of evidence use is teachers' confidence in understanding and using research evidence. If we want better use of evidence, this study suggests that relevant professional development for knowledge about research and a 'research-rich' school environment may help teachers better engage with research findings.

Keywords: perception of research findings; research evidence use; school improvement

1 Introduction

'Evidence' is information, facts, or data that alter our beliefs about how the world is working. Evidence in education involves various forms such as internal evaluation, standardised tests, and statutory inspection that could all be used for school improvement and policy development. For example, teachers who use students' reactions in the classroom to adjust teaching could be a form of use evidence. Findings that have been systematically collected and analysed by research studies are an essential sort of 'evidence'. This study focuses on the use of evidence from systematic research, particularly evidence that has been tested robustly.

In 1996, David Hargreaves proposed the idea that teachers could use evidence in teaching practice and decision-making. For perhaps 30 years, an international movement advocating the use of research evidence in practice has gained momentum. While research evidence has improved in education, the government and other stakeholders also expect that robust research evidence could be useful and used in real life. In England, the Department for Education funds the Education Endowment Foundation to support schools in finding and implementing high-quality research evidence in education. This includes setting up the Research Schools Network (DfE, 2018; EEF, 2021).

Teachers are among the most essential practitioners in educational settings, and their attitudes towards research evidence use may have a direct impact on the quality of using research evidence. It is important for

researchers to understand potential factors related to teacher perceptions of views on the usefulness of research findings. This study investigated predictors of teachers' perceptions of views on using research evidence for teaching improvement by analysing an existing dataset Survey of Teachers 2010.

1.1 An urgent pressure to use research evidence

Educators' use of research evidence in school practice remains limited so far. A large-scale structured review across all areas of public policy suggested that limited evidence supports the effectiveness, and there are only a few high-quality promising approaches to use research evidence in daily practice (Gorard et al., 2020). The review highlighted potential obstacles to evidence use, including the quality of primary research and users' skills and attitudes, and provided suggestions for summarising and delivering research findings.

For teachers, knowledge from rigorous research can be used to enrich, explain, and justify professional actions and judgments, as well as to stimulate thoughtful deliberation on one's practice. Using research evidence might be beneficial for teachers to enhance the effectiveness of learning processes, innovate new approaches to pedagogical issues, and improve school quality (Booher et al., 2020; Diery et al., 2021; Ion et al., 2021; Mincu, 2015). Teachers supposed that research guided a 'right path' to promote students' learning process and help instruction decisions. For a wider consideration of education equity, these 'research-rich' approaches are most beneficial for lower achievers and disadvantaged students.

On the other hand, there is resistance and reluctance to use evidence. van Schaik et al. (2018) reviewed 447 articles suggesting that teachers had limited interest and confidence in using knowledge from research findings to support teaching. Teachers perceive that research findings in education are difficult to understand and far removed from teaching practice.

Moreover, teachers' professional expertise is mainly gained from their daily teaching practice rather than research findings (Weimer, 2008). Therefore, teachers may think of research as a 'threat' which challenges their expertise and adds extra workload. Some teachers are sceptical and reject using educational research because they think that either the research evidence is not contextualised enough for specific teaching or that educational research is not scientific (Sato & Loewen, 2022).

Teachers' attitudes and beliefs about research evidence may be a strong predictor of their willingness and ability to use it in daily teaching (Lysenko et al., 2014). Before encouraging teachers to use research evidence, investigating teachers' perceptions of the usefulness of research evidence findings as a tool to improve teaching practice is an important step.

2 Facilitators and barriers of using educational research evidence

Although the perceived usefulness of research evidence for improvement of practice is a judgement made by practitioners themselves, some factors may be relevant to this judgement. To engage practitioners with robust research evidence, facilitators and barriers to using research evidence are essential to be investigated.

In the clinical field, Abu-Odah et al. (2022) synthesised information from ten existing reviews, revealing that the primary individual-level barriers were insufficient knowledge and skills to conduct, organise, utilise, and evaluate research literature. Rickinson et al. (2022) proposed a Quality Use of Research Evidence (QURE) with 112 studies in health, social care, education, and policy, which suggested individual enabler (skillsets, mindsets, and relationships), organisational enablers (leadership, culture, infrastructure), and system-level enablers (complex interactions and interdependencies across the education sector).

