

Building Excellence in Education through Evidence-Based Practice

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Article Info	ABSTRACT
<p>Article history:</p> <p>Received : 14.02.2025 Revised : 16.03.2025 Accepted : 09.04.2025</p> <p>Keywords:</p> <p>Academic Performance; Curriculum Development; Evidence-Based Learning; Instructional Strategies; Student Outcomes</p>	<p>Did you know that only a third of the efforts make it to bring a new educational program into their roll out? In reality, most school based programs are only implemented with some fidelity, meaning less than 25-50% of school based programs are implemented in a way that achieves the intended result with regard to the student or the school (Nagy 2011). This sets the stage for why we need to a more methodical approach in putting these educational innovations into practice. The implementation science framework is exactly such a place where we began. As researchers and educators, we have identified more than 70 implementation strategies in use that will work to adopt evidence based practices in schools. Yet, it's no quick fix – usually takes 2 to 3 years of continuous work and watching all organizational levels to succeed. We know that getting good intentions to come to fruition in the complex educational system will require more than that. And that is where this article comes in, we will look at some of the ways in which implementation science can help close the research to practice gap in education, take a deeper look at proven frameworks for success, and offer practical strategies for educators and administrators, who yearn to make lasting positive change in their school.</p>

1. Defining Implementation Science in Educational Contexts

By the 1960s, researchers arose questioning that if practices had been proven in a clinical trial, why not the healthcare system, paving way to develop

the Implementation Science. In the first phase, this scientific approach aimed to identify question in processes of slow regulation, and barriers to innovation, that are widespread [1]-[4].

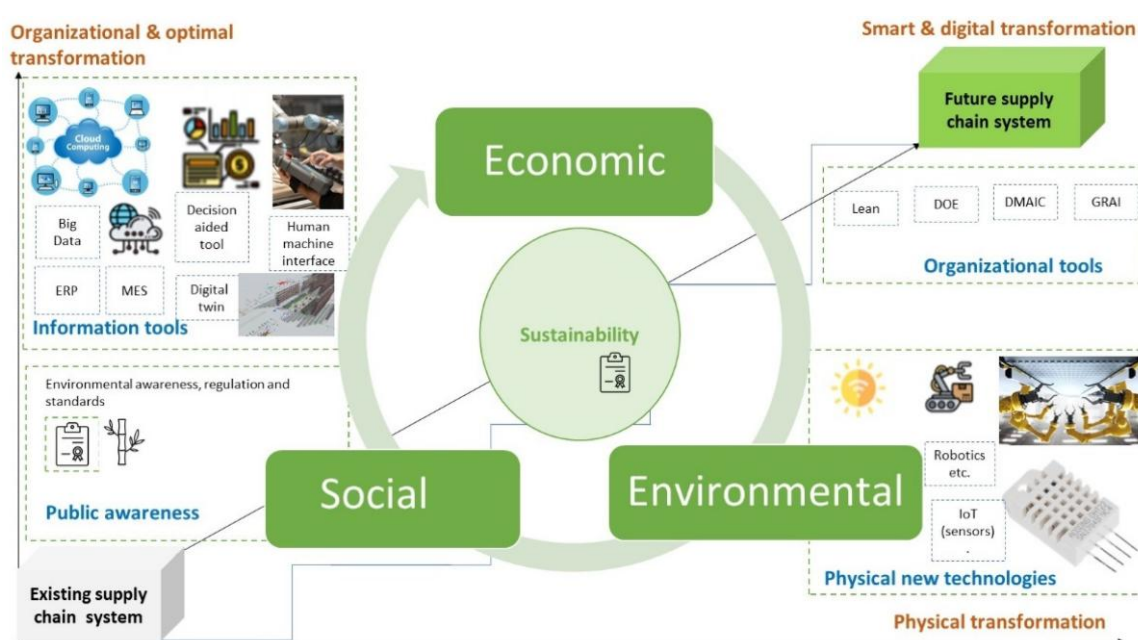


Fig 1. Origins of Implementation Science Framework in Education

The impetus for the journey of implementation science into education is a need to fill the research-practice gap. Indeed, studies clearly show that without set implementation teams and clearly defined methods it usually takes about 17 years to get just half of a new planned initiative into routine practice. In addition research indicates one time 'train and hope' models of professional development are quite ineffective in leading to professional behavior change.

Implementation science bridges the gap between educational change and implementation science. It uses specialised theories, models and frameworks (TMFs) for all kinds of purposes including asking research questions, identifying contextual determinants, choosing study designs and understanding findings.

