

**British Council
Partner Schools**

Action Research for Schools

**Global stories of
school improvement**

Action research projects: a shared vision to enhance education worldwide

Educators across the world play a pivotal role in developing young people and equipping them with the necessary skills to thrive. However, we live in a global society and therefore schools around the world face similar challenges: recruitment and retention issues, as well as the rapid evolution of technology and Artificial Intelligence.

As the UK's international organisation for cultural relations and educational opportunities, the British Council is uniquely positioned to support global education. Through British Council Partner Schools, we offer unparalleled operational and educational support to a network of over 2,600 schools across 40 countries. We collaborate with UK-based awarding bodies to provide access to life-changing UK international school qualifications worldwide. Our expert support empowers schools to improve educational outcomes and unlock opportunities for students across the globe.

British Council Partner Schools benefit from a global community of school leaders, teachers and students who share their expertise and deliver innovative solutions to global problems. This spirit of collaboration and mutual support was exemplified in March 2023 when over 180 educators responded to the first British Council Partner School call for research proposals. The themes were:

- Leadership at all levels
- Developing effective professional development programmes
- Technology and digital learning.

Twelve researchers were selected to complete their Action Research during the last academic year, supported by the British Council through grants, academic guidance and resource access. These researchers have exceeded all expectations, contributing significantly to school improvement, community building, and support not only in their own institutions but also across the British Council global community. The level of innovation they have brought to raising educational standards is truly inspiring. Their stories and strategies for improvement have already been shared at local, regional and global levels.

Each researcher demonstrated an unwavering commitment to driving educational standards and supporting their peers. Despite full workloads and an 11-hour time difference, each researcher attended every single input session. Their dedication is a testament to the power of collaborative effort and the shared vision of enhancing education worldwide.

The success of the Action Research Grants is largely due to the guidance of the Academic leads, Sirin Soyoz and Kathleen O'Hare. Kathleen and Sirin have expertly selected the most appropriate frameworks, timeframes and methodologies to successfully introduce the programme. More importantly, they have provided steadfast support to each researcher through monthly input sessions, resource sharing, template creation, and ongoing individualised feedback and one-on-one support sessions.

We are confident that the 12 accounts selected for this publication will be extremely useful, offering practical solutions to issues faced by schools across the globe. This innovative research has the credibility of being *by educators for educators*. We encourage you to experiment with the actions proposed in this book and hope you will be inspired to undertake Action Research in your own school.

This collection of practical research solutions is not just a testament to the dedication and innovation of the researchers but also a beacon of hope for the future of global education. The British Council is delighted to champion this initiative. As you read these stories about evidence-based change, we hope you find both inspiration and practical guidance to support your school improvement journey in education.

Thomas Evans
Global Educational Support Services
British Council

This innovative research has the credibility of being *by educators for educators*. We encourage you to experiment with the actions in this book and hope you will be inspired to undertake Action Research in your own school.



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Action Research for Schools

Leadership at all levels

Developing leadership skills in Peruvian high school students,
Dr César Morales, Colegio San Andres, Peru

**Enhancing learning walks: leveraging focused observation and
purposeful feedback,** Ghazala Sajjad, Generation's School, Pakistan

Smart leadership for female empowerment in education in Pakistan,
Nayyab Farooq, Peshawar Model Girls High School, Pakistan



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Developing leadership skills in Peruvian high school students

César Morales, Peru

Developing leadership skills in Peruvian high school students

School context

Colegio San Andres is situated in Lima, the capital city of Peru located in South America. Peru boasts a rich diversity of cultural backgrounds, making it a multi-ethnic country. Our official languages are Spanish, Quechua and Aymara, reflecting the varied linguistic heritage of our nation. With a population of approximately 30 million people, Peru is a vibrant and dynamic country.

About the author

César Morales is Headmaster of Colegio San Andres in Lima, Peru. He has a Doctorate in Education (BIOLA University, USA) and a Master's degree in Theology (Queen's University, Belfast, NI). César has published two books in Spanish: *The Catalyst Sermon* and *Renaissance: John Mackay and the Centenary of the independence of Peru*.



Key learnings

This research investigated the perspectives of students to design a leadership programme for teenagers.

- Students are deeply committed to actions that involve positive changes in the future of their society and their school.
- The intentional collaboration of the key stakeholders in the school is needed to implement a leadership programme for students that can promote real and significant changes within the institution and beyond.
- Shaping leadership in students meant making changes in policies in order to listen to their voices. Forming new leaders involved empowering them to disagree with our decisions.
- Integrity and consistency between words and actions, and good communication are skills that students seek in future leaders.
- Students look for a future with greater hope than their teachers; this shows that teachers play an important role in building students' dreams.



It is highly encouraging that students are deeply committed to actions that involve positive changes in the future of their society and their school.

A leadership programme should focus on developing the practical skills of adolescents in real-life situations.

Action research rationale

This topic is important to explore because leadership is a current issue in Peruvian society, as well as several countries in Latin America. Students need not only to be taught according to what literature says about leadership but also, they need to identify people as leaders and to develop leadership skills. However, students and teachers also need to understand what is their own definition of leadership and what attitudes and behaviours they value in their leaders. They also need to identify if their preferences are influenced by their culture. From this understanding, it will be possible to build a programme of leadership for students.

Exploratory research questions

1. What do senior students in Peruvian high schools currently think about leadership?
2. In what ways do the perceptions of leadership of senior students at Colegio San Andres differ or mirror those held by their teachers?
3. Considering their views on leadership, what essential components do senior students think should be included into a leadership programme designed specifically for Peruvian high school senior students?

Data collection procedures

The objective of this research is to investigate the perspectives of senior students concerning leadership and the topics that should be incorporated into a leadership training programme for teenage students aged 15 to 17 years at San Andres School in Lima, Peru.

The primary research method employed in this study is the use of focus groups. Each focus group will be tasked with responding to a set of 10 standardised open-ended interview questions.

These focus groups will comprise individuals of the same age or academic year, and each session is expected to last for approximately 1 to 1.5 hours (Rubin and Rubin, 2011). It is important to note that the focus group interviews are not designed as problem-solving sessions; rather, they are structured to encourage discussion, allowing for both agreement and disagreement among participants, with the potential for discerning patterns through group interaction.

In this investigation, two focus groups will be established, each consisting of 6 to 10 participants from San Andres School.

All senior students will be invited to take part, and the two groups will be divided at random. However, the researcher will ensure a balanced distribution in terms of both numbers and gender within these groups.

The second method of enquiry in this study involves conducting interviews with teachers, totalling two participants, with the intention of contrasting their viewpoints with those of the students. It is crucial for this research to incorporate diverse opinions in the development of the programme. Furthermore, a Journal Reflection will be utilised as a tool to evaluate the researcher's own thoughts and viewpoints regarding the findings of the study.

Before commencing the research, consent will be sought from all participants, ensuring that they have a comprehensive understanding of the study's objectives and their rights. In the case of students, parental or guardian consent will be a prerequisite, with parents/guardians receiving an information sheet and consent form akin to those provided to the students. All-important information will be given to participants.



Figure 1: Focus group with students, listening to their views on leadership.

Key findings from the exploration

- All participants agreed that effective leadership is possible in Peru and that effective Peruvian leaders seem to be more oriented toward people than to the task. Integrity and honesty were two main characteristics mentioned by the participants as important for good leadership in Peru.
- According to the interviews, Peruvian leaders will be more effective if they take seriously what followers believe concerning leadership and adapt themselves accordingly. Good communication is very necessary for being a good leader in Peru but it doesn't guarantee that his/her leadership would be really effective. Peruvian leaders look to be a combination of charismatic/value-based leadership, autonomous leadership, and self-protective leadership.
- The data reveals that students have greater hope for the future than teachers. That may be due to adults' experiences of disappointment. Additionally, teachers showed a greater preference for task-oriented leaders than people-oriented leaders. Both groups agree on preferring leaders who show values in their leadership.
- Although the teachers believe that a leader must be a good communicator, they stated that they were very distrustful of a leader who speaks well but does not demonstrate delivery.

- Both groups agree on carrying out a leadership programme for adolescents. However, while students demand more freedom to make decisions, teachers want more control over the decisions students make. Students want a leadership programme that contains more practical elements than theoretical (lectures). Both groups agree that communication is a skill that should be taught to future leaders, but they also both agree that communication alone, without values, is not enough for effective leadership.

Action plan

- Setting up a leadership development plan for adolescents is important and necessary due to the country's social situation. However, certain requirements must be considered. The programme should focus on developing practical skills of adolescents in real-life situations. This involves experiences that can be promoted in real contexts. The involvement of the whole school is required to establish an appropriate context for this.
- Real situations must focus on developing values and not just solving common problems. The programme must have a larger objective than mere personal control.
- The programme should involve learning communication skills such as public speaking and assertive communication.

Forming new leaders involves empowering students to disagree with our decisions, granting them the opportunity to influence important decisions, and understanding that this will bring positive consequences for everyone.

Action plan implementation

Although students who originally participated in the study graduated by the end of 2023, a small implementation programme based on the original project was carried out with the current senior students. A group of students with similar characteristics to the original group was assembled and invited to participate using informed consent. This new group was briefed about the findings of the original study.

Subsequently, they were asked to develop an ideal plan for the development of a leadership programme. Two main objectives were established:

1. A leadership development programme should foster hope that changes can be made for improvements.
2. Shaping leadership in students involves making certain changes in the school's educational policies in order to listen to the voices of the students.

Key findings after implementation

- It is highly encouraging to know that students are deeply committed to actions that involve positive changes in the future of their society and their school.
- The intentional collaboration of the key stakeholders in the school is needed in order to implement a leadership programme for students that can promote real and significant changes within the institution and beyond.
- Integrity, consistency between words and actions, and good communication are skills that students seek in future leaders.

Conclusions on research

Leadership is important for a country. Poor leadership that has been in place for a long time can discourage people from making necessary changes or aspiring for a better future. It is remarkable to realise that students look for a future with greater hope than their teachers; this shows to the researcher that teachers have an important role in building students' dreams.

It is also important to highlight that we must listen to the voices of our own students regarding what they think about our schools and how we can improve what we teach them. Forming new leaders involves empowering them to disagree with our decisions, granting them the opportunity to make and influence important decisions, and understanding that those decisions will bring positive consequences for everyone.

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Acknowledgements

The researcher would like to express gratitude to the board of Colegio San Andrés Anglo Peruano for granting permission for the conduct of this research. Likewise, I extend my deep appreciation to Professor Carmen Soto, Head of the English Department, for her collaboration in the selection of students for the focus groups.

Throughout the course of this research, artificial intelligence has been utilised for translation purposes only, as the questionnaires and interviews were conducted in Spanish.

Students have greater hope for the future than teachers; this shows that teachers have an important role in building students' dreams.

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Enhancing learning walks: leveraging focused observation and purposeful feedback

Ghazala Sajjad, Pakistan

Enhancing learning walks: leveraging focused observation and purposeful feedback

School context

Generation's, a large private school operating on two campuses in Karachi, Pakistan, serves over 3500 students from playgroup through to senior levels. With a faculty of 600, Generation's provides quality academic instruction rooted in values, and prepares students for Cambridge O and A Level examinations.

The school aims to foster academic, social and emotional growth through a vibrant, holistic learning environment. The school motto, 'Wings with roots' encapsulates the school's commitment to developing balanced and well-grounded personalities that are highly skilled and confident.

About the author

Ghazala Sajjad, with over 30 years of experience in education, serves as the Lead Curriculum and CPD at Generation's School in Karachi. She specialises in change management, learner-centred environments, and distributed leadership. Ghazala holds a Postgraduate Certificate in Applied Educational Leadership from the Institute of Education, UCL, and a Cambridge Programme Leader certification. Currently, she leads the internal CPD task force, focusing on aligning CPD experiences with teachers' needs. Additionally, Ghazala heads the induction programme for new teachers and is responsible for training and mentoring of middle leaders at her school.



Key learnings

This research looked at the benefits of structured learning walks where teachers observed each other's practices in order to foster collaborative learning and feedback.

- Middle leaders required training to conduct observations, analyse data, and offer targeted feedback to enhance teacher performance. Digital tools, like tablets, should be provided for efficiency and real-time feedback.
- School heads should be role models, fostering an environment of support by providing structures and recognition of contributions, while remaining approachable to all teachers.
- Skill development was observed in delivering constructive feedback, practising respectful communication, and cultivating a growth mindset.
- Difficulties with time management and scheduling observations were noted due to heavy workloads and disruptions.
- The research on learning walks underscored the significant benefits: it fostered skill enhancement, capacity building, and a culture of mutual learning for teachers and middle leaders. There was improvement in the uniformity of processes, leading to increased productivity.

‘Middle leaders are bridges between teachers and management. Their behaviour can motivate teachers to participate in learning walks.’

Vice Principal

Action research rationale

Generation’s boasts a robust CPD model, nevertheless, there is an essential need to better align professional development with observable teaching practices. This necessity has become more pronounced due to the school’s rapid expansion, regularly bringing in new teachers. Steiny (2008) quotes Carbone: ‘It’s much easier to learn by watching teachers; you can see practice, good and bad, right in front of you.’ However, teachers rarely get the opportunity to observe other teachers, and the traditional observation protocol conducted by school heads is often judgemental, and can be stressful.

To address this challenge, the study suggests ‘structured learning walks’ where teachers can mutually observe each other’s practices. Led by middle leaders, these walks involve teachers visiting classrooms together, concentrating on refining instructional skills aligned with the Cambridge Teaching Skills Roadmap. The process entails pre-observation preparation, adhering to a set protocol, conducting observations, and post-observation reflection. These stages foster collaborative learning and feedback among teachers.

We focus on 12 middle leaders who serve as team leads across various school sections. Their role as ‘expressive influencers’ (Norris and Poulton, 2008) is crucial in fostering trust and acting as a catalyst for change. Thus, this research examines the impact of learning walks on middle leaders’ capacity, along with exploring teachers’ intrinsic motivation for reciprocal observation and reflection. Our primary goal is to cultivate an environment where teachers actively invite their team leaders and peers to visit their classrooms.

Exploratory research questions

1. How do I believe that learning walks will enhance the capacity of middle leaders?
2. What do teachers think are the benefits/challenges of learning walks?
3. What do leaders think they can do to encourage teachers to participate in learning walks?

Data collection procedure

Employing a multi-method approach, the study integrated a focus group, reflective writing prompts, and a questionnaire to enhance research credibility. Geared at exploring the situation more broadly, this exploratory research aimed to gather diverse perspectives and insights from various stakeholders.

The researcher maintained a reflective journal throughout the study for reflections on related literature and informal notes on discussions and observations. A single focus group session involved four middle school leaders, aiming for diverse opinions and efficient communication. Twelve middle leaders from various academic domains participated in reflective writing prompts, selected through stratified random sampling. Additionally, 24 teachers, representing varied experience levels and teams, completed online questionnaires, addressing challenges and benefits during observations and learning walks.

Before the exploration began, consent was sought from all participants, ensuring they understood the study’s purpose and their rights. In addition to written consent, the researcher verbally confirmed that the staff understood the research and were willing to participate. Any collected data remained confidential, and identifying details were anonymised to ensure participant privacy.

To refine the research tools and ensure their effectiveness, a pilot test was conducted on the focus group questions and questionnaires.

Figure 1: Generation’s is a large private school in Pakistan with 3500 students and 600 faculty.





Figure 2: Themes from the focus group

Key findings from the exploration

The data underscores a prevalent awareness of the benefits of learning walks, signifying a collective recognition of the potential for growth through observation and feedback. However, challenges include the limited experience of both teachers and leaders, practicality and workload concerns.

Analysis and interpretation of the collected data revealed the following findings and observations.

- Leaders and teachers engage in 'double seeing', comparing their classrooms with observed ones (Tenenbergh, 2016).
- Middle leaders serve as mavens and expressive influencers, motivating teachers through expertise and persuasion.
- Team leads can facilitate positive relationships between teachers and peers, to create a trusting environment.
- Leadership experience is varied with 33% having one to three years as team leads and 25% with a decade's experience.
- Leaders' participation in learning walks also varies, with 25% never engaging, 16.7% once a year only, 25% once a term, and 25% participating weekly.
- Approximately 50% of teachers' comments expressed positive sentiments towards learning walks, citing benefits like friendly collaboration and learning practices.
- Challenges, noted by 36.4%, revolved around practicality, teacher workload, and potential student distraction. 66.7% teachers feel that they rarely get time to observe their peers.

- 95.8% teachers think that opportunities to observe peers/leads will help them improve their own practice.
- 25% teachers are either indifferent or uncomfortable when others observe them during teaching.
- 83.3% of teachers say that receiving constructive feedback encourages them to participate in observation.
- 87.5% teachers think improved collaboration while participating in learning walks will improve classroom practices.

Action plan

The study indicates the middle leaders need capacity building sessions, emphasising trust development and non-judgemental feedback, for effective learning walks and fostering a collaborative professional development culture.

Hence the initial action plan is as follows.

Professional development

- Training sessions on 'Focused observations and purposeful feedback'. A blended approach has been adopted for training to ensure learning is self-paced and accessible.
- Empower leaders to develop and implement structured debriefing sessions with clear protocols for effective knowledge exchange during the learning walks process.

Online resources for leaders and teachers

- OSS course: Leadership development, consisting of 2 modules:
 1. Leadership training - Planning, monitoring, evaluating and reviewing
 2. Engaging with leadership, management and leadership styles
- OSS module: Engaging with professional development - peer observation

Applying new knowledge in learning walks

- Team lead initiates learning walks and encourages peer observation.
- Schedule learning walks once per unit (every six weeks) involving section heads and team members to foster collaboration and shared professional development experiences.
- Practice learning walk and feedback protocols to develop mastery of the structured processes of observation.

QUESTION 1: What are your primary concerns or expectations regarding the upcoming training programme on observation and feedback skills? Rate each according to its importance.

Sub-questions	Pre Training Questionnaire			Post Training Questionnaire		
	Agree	Not Sure	Disagree	Agree	Not Sure	Disagree
Improving my own skills and practices in focused observations.	100%	0%	0%	98%	2%	0%
Improve my skills and practice in providing purposeful and timely feedback.	95%	5%	0%	98%	2%	0%
Ensuring active engagement of team members in the training sessions.	77%	13%	0%	84%	16%	0%
Addressing specific challenges within the team related to communication and collaboration.	74%	26%	0%	91%	9%	0%
Aligning the training programme objectives with the overall goals of the school.	86%	12%	2%	93%	7%	0%
Provision of resources and support by school leaders in order to facilitate the implementation / application of the training programme.	84%	14%	2%	91%	9%	0%

Figure 3: Pre and post training: The expectations and benefits gained by the middle leaders

Action plan implementation

The implementation of the action plan commenced early in the year, strategically aligning with the existing professional development framework of the school. This timing facilitated a smooth integration of training sessions for middle leaders, coinciding with the initiation of learning walks. The fortnightly sessions provided ample time and space for participants to apply newly acquired strategies and engage in reflective practices within their teams.

The training programme, spanning over two months, engaged 45 middle leaders from departments across the school. The focus was to equip educators with the necessary skills and strategies to transform observations into constructive and collaborative processes. Furthermore, the professional development experiences were designed to cultivate proficiency in delivering purposeful and effective feedback through deliberate practice and reflection.

During the sessions, meticulous protocols were developed by team leads to ensure efficiency and focus during learning walks. Collaborative opportunities for peer learning and feedback were integrated to foster a supportive learning environment and promote continuous improvement.

Overall, the implementation plan aims to empower educators with the necessary skills and support structures to facilitate effective learning walks and foster collaborative professional development within the school community.

Data collection procedures

As before, a multi-method approach with voluntary sampling was utilised, integrating pre- and post-training questionnaires, a focus group, and a reflective journal. This approach encouraged higher engagement and elicited more thoughtful and genuine responses, resulting in meaningful insights.