2.1 Access, time, and skills in using research evidence

Engaging teachers with research evidence is always challenging with insufficient preparation, lack of reinforcement, competing demands, the absence of evidence-based practice culture, challenges in maintenance and generalisation, and the breadth of expertise required (Scheeler et al., 2016). At teachers' individual level, they often encounter obstacles such as limited and inaccessible research resources, confidence in skills and time needed to identify research evidence, and the ability to understand and adapt research knowledge into practice (Ion et al., 2024; Sato & Loewen, 2022; van Schaik et al., 2018).

Finding, judging, and using research findings to support teachers' professional development is not as easy as using general information for them. A survey based on 390 teachers in the U.K. indicated that teachers were not confident in finding and using research information (Williams & Coles, 2007). Teachers' willingness to engage with research evidence may be hindered without physical access, especially if teachers are not sure about where they can get adequate research findings.

It is necessary for teachers to make sense of research evidence before they judge its quality and decide how to apply it in their specific teaching contexts. However, understanding research findings may not be as easy as using general information for teachers. Available research is often published in academic language and journals (Procter, 2013). Teachers often have difficulties to accurately interpret inferential statistics and effect sizes (Schmidt et al., 2023).

Thomm et al. (2021) used path analysis and examined the predictive power of teachers' access to sources, lack of sourcing skill and time, and familiarity with research for the appreciation and irrelevance of research evidence among 2,549 secondary mathematics teachers. Confidence in understanding research papers could positively predict teachers' appreciation of research. In other words, teachers who are confident in their searching and interpretation skills are more likely to consult research findings for their teaching practice and attach more value to the usefulness of research evidence.

2.2 Support from the environment

A teacher's potential to use research evidence might be limited, which indicates that support from colleagues and schools might be helpful in facilitating the use of research findings. However, the importance of school encouragement and colleague collaboration is usually ignored. About half of 131 teachers in England reported that they had received good professional development in engaging with educational research (Mills et al., 2021). Booher and colleagues (2020) found that 95% of 456 participating teachers reported that school leaders do not share education research with them.

An active evidence-informed school environment and culture may stimulate teachers to 'buy in' research evidence for improving teaching. Joram et al. (2020) stated that teachers' beliefs and attitudes about the usefulness of educational research findings for teaching practice are highly related to the degree to which they feel supported in their efforts to read and use research and their voice in decision-making in the classroom.

2.3 Limitations of existing studies

It is important to note that existing evidence should be interpreted with caution due to their limitations. Most studies investigated teachers' attitudes towards views on using research evidence via small-scale surveys or case studies. A limitation of many previous studies on this topic is that they often rely on case studies or surveys with small to medium sample sizes, which may not represent a diverse demographic of teachers. The studies reviewed by van Schaik (2018) were mainly case studies, and the review did not consider the quality of the underlying research, which makes the findings of the review less trustworthy.

Data collection methods in these studies may also contribute to bias, which could not which may not represent a diverse demographic of teachers. For instance, the survey conducted by Mills (2021) was distributed through specific channels such as the Chartered College of Teaching Twitter account and the UCL Institute of Education newsletter. This distribution method may result in a biased sample and limit the generalisability of the findings to the broader population of teachers in England. Teachers who are willing to participate in a survey or interview about using research findings may already have a preference for research evidence. Therefore, these studies may have a biased sample and could not illustrate an accurate 'snapshot' of teachers' views on research evidence.

Most existing studies have focused on the predictive power of teachers' perceptions views from a single aspect, either regarding themselves or the school environment. When these two aspects are combined, the strongest predictor of teacher perceptions views remains uncertain. The relationship among these predictors, particularly the interaction between teachers' skills and the school research environment, is still unclear.

In addition, these studies primarily focus on the use of research findings to improve teaching and do not compare teachers' perceptions of other approaches for teaching quality improvement. It is unclear if teachers will still value research findings as useful for their teaching when they are faced with other options.