1.1 Educational Implementation Science: Core Components.

Three critical components outline the "Formula for Success" that are the foundation of educational implementation science. An effective intervention illustrates in order of importance that for developing desired outcomes, evidence based practices to be implemented are to be chosen. Second, the effective implementation methods provide direct support to implementers via training, coaching and adequate time to develop the skills. Third, Enabling Context which are policies and procedures give opportunities for sustainable change.

Furthermore, implementation science emphasizes that the successful implementation of a program depends on early identification of the core components of the program. These are also called active ingredients, or essential elements, of a process that is critical to the program's purpose. But here, most importantly, once these core components have been so crisply defined that the program can then be implemented with fidelity, the implementation leads as regularly to program effectiveness as anything else tends to.

1.2 How Implementation Science Differs from Traditional Reform Efforts

However, implementation science unlike conventional reform seeks specifically, new generalizable knowledge about effective techniques for supporting program adoption and sustainment. The difference lies in how the processes for systematic intervention are based on using and introducing evidence-based practice into regular provision.

Implementation science acknowledges that how people are willing to implement the reforms will depend on the personal beliefs, behavior, and values of the people who are implementing the reforms. Hence, the framework suggests that any

one of the groups should not alone be made responsible for placing an intervention. For example, when teachers run the program on their own they don't necessarily change their instructional strategies to fit the change, so external facilitators are required to guarantee good results.

Moreover, implementation science is different from other improvement approaches in that it focuses on identifying variability local to one's school, which can thwart school change. Unlike other models, it imposes responsibility for program success on all members of the team (university researchers, community partners and local schools).

Further to this, it is distinctive from efficacy, effectiveness, quality improvement and program evaluation studies. These approaches measure outcomes of intervention, whereas implementation science focuses on assessing implementation outcomes of interventions that are already proven plausible. Additionally, the implementation science starts from an underutilized evidence based practice to fill quality gaps at multiple stakeholder levels and the quality improvement starts from a particular problem at a specific practice elicited from stakeholders in that practice [5]-[9].

2. The Science of Implementation: Theoretical Foundations

The implementation science has come a long way in using the theoretical approaches resulting in better understanding of why and how the implementation succeeds or fails. Compared to the technological applications that rely on our work, we are researchers in this field and that theoretical models are cornerstones for translating research into practical applications.

2.1 Implementation Science Models for Education Key

A classification of implementation science frameworks based on the primary functions for which they each serve determines five categories. Process models first guide the translation of research to practice. Second, determinant frameworks propose which is responsible for implementation outcomes. Third, classic theories based on psychology and sociology furnish the foundation of understanding. Fourth, implementation theories provide information on particular aspects of implementation. Finally, implementation efforts are evaluated with evaluation frameworks.

At present, there are well over 60 dissemination and implementation frameworks. However, there is no single framework that has shown superiority, but each provides its own perspective of how

evidence-based practices may be implemented in educational settings. They all have some common vogues of shared themes, i.e. have that implementation is over time across different stages, take place in complex multilevel systems and have a bidirectional relation between the settings and the evidence based practices [10]-[12].

2.2 Exploration, Preparation, Implementation, Sustainment (EPIS) Framework

A notable characteristic of the EPIS framework is that it is a holistic model built in keeping with the need of public service sectors. Based on this four phase implementation model, this is used to

address the context and to ensure the sustainability of implementing evidence based practice.

However, in the Exploration phase, stakeholders try to define existing health needs, and choose suitable evidence based practice. The Preparation phase then goes on to identify potential barriers and facilitators, assess adaptations needs, and create detailed implementation plans. During the Implementation phase, planned implementation supports begin to guide the use of evidence based practice. The Sustainment phase finally delivers practices to continue their delivery with appropriate changes [13]-[16].

Table 1: Core Elements of Evidence-Based Educational Practice

Educational Practice	Description	Impact on Learning Outcomes	Source of Evidence
Formative Assessment	Ongoing assessment to inform instruction	Improved student performance	Classroom observations, tests
Collaborative Learning	Students work together to solve problems or tasks	Enhanced critical thinking skills	Meta-analyses, case studies
Differentiated Instruction	Adapting teaching to meet diverse student needs	Increased engagement and equity	Research studies, surveys
Instructional Feedback	Providing timely and specific feedback	Better concept retention	Peer-reviewed journals
Blended Learning Models	Integration of technology and traditional teaching	Flexibility and personalized pace	Longitudinal studies

2.3 Active Implementation Frameworks in School Settings

Five elements in the Active Implementation Frameworks (AIFs) developed by the National Implementation Research Network are essential to successful implementation in educational settings. The elements are Usable Intervention Criteria, Stages of Implementation, Implementation Drivers, Improvement Cycles and Implementation Teams. Implementation Drivers, are the key Component of capacity building in three categories [Competency, Organization, Leadership]. These are the drivers for staff development, organizational support and leadership that help to guide the implementation process satisfactorily.