Online pre- and post-training questionnaires were completed by all 45 middle leaders who received the training and are conducting learning walks with their team teachers. This helped assess the impact of training on their competencies before and after implementation. Discussions were held to ensure participants understood the questions.

A focus group comprising five vice principals (VP) heading academic sections was conducted to gather valuable data and secure their ownership and support for the action research. The interview was recorded and transcribed using an online app.

Additionally, a reflective journal was maintained by the researcher to document reflections and ideas about the topic.

Consent was obtained from all participants prior to data collection, and they were provided with a copy of the questions to prepare insightful and efficient responses. Confidentiality was maintained, and identifying details were anonymised to protect participant privacy. A pilot test was conducted to refine the research tools and ensure effectiveness.

Most importantly the exploratory research served as a pilot, resembling a learning spiral. As all middle leaders became engaged, the subsequent action research phase gained momentum, mirroring an upward progression within this spiral (Smith and Rebolledo, 2018).

‘It is easier to learn by observing our peers – like questioning techniques and wait time and then discussing it later.’

Teacher



Figure 4: Training Session for middle leaders.



Figure 5: Team lead with teachers: Feedback Huddle

The results of pre and post-training questionnaires reveal a notable improvement following the training. Despite varying initial skill levels among middle leaders, the programme effectively enhanced their existing competencies, leading to a positive shift in respondents' attitudes. Other findings to explore perceptions and behaviours include:

Pre-implementation phase: Focus group (VPs) and journal notes highlighted several key points:

- Middle leaders require training to effectively conduct observations, analyse data, and offer targeted feedback to enhance teacher performance.
- Expectations for the training included a structured approach with opportunities for reflection, feedback, and collaboration, while concerns centred around effective implementation.
- Building trust, setting clear standards, and fostering open communication were identified as priorities.
- School heads should be visible role models, fostering an environment of support by providing structures and recognition of contributions, while remaining approachable to all teachers.

'Hands-on practice was provided during the sessions to actually give various types of feedback to teachers at different levels while maintaining respect.'

Middle Leaders

Post-implementation phase: middle leaders reported the following:

- Skill development was observed in areas such as delivering constructive feedback, practising respectful communication, and cultivating a growth mindset.
- There was improvement in the uniformity of processes, leading to increased productivity.
- Ability to build trust so that teachers viewed learning walks as learning opportunities rather than evaluations.
- Difficulties with time management and scheduling observations were noted due to heavy workloads and disruptions.

The Learning Walk Protocol

The Learning Walk Protocol at Generation's School ensures a standardised, respectful and evidence-based approach to conducting classroom observations. Learning walks are a collaborative approach to gaining quick insights into each classroom to enhance teaching and learning.

Before Learning Walk

- Make a group (observers and teachers to be observed)
- Ensure a mixed group including academic coordinator, lead teacher/year tutor and teachers
- Schedule a learning walk
- Inform students prior to observation
- Define a focus area
- Review protocol

- Leave a note of appreciation for the teacher and students

After Learning Walk

Huddle: Share observations in corridor (5 minutes)
Debrief session

- Identify common themes across classrooms
- All team members to have an equal voice
- Feedback to be constructive (multiplier effect)
- Keep confidentiality and acknowledge teachers
- Highlight the collaborative nature of the debrief, ensuring a collective focus on observed learning

During Learning Walk

- Arrive and exit on time (total 8—10 minutes)
- Observe and gather evidence
- Don't be judgemental
- Minimise interaction with teachers/students

‘Learning walks foster collaborative learning and feedback among teachers. It is reinvigorating for the community as a whole to participate in this exercise, enabling us to share our insights, experiences, and best practices on both local and global levels.’

School Director

Conclusion

The action research on learning walks underscores significant benefits: fostering skill enhancement, capacity building, and a culture of mutual learning for teachers and middle leaders. However, challenges like consistency and compliance persist due to time constraints and awareness gaps. School heads’ visibility in sustaining practices through support and direct assistance to teachers is crucial.

Leveraging focused observation and feedback can yield substantial outcomes when integrated effectively into the school’s culture. Consistency in scheduling, and embedding training into core roles, fosters trust and ensures it is not seen as burdensome. Also, promoting a growth mindset in feedback enhances the learning experience and encourages a can-do attitude.

The next step for middle leaders involves training to analyse and interpret data. Digital tools like tablets will also be provided to middle leaders to enhance efficiency and enable real-time feedback, streamlining the process for accessibility and tracking.

Enhancements in the school development cycle could involve integrating learning walks into the Generation’s Improvement Framework. This ensures they contribute to continuing professional development, improvement spirals, engagement mechanisms, and bridging the gap. Learning walks, if consistent and seen as important, can mark a turning point in fostering teacher leadership, benefiting the broader school community.

It is reinvigorating for the community as a whole to participate in this exercise, enabling us to share our insights, experiences, and best practices on both local and global levels. In this context, it is important to remember that small deeds may seem insignificant, but they ripple out with great impact!

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Acknowledgements

Thankful to the Creator who granted me the gift to find greatness in ordinary things. I greatly acknowledge the support of the following people: the Founder Principal Dr Ghazala Siddiqui and Shoaib Siddiqui Director Generation’s for the inspiration and valuable insights; our tutors: Sirin Soyoz and Kathleen O’Hare; my family and friends: Zahida Zaidi, Syed Safdar Sajjad, Fatima, Zahrah, Umbreen and Komal.

Special thanks to my research team: Subuh Fatima, Tayyaba Abbasi and research participants: the mavens – teachers and the middle leaders, who are crazy enough to think they can change the world!

ChatGPT and Fareeha Bashir for article edits.



British Council
Partner Schools

Smart leadership for female empowerment in education in Pakistan

Nayyab Farooq, Pakistan

Smart leadership for female empowerment in education in Pakistan

School context

Located in the bustling city of Peshawar, Pakistan, Peshawar Model Girls High School – V(5) stands proudly in the vibrant neighbourhood of Pakha Ghulam, along Dalazak Road. This school caters to a diverse demographic, drawing students from various socioeconomic backgrounds within the urban landscape. Embracing the rich tapestry of its region, the school serves as a beacon of opportunity and inclusivity, fostering an environment where every student can thrive. Positioned amidst the cultural mosaic of Peshawar, the school embodies the spirit of unity and progress, preparing young minds to navigate the global landscape with confidence and resilience.

About the author

Nayyab Farooq coordinates the Peshawar Model Education Network for Peshawar Model Schools, overseeing educational initiatives across 11 branches. She also leads the Cambridge O Level programmes across multiple campuses, organising training sessions, developing policies, and managing recruitment with skill. Her international recognition includes two ISA Awards from the British Council, showcasing her commitment to global educational standards. Farooq's leadership and achievements highlight her dedication to excellence on a global scale.



Key learnings

This research aimed to empower female students and cultivate leadership through mentoring and teacher training.

- The mentorship programme enhanced teacher professional advancement, fostered confidence, sharpened skills, and increased collaboration among participants.
- Advocating for inclusive mentorship practices was essential to cater for the diverse needs and backgrounds of educators, and in promoting equitable opportunities and collaboration.
- Some challenges occurred in mentor-mentee dynamics, including in communication and mismatched expectations, suggesting the need for enhanced training and support.
- Participants expressed the need for ongoing support beyond the initial mentorship programme.
- Ultimately, these initiatives will benefit students, as the trained female adults utilise their new skills to enrich classroom experiences.

‘Empowering educators through mentorship cultivates leaders who shape tomorrow’s generation.’

Ms Sadia Ateeq

Action research rationale

Peshawar Model School combines academic excellence with innovative educational strategies to meet diverse student needs, proposing a pioneering smart leadership model integrating data analysis, artificial intelligence, and collaborative decision-making. This initiative aims to enhance academic performance and foster individualised, student-centred learning.

The UNESCO report, *Orientation Balance in Training: Looking Past Equality*, notes that young ladies in Sub-Saharan Africa and South Asia face more difficulties in attending and finishing schooling compared with young men. The goal of my research is to engage young ladies to overcome these obstacles and understand their true capacity. The programme aims to develop balanced female leaders who succeed in both academic and extracurricular pursuits.

This action research emphasises female empowerment in a cultural context where women’s education may be undervalued. It aims to empower female students as catalysts for change within their families and communities. In this initiative, 15 students and five teachers will be chosen as role models. The school seeks to cultivate well-rounded female leaders excelling academically and in extracurricular activities, challenging gender biases and driving broader societal transformation.

Expected outcomes

- Improved academic performance through tailored educational strategies facilitated by leadership programmes.
- Creation of a personalised learning environment, fostering inclusivity. Supported by leadership programmes emphasising collaborative decision-making processes and student-centred approaches.
- Cultivation of empowered female leaders among teachers and students.
- Increased female self-esteem and confidence.
- Skill development in communication and collaboration.



Exploratory research questions

1. Exploring Your Own Perceptions
What are my assumptions and biases about the challenges and opportunities faced by female leaders in Pakistani educational institutions?
2. Exploring Others’ Perceptions (Students’ Perspectives)
What barriers or stereotypes do female students believe exist that might hinder their own leadership aspirations within our school?
3. Exploring Behaviour (Your Students’ and Yours)
What steps have the teachers taken to create a safe and encouraging environment?

Methodology

A multifaceted methodology incorporating digital tools, personal reflections and collective insights will be employed.

Researchers will maintain digital journals throughout the process, aiding in identifying and acknowledging assumptions and biases.

Focus group sessions will facilitate open discussions on challenges and opportunities faced by female leaders in Pakistani educational institutions, incorporating diverse voices, including students.

An online survey distributed to a representative sample of female teachers will provide quantitative insights into common beliefs, stereotypes and barriers hindering their leadership aspirations.

This comprehensive approach aims to gather rich data and insights to inform strategies for female empowerment in education.



Figure 1: Research participants providing their perspectives and discussing mentorship programmes.

Participant selection

Participants for the research will be selected through purposive sampling, ensuring representation from diverse perspectives. Researchers involved in the study will voluntarily contribute to the digital journal component. Two focus groups, each comprising 8 to 10 participants, will be carefully chosen to ensure diversity.

The online survey will include a minimum of 50 female teachers teaching various subjects and levels, prioritising socio-economic and educational diversity.

The selection criteria aim to capture a comprehensive understanding of the challenges and opportunities faced by female leaders in Pakistani educational settings, enriching the data by incorporating diverse voices and experiences and enhancing the validity and applicability of the research findings.

Ethical considerations

Prior to participating in any aspect of the research, all participants will be fully informed about the purpose, procedures and potential outcomes. Consent will be obtained, ensuring the voluntary nature of participation. All information collected will be treated with the utmost confidentiality. Participants will be assured that their responses will be anonymous to encourage open and honest sharing.

Analysis

Data collected from digital journals, focus group discussions, and online surveys will be analysed using qualitative and quantitative methods. Themes and patterns will be identified to answer the research questions and contribute to a comprehensive understanding of the challenges and opportunities for female empowerment in Pakistani educational leadership.

This research methodology aims to synergise diverse perspectives, fostering a holistic understanding of the complex dynamics surrounding female leadership in the educational landscape of Pakistan.

Summary and analysis of the findings

Research on female leadership aspirations and educational conditions in Peshawar Model School highlights several challenges and insights, including concerns about balancing fun and serious activities, limited opportunities, cultural biases, and obstacles like gender generalisations and peer pressure. Proposed solutions involve implementing mentorship programmes, refining school policies, and promoting inclusivity through awareness and targeted leadership programmes. Strategies for fostering a positive educational environment include addressing bullying, promoting collaboration through extracurricular activities, fostering open communication, and prioritising personal well-being support.

Overall, the findings underscore the importance of structured initiatives, collaborative efforts, and holistic approaches to empower female leaders and cultivate positive school communities. However, the research also identifies gaps in areas such as daily reinforcement, measurable outcomes for inclusivity initiatives, clarity in demonstrating improvements, student involvement in safety education, and assessing communication platforms.

The imperative to empower female leaders in Pakistani education is unmistakable amidst enduring challenges like work-life balance issues and societal biases. Proposed solutions, including mentorship programmes and awareness initiatives, aim to tackle these hurdles head-on. Female students, facing barriers, advocate for refined school policies and targeted programmes, while teachers and prospective student welfare officers underscore their commitment to a safe and inclusive environment. In conclusion, there is a resounding call for a comprehensive strategy that integrates awareness campaigns, mentorship initiatives, policy refinement, and a steadfast commitment to fostering a positive educational environment.



Figure 2: The action plan focused on training 20 female adults and launching a student peer mentorship programme.

Key findings from exploration

- Challenges for female leadership: Concerns regarding work-life balance, limited opportunities, societal biases, and gender stereotypes pose significant hurdles for aspiring female leaders.
- Proposed solutions: Mentorship programmes, refinement of school policies, and awareness initiatives are suggested as practical solutions to address barriers to female leadership.
- Educational environment: Strategies to nurture a positive educational environment include addressing bullying, promoting teamwork through extracurricular activities, fostering open communication, and prioritising emotional well-being support.
- Identified gaps: Gaps in emotional support, measurable outcomes for inclusivity initiatives, clarity in teaching enhancements, student involvement in safety education, and assessing communication platforms reveal areas for improvement in empowering female leaders and students.
- Call for comprehensive strategy: There is a pressing need for tangible actions, encompassing awareness, mentorship, policy refinement, and a commitment to fostering a safe and inclusive educational environment, to empower female leaders in Pakistani education.

Action plan

- Train 20 female adults in a one-month intensive mentorship programme emphasising leadership and mentoring skills.
- Launch a student-to-student peer mentorship programme pairing each mentor with at least two peers.
- Collaborate with administrators to refine and implement gender-inclusive policies within two months.
- Conduct a comprehensive policy review after six months.
- Establish a continuous evaluation system with feedback collected every three months.

Action plan implementation

The mentorship programme for 20 female adults integrates action research principles to optimise its effectiveness in cultivating leadership and mentoring skills. It begins with a pre-assessment phase to tailor curriculum development based on existing competencies and aspirations. Collaboration with experienced mentors ensures a comprehensive syllabus covering essential areas like communication and conflict resolution. Interactive workshops and peer learning sessions facilitate practical application and insights exchange. One-on-one mentoring provides personalised support throughout the programme. Reflection exercises promote self-awareness and goal-setting, while skill application projects facilitate real-world development. Post-programme assessments gather feedback for continuous improvement. By embracing action research principles, the programme empowers female adults to navigate leadership roles confidently and excel as mentors in their communities and workplaces.

‘Mentorship programmes empower teachers, foster collaboration and professional growth.’

Ms Gohar I Nayab Zahid



Figure 3: Qualitative insights were gathered through interviews with teachers, administrators and mentors, enriching the evaluation process.

Data collection procedure

The action research employed a range of data collection methods, including surveys, interviews and observations, to thoroughly evaluate the mentorship programme's effectiveness. Twenty teachers participated in pre- and post-implementation surveys, providing quantitative data on their expectations, concerns and perceived benefits, with explicit consent. Qualitative insights were gathered through interviews with teachers, administrators and mentors, enriching the evaluation process. Direct observations of mentor–mentee interactions were conducted with participant consent to offer real-time feedback. Prioritising participant consent underscored ethical considerations, ensuring autonomy. Active engagement of participants validated the collected data, facilitating informed decisions to optimise programme outcomes and enhance the learning experience for all stakeholders.

**‘MentorHERs:
Nurturing leadership qualities
in educators to sculpt
future leaders.’**

Participant

Key findings

- **Positive impact on teacher expectations:** Pre- and post-implementation surveys indicate a significant increase in teachers' expectations regarding the mentorship programme's effectiveness in enhancing their professional skills and confidence.
- **Enhanced teacher–administrator collaboration:** Interviews reveal improved collaboration between teachers and administrators, with mentors facilitating constructive dialogue and problem-solving approaches.
- **Challenges in mentor–mentee dynamics:** Observations highlight some challenges, including communication barriers and mismatched expectations, suggesting the need for enhanced mentorship training and support.
- **Opportunities for programme refinement:** Feedback from participants underscores the importance of refining activities and resources to better align with participants' diverse needs and preferences.
- **Importance of continued support:** Participants express the need for ongoing support and resources beyond the initial mentorship programme, emphasising the importance of sustained professional development initiatives.



The action research sheds light on the profound impact of mentorship programmes on teacher professional growth and collaborative culture within our educational sphere. Ultimately, these initiatives benefit students, as the teachers will utilise their skills to empower our youth..

Conclusion

The findings of this action research outline the various ways the mentorship programme has affected teacher professional development and collaborative culture within our educational context. These insights provide valuable lessons with global relevance for learning environments.

- The mentorship programme significantly enhances teacher professional advancement, fostering heightened confidence, sharpened skills, and increased collaboration among participants.
- Collaborative support frameworks, such as mentorship initiatives, play a crucial role in nurturing a culture of continual learning and professional enrichment within educational institutions.
- Sustained professional enrichment efforts are imperative beyond the initial mentorship period to continually nurture teachers' growth and efficacy.
- Advocating for inclusive mentorship practices is essential to cater to the diverse needs and backgrounds of educators, promoting equitable opportunities for professional development and collaboration.
- The success of mentorship programmes in enhancing teacher professional development and collaboration has global relevance, demonstrating the pivotal role of collaborative support frameworks in fostering ongoing learning and growth among educators.

The action research sheds light on the profound impact of mentorship programmes on teacher professional growth and collaborative culture within our educational sphere. It offers valuable lessons and insights applicable across global learning environments and the enhancement of the school development cycle. Ultimately, these initiatives benefit students, as the 20 trained female adults will utilise their newly acquired skills to enrich classroom experiences and nurture youth imbued with leadership qualities.

Acknowledgements

I extend heartfelt gratitude to Ms Gohar I Nayab Zahid, Coordinator of Peshawar Model School Girls-5, for her unwavering dedication and steadfast support throughout our journey. Her relentless dedication has played a pivotal role in the accomplishment of our endeavours.

We also wish to express our sincere appreciation to Ms Sadia Ateeq, Principal, for her invaluable guidance and for generously providing us with the opportunity to conduct our research. Her support and provision of resources have been instrumental in enabling us to carry out our work effectively.

I have used AI technology, particularly ChatGPT, for aiding in spell checks, grammar corrections and content rephrasing.

Female students face barriers like stereotypes, societal expectations and peer pressure in leadership aspirations, emphasising the importance of challenging stereotypes and embracing leadership roles collectively.

Teachers implement diverse strategies for a safe environment, prioritising addressing conflicts, promoting respect and enhancing inclusivity through extracurricular activities, open communication, emotional well-being support, and recommending teaching experiences for improved teaching quality.

Action Research for Schools

Developing effective professional development programmes

Improving student academic performance in Maths and Science,
Benjamin Muridzo, Masuka Christian High School, Zimbabwe

Sustaining positive classroom culture through teacher development,
Enobong Imaha, Pegasus School, Nigeria

**Unifying school culture through a shared vision: effectiveness of
continuous professional development for newly hired teachers,**
Marwa Ahmed Atteya, Capital International School, Egypt

**Impact of online professional development on teacher practice
in a secondary school,** Lydia Quansah, Dayspring International Academy,
Ghana

**Enhancing middle school Mathematics through
a professional learning Mathematics community,**
Dr Nadia Rashid Inam, Beaconhouse
Jauhar Campus, Pakistan



British Council
Partner Schools

Improving student academic performance in Maths and Science

Benjamin Muridzo, Zimbabwe

Improving student academic performance in Maths and Science

School context

Established in 2015 by Archbishop Isaac Masuka, the Masuka Christian High School is a private co-educational institution located on the southern part of Mashonaland West province in Zimbabwe and just 21 kilometres from the capital city, Harare.