3 Research questions

This study started with a description of teachers' views on research evidence use and investigated the strongest predictor of their views. Potential support from schools and colleagues is also discussed to facilitate teachers' confidence in understanding and using research findings. The research questions are as follows:

RQ1: How do teachers in England value the usefulness of research findings?

RQ2: What is the strongest predictor of teachers' views on perceived usefulness of research evidence for improvement of teaching in England?

RQ3: To what extent may school encouragement and colleague discussion support teachers' confidence in understanding and using research evidence?

4 Methods

The current study is cross-sectional with data obtained from the *Survey of Teachers 2010* (General Teaching Council for England, National Foundation for Educational Research, London Metropolitan University, 2012). Before analysing this dataset, the researcher examined the trend in the proportion of teachers who reported having access to educational information relevant to research, using data from TALIS 2008, 2013, and 2018 (Table 1). This showed that in terms of these simple questions that could be related to research use, not much has changed over time. For example, in England, there was almost no change in accessibility to educational conferences where teachers and/or researchers present their research or discuss educational issues.

Table 1 Trends of access to education information relevant to research

	2008	2013	2018
Educational conferences	50	43	53
Professional literature	79		73
Individual/ collaborative research	38	35	
Educational conferences - England		30	36

This suggests that although the more detailed data from the *Survey of Teacher 2010* data was collected a decade ago, its results will still be relevant. There is currently no better option. In addition, this dataset has not been investigated for teachers' use of research evidence except for one early and brief report from NFER (Poet et al., 2010). However, it is important to note that the report amalgamated teachers' use of research evidence with teachers' action research. The analyses in this paper illustrate the situation of teachers' use of research findings and the strongest predictor of how in-service teachers value research findings.

4.1 Survey of Teachers

The National Foundation for Educational Research (NFER) conducted a teacher survey in 2010 to investigate approaches for in-service teachers to improve their teaching. The survey gathered teachers' views on the use of research findings, the involvement of professional development, the use of observation and feedback, and performance management via the question 'how useful have you found the following?'

The survey contacted 13,500 teachers, of which 4,392 teachers responded the survey. NFER compared the demographic information of teachers in the survey and the population, indicating that there was only a small difference between the achieved sample and the population in the General Teaching Council for England (Poet, Rudd, and Kelly, 2010). The dataset is safeguarded, which should be requested from the UK Data Service by registering and accepting the End User Licence.

This study focuses on the use of research evidence among teachers from key stage 1 to key stage 4. Therefore, the sample size includes 3,982 teachers who have work experience from key stage 1 to key stage 4. The rest 410 teachers who only worked in the pre-key stage or in key stage 5 are excluded from the dataset. Teachers' background information, such as ethnicity, sex, employment status, and work experience, were collected by NFER and accessible in the dataset, as shown in Table 2. Teachers who answered this survey are white, female, and full-time teachers.

Table 2 Teacher background characteristics

Characteristics		Percentage
Ethnicity	Non-white	4.4
	White	93.6
	Missing	2.1
Sex	Male	20.7
	Female	79.3
Employment Status	Part-time	27.9
	Full-time	71.2
	Missing	0.8
Worked in Key stage 1		31.0
Worked in Key stage 2		42.0
Worked in Key stage 3		44.8
Worked in Key stage 4		43.6
Number of teachers		3,982

p.s. Key stage refers to the specific stages of the state education system in the UK.

4.2 Indicators

Teacher-perceived usefulness of research evidence for improving teaching practice is reflected by the question:

Thinking about the different ways that you might improve your teaching, in the past two years, how useful have you found the following? Using findings of other people's research.

This is a four-point Likert scale, with the degree from 'not at all useful' to 'very useful'. Teachers could also select 'no experience of it'.

The survey estimates teachers' confidence in their ability of research-evidence-use, opportunity to use research, and confidence in conducting their own research. Teachers' responses for items in Table 3 are categorised to six degrees from strongly agree to strongly disagree. Teachers could also select the category of 'don't know'.

Table 3 Items about research evidence use

Confidence and external condition	I know where I can find relevant research that may help to inform my teaching.
	The research I have found I have been able to understand and use.
	My school encourages me to use research findings to improve my practice.
	I have frequent opportunities (at least termly) to discuss relevant research findings with my colleagues.
	I do not have time to use research findings.
Conducting research	In the last 12 months, I have undertaken my own research and enquiry to improve my practice.
	I feel confident in my research skills to conduct my own enquiry.
	Usefulness of doing my own enquiry or research.