The framework stresses that taught, learnable, doable, and assessable innovations in practice are mandatory if the changes are to serve the interests of all students. However, supporting the use of educational methods in full, in an effective and sustained manner, cannot be done without Implementation Teams. An infrastructure is created through these linked teams, which consistently improves student outcomes.

In the framework, Improvement Cycles use Plan Do Study Act (PDSA) processes for quick methods

evolution, usability test cycle for method innovation adaption, and practice-policy communication cycle for systemic improvement. This systematic approach guarantees a continuous refinement and improvement of the practiced.

Instead, from research, it is seen that implementation science is very much different from effectiveness research in that implementation science deals with factors that lead the use of already established interventions as opposed to the efficacy of actual intervention in real world settings. However, educators can develop and deliver more precise interventions with consistent results when they understand contextual influencers that support and influence the intervention's effectiveness [17]-[19].

3. Organizational Context: The Foundation for Implementation Success

Repeated research shows that organizational context is critically important to implementation of evidence-based practices (EBPs) in organizational contexts within education. An extensive body of implementation research highlights that substantial variation in the implementation of self-

directed work teams can be related to the inner organizational settings.

3.1 Strategic Implementation Leadership in Schools

Strategic Implementation Leadership includes specific behaviors that either support or hinder implementation in educational organizations. Notwithstanding school principals, lower level leaders or leadership teams that are closer at arms-length to implementation efforts are equally important. Routine communications with staff, protecting time in meetings for strategic content, holding staff accountable, and giving ongoing performance based feedback are leaders who are completing strategic goals.

As strategic leadership, one needs to understand of both immediate and long term organizational need. As a result, the successful implementation leaders are characterized by dissatisfaction with current state, absorptive capacity, adaptive capacity and wisdom. These are traits which allow them to build on a vision, involving direction of medium to longer term and the ability to successfully translate plans into actions.

3.2 Building Implementation Climate in Educational Settings

Staff perceptions of organizational supports and practices that define norms and expectations for EBP implementation are referred to as implementation climate. A positive implementation climate is clearly an indication of what kind of behaviors are expected, supported and rewarded around new program adoption. It seems that if the organizations have low levels of strategic implementation climate, then they are unable to show that EBP implementation is valued. The School Implementation Climate Scale (SICS) focuses on seven critical dimensions: Focus on EBPs, Educational Support, Recognition, Rewards, Use of Data, Existing Supports and Integration. These components are part of policies, supports, recognition systems, and communications that principal leaders of schools that are actively implementing EBP tend to put in place in order to achieve conducive conditions for implementation efforts.

3.3 Implementation Citizenship Behavior Among Educators

Educators' implementation citizenship behaviors demonstrate their commitment to EBPs in terms of maintaining current knowledge and supporting colleagues who cannot meet implementation standards. Affecting the effect of implementation leadership and climate on implementation success, these behaviors mediate. Now education systems are moving to reorganization, education systems run in increasingly competitive and complex environment.

The School Implementation Citizenship Behavior Scale (SICBS) consists of four dimensions found to be essential: helping others, keeping informed, taking initiative and advocacy. Given this framework, this work makes clearer sense of how particular implementer actions could act as implementation mechanisms or outcomes. The results indicate that this implementation citizenship behavior makes one valuable contribution to an employee's efficiency and school organizational competence.

Both organizational drivers and competency drivers are used to devise implementation action plans by implementation team. EBPs have structure around organizational drivers to be adopted, implemented, sustained over time, and positioned to respond to changes in funding availability, mandates, or staffing. As it happens, competency drivers simultaneously build confidence and competence of staff to use the new interventions through selection, training, coaching and performance assessment.

Undoubtedly, for its implementation to be successful it requires to system wide support including many different levels of school leadership and many different stakeholders. And this creates the long term dedication that is necessary to have innovative practices. Reliability of implementation citizenship behavior measures is evidenced first order factor loadings between .85 to .96 and second order between .93 to .95.

3.4 Materials and Methods: Measuring Implementation Quality

Systematic approaches are needed in order to measure implementation quality, that is how well educational programs are delivered as they were intended. Implementation fidelity, that is the degree to which prescribed procedures are followed, is a cornerstone of decisions about student progress and future intervention needs [20]-[24].