The school has a total student population of 338, with 184 girls and 154 boys from 13 to 18 years. It runs from form 1 to form 6 and offers parallel examination systems, namely, the local Zimbabwe Schools Examinations (ZimSec) and the Cambridge International Examinations at both Ordinary and Advanced levels. It has 15 male and 12 female teachers with various qualifications ranging from diplomas to university degrees.

About the author

Benjamin Muridzo is the principal of Masuka Christian High School a position he has held for five years. He has a Bachelor of Education degree from the University of Zimbabwe, specialising in geography and curriculum studies. He also holds a diploma in Customer Relationship Management (CRM) and a Certificate in Performance Management Appraisal. He is a Certified Master Coach trained by the Certified Coaches Federation of Canada in 2017. He has vast experience in educational leadership at both government and private institutions spanning 30 years. Over and above that, Benjamin Muridzo is a renowned trainer, motivational speaker and researcher.



Key learnings

This research explored strategies to improve student results in Maths and Science.

- **The upgrading of the laboratories, improved equipment and an e-library has increased enrolment and motivation in Maths and Science. This led to more students engaging in Maths/Science video games.**
- **Benchmarking against cluster schools is necessary to remain competitive.**
- **Teamwork among both students and learners significantly improved.**
- **In terms of results, the lower-performing students need more remedial work while the high-performing group improved faster than anticipated.**
- **We need to implement a homegrown continuous professional development programme funded by local resources.**



For the past three years, the school's average in Maths and Science was below that of schools around us. It's imperative that our students gain a strong Science/Maths foundation so they can become active participants in this world of technology.

Action research rationale

For the past three years, the school's average pass rate in Maths and Science at Ordinary level was below that of schools around us, the cluster average. Our school pass rate for Maths was 56%, compared to the cluster average of 68%, and for Science ours was 64% compared to the cluster average of 74%.

Students, teachers and management were concerned and parents had also expressed concerns over the continued low performance. The arrival of the Action Research Grant was a very welcome gesture in terms of resolving the school's Maths and Science problem.

The then Minister of Primary and Secondary Education declared that, "From 2015 onwards, a new competence-based curriculum will be introduced in Zimbabwe and will have a strong bias towards STEM subjects". It therefore followed that a firm foundation in Science and Maths at Masuka Christian High would help our learners fulfil the Zimbabwe education dream, which is housed in STEM or what has been popularised as Education 5.0.

Herman Henkel once said, "Science helps us understand the world and in Maths alone each generation adds a new story to the structure". Therefore, good grades in Maths and Science at Masuka Christian High will open up a whole window of opportunities and help students continue to build their knowledge of these two subjects for the future.

The era in which we are living is driven by Maths and Science and according to Maria Mitchell, "In this world, we cannot continue to take anything for granted. We need scientific validation".

It became imperative that our learners at Masuka Christian High School get a very strong Science/Maths foundation so that they become active participants in this world of technology.

Exploratory research questions

Three basic exploratory questions were used covering the three participating groups: namely the six Science and Maths teachers at the school; five Science and Maths teachers from our surrounding schools; and eight students from Masuka Christian High School.

1. What do teachers think is the reason for low pass rates over the past three years?
2. How do students in the school perceive Maths/ Science teaching and learning and their chances of success in these subjects?
3. What do colleagues in other schools believe promotes good teaching and learning in Science and Maths?

Data collection tools

The research used three sets of data collection tools, namely: focus group discussions; interviews; and learners' written work.

Eight learners in Form 3 were selected to participate in the project and were divided into two groups of equal gender representation. Group 1 was made up of average-performing learners while Group 2 was made up of high-performing learners, all drawn from the Cambridge Science class. They were chosen by their Maths and Science teachers and ranged from 14 to 17 years.

Three Science and three Maths teachers from the school were chosen to participate in the research, four male and two female. Three are diploma holders while the other three are university graduates. Their average teaching experience was three years.

Finally, five Science and Maths teachers from our three surrounding schools were chosen, two female and three males. All are university graduates with an average teaching experience of six years.

All participants signed consent forms at the onset of the research.



Figure 1: Teachers attending staff development workshop

Key findings from exploration

The findings are divided into three categories: issues raised by our teachers; issues raised by our participating students; and issues raised by teachers from the surrounding schools.

Findings from our six local Science and Maths teachers

- 83.3% (5 out of 6) teachers believed that the low pass rates were due to limited resources, notably text books, science equipment and chemicals.
- 83.3% bemoaned limited opportunities to regular practicals in Science.
- 67.7% believed that the learners needed more remedial work for the 'average learners' and more extension work for the 'fast learners'.
- 100% believed that the two laboratories needed upgrading.
- 100% thought it was due to limited exposure to the Cambridge curriculum.

Findings from the eight Science and Maths learners in Form 3 (14–17 years)

- 50% had a positive perception towards the teaching and learning of Maths and Science at the school while the other 50% had a negative attitude.
- 62.5% thought the two subjects were valued at the school.
- 75% wanted the two existing Science laboratories to be upgraded and equipped with more chemicals and other relevant apparatus to make them meet the quality of the laboratories found in our neighbouring schools.
- All learners thought they needed more practical lessons and extension work so that they could remain challenged to work harder.
- 75% believed that they would benefit from more experienced teachers who are more familiar with the Cambridge Science and Maths Curriculum.

Findings from the five teachers from our surrounding schools

- They believed that collaborative teaching followed by guided presentations would improve the pass rates.
- They also advised that research would help our students to improve their academic performance.
- They all recommended that benchmarking was a useful teaching and learning method.
- They strongly recommended introducing Continuous Professional Development for Masuka High School teachers.

Action plan

- Home-grown continuous development programmes
- Upgrading the two existing labs
- Introducing e-library for Science and Maths
- Sourcing a variety of more text books and Science equipment
- Watching Maths and Science video games
- Introducing video lessons
- Forming active Maths and Science clubs
- Increasing benchmarking opportunities
- Developing positive mindsets
- Increasing practicals in the two subjects
- Use of AI
- Increasing use of collaborative teaching methods



Figure 2: Students attending development workshop

Action plan implementation

In trying to improve academic performance in Maths and Science at Masuka Christian High School, a raft of measures was introduced and existing ones were strengthened. As a result of complaints from parents and management, a continuous professional development programme was introduced to upgrade and motivate both learners and teachers.

Specific topics like syllabus choice, interpretation and implementation, modern pedagogical issues and issues to do with personal effectiveness were part of the package. Experienced Maths and Science teachers were invited to do the training for the month of March at a pace of three hours every Saturday.

Sessions for the six Science and Maths teachers and senior management were separated from those of the eight participating students. Also included during training were issues on developing positive mindsets, benchmarking and AI.

A decision was made by senior management and the board of directors to upgrade the existing laboratories to a level that matches British Council expectations at a cost of US\$825 from the research grant and another US\$1000 from the school.

The existing Maths and Science clubs were strengthened, while video games in these two subjects were introduced. Along the same lines, a decision was made to come up with a bank of video lessons serving as examples of modern teaching pedagogy. A new set of text books for both subjects were bought for US\$400, while new science equipment and chemicals were bought for US\$700.

Data collection procedure

Post-implementation data collection tools included oral interviews, observation and learners' written work.

Oral interviews were used to obtain information on the effectiveness and impact of the whole project especially on issues related to academic performance improvement. The interviewees included our Science/Maths teachers, the learners and other staff members. The oral interviews also included asking learners on the impact of the upgraded laboratories, increased supply of science equipment and text books.

Observation, as a post-implementation research tool, was used to track the level of interest of the students in such newly introduced teaching/learning techniques like video games, the e-library room, continued use and recording of video games and exposure to practical lessons.

A tracking system of learners' written work was used and will continue to be used to check on progress or lack of it until they write their final O level exams in October/November 2024. Their final results will continue to be of interest when they are out in January 2025.

All participants signed consent forms at the onset of the data collection exercise.



Average performing group

2023						2024		
Month	June	July	Sept	Oct	Nov	Jan	Feb	March
Average Mark	47%	44%	49%	53%	58%	62%	67%	69%

High performing group

2023						2024		
Month	June	July	Sept	Oct	Nov	Jan	Feb	March
Average Mark	66%	69%	76%	78%	83%	85%	88%	89%

Figure 3: Masuka Christian High School monthly improvement in Maths and Science

Key findings

While the monthly academic performance tracking system has shown a pleasing trend, two scenarios stand out clearly:

- progress from the lower-performing group of students is sluggish and needs more remedial work if they should score a B grade or better in their final Cambridge O-Level exams in October/ November 2024
- progress from the high-performing group has improved faster than anticipated and is expected to keep increasing to the A and A+ grades for the 2024 final exams.

The upgrading of the two laboratories and the subsequent improved supply of chemicals, equipment and textbooks brought about the following:

- a 20% increase in enrolment in the school's 2024 Form 3 and Form 5 Science and Maths classes
- highly motivated teaching staff and Science/ Maths student body across all classes from Forms 1 to 6
- more students can be seen engaging in Maths and Science video games across the school.

We also noted these findings.

- Benchmarking of our students against those from our cluster schools will remain necessary if our learners should continue to be competitive.
- Teamwork among both students and learners has significantly improved since the inception of the project.
- One of our very good Science teachers has become such a powerful and popular figure among our neighbouring schools so much that the school may lose him if more attractive incentives are not put on the table.

Conclusion

The following conclusions were drawn from the main findings of the research.

Conclusions from our Maths/Science teachers

It emerged from the findings of the research that the low pass rates over the past three years at Masuka Christian High School were due to limited supply of resources, notably textbooks, science equipment and chemicals. This related to insufficient funding when the Cambridge curriculum was introduced three years ago. To this end, new textbooks, chemicals and equipment were purchased for a total of US\$1100.

It also emerged that the two science laboratories needed structural upgrading to meet the new Cambridge requirements. The two laboratories were renovated at a cost of US\$1825, (\$825 was from the grant and the rest from the school).

Conclusions from our learners

It emerged that the eight participating students concurred with their teachers on having the two laboratories upgraded and that more equipment and chemicals were needed. It can also be concluded from the same findings that the average performers needed more remedial work if they should improve to grade B, while the high-performing group needed more extension work through research. To this end, a monthly performance tracking record was instituted.

Conclusions from the surrounding schools

The conclusion from the findings of these five teachers was the need to institute a homegrown continuous professional development programme for senior management, teachers and learners.

It also emerged that there was need to introduce an e-library facility, Science/ Maths video games and create a bank of local video lessons.



We concluded that we need to institute a homegrown CPD programme for senior management, teachers and learners.

It also emerged that there was need to introduce an e-library facility, Science/Maths video games and create a bank of local video lessons.

Key takeaways

Some of the takeaways include the following points.

1. We need to adopt a homegrown continuous professional development programme funded by local resources.
2. Use of locally-produced video lessons by the best Science/Maths teachers that will always act as a school lesson bank for best practice. This has been spread to other departments.
3. The introduction of an e-library has improved interest in research at the school.
4. The introduction of artificial intelligence (AI) as a teaching tool should be encouraged in our schools. However, both teachers and learners should appreciate its merits and demerits.
5. The upgrading of the two science laboratories may not have happened so early if not for this Action Research Project.

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Acknowledgements

To my Director, Bishop Isaac Masuka, thank you so much for allowing me to participate in this inaugural and prestigious Exploratory Action Research on improving academic performance in Maths/Science at your school. To my mentors, Kathleen, Sirin and fellow researchers, thank you so much for the guidance and encouragement throughout the arduous journey. To the Zimbabwe British Council team, thank you for visiting the school for the Grant Signing Ceremony and allowing me to market the project at your meetings. To my beloved wife Susan, thank you for being such a towering muse in my journey thought the project.

Artificial intelligence was only used to check spelling and grammar.

The findings showed that the low pass rates were due to limited supply of resources, notably textbooks, science equipment and chemicals, related to funding. To this end, new textbooks, chemicals and equipment were purchased. The upgrading of the two science laboratories may not have happened so early if not for this Action Research Project.

**British Council
Partner Schools**

Sustaining positive classroom culture through teacher development

Enobong Imaha, Nigeria

Sustaining positive classroom culture through teacher development

School context

Pegasus School is a vibrant school in southern Nigeria that strives for excellence. It has a culture of equality, diversity and inclusion, and operates the British and Nigerian curricula. Pegasus was established in 1994 with the vision of servicing the educational needs of the children of Mobil workers. Initially called Mobil Pegasus Primary School, it added a high school in 2007 and has recently built boarding facilities. This has enabled more students who reside outside the state to seek enrolment. It currently has 526 students. English is the primary language of instruction. Technology plays a major role as it was one of the few schools in Nigeria able to operate online during the COVID-19 pandemic. It has a Board of Trustees and Heads overseeing the different schools. Pegasus has benefited from British Council teacher support and student competitions. To improve the school ranking, Pegasus had a virtual inspection by the Council of British International Schools committee in February 2024. It received COBIS accreditation in May 2024.

About the author

Enobong Imaha is an English teacher who has taught for over two decades in both primary and high school. She rose to the level of a vice-principal at Frankfurt High School, Eket, Nigeria before her employment with Pegasus Schools in 2007. In her job, she wears many hats as she is the Activities Coordinator, the Head of the Girl Guides Club, and the facilitator for the 'Leader in Me' project. Enobong holds a master's degree in leadership of education from Liverpool John Moores University, United Kingdom. She enjoys moulding children and has led several initiatives aimed at promoting the voices of the girls and women in general. She authored her first book, *NENE*, in 2022.



Key learnings

This research explored new strategies to sustain a positive class culture.

- **Class culture included courtesy, morals, respect and decorum.**
- **Deviation from class culture is influenced by a lack of parental involvement, along with influence from the media, community and friends.**
- **Teachers observed deviation despite utilising open communication.**
- **Class culture deviation can occur when students do not understand the rules.**
- **Teachers agreed that targeted CPD helped create synergy with the students and assisted in managing classroom behaviour.**
- **The involvement of students in setting class rules also helped.**



Action research rationale

A move towards embracing 21st-century teaching and learning practices has led to more students speaking up, questioning rules, duties, authority, and the relevance of certain instructions of learning. These issues raised concerns amongst educators who found it hard to manage students' attitudes regarding adherence to traditional class rules and expectations.

My topic for action research was chosen after interviewing teachers and students on improving learning and behaviour. The periodic professional development modules designed for school improvement did not satisfy the needs of most teachers in this regard.

As such, teachers needed new strategies to sustain a positive class environment to meet the learning objectives. This is where targeted and sustainable continuous professional development (CPD) became a tool to aid educators. Fifteen teachers who instructed the 39 students in Grade 4 were chosen to make up the sample group.

This action research explored ways to sustain a positive class culture and how teacher development helped in achieving this objective. The premise is that by investing in targeted and sustainable CPD for educators, schools can empower teachers with the knowledge and skills required to create a learning environment that supports the learning process and conditions the students to be willing learners (Kostas & Ioannidou, 2023).

Exploratory research questions

1. According to teachers, why do students deviate from accepted class culture?
2. What do students think about these deviations?
3. What are the CPD needs of teachers to support a positive class culture?

Data collection procedure

The research adopted a mixed-method approach. The data collection tools were two focus groups, questionnaires and the researcher's self-reflection journal. Group 1 had six students aged between 8 and 9 years, chosen randomly but ensuring diversity in gender and character (an introvert and an extrovert). They were selected from the 39 students who made up Grade 4.

Focus group 2 had three teachers selected based on gender, tribe and years of experience. This allowed for a range of opinions, effective communication, and insight into teachers' views on the research topic. These three teachers were chosen from the original population of 15 teachers who taught Grade 4.

The questionnaires addressed the research questions while my self-reflection journal covered detailed observations before, during and after lessons showing both behaviour that aligned with, and deviated from, acceptable class culture.

Consent was sought from all participants. Parents of young participants consented before the students were allowed to take part. The customised forms were approved by the British Council and Pegasus Schools Management. The researcher verbally confirmed the students understood the research and were willing to participate. They were informed as to how their data would be used, stored, and protected as it is confidential, and all details would remain anonymous.

A pilot test was administered to selected teachers and students from Grade 5 to test the choice of tools and their effectiveness.

The premise is that by investing in targeted and sustainable CPD for educators, schools can empower teachers with the knowledge and skills required to create a learning environment that supports the learning process and conditions the students to be willing learners.



Figure 1: Students focus group

Key findings from exploration

RQ1: 78% of teachers stated that external factors such as lack of parental involvement, influence of the media, community and friends encouraged deviation from acceptable class culture.

RQ2: 90% of students felt uncomfortable when class rules were broken, and this affected learning.

- 67% found it hard to focus and follow rules.
- 48% wanted to be funny and different.
- 41% explained that rules were unfair, and they had no respect for their teachers.
- 18% did not know the rules.

RQ3: 99% of teachers explained that they often self-reflected over teaching practices and areas CPD can help improve class culture. Teachers strongly agreed to having received CPD related to classroom management and maintaining a positive class culture but would benefit from targeted CPD to better address deviation from class culture. They suggested international exchange programmes, helpful educational sites, behaviour management training, child psychology, non-conventional learning and effective 21st century methods which will help manage classroom behaviour.

Action plan

My action plan included:

- generating targeted professional training support for teachers
- encouraging collaboration by stakeholders
- school policy reform.

Action plan implementation

In 2024, Pegasus Schools had its 30th anniversary and, as part of its celebration and rebranding strategy, it pushed for accreditation from the Council of British International Schools (COBIS). In addition, Pegasus Schools received the British Council Action Research Grant of £2,500 in the 2023/24 session which helped in this work. Due to these developments, the research action implementation plans targeted professional development programmes for teachers. These programmes centred on classroom management, empathy, collaboration, enhancing 21st century skills and sustaining a positive school culture through webinars and onsite workshops.

Awareness of the action plan was enhanced by creating posters, an action research board at a central point in the school, and periodic meetings. These meetings were held with the student leadership team, face-to-face meetings with parents during Open Day events, and scheduled Zoom meetings between parents and the school management. These areas were discussed during solemn assemblies and every other general school meeting. In practice, new class rules and expectations were jointly set by teachers and students of every class. Weekly reviews in small groups were also encouraged.

Pegasus Schools added the students' voices to the bi-weekly 'Leader in Me meetings' (LIM). The LIM is a Lighthouse team working in partnership with the Steven Covey Foundation which teaches *The Seven Habits of Highly Effective People*. Representatives from the students' leadership team now join the live sessions via Google Meet. The Schools Now Conference of 2024 'Enriching your Curriculum' also led to the activation of the students' voices at a larger scale. School policies were reformed with the intention of sustaining positive class and school culture while enhancing concepts related to safeguarding, well-being, and encouraging student voices.

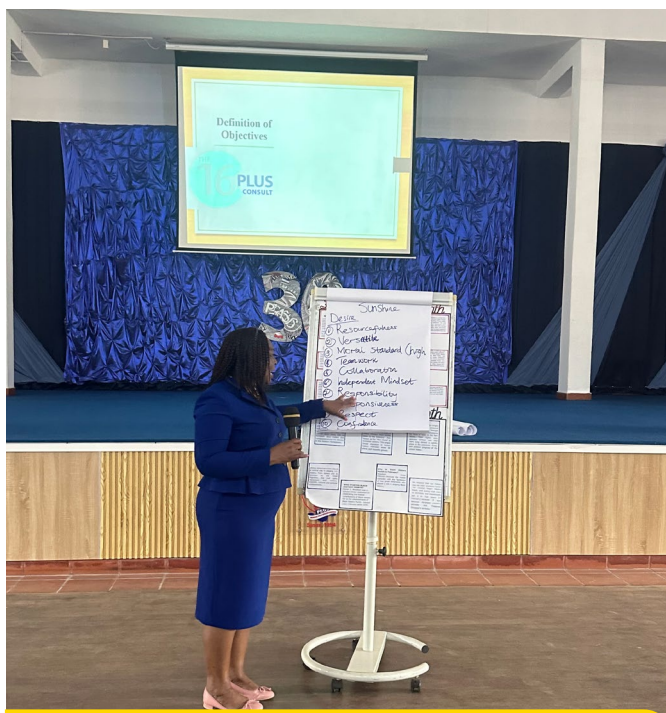


Figure 2: In-house training for teachers

Teachers significantly agreed that targeted CPD helped to create synergy with the students and assisted in managing classroom behaviour.