4.3 Analysis

The analysis started with a descriptive analysis of teachers' views on the usefulness of diverse resources to improve teaching. A multi-variate regression was constructed to find out the strongest predictor of the willingness to use research evidence. Taking a further step, the study explored the relation between predictors via path analysis.

Teachers who did not respond to the question on the usefulness of research evidence were excluded at the first stage (n=46). The dataset finally contained 3,936 teachers. To retain most of the cases and mitigate potential bias, the study recoded missing values in categorical variables into missing and replaced missing ordinal variables with the mean scores of the corresponding items.

The study described how teachers valued the approaches for improving teaching, such as self-reflection on practice, school self-evaluation, performance management objectives, conducting enquiry or research, using research findings, and using teacher assessment data. For descriptive analysis, teachers' answers were re-categorised into 'useful', 'useless', and 'no experience'.

The study first compared the percentage of teachers who have no experience with a certain approach to investigate the most accessible approach to improve teaching among teachers. The highest-valued approach and lowest-valued approach were illustrated by comparing the percentage of teachers who rated the approach as 'useful' divided by the total number of teachers. With consideration of teachers who had never used a certain approach, the useful rate was calculated to represent the percentage of teachers who rated the approach as useful among teachers who have such experience.

$$Useful\ rate = P(useful|experienced) = \frac{p(useful)}{p(experienced)}$$

To investigate the strongest predictor of teachers' value about the use of research evidence, a multivariate logistic regression model was constructed with outcomes represented by teachers' answers to the perceived usefulness of research findings for enhancing teaching practice. The study recodes the outcome variable to a bivariate variable. Teachers who rated the usefulness of research evidence with 'fairly useful' or 'very useful' were recoded into 'perceive research findings useful', while the rest were labelled as not perceived usefulness. Values for each predictive variable were inversed so that the larger the number was, the higher agreement that teachers expressed.

Teachers' background variables were entered into the first block of the model, followed by teachers' confidence and external condition, and conducting their own enquiries. The model used forward function to determine whether predictors should be included in any one block.

With consideration of missing cases and values, p-value may not be an appropriate index to judge the model. Even with fully randomised data, significant test represents the probability of observing the coefficient under the hypothesis of the coefficient was equal to zero. However, significance does not provide a useful probability or events occurring by chance (Berk & Freedman, 2001). Instead, this study reported the percentage correct of each block to support the model. If the percentage correct increases with adding a block, it suggests that variables in that block have predictive power for teacher-perceived usefulness of research findings. This analysis used the standardised coefficient to represent the odds by which the outcome of having positive views on the usefulness of research findings increase or decrease with the increase in each predictor.

While discovering the strongest predictor of teachers' views on research findings, this study also explored the interaction between teachers' confidence and external conditions of using research evidence. A path analysis model was constructed to explain how support from schools and colleagues may facilitate teachers' understanding of research findings. The model is illustrated in Figure 1.