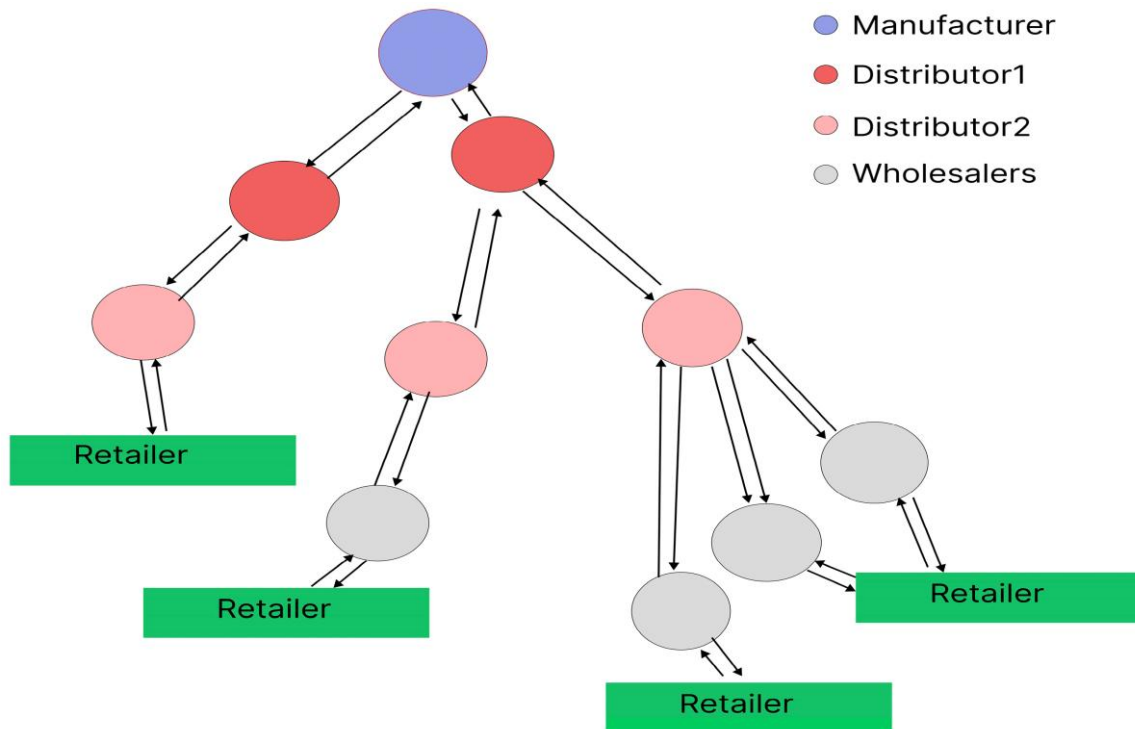


Fig 2. Implementation Fidelity Assessment Tools

Five core dimensions of implementation fidelity define the program delivery to be effective. The dosage (amount), adherence (extent to which core program components were delivered as intended), quality of delivery (how well the facilitator performed), participant responsiveness (level of engagement), and the program differentiation (unique characteristics of program) were these dimensions. According to studies, etc., 63 percent of implementation assessments target fidelity or adherence, 49 percent target dosage, and only 17 percent evaluate other important dimensions.

In terms of being a tool that should be used in the documentation of program delivery, the Implementation Fidelity Checklist shines the most. Such an instrument usually consists of several components to monitor exposure time, adherence and quality metrics. Research shows that implementation fidelity data in conjunction with learning outcome data on student outcomes allows for a complete measurement of effectiveness of the program [25]-[26].

4. Evaluating Implementation Outcomes in Schools

Three critical variables in the school based implementation evaluation include methods of data collection, frequency of assessment, and systems of support for maintaining the implementation quality. Since middle and high schools' complexities regarding scheduling and staff often tower in comparison, implementation teams must monitor fidelity at each and every level of support.

Qualification occurs through qualified people observing staff members while that staff members did their work and recording on standardized checklists. Off the other hand, in indirect assessment, self reports, interviews, sample work, and interpreting existing data are used. Finding that combining IF data with outcomes data can strengthen inferences about program effectiveness is a finding of studies [27]-[29].