Data collection procedure

The action research procedure focused on in-house teacher training to enhance positive class culture. It applied a mixed-method approach with the data tools: a focus group, questionnaire and researcher's self-reflection journal. The focus group had five teachers from Grade 4 selected based on gender, tribe and years of experience. This allowed for a range of opinions and insight into teachers' views on the research topic.

The questionnaires addressed the action research questions which centred on teachers' satisfaction of the training and the schools' administration support.

Consent was sought from all participants verbally and in written form. The customised forms were approved by the British Council and Pegasus Schools Management. The researcher verbally confirmed that teachers understood the action research and were willing to participate. They were informed how their data would be used, stored and protected.

Key findings

The summary and analysis show that a significant number of teachers and students agree that deviation from class culture is influenced by a lack of parental involvement in the lives of their children, with influence from the media, community and friends. They agreed that class culture deviation can occur when the students do not understand the rules. Teachers observed deviation despite utilising open communication in the forms of wall posters, constant verbal reminders, and pointing them back to the expected behaviour. Class culture, to a significant number of teachers, included courtesy, morals, respect and decorum.

Teachers significantly agreed that targeted CPD helped to create synergy with the students and assisted in managing classroom behaviour. The involvement of students in setting class rules also helped. In the latest development, Maths teachers collaborated with selected students, their parents, and the school management to attain first position in the Mathematics All Stars competition on 14 March 2024.

They involved the parents by creating a social media page where parents were informed, which made them intentional and supportive towards their children to continue in the 13-day marathon Maths competition thus helping Pegasus Schools become the global champion for 2024.



The act of intentionally listening to students made them take ownership of their learning and classroom environment.

Conclusion

My action research work provided educators with a new perspective on how to view classroom behaviour, and shows that students know what they want. The act of intentionally listening to students made them take ownership of their learning and classroom environment.

Parents and all stakeholders should be informed of the effect of their actions and inactions as these affect their children's output in class. Understanding the influence of external factors will help build systems that will support a positive class culture. This work demonstrated an improvement in the teachers' outlook on their students' behaviour, an ability to create synergy and empathy in the classroom, and an improvement in character moulding and learning outcomes especially as they felt the support of the school leaders.

These strategies will benefit educators trying to find a balance in similar settings. It is expected that with consistency, more outstanding outcomes will be achieved. This is because it takes time and being intentional to achieve a positive and sustainable class culture. For sustainability of the process, periodic reviews of school policies, reward systems, and an expression of empathy towards the students should be enforced.

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Acknowledgements

I am deeply thankful to my coaches, Kathleen O'Hare, Sirin Soyoz, Thomas Evans and Charlotte Weatherilt from the British Council for their invaluable guidance, expertise, and unwavering support throughout every stage of this work. The British Council for providing me with such a great platform to explore and discover how to enrich the education curriculum. The free versions of ChatGPT and Grammarly apps which assisted in summarising this work.

To Pegasus Schools and my Head of Schools, Mrs Monica Lewis, for believing in me and this project. My colleagues and fellow researchers for their collaboration and stimulating discussions, which have enriched the quality of this research.

To God for strength.

**British Council
Partner Schools**

Unifying school culture through a shared vision: effectiveness of continuous professional development for newly hired teachers in Egypt

Marwa Ahmed Atteya, Egypt

Unifying school culture through a shared vision: effectiveness of CPD for newly hired teachers in Egypt

School context

The school is a private international school located in New Cairo, Egypt. Founded in 2016, it has rapidly expanded to around 1500 pupils mostly from the local area, with a few international pupils. Staff members come from diverse backgrounds, which affects the emerging school culture. The school faces the challenge of developing its culture through a shared vision which aligns returning teachers and newly hired teachers recruited every year to lead pupils' teaching, learning and well-being.

The action research will assess the effectiveness of a CPD programme for new teachers on building a shared vision and unifying the school culture. The CPD committee will plan workshops and online courses for upper primary and lower secondary staff members. The research topic will be explored after the 2023–24 Induction Week and action will be implemented on CPD days during the academic year. This will be evaluated to continuously improve the programme for future years.

About the author

Marwa Ahmed Atteya is the Vice Principal for Upper Primary and Lower Secondary at Capital International School in New Cairo, Egypt. She has a background in engineering, a PGCE from the University of Dundee, a Special Diploma in Education, and an IB certificate in Leadership Practice. Marwa has over 15 years of experience in education across Saudi Arabia, Kuwait and Egypt, she has taken on various leadership roles. She is pursuing a Master's degree in Educational Leadership from the University of Dundee.



Key learnings

This research assessed the effectiveness of a CPD programme, Social Emotional Learning (SEL), to enhance pupil well-being and sense of inclusion at school.

- Staff members needed an understanding of SEL before implementation: the benefits and how it positively impacts aspects of life, including academic achievement, mental well-being, and healthy behaviour.
- The programme needed to be levelled according to staff background.
- All staff members, not just teachers, should be included in the programme to unify school culture.
- While the initial setup and intermittent activities were important, it was essential to allocate time to ensure SEL was integrated into daily school life.
- SEL helped staff and pupils become more aware of themselves and their actions to build better relationships, foster empathy, understanding and open dialogue in the classroom.

Expected outcomes

- Unified school culture with a shared vision of leading pupils
- Supportive learning environment
- Improved learning outcomes for pupils
- Improved pupils' academic results
- Promotion of continuous school improvement



Figure 1: Meeting with CPD Committee

Action research rationale

The primary aim of this research is to unify school culture in Capital International School through a shared vision and build a positive learning environment for pupils, by aligning newly hired staff members through professional development.

To build a positive learning environment, pupils need to have a clear idea of how things are done in their learning environment. They need to receive the same message from everyone in the school to feel safe and be able to belong to the school community. This is hard to accomplish when school teachers do not share the same vision about the school culture.

Unifying school culture would create a homogeneous environment for pupils' learning, which would promote their sense of belonging to the school community, and subsequently positively influence pupils' learning, results and well-being.

Building a shared vision that reflects teachers' everyday practice will improve teaching and learning, create a supportive learning environment for pupils, and promote school improvement.

Exploratory research questions

1. Why do I think that professional development could build a shared vision to unify school culture?
2. a. What is teachers' perception of the PD sessions?
b. What kinds of CPD activities do other schools have for teachers to achieve unity of purpose in their school culture?
3. What are the pupils' perceptions of the school culture? Do they perceive it differently from their teachers?

Methodology

The research's methodology employs a multi-method approach to investigate community members' perspectives.

First, we recorded informal conversations about whether professional development could create a shared vision with the school CPD committee.

Surveys of 10 to 15 recently hired teachers were conducted to explore their opinions on how professional development during induction weeks has affected the school culture and how well they have aligned with it.

Pupils' surveys explored how satisfied they are with different components of the school culture, given to a sample of 20 to 30 pupils.

After observing classroom camera recordings for 8 to 10 distinct sessions of newly hired teachers, CPD committee members completed an observation tool for a comprehensive view of the culture aspects of the classroom.

Lastly, we explored how other schools bring their school culture together through professional development by analysing the notes from one-on-one interviews with two to three leaders.

Before commencing the research, each participant had their consent obtained, a meeting was conducted to inform pupils about the goal of the research, an email consent form and a comparable information page were issued to parents, and we obtained agreements from parents of participating pupils. Every participant received information regarding the usage, storage, and security of their data. All information gathered is kept private in school to protect participants' privacy, and all identifiable information is anonymised.



Figure 2: Meeting with pupils

Key findings from exploration

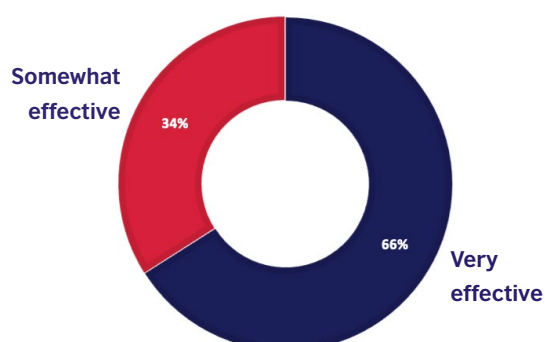
For question 1: The interviews involved five participants from the CPD Committee, and all agreed that Induction Week PD sessions have effectively established a unified culture particularly when paired with follow-up accountability.

Most of them expressed concern that heavy workloads might lead to a gradual deviation from cultural adoption. Suggested enhancements include empowering teachers to formulate aligned visions and scheduling culture refreshers.

For question 2a: Ten newly hired teachers were surveyed about their perception of CPD sessions conducted during Induction Week. All agreed that induction week CPD sessions helped them understand the school's culture and values and that brought staff together with shared experiences.

Recommendations for improvement included that all staff members who deal directly with pupils should attend sessions to unify school culture. Equity and inclusion, social-emotional learning, and stress management sessions were suggested as ways to reach a unified school culture.

Figure 3: Teachers' perceptions about school policies reinforcing school culture



For question 2b: Three leaders from other schools were interviewed about their CPD activities for teachers to achieve unity in their school culture: 33% offer on-site workshops while 67% reported mixing between on-site workshops and online sessions. Of the participants, 67% agreed that initiatives reinforcing and sustaining culture for both newly hired and returning teachers are effective in their schools by applying a levelled CPD programme, while 33% of participants lack this area in their school.

Some potential pitfalls to avoid are designing the same programme for all without a diagnostic assessment to level the programme, and the timing to be during induction weeks only without follow-up sessions. School leaders also shared that methods to measure/evaluate the effectiveness of CPD are surveys for teachers, pupils, and parents, other than classroom observations for teachers' applications.

For research question 3: More than 30 pupils were surveyed about their perceptions of the school culture (the ideas, procedures, and way we do things) and most of them found it to be good or very good. One thing that pupils would improve about the school culture: some pupils asked for better communication with supporting staff and more space for how to apply the school rules. Bullying was mentioned as it affects their acceptance of their daily practice at school or feeling satisfied.

Figure 4: Pupils' perceptions of inclusion

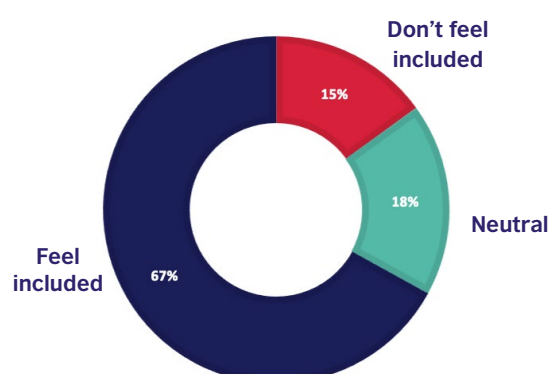




Figure 5: Staff members receiving their completion certificates for the SEL training

Action plan

Looking at all the findings, we concluded that the following actions would cover most aspects mentioned by teachers, pupils and other school leaders.

1. Revisit the workload of teachers to allow for more time for reflection on teachers' and pupils' well-being.
2. Compile case studies from different departments showcasing cultural values to utilise post-induction levelled training refreshers.
3. Create Professional Learning Communities that bring together returning and new teachers.
4. Create a PD programme for staff members focusing on Social Emotional Learning for a more inclusive learning environment.
5. Safeguarding and child protection training is to be launched for all staff members and evaluated consistently.

Action plan implementation

All actions we have discussed are very important, however, we needed to focus on fewer actions due to time constraints. So we decided to create a levelled professional development programme to unify school culture with the following criteria: a CPD programme focused on Social Emotional Learning (SEL) and Safeguarding to enhance pupils' well-being and sense of inclusion.

Three different programmes were implemented for a mixed group of returning teachers, newly hired teachers, and supporting staff members.

1. One for teachers and supporting staff members who had no previous knowledge in this area (25 staff members) held by Eduline for Educational Consultations: a mix of on-site workshops and online sessions, five sessions of two hours each. For further support, Wired for Well-being resources from Outside the Box Learning Resources have been provided to teachers to understand how to apply SEL in their classrooms.
2. The second was planned for staff members who needed follow-up and enhancement in this area (26 staff members): a self-paced eight-hour online course by Model Teaching titled Strategies to Support Social Emotional Learning.
3. The third was for Deputy Pastors (two staff members) who received a Designated Safeguarding Lead Level 3 training by High-Speed Training.

We decided to create a CPD programme focused on Social Emotional Learning (SEL) and Safeguarding to enhance pupils' well-being and sense of inclusion.



The Social and Emotional Learning (SEL) professional development programme will play a significant role in fostering understanding, empathy, and open dialogue in the classroom.

Data collection procedure

First, I wrote a reflective journal on the foreseen challenges and benefits of implementing a professional development programme focusing on Social and Emotional Learning (SEL) to unify school culture for both returning and new staff.

We surveyed more than 30 staff members before the action implementation on the expectations and concerns of teachers regarding a professional development programme focusing on SEL on teachers' professional development and its impact on pupils' learning outcomes.

After action implementation, we surveyed more than 20 staff members tailored to gather information about the expected benefits of a Professional Development programme focusing on SEL in increasing pupils' sense of safety, building better relationships with teachers, and creating a stronger feeling of belonging to the school community.

Lastly, we interviewed a focus group of six staff members to discuss what support and resources school leaders provided to facilitate integrating the SEL programme.

Before commencing the research, each participant had their consent obtained, a meeting was conducted where they received information regarding the usage, storage and security of their data. All information gathered is kept private in school to protect participants' privacy, and all identifiable information is anonymised.

Key findings

- The Reflective Journal showed that the SEL professional development programme was an addition to our school community, as it focuses on enhancing pupils' and teachers' social and emotional skills. The fact that not only teachers have been trained in this programme and that other supporting staff members were involved made the programme more effective.
- Surveying staff members before implementation highlighted the need for increased awareness about SEL, its benefits, and how it can positively impact various aspects of life, including academic achievement, mental well-being, and healthy behaviour. Teachers' concerns indicated challenges in allocating time for acquiring and implementing SEL strategies alongside existing responsibilities, highlighting the need for guidance in this area and reflecting apprehensions about aligning SEL with current educational demands.
- The results of surveying teachers after implementation expected the programme to have a positive impact on creating a safe and secure environment for pupils' learning which highlights the programme's effectiveness in improving teacher-pupil connections. SEL will play a significant role in fostering understanding, empathy, and open dialogue in the classroom.
- The focus group's overall feedback indicates that while the initial setup and intermittent activities are important, the primary area for improvement lies in time allocation to ensure the SEL programme's effectiveness and integration into daily school life.



Conclusion

To unify school culture through professional development, the programme implemented needs to be levelled according to staff background, it also needs to include all staff members, not only teachers, to promote a unified culture.

Choosing a topic for professional development should consider the needs of teachers and pupils to choose the topic with the highest possible impact on the context and culture of the school.

The topic of social and emotional learning will highly touch staff members' and pupils' daily school life, promoting an enhanced school culture, where staff members and pupils are more aware of themselves, can manage their actions, and build better relationships within their context.

The enhanced healthy learning environment will affect pupils' learning and reflect on academic results.

Future actions

Integrate SEL more broadly through PLCs:

Ensure SEL principles are incorporated across all subjects and grade levels, fostering a more holistic approach. Grade level teachers to meet and collaborate through Professional Learning Communities (PLCs) to share ideas and strategies of implementation.

Broaden resource allocation: Include more diverse and interactive resources, such as SEL and well-being textbooks, online platforms, and real-life scenario kits. Allocate the necessary time in daily school life for implementation.

Utilise feedback effectively and compile case studies:

Establish a more robust and ongoing evaluation system for collecting and implementing feedback from instructors to continually adapt and improve the SEL programme and compile case studies from different departments showcasing cultural values.

Acknowledgements

I would like to acknowledge the leaders of the Capital International School CPD Committee who helped on this journey:

- Chaimaa Ajami, KS3 Academic Deputy, PhD in Teaching and Learning Strategies from Cairo University, Egypt
- Nermine Hossam, KS3 Academic Coordinator, MEd in Innovation in Teaching and Learning from South Wales University, UK
- Ghada Ali Hassan, KS3 Deputy Pastoral, Educational Leadership Diploma from Notting Hill University, UK
- Rasha Hamdy, KS3 English Department Supervisor, Cambridge Certified Exam Specialist, Postgraduate studies in Exeter College, Oxford University, UK.

I would also like to acknowledge the use of the following AI tools: Claude AI which has been utilised to develop data tools including surveys, focus group questions, and criteria for class observations; and POE.com in paraphrasing submissions.

The topic of social and emotional learning will touch staff members' and pupils' daily school life, promoting an enhanced school culture, where staff members and pupils are more aware of themselves, can manage their actions, and build better relationships within their context.

**British Council
Partner Schools**

Impact of online professional development on teacher practice in a secondary school

Lydia Quansah, Ghana

Impact of online professional development on teacher practice in a secondary school

School context

Dayspring International Academy, an expanding international school in Accra, Ghana, was established in 2011. Our curriculum is designed to offer a broad spectrum of options in languages, humanities, the sciences, mathematics, and creative and vocational courses, leading to the attainment of IGCSE and AS/A level certification. Our learners are encouraged to be independent and critical thinkers with a love for learning.

About the author

With over 15 years of teaching experience, Lydia Quansah, Head of Academics and Acting Head of the Secondary Department of an international school, has taught English language and literature across various levels. As a teacher and school leader, she appreciates targeted teacher training that promotes learner engagement and relevant learning experiences.



Action research rationale

Effective Continuous Professional Development (CPD) is essential for improving school performance and driving innovation in education. In offering professional development opportunities, institutions seek to sharpen the knowledge and skills of teachers to deliver high-quality teaching that impacts positively on learner outcomes. However, there was a perception of dissatisfaction with CPD programmes within the context of this research. The common perception was that training programmes had little impact on teaching practices. There was little evidence of training application, and some teachers reported feeling inadequately trained despite participating in professional development initiatives.

The study investigated what teachers consider to be effective professional development and how this perception of effectiveness impacts training application and improvement in student learning. Using the British Council Online Support for Schools (OSS) platform, the contributions of online CPD activities to improving teachers' professional practices were examined.

Key learnings

This research examined the contribution of online CPD activities to improving teachers' professional practices.

- **The British Council OSS platform proved a useful resource with a positive impact on teaching practices and student outcomes.**
- **A collective training model was more successful than the self-paced model.**
- **Students demonstrated increased engagement, while teachers incorporated more varied hands-on activities, as opposed to the traditional lecture method. This was particularly noteworthy.**
- **By addressing classroom behaviour, teachers could incorporate active learning strategies in the classroom to establish rapport and foster classroom motivation.**



Figure 1: Teachers engaging with the OSS module



Findings from the study can be used to support the development of effective professional training and enhance school professional development culture towards more targeted training to improve student learning. Online CPD's contribution to enhancing professional practice can be evaluated and used to create a feasible online professional development model for teachers. Evidence of the impact on student learning and outcomes can provide recommendations for developing impactful teacher training within the Partner Schools community, especially for schools yet to fully engage with the OSS platform.

Exploratory research questions

1. What are teachers' perceptions of the current continuous professional development (CPD) opportunities?
2. How do teachers transmit the knowledge and skills acquired through professional development?
3. What professional development opportunities will teachers be interested in?

Data collection procedure

A mixed-method approach of questionnaires, lesson observations, and focus group discussions was employed in conducting the research. A total of nine teachers participated in the study, three teachers from the respective subject areas: science and mathematics; languages; and humanities.