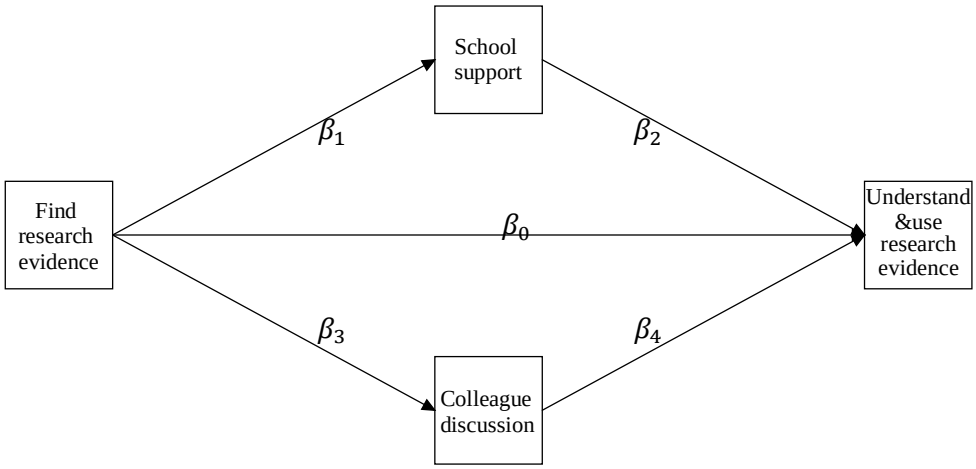

Figure 1. Path analysis of issues in using research evidence

This study constructed the model in M-plus editor and diagrammer, version 8 for IOS. The model was constructed based on the relationship between finding research evidence and understanding research evidence. R^2 was an indicator for the model rationale. If R^2 increases with school support and colleague discussion, it represents that school support and colleague discussion partially explain the process from finding research evidence to understanding it.

In the model, the main path was from finding research evidence to understanding and using research evidence with school support and colleague discussion as mediators. The degree of teachers' understanding and using research evidence could be predicted by

$$\beta_0 \times finding\ research\ evidence + \beta_2 \times school\ support + \beta_4 \times colleague\ discussion$$

Where school support could be predicted by

$$\beta_1 \times finding\ research\ evidence.$$

And colleague discussion could be predicted by

$$\beta_3 \times finding\ research\ evidence.$$

The indirect path 'effect' was estimated by multiplying standardised coefficients on each indirect path ($\beta_1 \times \beta_2$ and $\beta_3 \times \beta_4$). They were added up with the standardised coefficient of the main path to estimate the explanatory power of support from schools and colleagues in the process of understanding research evidence. The ratio of the indirect explanatory power over the direct explanatory power was calculated with the following formula:

$$Ratio = \frac{\beta_1 \times \beta_2 + \beta_3 \times \beta_4}{\beta_0 + \beta_1 \times \beta_2 + \beta_3 \times \beta_4}$$

The ratio suggested the indirect correlation between teachers' confidence in finding relevant research findings and understanding research evidence via support from schools and colleagues. The ratio could represent the potential difference made by the mediators.

5 Findings

Using research findings was not highly valued by teachers compared with other approaches to promote teaching practice with a quarter of them never experiencing this approach. The perceived usefulness of research findings did not relate highly to their background characteristics, but largely related to their confidence in understanding of research findings and teacher-perceived usefulness of conducting their own research. Furthermore, the study investigated the path from finding to understanding research evidence. The results indicated that receiving support from school and colleagues may explain teachers' confidence in understanding research evidence.

5.1 RQ1: Using research findings is the least valued approach to improve teaching practice

The survey mentioned six ways to improve teaching, of which using research evidence was a less commonly experienced approach and had the lowest useful rate.

Table 4 illustrates how teachers value different approaches to improving teaching practice.

Table 4 Usefulness of ways to improve teaching (percentage)

	No experience	Not useful	Useful	Experienced & Useful
Reflecting on my own practice	1	2	97	99
Reviewing my practice as part of school self-evaluation	13	14	73	84
Working towards my performance management objectives	10	26	64	71
Doing my own enquiry or research	29	9	61	88
Using the findings of other people's research	24	18	57	76
Using teacher assessment data	10	18	71	80

Using research evidence or conducting school research were not popular approaches for teachers to improve teaching compared with the other four approaches. Almost all teachers (99%) had the chance to reflect on their practice. However, 24% of the teachers had no prior experience of using research findings, which was the second largest proportion, following the figure for doing their own enquiry or research (29%). 57% of teachers reported that they found research findings useful for teaching practice, which was the least valued approach.

Teachers who had experienced using the findings of research to improve teaching practice were not fully satisfied with the benefit of research findings. A quarter of teachers (24%) with experience in using research evidence find it useless to improve their teaching. For the most popular approach, self-reflection in daily practice was highly valued by teachers with more than 96% of teachers who had experienced it finding it useful. While conducting teachers' own research was the least common approach (29% no experience), 88% of teachers who had instructed their research found it useful.

The percentage of teachers who hold a positive view towards using research evidence for teaching practice was not as large as in prior studies (e.g. Everton et al., 2002; Mills et al., 2021). The remaining teachers either hold a critical view of research findings or have no experience in using research findings in their teaching practice. Compared with other approaches, using research findings was the least popular approach for teachers to improve teaching practice, while reflecting on their own practice was the most popular.