Table 2: Implementation Challenges and Strategic Solutions

Challenge Faced	Description	Strategic Solution	Expected Outcome
Resistance to Change	Educators reluctant to shift from traditional methods	Professional development and training	Increased adoption of new strategies
Lack of Access to Data	Limited access to quality research or student data	Centralized digital evidence repository	Improved decision-making
Insufficient Time for Planning	Teachers overwhelmed with existing responsibilities	Scheduled collaborative planning time	More effective lesson planning

Limited Institutional Support	Absence of leadership buy-in or resources	Policy reforms and administrative backing	Sustainable implementation
Varying Teacher Readiness Levels	Differences in skills and confidence across staff	Tiered mentoring and coaching programs	Equitable capability enhancement

4.1 Data Collection Methods for Implementation Research

Implementation research employs multiple approaches to collecting data about the multifaceted way in which program is delivered. As an inexpensive solution, audio and video recordings will allow for multiple times for implementation quality review, however, they will have the potential to affect the behavior of the participant. Though more resource intensive, between observation, outside of the participant, and participant observation, the former offers less biased evaluation and the latter provides more authentic participant experience perspectives.

Teacher Weekly Reports offer valuable self reporting tools for assessing implementation from educator's points of view on level of adherence, content suitability and students engagement. Gathering from the perspectives of learners, Student Review Questionnaires also address the implementation quality in terms of attendance at specific sessions and effectiveness of teacher delivery.

The implementation quality measurement of intervention studies strengthens them because measuring the implementation quality itself can contribute to intervention outcome. However, there are challenges associated with

operationalizing implementation outcomes due to the nature of absence of validated instruments specifically built for school settings. Implementation outcome assessment triangulation allows the evaluator to analyze these data sources inconsistencies to obtain a complementary view of the implementation process.

Before data collection tools are selected, the programs must have defined the Logic Model and develop a Performance Measurement Plan. Typically, tutoring dosage and session attendance are recorded in administrative records, while rubrics are used to assess the effectiveness of the tutor and the progress of the student. Surveys are a nice medium between nuance and simplicity, and they distill qualitative differences in experiences and mindsets into a number that represents shifts at scale across all stakeholders [26]-[30].

4.2 Implementation Strategies That Push Educational Excellence

Research has shown that learning strategies act as driving forces for educational success, in particular, students who use effective learning approaches have fast academic success. The successful implementation at the core is a careful selection and application of evidence based strategies that should drive educational excellence.