The questionnaire captured teachers' perspectives on online CPD while classroom observations centred on teachers' application of training within the classroom with an emphasis on lesson planning, understanding learners, subject knowledge, and promotion of 21st-century skills. To conclude the research methodology, a focus group discussion was held to explore teachers' perspectives on effective CPD and the factors influencing their willingness to engage in online professional development initiatives.

The research was conducted within an ethical framework. Informed written consent was obtained from all participating teachers and the students within the observed classrooms, with the aims and methods of the research clearly outlined to all participants and parents/guardians. Participants' rights were also verbally explained and a commitment to treat all participants with courtesy and respect was communicated. Confidentiality and anonymity with regard to participant data have been maintained.

The findings emphasise a need for thoughtful consideration of logistics and interactive elements in online CPD to maximise its benefits and address teachers' varied preferences and concerns, especially regarding teacher well-being and subject-specific training.

9. Have you observed a positive impact on your students' learning outcomes as a result of your participation in professional development?

No impact	0
Minor impact	1
Moderate impact	6
Significant impact	1
I'm not sure	1



Figure 2: Feedback on previous training programmes

Key findings from exploration

The results suggest a somewhat positive perception of CPD programmes among the nine surveyed teachers.

- 78% found the current CPD opportunities to be moderately effective, while 22% found them effective.
- 67% perceived an improvement in teaching practice, while 33% expressed a neutral stance.
- Although 33.3% felt little to no improvement in subject knowledge, all respondents reported improvement in other key areas.
- 66% of the respondents viewed the impact of CPD as moderate to significant while a few were uncertain or noted minor impact.

There was a disparity in the transmission of knowledge and skills, with 67% of teachers often transmitting acquired expertise, while 33% do so only occasionally. After initial training, teachers eagerly embraced technology and 21st-century skills but faced challenges translating them into practice, emphasising the need for follow-up training. Teachers identified a lack of practicality in initial training, which is crucial for effective implementation. Classroom observations revealed limited use of learning materials, primarily audio and video resources.

Teachers also have a multifaceted perspective on online professional development. Online PD is generally well-received with 78% of teachers endorsing its effectiveness. However, some concerns about scheduling, reminders, network stability, and practicality were expressed. Teachers value flexibility (67%) and are motivated by well-planned sessions, video resources, and follow-up training. The findings emphasise a need for thoughtful consideration of logistics and interactive elements in online CPD to maximise its benefits and address teachers' varied preferences and concerns, especially regarding teacher well-being and subject-specific training.

Additionally, certification emerged as a desired feature, indicating the importance of formal recognition in motivating participation.

Action plan

Based on the findings from the exploration, the following three actions were proposed for implementation:

1. A shift towards more teacher-focused CPD programmes

CPD programmes should take into consideration the needs and preferences of teachers, rather than solely focusing on school or student needs. Accordingly, targeted programmes have been formulated by considering the needs of the school, students and teachers in a triangulated approach.

2. Implementation of online professional development

In January 2024, we piloted online professional development with the British Council OSS Webinar on Classroom Behaviour and Interaction to target a specific area of improvement identified by teachers. With online CPD, we aimed to accommodate teachers' preferences for flexibility, interactivity, and training certification.

3. Enhanced practical training for teachers

After training, follow-up sessions were conducted using the British Council OSS module – Understanding and Anticipating Classroom Management Problems. Based on these sessions, teachers developed an observation form as an assessment metric to measure their progress.

Immediate classroom application opportunities were provided to integrate acquired skills into teaching. Peer assessment was used to observe and evaluate the teachers' progress in training transmission, and feedback was provided using the observation form created by the teachers.

Figure 3: Feedback regarding anticipated challenges of online PD

9 responses submitted

What concerns or challenges do you anticipate when engaging in online professional development, and how could these concerns be addressed?

"The challenge is the effectiveness of the network. Using a WiFi in a place where the network is strong."

"I anticipate that some participants might experience network issues so I think the sessions should be recorded and distributed to interested participants via mail. Also to encourage participation, a chatroom could be created for participants to share ideas, ask questions and make connections. To ensure participants actually understand what is shared and discussed, some kind of peer-reviewed test can be conducted and the results uploaded into a database for facilitators to keep track of the progress and effectiveness of the course."

"The challenge of time clashes with my teaching classes with the online professional development meetings."

"Internet connectivity could be a problem Cost of data Security breaches "

"Staying on schedule is a major concern. Although reminders can/are sent to emails, work demands can easily overshadow the schedule. Addressing this, special permission slips can be addressed to the Management to help reduce the workload."

"Time factor My suggested solution is to have intentionally recorded files that could be uploaded for individual teachers who may not get the time for a live session to download and go through later."

"Network issues mostly are bothersome. However, a good data connection will greatly help."

"Network challenges and software disfunction sometimes."

"None"

Action plan implementation

Based on the feedback gathered from the exploration phase regarding the anticipated challenges of online CPD, it was observed that most teachers identified network challenges as the primary issue in accessing the online platform, while a minority indicated scheduling conflicts (see Figure 3). In response to this feedback, two models for utilising the British Council online platform were piloted.

In the first model, three of the nine participants were granted access to the platform for three months, enabling them to utilise the platform individually at their convenience in a self-paced manner.

In the second collective model, all nine teachers were scheduled to participate in the British Council OSS webinar together in a conference room, following a prearranged structured programme. During the webinar, they engaged with the facilitator and online colleagues by posting questions and comments on the platform. Additionally, they interacted among themselves by discussing the topics presented and engaging in activities in groups.

Six weeks after the collective webinar, the teachers participated in a follow-up training session using the British Council OSS Module on Understanding and Anticipating Classroom Management Problems – Building Rapport. A designated teacher led the discussions, and the teachers collaborated on tasks and activities in groups. The module proposed four techniques for building rapport between teachers and students: planning lessons; building trusting relationships with learners; managing classroom behaviour; and responding to student behaviour.

Based on these techniques, four groups were formed, and each group designed a section of the observation criteria for classroom observation. Subsequently, a representative from each group was assigned to observe a volunteer from each of the other groups in four different classroom observation sessions, utilising the observation criteria (see Figure 4) created by the teachers.

Data collection procedure

During this phase of the research, three data collection tools were utilised to gather insights and perspectives from various stakeholders.

A reflective journal was used to capture the researcher's reflections on the challenges in implementing online PD and how to support teachers in transmitting the knowledge and skills acquired through professional development. A questionnaire was used to gather feedback from teachers after participating in the British Council OSS module. Finally, classroom observations were conducted to observe the transmission of training skills by teachers in real classroom settings. The criteria for observation were developed in consensus with teachers post-training implementation, focusing on skills acquired during the training.

The positive reception of online CPD activities highlights the transformative potential of the British Council OSS platform in addressing classroom challenges and enhancing teaching practices.

Figure 4: Observation criteria designed by teachers after engaging with the British Council OSS module

DAYSPRING INTERNATIONAL ACADEMY LESSON OBSERVATION FORM						
Name of Teacher: _____ Class: _____ Subject: _____ Topic: _____						
Duration of lesson: _____ Date: ____/____/____ Name of Observer: _____						
Legend: 1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree						
	PLANNING THE LESSON	1	2	3	4	5
1.	The teacher used different methods and tailored the lesson to students' interests. (videos, audio, pictures, tiered-questions, etc.)					
2.	Slides were presented in a fun way using comics, cartoons and other humorous features.					
3.	Facilitator set time aside to address students directly, offering personal feedback, encouragement or support.					
4.	The classroom atmosphere was relaxed and exciting.					
	BUILDING TRUSTING RELATIONSHIPS WITH LEARNERS					
5.	Teacher showed favouritism during lessons.					
6.	Teacher used words of affirmation during the lesson.					
7.	Teacher often gave learners the opportunity to correct their submissions.					
8.	Teacher's instructions to learners were clear and simple.					
9.	The teacher provided explanations in different ways to help understand better.					
	TEACHER'S CLASSROOM BEHAVIOUR					
10.	Teacher used "Please" more often when talking to students during the lesson.					
11.	The teacher made his/her students laugh/smile during the lesson.					
12.	The teacher raised his/her voice at any student out of anger.					
13.	The teacher encouraged all students to partake in all activities during the session.					
	DEALING WITH STUDENT BEHAVIOUR					
14.	The teacher is observant of student behaviour in class.					
15.	The teacher was able to discipline students for their misbehaviour (misbehaviour is any action taken by student that hinder the smooth running of the class).					
16.	The teacher used negative punishment approach in dealing with bad behaviours.					
17.	The teacher makes it clear to the class that it is the behaviour that is bad and not the student.					
18.	The teacher was able to notice and praise good behaviour during the lesson.					
19.	The teacher stuck to rules and regulations laid down in the class.					
20.	The teacher treated all learners equally.					
Commendable features						
Suggestions for improvement						

3. Do you believe this professional development programme has positively impacted teaching practices and student outcomes?

■ Yes	9
■ No	0

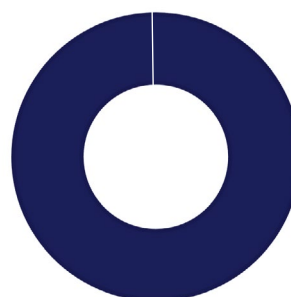


Figure 5: Feedback after Action Plan implementation

Key findings

The British Council OSS platform proved resourceful in addressing training needs. As depicted in Figure 5, 100% of participants reported that the professional development programme had a positive impact on teaching practices and student outcomes. Participants appreciated the expertly explained course content and gained expertise in handling classroom challenges. The OSS module reinforced the concepts from the webinar and introduced practical strategies for addressing classroom misbehaviour through case study videos from around the world, which were highly valued by the teachers. However, despite all teachers attending the training using the collective model, only one teacher received a certificate, as he used his account to gain access to the platform. The rest of the teachers expressed interest in obtaining training certification.

The findings also indicated that of the three teachers on the self-paced model, two were unable to engage with the online platform during the three-month period citing conflicting schedules. One teacher reported being unable to participate in the AI in the classroom webinar after registration due to network challenges. Furthermore, even though one teacher did obtain certification from a webinar, he admitted to not gaining substantial knowledge due to concurrent school-related commitments. Though the three-month period is too brief to draw any generalised conclusions, this was a noteworthy revelation.

The classroom observation revealed that students demonstrated increased engagement, while teachers were observed to be incorporating more varied hands-on activities in their teaching approach, as opposed to the traditional lecture method. This was particularly noteworthy as it had been a significant challenge prior to the research. Surprisingly, by addressing classroom behaviour and management, teachers were able to incorporate active learning strategies in the classroom. The majority of teachers recognised that “Using students’ interests to establish rapport and foster classroom motivation is highly effective. It converts previously disengaged and unresponsive students into active participants in class discussions.”

Conclusions

This study emphasises the critical importance of effective CPD in driving educational innovation and improving school performance. By aligning CPD programmes with teachers’ preferences and needs, fostering a culture of targeted training, and enhancing online PD accessibility and effectiveness, a more dynamic and impactful professional development ecosystem can be cultivated.

The positive reception of online CPD activities highlights the transformative potential of the British Council Online Support for Schools platform in addressing classroom challenges and enhancing teaching practices. Moreover, the observed impact on classroom practices was significant, with increased student engagement and the adoption of hands-on activities by teachers.

‘For me, the key takeaway on managing classroom behaviour from the webinar is to remain positive. That’s it. Student behaviour can be so intolerable sometimes that you wonder what you can do, but remaining positive immediately changes the perspective.’

A teacher commenting after the webinar

‘It has empowered teachers with innovative teaching practices and refined classroom management skills.’

A teacher commenting on how the British Council OSS module had positively impacted teaching practices and student outcomes

These insights present opportunities for enhancing teacher training and professional practices by:

- incorporating teacher preferences and needs in training programmes
- providing subject-specific training for tutors
- assessing the needs of teachers in individual school contexts to develop one of two pathways for engaging with the OSS platform:
 1. a self-paced individual model
 2. a structured hybrid collective model
- providing structured follow-up training sessions
- providing opportunities for hands-on, real-life practice sessions
- involving teachers in training assessment and evaluation based on skills acquired during training.

However, strong teacher interest in obtaining certification highlights a need to align with the British Council in future implementations of the structured collective approach to engaging with the OSS platform. Also, based on the insights, future online training should include subject-specific training to further fulfil teachers’ needs.

While this study provides valuable insights into the benefits and challenges of online professional development, further research is warranted to explore long-term outcomes and scalability. Addressing connectivity and scheduling barriers, refining certification processes, providing subject-specific training for tutors, and continuing to support teachers in implementing innovative teaching strategies will be crucial in maximising the potential of the British Council OSS platforms for teacher development and student learning.

Acknowledgements

I would like to express my sincere appreciation to Mrs Vivian Takyi-Mensah, the Headmistress of Dayspring International Academy, for her unwavering support and encouragement. I also want to extend special thanks to the leadership, staff, and students of DIA for their dedication and cooperation.

I am immensely grateful to the British Council for the opportunity, and to our mentors for their invaluable guidance. AI tools were utilised for developing data collection tools and analysis.

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**British Council
Partner Schools**

Enhancing middle school Mathematics through a professional learning Mathematics community

Nadia Rashid Inam, Pakistan

Enhancing middle school Mathematics through a professional learning Mathematics community

School context

Located in Karachi, Pakistan, Beaconhouse Jauhar Campus is a part of the world-renowned Beaconhouse School System. It serves students belonging to upper-middle and high socioeconomic family backgrounds. The school has 1220 students aged 11–16 years in Middle and O level sections. It is proud of its exceptional teaching standards and conducive learning environment that propels students towards unparalleled success in their academic pursuits. The esteemed faculty, predominantly comprising Master's degree holders, serves as the backbone of the school. The school offers thorough training and development programmes for teachers to maintain high standards in education. The curriculum is carefully designed to meet Cambridge standards and helps students achieve great results in O Level exams. Jauhar Campus is dedicated to providing top-quality education and aims to benefit its students, the local community, and beyond through effective management and teaching.

About the author

Dr Nadia Rashid Inam is an experienced educational leader who has over 20 years of experience. She has a background in Medicine and Educational Leadership and is able to bring scientific perspectives into education. She recently earned a distinction in Certificate in Educational Leadership from Cambridge Assessment International Education, enhancing her skills further. Dr Nadia specialises in strategic leadership, team building, staff development, effective communication and student engagement. She is dedicated to helping teachers grow professionally aiming to empower them to prepare students for the challenges of the world.



Key learnings

This study explored the impact of a Professional Learning Mathematics Community (PLMC) in Middle School.

- Veteran teachers were paired with novices to mentor on instructional strategies, classroom management and curriculum implementation.
- Each teacher made an individual action plan to improve areas of weakness. The school provided personalised support which led to a cohesive teaching environment with a unified set of best practices.
- Challenges, such as time constraints and differences, were outweighed by the benefits perceived by both mentors and mentees. All were optimistic about enhanced teaching practices. Support from school management, clear communications and manuals helped the programme's success.
- The programme significantly boosted confidence, trust, and collaboration among the Maths faculty. It increased student interest and enthusiasm in Maths, and improved test results.

Expected outcomes

- Enhanced professional development of Mathematics teachers.
- Improved pedagogical skills and content knowledge.
- Better instructional practices and targeted interventions.
- Increased student achievement in Middle School Mathematics.



Figure 1: Workshop on PLMC

Action research rationale

This study explores the impact of a Professional Learning Mathematics Community (PLMC) in Middle School. The goal is to identify and disseminate effective teaching strategies, innovative approaches and successful interventions for teaching Maths. Learning gaps in Maths, attributed to disparities in knowledge, pedagogy, and training, are particularly pronounced for new teachers. Concerns regarding the variability in Maths teaching quality and students' below-average performance in the subject have been raised by parents and students alike. Additionally, the lack of regular Maths practice due to the pandemic has created significant challenges for students. Teachers reported distracted and disengaged students during classes. The standardised assessment results showed slightly lower scores compared to the average national score, highlighting these issues.

The formation of the PLMC is a strategic response to these concerns, focusing on uniform competency levels in Mathematics teaching across the middle school.

In *Turning Points*, Jackson and Davis (2000) emphasised the importance of school principals in initiating and sustaining improvement in middle school students' performance. Collaborative discussions about teaching and learning are crucial for student learning, enhancing the professional development of teachers, and fostering a synergistic environment geared towards academic success. Dufour and Eaker (1998) argue that the most promising strategy for sustained, substantive school improvement is developing the ability of school personnel to function as professional learning communities.

Exploratory research questions

1. How does my perception of the potential benefits of a Professional Learning Mathematics Community align with existing literature?
2. What are the beliefs and attitudes of Mathematics teachers towards participating in a PLMC?
3. What are the teachers' expectations from this community?
4. What insights are provided by the results of students in Mathematics regarding their comprehension of the subject?

Methodology

Employing a triangulation approach, the methodology combined qualitative and quantitative data sources to effectively address the research questions. Consent was obtained from all participants, including teachers and mathematics experts before commencing with research activities. For students, parental/guardian consent was obtained. Participants were briefed on the research's purpose, their rights, and data handling procedures. Furthermore, participants were reassured that data would be treated with strict confidentiality, and personal information kept anonymous to protect privacy.

The research began with a literature review of a minimum of six scholarly articles on PLMCs. A reflective journal documented the alignment between the researcher's perceptions and existing scholarly discourse. Focus group discussions with all eight middle school Maths teachers disclosed their beliefs, attitudes and expectations regarding the PLMC. A survey questionnaire further captured these aspects, while in-depth interviews with an O Level Maths teacher and the Mathematics Subject Lead provided additional insights.



Figure 2: Focus group discussion with students

Mid-year and End-of-Year examination results of Middle school in Maths were analysed and compared with other subjects to gain insight into students' comprehension. Focus group discussions with students from different ability groups offered perspectives on their understanding of Mathematics and influencing factors.

Key findings from exploration

The researcher's perspective on Professional Learning Mathematics Communities (PLMC) aligned with the existing literature. Through learning communities, teachers gained deeper subject understanding, experienced professional renewal, and adapted more swiftly. The impact extended to staff satisfaction, higher morale, reduced absenteeism, and improved teaching in the classrooms.

Feedback from teachers highlighted the efficacy of PLMC in promoting collaboration and enhancing teaching methodologies. Results from the questionnaire and expert interviews demonstrated strong enthusiasm, with teachers anticipating improved instructions, inclusion and enhanced pedagogical techniques. The Mathematics Subject Lead foresaw PLMC as a structured collaboration to enhance subject knowledge, particularly in geometry teaching. Teachers were hopeful to address challenges like student disinterest and finding the subject very difficult through PLMC.

'I anticipate PLMC to enhance my understanding of geometrical concepts by exchanging ideas, discussing pedagogical approaches, and challenging concepts, ultimately enhancing my expertise in geometry instruction.'
Mathematics Subject Lead

Exam analysis suggested a decline in students' Maths performance. During focus discussion, students emphasised an engaging Maths education including clear explanation of concepts with real-life examples, varied problem-solving methods, and practice worksheets. Students reported the subject becomes challenging when concepts are unclear and demanded more explanation time with effective use of digital technology. Students further highlighted the importance of a positive learning classroom environment, family support, and approachable teachers for effective learning experiences.

Action plan

Phase 1: Build connections

- Ice breaker and goal setting: Build connections through fostering trust and align aspirations with mentors and senior Maths teachers of O level section.
- Mentoring and coaching: Connect middle school Maths teachers for diverse support. This will include:
 1. Introducing Mentoring programme
 2. Conducting Mentoring in action workshop
 3. Code of ethics for mentor and mentee
 4. Pairing of mentors and mentees
 5. Evaluation of mentoring programme.