5.2 RQ2: Teachers' confidence in understanding and using research evidence is the strongest predictor

A logistic regression model was constructed to investigate the strongest predictor for teacher-perceived usefulness of research evidence to improve teaching. This model compared 2,282 in-service teachers who reported usefulness of research findings for teaching practice with 1,654 teachers who did not perceive the usefulness, either found research evidence useless or had never used research findings.

The base percentage correct for the logistic regression model was 58%, indicating that by random guessing, the model was able to predict a teacher's views on the usefulness of research findings with a 58% accuracy rate. The study organised the variables into three blocks and applies a forward function. Table 5 represents the percentage correct and the increase of the figures with blocks added. Overall, the model could predict 74.2% of teacher-perceived usefulness of research evidence.

Table 5 Percentage correct

Block	% Predicted correctly	Increase on previous figure
Baseline	58	--
Background	58.2	0.2
Confidence and support	69.8	11.6
Conducting own enquiries	74.3	4.5

The first block contained teacher background characteristics of sex, ethnicity, employment status, and key stages. However, these variables contributed only a marginal 0.2% increase in the accuracy of the model's predictions. Teachers who thought research findings were useful for their teaching were not stratified by these characteristics.

The most substantial enhancement in predictive power, a noteworthy 11.6%, came from the block that included teachers' confidence and external support for using research evidence. The percentage correct increased by around five per cent by adding teacher-perceived usefulness of conducting their own enquiries. This item was closely related to teachers' values about using research evidence, and therefore, added in the last batch.

The results of logistic regression were almost consistent with the figures for descriptive analysis, as shown in Table 6. With the forward function, the model only included variables which increased the percentage correct of the predicted outcome. Teachers' background information was excluded from the regression model, which indicated the irrelevance of background information in predicting the usefulness of research evidence.

Table 6 Coefficients for each predictor

	Variables	Odds Ratio
Block2	I know where I can find relevant research that may help to inform my teaching	1.04
	The research I have found I have been able to understand and use	1.46
	My school encourages me to use research findings to improve my practice	1.19
	I have frequent opportunities (at least termly) to discuss relevant research findings with my colleagues	1.05
	I do not have time to use research findings	0.86
Block3	Usefulness of doing my own enquiry or research	1.67
	Constant	0.05

Aligned with prior research (e.g. McGoey et al., 2014; Thomm et al., 2021), access to relevant research findings, time limitation, and skills to understand research evidence were predictors of perceived usefulness of research findings. The result of this logistic regression model suggested that teachers' confidence in understanding and transforming research findings into practice was the strongest predictor of the perceived usefulness of using research evidence. Specifically, for every one-point increase in teachers' confidence levels, the probability of them finding research evidence useful rose by an impressive 46%.

Encouragement of using research evidence from schools was another powerful predictor in this block with an odds ratio of 1.19. Access to research and discussion with colleagues were also predictors of usefulness but with much smaller predictive power (1.04 and 1.05 respectively). On the flip side, time constrained appear to be an essential deterrent. When teachers perceived a one-point increase in time limitations, the likelihood of them considering research evidence useful took a hit, dropping by 14%.

Teachers' perception of the usefulness of undertaking their own research was also a powerful predictor. An odds ratio of 1.67 indicated that the likelihood of teachers finding research evidence useful increased by 67% with each incremental level of perceived usefulness of conducting their own research or inquiries.

5.3 RQ3: Support from colleagues and schools potentially change teachers' views

The logistic regression model revealed that teachers' confidence in understanding research evidence was the strongest predictor for their perception of its usefulness for improving teaching. However, there remained a gap between teachers being aware of how to access research evidence and their confidence in comprehending and applying it. The path analysis focused on the procedure from finding research evidence to understanding research evidence with a specific focus on the support teachers receive from their schools and colleagues. This analysis aimed to illuminate the various steps involved and the role that external support played in helping teachers bridge the gap between accessing and understanding research evidence.

The model was built on the direct path from finding to understanding research evidence and contained the variables about colleague discussion and school support.