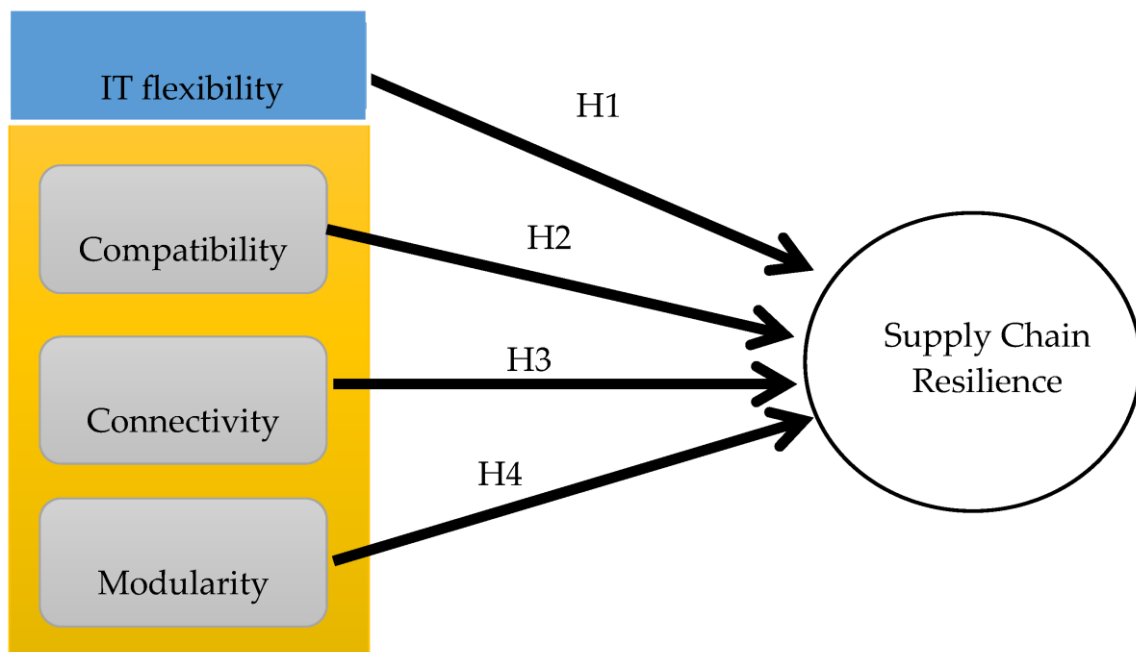


Fig 3. Evidence-Based Implementation Strategies for Schools

Recent advances in educational effectiveness theory view classroom level processes as multidimensional attributes of classroom, school and system characteristics and currently emphasize the study of classroom level processes through analytical models of classroom level processes. Academic outcomes as well as metacognitive skills for students are most strongly explained by teacher behaviors and classroom dynamics. According to studies, students who apply deep learning strategies do well in their grades in comparison to a student who applies surface learning strategies that ultimately do not reap the best in their grades.

Classroom level models of educational effectiveness differentiate strategies of teaching from context of instruction. The models take into account non-linear relationships between effectiveness factors and student learning outcomes, additional same level and cross level interactions. Unsurprisingly, there is research suggesting that technology supported problem based learning requires more active scaffolding and teacher support than merely the 'guide on the side' approach [31]-[33].

5. Matching Strategies to Implementation Barriers

Systematic assessment and planning are necessary for the process of matching implementation strategies with particular barriers. The implementation teams should first determine the contextual determinants and then select the strategies to meet these effectively. Implementation strategies should fit context and yet most studies have applied the same techniques, producing modest to moderate effects.

Implementation science frameworks suggest four matching strategies, conceptual mapping, group model building, conjoint analysis, and intervention mapping. Common strengths in their participatory nature, the different approaches also share their concrete steps of how these stakeholders can engage one another. Concept mapping is of particular value in identifying the factors that influence particular evidence based practice implementation and in so doing which of the factors are the most important and actionable from differing stakeholder perspectives.

5.1 Strategy Effectiveness Across Educational Contexts

Implementation strategies are very effective at different educational settings. Effectiveness factors do not always work equally for all students in all schools and all education systems, as studies have indicated. Such impact, however, depends on the composition of other factors at both same and different levels.

Therefore, implementation strategies can be implemented at any level of the social ecological model, from single strategies, such as training, to multi barrier bundles, allowing strategies to address multiple implementation barriers. Based on their relationships, there are nine clusters of 73 distinct implementation strategies, deemed feasible and important by the Expert Recommendations for Implementing Change (ERIC) project.

So it would be described that effective implementation is built on creating an environment and experience so one is efficient and not wasting time. Without true understanding and true belief in the approach, true effectiveness of the actual implementation is unattainable. Structural integrity is one of the things that resilient systems offer in order to endure implementation challenges, providing redundancy, a well defined process, organized system with clear expectations.

With first-order factor loadings between .85 and .96 and second order between .93 and .95, strategy assessment is highly reliable for implementation. In combination with canonical implementation studies, these measurements allow for a fit between the implementation used in schools and the schools' needs and contextual factors and therefore serves as a means for schools to respond more effectively to contextual factors.

5.2 From Theory to Practice: Implementation Science Case Studies

Implementation science frameworks are compelling evidence of their contribution to educational improvements in real world case studies. Data from recent years also shows that 83 per cent of school principals used social emotional learning curriculum in 2023–24, compared to 46 per cent in 2017–18.

PBIS Implementation in Urban School Districts

Results from the implementation of Positive Behavioral Interventions and Supports (PBIS) in urban school districts are remarkably positive in relating to work on disciplinary disparities. Through adoption of PBIS, there were dramatic reductions in inappropriate student behavior in a study of school, referred to as corrective action plans. While racial disparities persisted between black, multiracial plus white students, the implementation cut them significantly.

In environments where secondary schools implemented PBIS, attendance among students improved and there was a decline in suspensions. The basis of the success of this framework is its systematic approach to move towards a positive school culture by means of some behavioural interventions. Incorporating PBIS into the school improvement plan turned out to be a good way for

school leaders to improve overall climate outcomes.

5.3 Social-Emotional Learning Program Implementation

And social and emotional learning (SEL) implementation success stories illustrate how the framework works in broad educational settings across the globe. At the moment, 49 states and the District of Columbia have at least one supportive policy with regards to SEL in schools. Separate studies report fewer barriers and better community support for schools implementing SEL, and increased professional learning opportunities. The Arlington Heights School District 25 is a district with successful implementation of SEL through Multi Tiered System of Supports (MTSS). In fall 2020, they hit incredible results: 85 % of specialists, interventionists plus school administrators interacted with their platform by entering or viewing student data. In addition, 61% of the interventions utilized evidence based approaches with high leverage approaches such as Concrete Representational Abstract plus Math Manipulatives.