Phase 2: Collaborative action (ongoing)

- Weekly meetings: Senior teachers and mentors join focused discussions on sharing best practices, pedagogy, resources, student engagement and performance.
- Peer observation and co-teaching: Share best practices and receive valuable feedback.
- Resource exchange and workshops: Bridge knowledge gaps across roles and levels.



Figure 3: Mentor/Mentee weekly meeting

Phase 3: Continuous growth and sharing (ongoing)

- Data analysis: Track progress
- Adaptive Improvement: Fine-tune based on data, evidence-based decisions, implement, reevaluate, feedback, and needs.
- School-wide celebrations: Celebrate success of students and acknowledge teachers.

Action plan implementation

The middle school faced three interconnected challenges: an influx of new Maths teachers, disparities in the quality of Maths teaching, and low student performance. To address these issues, a structured mentoring programme was implemented for the four novice Maths teachers.

The first step was to pair veterans with the novices in the mentoring programme. Through this mentorship, inexperienced teachers received guidance on effective instructional strategies, classroom management, and curriculum implementation that fostered in developing them professionally.

In the subsequent phase, each Maths teacher was tasked with self-assessment to identify individual areas of improvement and make action plans outlining strategies for improving their areas of weakness. The school facilitated this process by offering personalised support, resources and professional development opportunities as per their need. This concerted effort nurtured a cohesive teaching environment with a unified set of best practices.

The issue of students' low Maths performance and bridging the gap between the transition from middle school to O level was resolved by incorporating proven strategies for improving student outcomes. Mentors, including both seasoned teachers in middle school and O level school worked collaboratively towards refining teaching techniques, introducing innovative methodologies, and developing strategies to address specific learning challenges faced by students.

Data collection procedures:

To assess the efficacy of the mentoring programme, a mixed-methods approach was employed. Mentees were required to develop action plans identifying their areas of development and desired support from mentors. These action plans served as a quantitative measure of the programme's effectiveness in enhancing the professional development of mentees.

Mentors and mentees maintained reflective journals throughout the programme, documenting their learning experiences. Qualitative analysis of these journals provided insights into the programme's impact on their growth.

Survey forms were sent to the participants after obtaining their consent to gather insights about their expectations and concerns regarding participation in the mentoring programme. This quantitative data provided insights into the perceived benefits and challenges of the programme. Moreover, quantitative analysis of students' mathematics results was done to measure the impact of the mentoring programme on student outcomes.

Interviews were conducted with mentors and mentees to explore the most valuable aspects of the mentoring programme and identify potential areas for improvement in the programme.

The qualitative analysis of the school's documents helped to appreciate the support and resources provided by the management to address the various needs of the mentoring programme.

The summation of both quantitative and qualitative findings provided a holistic understanding of the mentoring programme's efficacy and impact on teacher professional development and student achievement in Mathematics.

Being a mentee is inspiring me to achieve my full potential, fostering my personal development and helping me to develop key skills and overcome obstacles.
Grade 6 Maths teacher



‘It’s immensely rewarding to witness the transformation and success of those I mentor, knowing that I’ve played a part in their development.’

Mentor, Grade 8 Mathematics teacher

Key findings

After eight weeks, mentees through mentor support, achieved over 80% of their set goals. Quantitative analysis of the result of standardised tests conducted by Beaconhouse showed improved performance of students surging from 49% to 73.88%, surpassing the previous year’s national average of 51% to the current 53.28%.

Qualitative analysis of reflective journals highlighted enhanced pedagogy, improved learning outcomes, and sustained professional growth. In a survey, 80% of mentees were optimistic about the programme in enhancing their professional development and teaching practices in Maths. Mentees anticipated support networks, leadership skill development, and constructive feedback from mentors. Mutual respect, trust and effective communication were deemed essential for programme efficacy. Of the mentees, 80% emphasised obtaining feedback from mentors after classroom observations for improved engagement.

The mentor survey showed that all mentors were enthusiastic about improving mentees’ teaching practice and professional development. However, 25% showed concerns related to time constraints, while 75% agreed to guide mentees in Maths teaching, integrating technology, and providing resources. Mentors anticipated improved teaching skills, insight into Maths teaching challenges, and enhanced relationships with colleagues for themselves. Half (50%) found satisfaction in helping others, boosting their leadership and coaching skills in mathematics.

In the interview, the mentor anticipated improving their own teaching skills and relationships with their colleagues. Mentees valued guidance in pedagogical skills, communication, and overcoming challenges during the interview. Both, mentor and mentee emphasised programme continuity for sustained benefits.

The school facilitated mentorship logistics and resource support. Manuals outlined clear roles of mentor and mentees. Trainings and reading materials offered diverse support and structured sessions.

Conclusion

The research on ‘Enhancing Middle School Mathematics through a Professional Learning Mathematics Community’ reveals significant findings. The exploratory research validated the positive effects of PLMCs on teacher growth and student outcomes through literature review. Feedback from teachers emphasised the efficacy of PLMCs in promoting collaboration, enhancing teaching methodologies, and addressing student disinterest.

Following the exploratory phase, the implementation of action plans and mentoring interventions yielded promising results. After eight weeks of mentoring, mentees achieved over 80% of their set goals. Quantitative analysis showed a remarkable improvement in students’ Maths performance, in standardised test results surging from 49% to 73.88%.

Qualitative analysis of reflective journals further underscored the positive impact of PLMCs, highlighting enhanced pedagogy, improved learning outcomes, and sustained professional growth among teachers. Surveys revealed high optimism among mentees regarding the programme’s effectiveness in enhancing professional development and teaching practices in Mathematics. Mentors also expressed confidence in improving mentees’ teaching practice and professional development.

The research demonstrated the transformative potential of PLMCs in fostering collaborative learning environments, enhancing teaching practices, and improving student achievement. Moving forward promoting trust, sustaining collaboration among teachers, sharing best practices and resources and data driven decisions will be crucial for maximising the long-term benefits of PLMCs in schools.

Moreover, the programme significantly boosted confidence, trust, and collaboration among the Mathematics faculty. Teachers also reported increased enthusiasm and interest of students in the subject, indicating a positive shift in classroom dynamics and student engagement.

Challenges such as time constraints, differences in context were mentioned but were outweighed by the benefits perceived by both mentors and mentees. Furthermore, clear roles, effective communication, and comprehensive support provided by school management resulted in the success of the programme.

In conclusion, the research demonstrated the transformative potential of PLMCs in fostering collaborative learning environments, enhancing teaching practices, and improving student achievement. Moving forward promoting trust, sustaining collaboration among teachers, sharing best practices and resources and data driven decisions will be crucial for maximising the long-term benefits of PLMCs in schools.

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Acknowledgements

Heartfelt appreciation to the British Council for providing the opportunity and funds to participate in this research project. Extremely grateful to the mentors, Kathleen O'Hare and Sirin Soyoz for their invaluable guidance and insights. Their feedback has played a pivotal role in shaping this research. Special acknowledgement to the students and Maths teachers of Beaconhouse, Gulistan Jauhar Campus Middle School: Hira Asim, Sania Javed, Yusra Fareeh, Muhammad Sirboulani, Aqsa Kamran, Durre Shahwar Muhammad Ibrahim, Muhammad Usman, Sadia Khalid and Shan e Haider from the O-level section, for their active involvement in the Professional Learning Mathematics Community (PLMC) and research. Thank you to Ms Fariha Amir, Headmistress Middle School and Nida Siddiqi, Senior Mistress Middle School. Lastly, the researcher is grateful for the assistance provided by AI in correcting and refining the research.



Action Research for Schools

Technology and digital learning

Developing middle leaders of English and Science in the use of smart board technology, Aisha Shahzadi, Lahore Grammar School, Pakistan

AI-enhanced Maths: Active metacognition and transformative assessment, Lina Hoyos, Saint George's School, Colombia

Leveraging ChatGPT to enhance EFL Reading skills for 10–12 year-old students, Neeti Tripathi, CIDER International School, Bangladesh

Levelling up Maths learning through digital platforms: Using digital resources to improve fifth grade students' problem-solving skills, Shireen Hamdan, Al-Ridwan School, Jordan



**British Council
Partner Schools**

Developing middle leaders of English and Science in the use of smart board technology

Aisha Shahzadi, Pakistan

Developing middle leaders of English and Science in the use of smart board technology

School context

Established in 2014, Lahore Grammar School, Sheikhpura has experienced rapid growth, currently accommodating over 800 students across two campuses. However, the technological infrastructure in the school is insufficient, with only a fraction of the computers in the computer lab operational. As a result, the majority of teachers still rely on traditional teaching methods. To address this challenge, my aim was to promote inclusivity and enhance the learning experience by integrating smart board technology and providing ongoing teacher training. By establishing a fully functional technology lab equipped with operational computers and interactive smart boards, I sought to empower teachers with comprehensive training in incorporating technology into their instructional practices. Additionally, I aspired to educate students on the effective utilisation of technology to augment their learning.

About the author

Aisha Shahzadi is an educator with more than 12 years of experience. She has been actively involved in teaching and leading various departments at Lahore Grammar School in Sheikhpura, Pakistan. Presently, she holds leadership positions in the English and Humanities departments, where she demonstrates her strong commitment to incorporating cutting-edge teaching methodologies.



Key learnings

This research aimed to train teachers to integrate smart boards into their classes.

- Strong and thorough planning was required to ensure the lesson plan was effective and utilised the resources. Some teachers faced a lot of technical difficulties. At least two teachers were needed in the lab to ensure the lesson was conducted smoothly.
- Parents wanted to know more about the smart board classrooms and our inclusivity practices.
- The administration must make certain changes, like having mandatory technology-integrated classes for English, Science and Social Studies.
- Other schools were interested in this research and wanted to collaborate on training.
- Teachers need ongoing training, support and motivation to make their lessons more attractive and student-centred, and to continue with best practices.

'I see that the smart board has many benefits for both me and the students. It allows me to present the information in a more visual and dynamic way, and to use various multimedia resources and tools. It also motivates the students to participate more actively and creatively in the learning process, and to develop their digital skills and confidence.'

Sana Mahmood, Grade 4 Science teacher

Action research rationale

In Sheikhpura, there is a significant gender disparity, resulting in limited or restricted access for girls to smartphones and technology due to parental disapproval or unwillingness. Conversely, among the boys who have access to these resources, there is a noticeable lack of appropriate use for educational purposes. Although technology has created new opportunities to expand and change classroom instruction and student learning outcomes, due to inadequate infrastructure and teacher training, integration is still restricted in our school.

The purpose of this study is to use a cascading training that aims to increase middle leaders' and teachers' capacity to integrate smart boards into Science and English for inclusive classes. Two department heads will be among the participants, and they will supervise teachers while they receive training. The intensive workshop's main topics will include formative tests, data-driven instructor feedback, and interactive media for students. Over the course of an academic year, focus groups, interviews, observations, and surveys on student accomplishment will be used to evaluate integration practices and outcomes with funding allotted for technology infrastructure.

Interactive smart board technology presents immense potential to transform classroom practices by promoting student engagement, critical thinking, and equitable access to digital resources. Targeted professional development for middle leaders represents a crucial step in building schools' capacity to leverage smart boards for 21st century teaching and learning.

Expected outcomes

It is expected that the training programmes in the use of smart boards will increase teachers' confidence and competence in incorporating technology to create more motivating, enriched learning experiences for all students. Observations should reveal greater interactivity, engagement, and inclusion in classrooms through smart boards. Learning outcomes and test scores are also

predicted to improve, compared to conventional instruction. The study aims to showcase the key role of teacher professional development in harnessing technology's potential for 21st century education across student demographics. It can provide a model for bridging digital divides in other developing schools through training and infrastructure.

Exploratory research questions

1. How confident am I in my ability to effectively use smart board technology in my teaching?
2. What are current levels of expertise in using smart board technology among teachers and middle leaders?
3. How do other educational institutions design and implement their training programmes for middle leaders and teachers in the integration of smart board technology, and what successes or challenges have they reported?

Methodology

The primary aim of this research is to explore the development of students of Lahore Grammar School through creating a smart lab installed with a smart board and computers for English and Science. The methodology integrates a qualitative method approach, including a focus group with teachers of English and Science, surveys, and a reflective journal. Each group will use the smart board as part of their lessons to improve inclusive classrooms and learning of their children. This will help us understand students' learning through formative assessment and feedback in real-time.

For my reflective journal, I will use a set of planned questions to write about what I have already experienced in using smart boards and what I need to learn to elevate my classroom teaching to the next level. Initially, I will write up my journal fortnightly to record how my teaching has helped students improve in English Language. I will also be observing how other English and Science teachers use smart boards in their class and how their students have improved, through surveys and the survey of our parent body.

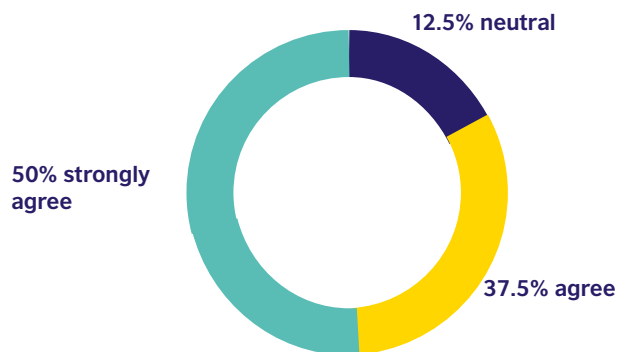


Figure 1: Smart boards enhance student engagement and participation (8 responses)

I will observe the general atmosphere in the classroom and note any unexpected events. I will keep my reflective journal updated throughout the project and add any points as required along with pictorial and video evidence. This journal will record teaching experiences, challenges faced, and methods used to motivate teachers and students.

Before the main research was started, a pilot test was conducted using the focus group questions and the survey. This was conducted in different schools. The survey helped me understand how other schools use the smart board for effective teaching.

Key findings from exploration

After trying to use the smart boards in inclusive classrooms, I realised that continuous upskilling of all stakeholders was necessary to fully harness their potential. A focus group of 12 participants with varying teaching experience revealed that some teachers were adept at incorporating technology, while others lacked exposure. However, the school principal was proficient and motivated and inspired teachers to explore smart board teaching. After the experience, teachers from other subjects expressed interest in incorporating technology into their lessons.

A global survey of 15 individuals indicated that educational institutions providing regular training for smart board integration reported high student motivation and learning outcomes, despite occasional distractions and technical issues. Analysing their digital journal, I recognised the need for further smart board training to enable English language teachers to train others. While training Science teachers proved challenging initially, there has been some progress. I expect smart board integration to cater to diverse learning needs and promote inclusivity, but I also know that we need extensive teacher training and motivation due to resistance to change.

The analysis highlighted varying levels of experience and exposure to technology integration, underscoring the necessity of targeted training initiatives. Leveraging the expertise of the school principal can facilitate knowledge-sharing and successful implementation.

Overall, participants expressed positive views on smart boards, citing enhanced engagement, interactive learning, multimedia integration, and immediate feedback. Weaknesses included technical troubleshooting, potential distractions and set-up time. The analysis emphasised addressing technical issues, providing training and support, and leveraging the benefits of smart boards in education.

Conclusions from the exploration

With a well-executed action plan, I aimed to achieve exceptional teaching outcomes for the cascading training. To assess the effectiveness of this training, we will closely observe teachers' lessons and conduct focus groups with teachers and surveys for students in grades 4–7, specifically evaluating their Science and English learning outcomes. I am also interested in learning from the experiences of others and strategies for incorporating technology into teaching.

The implementation of smart boards can effectively address diverse learning needs and foster inclusive classrooms, potentially resulting in improved student learning outcomes. However, maximising the benefits of smart boards will require extensive training. Considering the varying levels of teaching experience and limited technology integration, it is crucial to develop targeted training initiatives. The support and expertise of our principal will be instrumental in empowering teachers. In summary, this analysis underscores the significance of training, knowledge-sharing, and addressing any resistance to technology integration.

'I can see a huge difference in the learning outcomes of students. Their understanding has developed a lot as compared to their previous learning.'

**Lubna Shahzadi, Grade 7
English Language teacher**

**‘Student engagement has remarkably improved;
I can clearly find them excited, focused and involved.
They’re totally loving this unconventional teaching method.
As far as academic achievements are concerned, I’m hopeful.’**
Moon Waris, Grade 6 English Language teacher

Action plan

My main focus revolved around teacher training. Using prior knowledge and lots of research from different platforms I investigated ways to integrate technology into the classrooms efficiently. I also enrolled in a training programme which incorporated technology in the classroom but I had to leave it because it involved creating a website which was too advanced for my teachers to be of any use.

I needed to break the training segment into chunks so that it would be easier for the teachers to digest. Every Friday, teachers stay back in school for at least an hour and a half. I knew this would be the ideal time to host workshops. The first day, I shared how to operate the systems. To connect the systems, I put the same Gmail address in all the systems. For the second workshop, I designed a Power Point presentation through which I encouraged teachers to think outside the box using case studies of students who do not pay attention in conventional classrooms.

I also took the initiative to enrol students in an English Quiz Competition that had computer-based tests. We designed quizzes for the children so that they could practise and become familiar with using gadgets for their studies.

In the same workshop, I shared how teachers could help their children revise for the upcoming tests. As we had a few days before the assessments, one English teacher (grade 5) took the initiative and decided to show the movie version of the book they were reading in class. On checking the test result, we were pleased to note how the children had a comparatively better understanding of the characters and, during discussions, they could identify which parts of the book had been removed from the film.

I also designed a survey for parents and students. It was encouraging to see how children filled their own forms without the need for much explanation. Our parents were also cooperative and their children helped them fill in the forms.

I had also decided that I would join the Smartlab classrooms whenever possible so that we could work on an improvement plan. I also planned focus group questions for the administration and recorded their answers so that I could use the results in my article.

Action plan implementation

The implementation of the action plan coincided with the March assessments. Teacher focus group sessions and workshops had begun in December. After the teachers returned from the holidays, there were a number of festivities and election holidays that prevented us from doing anything in the Smartlab. This gave teachers ample time to prepare for the smart board lessons. Teachers were encouraged to have at least one revision lesson before the test. Even if they could not, they were encouraged to teach the lessons they would be assessing in the final term (May–June) so that students would have clear concepts. We would take pictures and also record random chunks of the lesson which would be shared with the administration for discussion.

Data collection procedure

I decided to continue with my digital journal so that I could continue recording my experiences and the challenges I came across. As we kept getting unexpected government holidays, I decided on a more proactive approach. After conducting the first smart board workshop session which also included the principal’s presence, I handed out a sample lesson planning format for teachers to use where they could pick a chapter they were about to teach and integrate it with technology. I created a WhatsApp focus group because meeting regularly had become a little difficult. I thought it a fitting platform for discussions and sharing evidence. After that, I designed surveys to be completed by students and parents. The students from grades 4–7 managed to attempt the surveys by themselves and some even helped their parents to fill it in.

I sat in the smart board classes and observed the challenges and successes while taking pictorial evidence. I shared my observations with the administration and we had two focus group sessions. Participants who were observed, along with the teachers and administration, gave their signed consent.

Please state the reason/s why you do or do not want to give your children too much exposure to technology? (17 responses)
Because it will help her in future.
Too much screen time causes problems and wastage of time are the main reasons behind this.
I don't want to give my child too much because it affects his mental health and eyesight.
To avoid negativity.
Because it affects their brain development and eye health.
Because of adult stuff.
Use in proper way.
I guess technology has more side effects than benefits for children.
It makes them dull and addicted. Short-temper issues, unwanted content exposure and bad health.