Table 7 shows the model explanatory with the indicator R^2.

Table 7 Model explanatory power

Predictor	R^2
Finding research evidence	0.473
Colleague and school support	0.502

Teachers' confidence in accessing appropriate research findings could independently explain 47.3% of the variance in their confidence in understanding and using research evidence. With the opportunity of colleague discussion and encouragement from schools, the model explanatory power rose to 50.2%. The increase in R^2 provided a robust explanation of the variance in teachers' confidence in understanding and using research evidence. However, an explanatory power of 50% did not indicate good fitness of the model. The degree of understanding and using research evidence could only be partially explained by the model. While the findings should be treated with caution, it still brought an insight to foster teachers' confidence in understanding and using research evidence. Figure 2 illustrates the standardised coefficient of each path, which represented the shift in the outcome variable for a one-standard-deviation variance in the predictive variables.

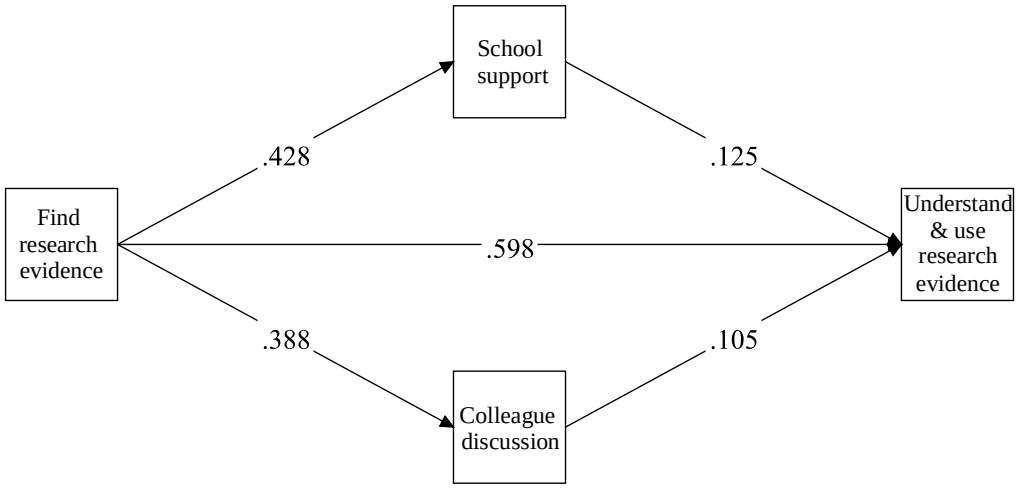

Figure 2. Coefficients for the path analysis

Access to research evidence was an essential step and almost a premise before understanding research evidence, as evidenced by a substantial coefficient of 0.598. When teachers were confident in knowing where to find relevant research that may help to inform teaching, they also felt confident in understanding and using that research evidence. In other words, the strong positive relationship between access to and understanding of research evidence suggested that ensuring teachers to easily reach relevant research

findings was a critical factor in enhancing their confidence to comprehend and apply those findings in their teaching practice.

Encouragement of using evidence in practice from schools and opportunities to discuss research findings were positively related to finding and understanding research evidence. On average, teachers who knew where to get access to the research findings might receive more encouragement from schools and were more likely to get involved in discussions with their colleagues, with coefficients of 0.428 and 0.388 respectively. Furthermore, when teachers received more encouragement from schools and had a higher frequency to discuss research evidence with colleagues, they tended to be more confident in their ability to understand and use research evidence in their teaching practice.

Table 8 calculates the ratio of the indirect path 'effect' and the total path 'effect'. As explained in the design and method section, the ratio indicated the extent to which a supportive and collaborative environment within schools may make a difference in teachers' confidence in understanding and using research findings.

Table 8 Path 'effect' and ratio

Predictor	Path 'effect'	Ratio of indirect 'effect' over total 'effect'
Finding research evidence	0.69	--
Colleague discussion	0.04	6.0
School support	0.05	7.7
Total-mediation	0.09	13.7

In total, the direct link between finding and understanding research evidence could be partially explained by encouragement from the school and discussion with colleagues, contributing to 13.7% of the explanation. The model still emphasised the importance of teachers' ability to find appropriate research findings to inform teaching, which was largely relevant to their confidence in understanding and using research. However, teachers did not navigate this journey alone. School climate of using research findings for teaching practice and active teacher collaboration were both essential components that may complement teachers' individual efforts in understanding and employing research evidence effectively.