Through implementation framework, the district documented over 600 MTSS student meetings and 60 family communications. By fall 2021, plans for intervention for 176 students in need of reading support as well as 147 requiring math assistance were promising. Those students with a record of support for math interventions had an average growth percentile of 59 while those without documented support for math interventions had an average growth percentile of 51.

6. Academic Intervention Implementation Success Stories

Academic intervention programs especially appear to have benefited a lot from the implementation science frameworks. One mid-sized Midwest urban school district successfully implemented Direct Instruction teaching practices and produced significant gains in student MAP plus STAR scores. Like a Wisconsin charter school, Direct Instruction implementation in a charter school sustained positive outcomes over two decades.

Systematic implementation approaches resulted in improved scores for an Arizona school district that serves a population where 90% of students free or reduced price lunch. Consequently, a Wyoming middle school systematically translated implemented strategies into elevated below-basic students' proficiency to basic.

The framework is adapted to implement Response to Intervention (RTI) in one elementary school. It built a combination school model of standard protocol plus problem-solving. Universal screeners used throughout the year for student data at

weekly math plus reading collaborative learning team meetings were analyzed and compared for group study. It included running records, PALS Quick Checks, as well as assessments related to the Orton Gillingham, as well as math formative assessments as well as exit tickets.

While each case study illustrates that successful implementation of the 2003 SDA Calls to Action requires to a great extent understanding local context combined with systematic approaches to change, the focus of the present study is wider. Strong leadership commitment coupled with solid data systems, sufficient professional development support, and relative achievement of schools define the norm for achievement among the most successful schools. Of note, continuity in improvement through data driven decision making by implementation teams results in better student outcomes.

6.1 Wherewith to Overcome Implementation Barrier in Education System

Research suggests that implementing evidence based practices (EBP's) in educational settings continues to be uphill and that even with one fourth of schools that do not have a part time counselor. The most important element that must be understood and addressed in order to perform educational reform successfully is these implementation barriers.

Common Barriers to Evidence-Based Practice Adoption

The initial list of few factors that affect whether and how EBPs may be adopted and delivered successfully by educators includes the individual characteristics of educators, such as their attitudes, stress levels, and self-efficacy. Because teachers are often highly suspicious of research findings, teachers tend to look to their trusted colleagues for information or to rely on their personal experience. An initial source of skepticism primarily derives from lack of understanding of the importance of links between research and what counts in practice in the classroom.

Pervasive barriers which include time constraints and supportive leadership remain, regardless of the setting of school implementation efforts. The research found that one day workshops are not sufficient enough to improve existing teacher practice. Often, teachers tell us that they do not have enough time for meeting, planning with others, and developing needed implementation supports.

6.2 Resource Constraints plus Implementation Challenges

There are financial limitations and gaps in the technological infrastructure that make it difficult to access quality resources. Restrictive budgets

and a limited support from administrative authorities leave many schools to resort to traditional intervention methods instead of evidence based approaches due to the lack of support from the administration.

Once the district has approved the implementation, additional hurdles present themselves in coordinating with individual schools. The staff often has a hard time providing the needs effectively as the school resources rarely remain sufficient. Notably, there are fewer than two-thirds of the schools that have school psychologists and fewer than half in the country with social workers.

Major barriers to adoption of EBP are professional development processes. Teachers need protected time for collaboration and action learning in relation to practical skills in self advocacy. Research shows it takes about 17 years to get half of the intended new initiative into regular use with implementation teams not using a clear method.

Strategies for Addressing Resistance to Change

To counter resistance, six selected methods help school administrators to do the following: education (and communication), participation (and involvement), facilitation (and support), negotiation (and agreement), manipulation (and co-optation), and explicit (and implicit) coercion. A successful implementation requires system wide buy in at different leadership levels plus the stake holders.

Early on, they should implement classroom observation schedules to alert facilitators and provide them an opportunity to rectify problems as early as possible. There must be regular contact maintenance via various communication modes, and documentation that the program is effective, and that assimilation is still important.

Having implementation plans before commencement of academic year, helps to address the program logistics in a concerted manner. The answers for these plans should include program start date, teacher facilitator assignment, student participation number and classroom or computer lab space required. Staff input included in plan development will ensure that support and resource access are included.

The administration of the school can eliminate the resistance if it creates forums for its stakeholders to express their concerns and suggestions. Personalized support offered to those in need of extra help in adapting to change; celebration of implementation milestones in process reinforces buy in; pilot programs and phased approaches help achieve adjustment and tweaking based on feedback.