Figure 2: A survey question showing why parents are reluctant to give too much technology exposure

Key findings

- We need to communicate with parents regularly about the smart board classrooms and our inclusivity practices.
 - Strong and thorough planning is required to ensure that the lesson plan is effective and utilises the resources provided fully. Through observations, we noticed that the students who were not being asked the quiz questions became bored and distracted.
 - The administration will have to make certain permanent changes starting next year like having mandatory technology integrated classes for English, Science and Social Studies. This will be achieved by having meetings with the subject facilitators to follow up. The administration will have to prepare its own checklist of observation schedules. They will have to adjust timetables accordingly.
 - Teachers will need ongoing training, support and motivation to continue with the best practices.
- They will need to make continuous research in the best ways to make their lessons more attractive and student-centred.
- At least two teachers are required in the lab at the same time to ensure that the lesson is conducted smoothly. It becomes difficult to handle a class of 26–28 children in an interactive classroom with lots of activities.
 - Change is difficult for everybody. Some take a more hands-on approach while others continue to sit and watch. The cascading approach was meant for 12 people, of which eight took the initiative to use the Smartlab.
 - Parents would like to know more about the smart board classrooms because the majority are reluctant to give devices to their children.
 - Other schools who heard about this research wanted me to help their teachers. We collaborated in a training session very recently and they want me to continue. This school has 3000 students and 145 teachers across two campuses.

Figure 3: Science lecture on the digestive system after which students played games and created a model of the digestive system. The smile says it all...For once concepts in Science do not feel abstract.





Figure 4: Collaborating with other schools on student-centred learning and integrating technology in classrooms

Conclusion

It takes phenomenal effort to get people to take up challenges and despite the concept being so new, many of the teachers embraced it readily. Students were excited to be a part of this journey and they shared through their surveys that lessons were more fun compared to the conventional methods of teaching. It was a challenging ordeal in the class for teachers to manage the resources and the videos by themselves. Some of them faced a lot of technical difficulties as well due to which they were unable to have their lessons as planned. It is commendable to note how the teachers who were truly enthusiastic requested other teachers to let them take their lessons so that they could have a go at the smart board class with their children. Once teachers managed to have their lessons, they felt very confident. Some of them started making revision quizzes that the children could use to prepare for their tests. This is the first step to integrating technology in the classrooms. Some people are still very reluctant to integrate technology into their teaching and the administration will have to take a stronger stance to get teachers to take initiatives. Others have taken this as a challenge, and are competing with each other to see who has a more effective lesson.

Acknowledgements

I would like to express my sincere gratitude to Naila Saad Khan, my mentor and principal, for her unwavering encouragement, guidance, and receptiveness towards my ideas. Furthermore, I extend my heartfelt appreciation to my husband, Fiaz Mahmood, for his consistent support. I am immensely grateful to my team members, Nageen Fatima, Moon Waris, Lubna Shahzadi, Fatima, Rabia Raza, Ayesha Noor, Sana Mehmood, Mahnoor, and Faiza Noor, without whom none of this would have been possible. They courageously embraced the first step towards change, and that truly made a significant impact. I would also like to acknowledge the administration, specifically Saira Shafique and Sana Ijaz, who, despite their demanding schedules, provided assistance to the best of their abilities. Special thanks go to Sir Safdar Kharal for effectively managing the accounts and to Yashfa Haroon and Qazafi for their patience and willingness to accommodate my requests.

I would like to acknowledge the use of AI that helped me put my ideas in a more structured way onto paper and helped in designing focus group questions in its initial stages, which I later modified as needed.

**‘It’s a win-win situation for you and your students both...
on one end, you are learning new ways of engaging your students,
and on the other end, your students show interest in
learning through the use of technology,
which is absent in a traditional non-technology classroom.’**

Naila Saad Khan, Mentor and School Principal

British Council
Partner Schools

AI-enhanced Maths: active metacognition and transformative assessment

Lina Hoyos, Colombia

AI-enhanced Maths: active metacognition and transformative assessment

School context

Saint George's School, located in Bogota, Colombia, is a private co-educational, bilingual institution with British origins. With an average of 1300 students, the school is divided into three sections: preschool, primary and high school. Its vision is to shape society through a liberal, dynamic, innovative, and high-quality education that upholds a tradition of excellence.

About the author

Lina Hoyos is a biologist with a Master's degree in education. With over 18 years of experience in education, she holds the position of biology teacher at Saint George's School in Bogota, Colombia. In addition, she is actively involved in the school's Innovation Centre and serves as a member of the research office.



Key learnings

This research investigated active learning methodologies and AI tools to enhance the Maths performance of 10th grade students.

- Incorporating an AI platform (Educo) significantly enhanced students' understanding and performance in Maths, both in content learning and critical thinking skills.
- After implementing Educo, 29% of students reported increased confidence in solving Maths problems; 56% claimed to think more critically; 61% said it helped them identify errors; and 87% found the step-by-step guidance for problem-solving highly useful.
- The research offered the Maths department tools for interactive, student-centred teaching to improve learning and reduce anxiety. It led to significant changes in teaching methodology, shifting towards a more direct approach to knowledge where students play an active role in their learning.
- AI technologies should also be implemented in other areas of the curriculum; they underscore the importance of ongoing teacher training and the development of pedagogical strategies to maximise learning and teaching.

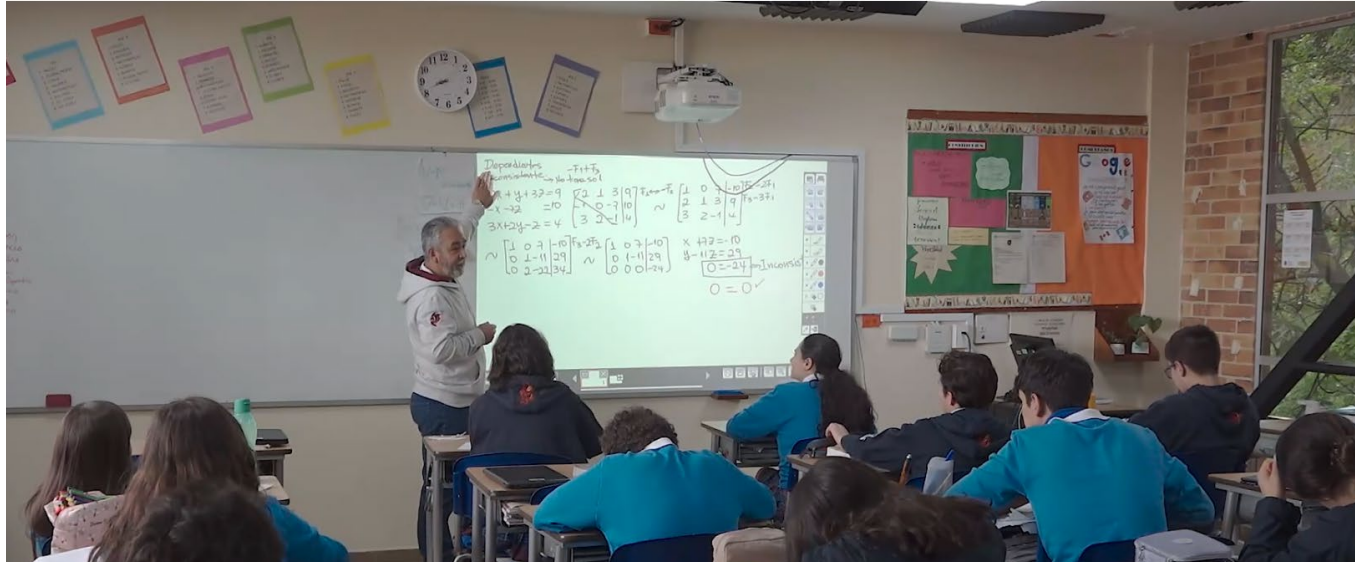


Figure 1: A class in action. The goal is to enhance student performance in Maths and create a more inclusive, equitable learning environment by integrating AI tools with effective teaching practices.

Action research rationale

Over the years, Lina has observed that students face challenges in subjects like Mathematics. Contributing factors include insufficient foundational knowledge, pandemic-related learning gaps, difficulties with abstract thinking and problem-solving, and ineffective teaching methodologies. She proposes an action-research approach to identify reasons for poor performance and to develop interventions using active learning methodologies and AI tools like simulations and formative assessments. This aims to provide a more engaging, personalised learning experience while emphasising ethical AI implementation.

By integrating virtual environments with effective teaching practices, the goal is to enhance 10th grade students' performance in Maths and create a more inclusive, equitable learning environment. This research acknowledges the importance of integrating technology, such as Artificial Intelligence (AI), to assist students in obtaining more personalised feedback processes. By doing so, it aids learners in identifying their mistakes and strengths, ultimately enhancing their metacognitive processes.

Exploratory research questions

1. How do students in the 11th grade feel about the teaching and learning methods in Maths?
2. According to students and teachers, what is the most appropriate artificial intelligence platform to assist students in enhancing the teaching and learning processes in 10th grade mathematics?
3. What are the beliefs and expectations regarding the utilisation of artificial intelligence in the classroom by the mathematics teacher?

Data collection procedures

Firstly, a survey was conducted with 65 students from 11th grade to gain insights into their perceptions and identify areas for improvement. In addition, focused group discussions with nine students (three from high, three from average, and three from low-performance categories in Maths classes) provided a deeper understanding of their experiences. The Maths teacher's perspective was gathered in an interview.

A comparative analysis of the last six years' maths outcomes for 10th grade identified trends and highlighted areas in need of improvement. Further, 153 students (10th and 11th-grade) were surveyed to understand the integration of AI platforms in their learning process.

To analyse the use of technology and AI in teaching, student engagement and classroom dynamics, three classroom observations were recorded prior to the adoption of new teaching strategies.

Lastly, an 88-participant survey assessed metacognitive awareness, using the Metacognitive Awareness Inventory (MAI) developed by Schraw & Dennison in 1994.

Before initiating the research, we obtained consent from all participants, ensuring they fully understood the study's objectives and their rights. For student participants, we secured mandatory consent from parents or guardians, supplying them with detailed information documents and consent forms. Alongside written consent, we verbally verified students' understanding of the research and their voluntary participation. We provided all participants with thorough explanations regarding the use, storage, and protection of their data. It is noteworthy that we kept all collected data confidential, anonymising any personally identifiable information to safeguard participant privacy.

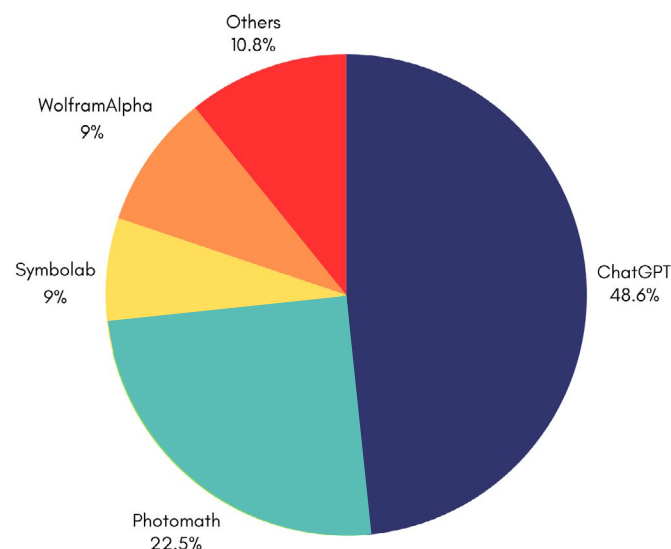
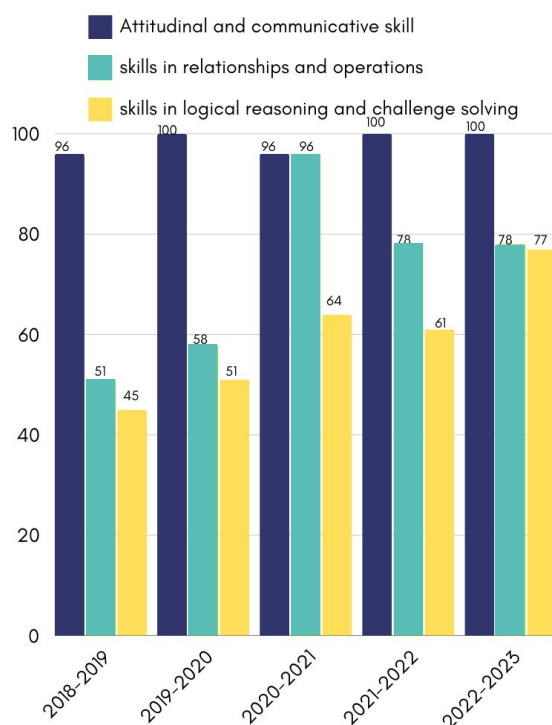


Figure 2 (left): Percentage of approval per skill results for 10th grade in Maths subject in the five past years

Figure 3 (above): Use of artificial intelligence platforms for the study of Maths in 10th and 11th graders

Key findings from exploration

Students have highlighted feedback as an essential component of their learning, greatly valuing this aspect. However, they express a desire for more personalised feedback that makes it easier to understand the processes of solving mathematical problems and helps them identify their mistakes. Similarly, they show a preference for more interactive lessons with greater integration of technology

In the school's mathematics area, three competencies are assessed: attitudinal and communicative; skills in relationships and operations; and skills in logical reasoning and solving mathematical challenges. The analysis of the last five years indicates that the most challenging competency for students is related to logical reasoning and solving mathematical challenges, as shown by the lowest averages and approval percentages (see Figure 2).

Regarding the implementation of AI technologies, 67% of both 10th and 11th grade students have used such platforms to understand and solve mathematical problems. The most used platforms include ChatGPT, Photomath, WolframAlpha, and Symbolab (see Figure 3). Considering these results, it was determined that the selected platform should be engaging, adaptable, user-friendly, and encourage independent work by students.

The analysis of the results from the Metacognitive Awareness Inventory (MAI) revealed that participants achieved an average score of 13.08 out of a possible total of 17 in the 'Knowledge About Cognition'

category, suggesting a moderate level of awareness of their own cognitive processes and understanding. In the 'Regulation of Cognition' category, the average score was higher, reaching 24.52, indicating that participants generally have greater skills in monitoring and regulating their learning strategies and processes. The difference between the two scores highlights an opportunity for potential development in improving students' understanding of their own cognition.

Action plan

- Teacher professional development: training the Maths teacher in using and implementing an AI platform for more active lessons with technology use.
- Developing metacognitive skills in 10th grade students through the use of an AI platform in Maths class.

Action plan implementation

The implementation of the action plan was divided into two main sections: one directed at the teacher and the other at students.

For the teacher, training focused on reviewing objectives, success criteria, and their alignment with planning. Regarding metacognition, training was provided on the use of tools for the development of metacognitive skills, such as feedforward. Additionally, training was offered in the use of AI platforms like Educo and ChatGPT.

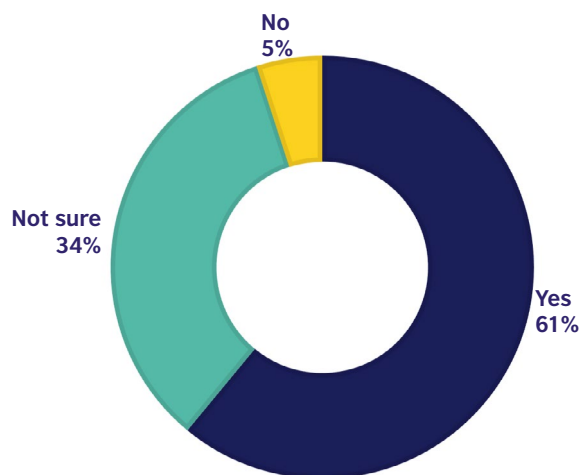


Figure 4 (left): Effectiveness of Educo in error identification and understanding in Maths problem solving



Figure 5 (above): Percentage of change in some skills for Regulation of Cognition

As for the students, two main tools were implemented: Educo (<https://www.educo.co/>) and feedforward. Educo, an artificial intelligence platform, allows students to explore the step-by-step process for solving mathematical problems. Unlike other platforms, Educo does not immediately show the answer or the problem's development; instead, it guides the student through questions, offering theoretical explanations when it detects conceptual difficulties. The platform allows for interaction via questions, which is very useful for teachers as they can include exercises, class workshops and exams.

The other tool used, especially during the correction of exams, was feedforward. This technique not only helps students to identify errors but also plan future actions to improve their performance.

Data collection procedure

Structured dialogues involving the teacher, head of department, educational coach and research office members were held to review objectives, success criteria, and their alignment with planning, alongside discussions on AI platform implementation. Topics included expectations, creating prompts, challenges, and benefits in developing students' problem-solving skills, with a focus on assessing professional development needs for effective platform use.

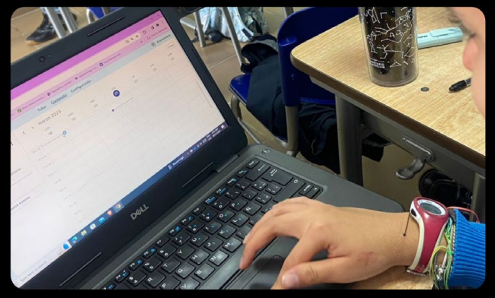
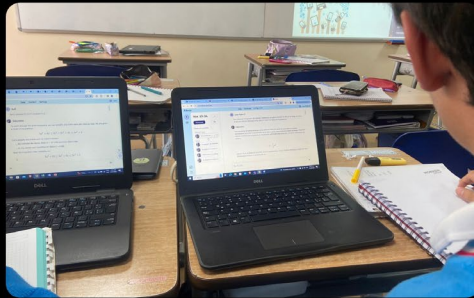
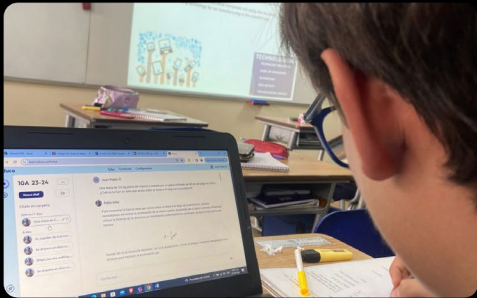
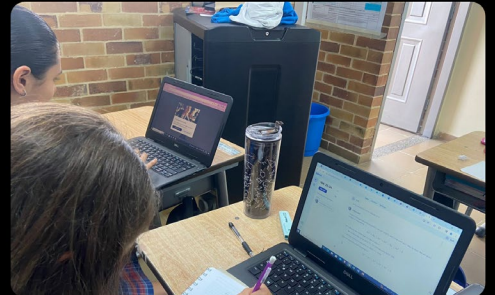
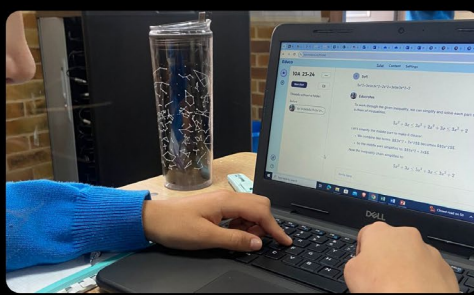
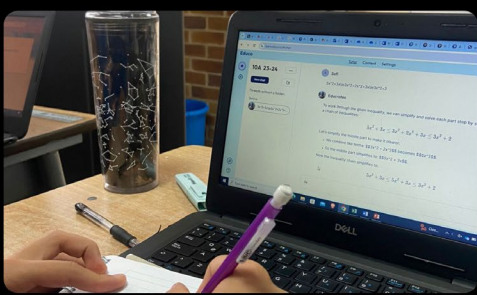
The teacher underwent a survey and interview to evaluate expectations and perspectives on the AI platform. Additionally, a survey was conducted among 88 students in 10th grade to understand their expectations and perceptions of platform usage, followed by a focus group for deeper understanding.

Academic outcomes, including logical reasoning, mathematical problem-solving skills, and exam results, were compared between terms and with the past five years among 10th grade students.

Metacognitive awareness levels were re-evaluated using the MAI to detect changes in students. Finally, school leaders were interviewed to explore their future expectations regarding the implementation.