6 Discussion

This study is based on secondary data collected more than a decade ago in England. The *Survey of Teachers* collected teachers' views on research evidence use with a limited number of items, which constrained the comprehensive analysis for their views, confidence, and requirements. In the past ten years, there has been an increasing number of systematic reviews on the effectiveness of educational projects and teaching strategies. Teachers have more opportunities to access research evidence and get help from diverse approaches to use research evidence (e.g., Research Schools Network, EEF Teaching and Learning Toolkit). The movement of using research evidence may also bring pressure and challenge to teachers to improve their practice. The teachers surveyed back then may not accurately reflect the views and skills of the current teacher population. In addition, the survey explored teachers' views via only a limited number of variables. Despite these limitations, the findings still offer valuable insights into teachers' views on research evidence in education and potential predictors of their views.

Compared to other European nations, England is the one with the fastest-growing use of research evidence in education, and it is also the first to have a legislative provision that specifically emphasises its use (Pellegrini & Vivanet, 2021). New research evidence on educational projects is being explored and disseminated by organisations like the Evidence-based Teachers Network and the Education Endowment Foundation.

While researchers and policymakers dedicate much effort to finding out and disseminating research evidence, existing studies about teachers' views on the usefulness of research evidence might be misleading. This study suggests a preference among teachers for alternative approaches, such as reflecting on their own practices, rather than relying on research evidence to enhance teaching. Teachers express scepticism about the usefulness of research evidence, presenting a substantial barrier to its integration into teaching practices.

When teachers are not aware of the value of educational research findings, they do not at all consider using them. But on the other hand, there is no grounded evidence that use of robust research evidence could be beneficial for students' learning outcomes (e.g., Erkan, 2021).

Taking a further step about factors relevant to teacher-perceived usefulness of research findings, confidence in their ability to apply research findings is the strongest predictor. Trainings are necessary for teachers to boost their ability to understand and use research evidence but current training sessions for evidence use may not meet the requirements of in-service teachers. In Mills' (2021) study, for example, even teachers who show high expectations for the use of research evidence are not satisfied with their professional development in engaging with educational research.

Teachers' confidence in understanding and using research findings in their daily practice might be limited. They may be reluctant to push themselves to do so and conclude that educational research evidence is useless for their teaching. As a result, they could find themselves trapped in a loop of ineffective practices. This implies that specific professional development in basic knowledge of understanding and using research evidence might be necessary for new and in-service teachers to boost their confidence and ability before persuading them to use research findings.

Professional training for teachers is not the only approach to facilitate teachers' confidence in understanding and using research evidence. According to this study, cultivating a collaborative and supportive school environment potentially encourages teachers to explore the use of research findings. Teachers tend to believe in the value of research findings and to incorporate them into their teaching when they are in a comfortable and supportive environment which praises their efforts to understand and apply research (Joram et al., 2020).

Teachers' perceptions of research evidence could be a strong predictor of evidence-informed practice (Lysenko et al., 2014). This study provides insight into factors for a positive view on research evidence and a potential path to increase teachers' belief in the usefulness of research findings. However, it is insufficient to have a positive view towards research evidence. The next step should consider about teachers' evidence-led practice. The degree to which the plain evidence should be revised and the approaches to apply the evidence correctly. Most studies are restricted to frameworks and strategies for disseminating research evidence to teachers rather than rigorously evaluating the effectiveness of using research evidence (e.g., Chapman & Ainscow, 2019; Finnigan, 2023).

In brief, further research needs to investigate the current situation of teachers' views on educational research findings and their practice. Studies should focus more on the best approaches to facilitate teachers' use of research evidence. It is important to provide relevant professional development of basic skills about research and build up 'research-rich' schools to boost teachers' confidence in understanding and using research evidence (Chen, 2023). Issues such as who should judge the quality of education research evidence, the standard of quality assessment, and the format of evidence and evidence dissemination should all be taken into consideration.

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