Results show that teacher behavior change ultimately succeeds in implementation. Therefore, attempts to implement EBPs in the schools need to

consider strategies tailored for specific barriers with potential for facilitators, and detailed facilitation of implementation of EBPs by front line implementers. The practice of professional development provides teachers with skills to work with new materials effectively and confidence in the use of the material.

7. Limitations: Implementation Science Knowledge Gaps in Education

However, there are many knowledge gaps still present in educational environments. At least, implementation science training programs are seriously lagging behind in meeting the global demand. Such an understanding of these limitations is essential to push this field forward, as well as to improve educational outcomes.

7.1 Current Research Limitations

The disconnect between theoretical frameworks and the actual application is a basic challenge. Today there exist roughly 200 theoretical models and frameworks for the development, application, and evaluation analysis of implementation in various fields. Nevertheless, only a minority of these frameworks have been found to be technically useful in educational settings and hence an aporetic situation has emerged in which research aimed at resolving the research-practice gap has become estranged from actual practice.

There is a great demand for implementation science training with a significantly lagging supply. Additionally, there are few training programs which train implementers (practitioners using research plus only need some specialized skills to assess their context plus adjust interventions within the local culture). The lack of a practitioner-focused training gap prevents a smooth implementation of the evidence-based practices across the educational institutions.

7.2 Methodological Challenges in School-Based Implementation Research

Methodological hurdles for school based implementation research are unique. The first practical challenge is that of research among turbulent conditions, which specifically involves the acquisition of research populations and data. Frequently, school closures plus disruptions creates interruptions during which researchers cannot visit schools, or interact with students and staff directly.

Despite all the best conditions for research, school based research requires input and support from multiple stakeholders including the district administrators, principals, teachers, and parents. Complimenting staffing shortages and deficient job burnout among teachers, data collection efforts are further complicated. Moreover, the pandemic has

reduced researchers' and plus educators' capacity to gather high quality data on many measures that are the focus of education research.

There also lies another significant barrier in implantation science complexity. A lot of healthcare facilities cannot accommodate for new interventions necessary without the aid of resources and infrastructure. Likewise, some healthcare providers do not know that current approaches are the best way or they are trained to perform some interventions that facilitate a better care for their patients.

8. Future Research Directions

However, there are a few things that implementation science needs to focus on moving forward. First, there is an imperative for more research on determinants and practical tools for sustaining training of implementation science. The second is to pay attention to aligning skill sets with diversity settings in that almost all implementation science competencies were designed in high income country contexts.

Implementation science needs to address growing pressure on equity. There are currently few training programs that intersect health equity with implementation science to build competence in both disciplines. Furthermore, research in pragmatics has to pay more attention to questions, data and outcomes to decision making and action taking.

Implementation science researchers promote 'communities of practice', where knowledge sharing and experiences as well as support for implementation in the public sector are created. Such communities are an opportunity to professionalize practitioners and to provide collaboration between practitioners plus researchers on research questions based upon practitioner created problems and the use of practical methods.

While there has been progress illustrated in the growing literature about training plus building capacity in implementation science, there are important gaps and opportunities for growth. The limitations presented here can be addressed by systematic approaches to the development of implementation capacity in contexts where preventable burdens of ineffective practices are greatest.

9. CONCLUSION

Implementation science provides educators a structured approach to actual educational change. Research shows that the successful implementation of community correction depends on careful attention to organizational context, strategic leadership, evidence based practices. Using frameworks like EPIS and Active

Implementation Frameworks, schools are able to bridge the research to practice gap in order to bring about lasting change. Structured implementation approaches have been shown to reach remarkable levels of success when studying actual implementations of PBIS and SEL programs. Significantly, leadership commitment, robust data systems, and consistent professional development support to the terms of implementation (namely, 95 percent mastery of the skills by all students) played a key role in these successes. Although implementation barriers exist in resource constraints and resistance to the change, schools can overcome the latter with systematic planning and stake holders engagement. Some of the limitations in research/practice and conducted training programs are still addressed in the field. However, implementation science frameworks have worked successfully in implementation in various educational settings. Schools that achieve optimal results show the value of data driven decision making and the process of continuous improvement. The future of educational excellence, therefore, will undoubtedly see implementation science. Powerful tools for making meaningful change are the emphasis on systematic approaches, evidence based practices and organizational context within the framework. Building sustainable systems—resulting in environmental responsiveness for all students at all times—comes from listening closely to implementation quality and developing strategic plans.

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