Key findings

- After the implementation of the Educo platform, 29% of the students reported increased confidence in solving mathematical problems.
- 56% claimed to think more critically when seeking solutions to mathematical problems.
- 61% of the students stated that the platform helped them identify their errors in solving mathematical problems (see Figure 4).
- 87% found the platform's step-by-step guidance for problem-solving highly useful.
- Although *t*-tests did not reveal statistically significant changes, an observable change of 11% in the average final results between the first and second term was noted, with a 22% improvement in the percentage of approval for the subject.
- Results from the Metacognitive Awareness Inventory (MAI) also did not show statistically significant changes after conducting a *t*-test. However, there was a noticeable improvement in cognitive regulation skills.
- Detailed analysis of the scores from each test revealed a 50% improvement in planning, 58% in monitoring comprehension, and 56% in evaluation skills (Figure 5).
- The teacher enhanced his professional growth, through an in-depth exploration of AI, highlighting the importance of staying current with technology. It also led to significant changes in teaching methodology, shifting towards a more direct approach to knowledge where students play an active role in their learning.
- The research offered the Maths department tools for interactive, student-centred teaching to improve learning and reduce anxiety.



Conclusions

It's crucial to stay aware of the social changes and the evolving needs of contemporary students, who are calling for more interactive, personalised classes with deeper technological integration. This study reveals how incorporating artificial intelligence (AI) platforms, like Educo, can significantly enhance students' understanding and performance in mathematics. Tangible improvements were observed in final results and exam percentages of approval.

In addition to aiding specific content learning, AI-assisted education can enhance critical thinking skills, vital for long-term learning and application across various contexts. While progress in students' metacognition did not meet expectations, notable enhancements were seen in specific cognitive regulation skills.

For future research, it is recommended to explore additional tools, like feedforward, to further boost the development of these skills, crucial for effective and autonomous learning.

It is also recommended to advocate for the expanded implementation of AI technologies in other areas of the school curriculum. They underscore the importance of ongoing teacher training and the development of pedagogical strategies that effectively integrate these technologies to maximise their impact on learning and teaching.

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Acknowledgements

I would like to express my sincere gratitude to: Katherine Hurtatiz, Educational Coach; Diana Hernández from the Innovation Centre; Mónica Tapias, Head of the Mathematics Department; Jorge Hernández, Mathematics Teacher; Helena Figueroa, English Teacher; and Myriam Copete, Executive Director—your guidance and support were invaluable in the completion of this research. To Kathleen O'Hare and Sirin Soyoz for their guidance, support and feedback.

Additionally, I would like to note that I used ChatGPT in refining style, grammar and summarising texts.

'The project significantly boosted my professional development, especially through exploring artificial intelligence, underscoring the need to stay abreast of technology for our students' futures.'

Maths teacher

British Council
Partner Schools

Leveraging ChatGPT to enhance EFL reading skills for 10–12 year-old students

Neeti Tripathi, Bangladesh

Leveraging ChatGPT to enhance EFL reading skills for 10–12 year-old students

School context

The international school in question caters to students aged 3–18 and operates as an English-medium institution, placing a high priority on developing strong English proficiency. Despite this focus, traditional teaching methods have not significantly improved students' English reading skills or their engagement, particularly in the elementary school grades. The school leadership is open to exploring innovative pedagogical approaches and integrating technology to enhance English as a Foreign Language (EFL) reading instruction for students in their transition years, specifically those aged 10–12 years. Furthermore, teachers at the school are highly enthusiastic about professional development opportunities that would enhance their skills and enable them to provide more personalised learning experiences to their students.

About the author



Neeti Tripathi is an educator from India with 18 years of experience teaching diverse curricula, including IB, Cambridge and Indian syllabi. Currently Principal of Junior School at an international school in Bangladesh, Neeti is professionally trained and skilled in core pedagogical approaches and leadership strategies. She is also an accredited Cambridge Programme Leader and certified British Council Trainer for Core Skills and Leadership in Bangladesh. Her breadth of knowledge and hands-on expertise make Neeti well-poised to investigate innovative solutions for improving EFL education.

Key learnings

This research aimed to improve EFL reading instruction using ChatGPT.

- Students viewed ChatGPT positively for enhancing English reading skills while parents were concerned about reduced creativity, increased screen time, academic integrity, and the need for clear policies.
- EFL teachers recognised ChatGPT's benefits for reading skills and student engagement but expressed concerns over originality, ethical issues, and potential parental disapproval.
- Developing and implementing an AI policy with the input of all stakeholders is necessary to address concerns and integrate AI tools effectively into the school's EFL curriculum.
- The action plan includes regularly monitoring and evaluating ChatGPT's educational impact.
- Strategies involve gradual curriculum integration, continuous improvement research, and a yearly review of the AI policy.



Background to action research

To address the challenges of teaching EFL reading skills, the researcher proposed leveraging ChatGPT's capabilities as a generative artificial intelligence (AI) tool to provide personalised and adaptive instructions catered to each learner's needs and interests.

With AI tools like ChatGPT becoming increasingly prevalent, understanding student attitudes, parental perceptions, and teacher insights is crucial. ChatGPT's potential to collaborate with teachers in developing engaging reading activities also makes it a valuable professional development tool.

The school leadership welcomed investigating ChatGPT's possibilities as an innovative solution aligned with the institution's focus on preparing students and teachers for 21st-century education and the importance of aligning AI usage with the values and expectations of students, parents and educators in specific educational settings.

Action research rationale

This research aims to improve EFL reading instruction using ChatGPT, addressing critical pedagogical needs by facilitating personalised reading support and activities. ChatGPT's capabilities enable the provision of tailored instructions, feedback and content recommendations according to each student's proficiency level, significantly enhancing motivation and reading outcomes. Teachers benefit immensely from this technological integration, as ChatGPT offers new insights into pedagogy and efficient EFL teaching methodologies. It is a collaborative tool for designing engaging, customised reading lesson plans and materials, expanding teachers' professional skills and enriching their pedagogical knowledge. Using ChatGPT in lesson planning allows for the incorporation of advanced strategies in teaching EFL reading competencies.

The research also seeks to clarify the roles of ChatGPT in the educational ecosystem, explicitly addressing how it will be incorporated into the school's EFL curriculum. This integration is guided by the school's educational technology policy, which supports the use of innovative tools in teaching to enhance learning outcomes. The study will examine how generative AI tools such as ChatGPT align with these policies and contribute to the school's educational strategic goals. The intention is to establish ChatGPT as a versatile resource that supports educators in delivering high-quality, personalised instruction for supplementary learning to enhance students' reading abilities.

By investigating parents' views and expectations, the research ensures that the integration of ChatGPT aligns with familial expectations and gathers essential parental support for its successful implementation. This dual approach underscores the potential of generative AI to enhance EFL reading instruction and foster a collaborative educational environment involving teachers, students and parents.

Expected outcomes

This action research has significant potential to:

- enhance students' English reading skills and engagement through personalised instructions and feedback with the help of ChatGPT-created lesson plans and resources
- empower teachers with a collaborative technology partner for material design and pedagogical improvements
- promote technology integration and innovation in EFL classrooms
- prepare students, parents and teachers for next-generation AI-powered education
- yield insights to guide effective implementation of ChatGPT for EFL education.

The intention is to establish ChatGPT as a versatile resource that supports educators in delivering high-quality, personalised instruction for supplementary learning to enhance students' reading abilities.



‘We have already learned all the academic skills in our schools, and we know how to use them; students must learn them before trying them with ChatGPT.’

A parent during the focus groups

Exploratory research questions

1. What opinions and attitudes do EFL students aged 10 to 12 at CIDER International School have towards using ChatGPT to sharpen their reading abilities?
2. What are parents’ attitudes, perceptions and expectations towards using ChatGPT to improve EFL reading abilities in their children aged 10 to 12 years?
3. How do teachers perceive the pedagogical utility of ChatGPT in enhancing students’ EFL reading skills and facilitating their professional development?

Methodology

This study used a mixed-methods approach to fully comprehend the topic, integrating quantitative and qualitative data collection strategies. The researcher obtained comprehensive insights regarding the effects of ChatGPT on EFL reading skills and triangulated data.

Data collection methods

Quantitative data collection

Questionnaire: A paper-based questionnaire was administered to approximately 100 students aged 10 to 12 years. This questionnaire encompassed various aspects, including reading skills, engagement levels, and the perceived impact of ChatGPT. The quantitative data helped the researcher gauge the statistical significance of any observed effects.

Qualitative data collection

Parents’ focus groups: Four focus groups were held, each with 8 to 10 parents. This qualitative method provided insightful information about how parents view, feel about, and anticipate the use of ChatGPT in their children’s EFL instruction. The combined experience of the parents enabled the researcher to understand the social and cultural aspects of the technology’s application on a deeper level.

Solo and group interviews for teachers: The researcher conducted both solo and group interviews with eight teachers who taught EFL classes to students aged 10–12. This qualitative approach

aimed to explore teachers’ experiences, challenges and opinions regarding ChatGPT’s effect on students’ EFL reading skills and professional development opportunities. These interviews provided rich data on individual experiences and the group dynamics related to the technology’s usage.

Participant selection

Students: One hundred (100) students were approached to participate in the study, and the students were selected after their parents or guardians gave their mandatory consent.

Teachers: The study included eight teachers from CIDER International School. These teachers were directly involved in implementing the EFL curriculum for 10–12 year-old students.

Parents: Four focus groups, each composed of 8–10 parents, participated in the research. These parents were selected based on their consent to participate and represented a diverse range of backgrounds, including proficiency levels in English. This diversity helped us capture a wide array of parental perspectives.

Ethical considerations

All participants were notified of the research objectives and their rights, and parents or guardians provided consent for student participation. Students were also informed about the research. This consent was explicitly documented to ensure the ethical participation of minors in the study. All acquired data was kept strictly confidential. Codes were used to anonymise participant identities, protecting their privacy. Data was also stored securely to avoid unauthorised access.

One of the students wrote in the questionnaire: ‘I use ChatGPT because it is like a friend and does not judge me if I ask any question.’

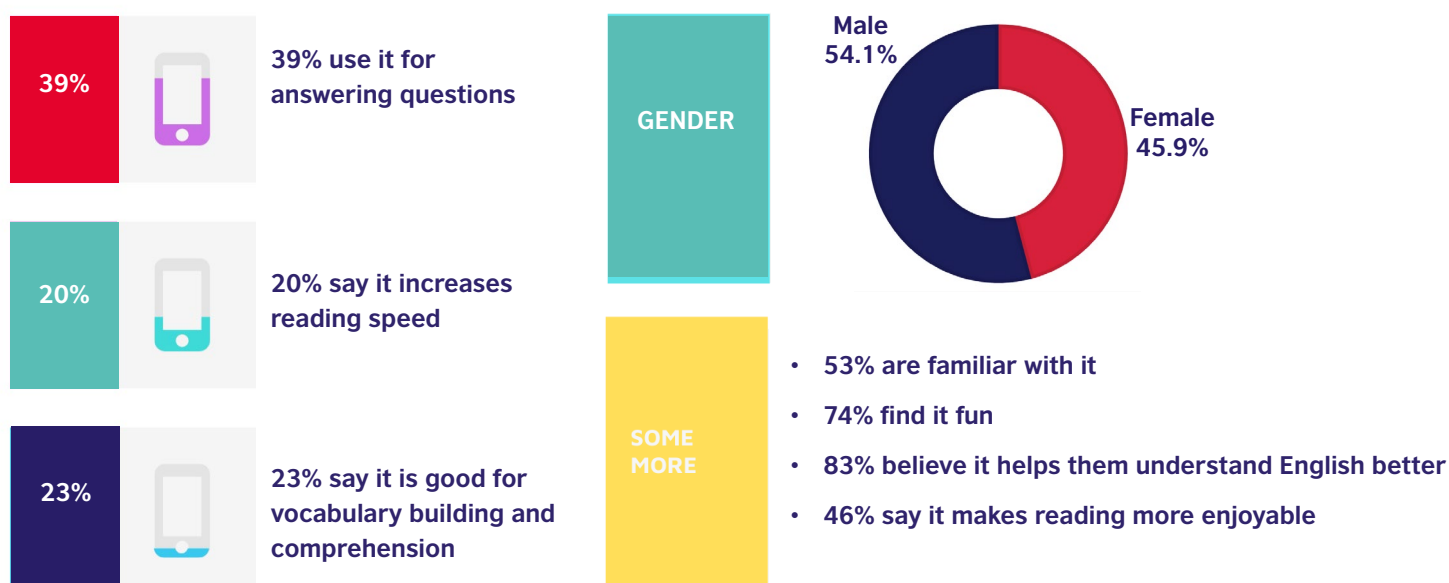


Figure 1: Students on ChatGPT usage

Key findings from exploration

Students generally view ChatGPT positively as a means of improving their English reading skills. They find it enjoyable and effective, particularly for answering questions and practising grammar. However, opinions vary regarding its influence on reading enjoyment. Enhancements such as adding voice and video features and using more straightforward language are suggested. Students see ChatGPT as a valuable addition to the EFL curriculum without concerns about creativity loss or over-dependence.

Parents express concerns about ChatGPT's impact on their children's creativity, increased screen time, academic integrity and school readiness. They emphasise the need for a proper introduction to ChatGPT, clear AI policies, transparent communication, and comprehensive information before its integration into the EFL curriculum.

Most EFL teachers are familiar with, and use, ChatGPT in their teaching, valuing its positive impact on reading skills and student engagement. They also use it for professional development. However, there are reservations about fully incorporating it into the curriculum due to concerns about originality, excessive digital usage, ethical issues, and potential parental dissatisfaction. Teachers suggest a balanced approach to ChatGPT's use, including thorough induction, an AI policy, and limited, supervised application.

Action plan

After analysing the findings, we formulated an action plan to address the identified needs.

- Interactive student training and activities with ChatGPT.
- Parental involvement through induction sessions and guidelines.
- Gradual implementation of ChatGPT into the curriculum.
- Teacher development includes training with a balanced approach to using ChatGPT and other resources, emphasising ethics, creativity and originality.
- Generate and establish clear AI policies and guidelines for ChatGPT use in school EFL curricula with the help of EFL teachers, students, and parents, which will be reviewed yearly.
- Emphasis on ethics, creativity and originality in ChatGPT applications.
- Regularly monitor and evaluate ChatGPT's educational impact.
- Promotion of research for ChatGPT improvements.

The action plan includes regularly monitoring and evaluating ChatGPT's educational impact, emphasising ethical use, creativity, and the importance of original work.

Action plan implementation

A comprehensive strategy was developed to establish clear AI policies for integrating AI tools into the English as a Foreign Language (EFL) syllabus, guided by relevant research questions. EFL teachers, student representatives, parents and administrative members were involved in the policy development process. The process began with an in-depth review phase, where existing policies were examined and stakeholders were interviewed.

Based on these findings, a preliminary policy will be carefully crafted, considering ethical, educational and logistical aspects to ensure that technology integration aligns with the pedagogical needs and the ethos of the academic community. This policy will undergo a thorough review, inviting feedback from the wider educational community to ensure it meets expectations and addresses any concerns.

After refining the policy, it will be implemented through a structured plan that includes teacher development sessions and informative workshops for parents and students, ensuring everyone understands and aligns with the school's educational goals. This initiative will represent a progressive approach to adopting AI in education, informed by international examples and tailored to the unique environment of CIDER International School in Bangladesh.

Data collection procedure

A comprehensive data collection process centred around the three key research questions addressed the challenges and opportunities of implementing an AI policy at an educational institution. First, reflective journals explored the obstacles and potential benefits of formulating such a policy. Stakeholders, including teachers, students and administrators, documented their experiences, observations, and evolving perspectives on AI integration within the educational framework over a set period. This method provided deep, reflective insights into the proposed policy's personal and collective implications.

Second, the views on developing and applying an AI policy within the school context were gathered through focus groups. Separate sessions were organised for parents, students, EFL teachers and school administrators, facilitating a structured yet open dialogue that allowed each group to voice their specific concerns, expectations and recommendations.

This approach ensured that the diverse viewpoints and experiences informed the policy development of the entire school community.

A literature review was conducted to benchmark against global practices, focusing on how educational institutions worldwide have navigated the ethical, pedagogical and practical considerations of integrating AI into their academic programmes. This extensive review identified best practices, highlighted potential pitfalls, and uncovered innovative strategies that could inform the institution's policy formulation process.

Together, these data collection methods provided a rich and broader understanding of the implications of introducing an AI policy, ensuring that the development was grounded in both the local context and global best practices.

Key findings

- Students view ChatGPT positively for enhancing English reading skills, appreciating its help with grammar and question-answering.
- Parental concerns focus on the potential for reduced creativity, increased screen time, academic integrity, and the need for clear AI policies and transparent communication.
- EFL teachers recognise ChatGPT's benefits for reading skills and student engagement but express concerns over originality, ethical issues, and potential parental disapproval.
- Teachers advocate for a balanced ChatGPT usage approach, underlining ethics, creativity and originality.
- Developing and implementing an AI policy with the help of all stakeholders is necessary to address concerns and integrate AI tools effectively in the school's EFL curriculum.
- The action plan includes regularly monitoring and evaluating ChatGPT's educational impact, emphasising ethical use, creativity, and the importance of original work.
- Strategies involve gradual curriculum integration, continuous improvement research, and a yearly review of the AI policy to ensure it remains relevant and effective.

ChatGPT and Bing AI-Search were used to draft this research article, showcasing the transformative potential of artificial intelligence in enhancing academic endeavours.

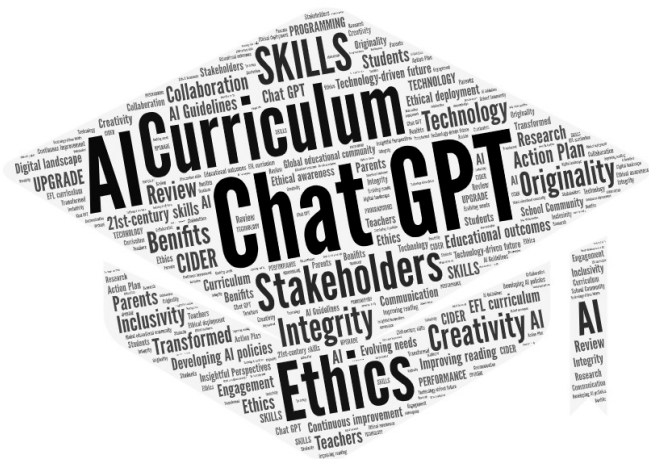
Conclusion of the research and changes in the school as a result

The research at CIDER International School, Bangladesh, into integrating ChatGPT into the EFL curriculum reveals insightful perspectives from students, parents and teachers on AI's role in education. Students appreciate ChatGPT for improving their reading and grammar skills. Parents voice concerns over creativity, increased screen time, and academic integrity, calling for clear communication and ethical deployment of AI tools. Teachers see the benefits of ChatGPT in engaging students and supporting professional development but stress the need for a balanced use that maintains originality and ethics.

An action plan for developing and annually reviewing AI policies with stakeholder input significantly addresses these concerns, ensuring a responsible integration of AI tools like ChatGPT. This initiative has transformed CIDER International School, promoting inclusivity and collaboration and establishing clear, ethical AI policies and guidelines. The focus on ethics, creativity, and originality mitigates concerns about academic integrity and student development. This case study offers valuable lessons for the global educational community. It demonstrates a model for integrating AI technology that emphasises stakeholder involvement, ethical considerations, and continuous improvement. The process of developing AI policies, which are reviewed yearly to meet evolving needs, ensures education remains relevant and prepares students for a technology-driven future.

CIDER International School's approach highlights the importance of adapting to the digital landscape while fostering an educational environment that equips students with essential 21st-century skills and ethical awareness.

In conclusion, the experiences and outcomes of integrating ChatGPT into the EFL curriculum at CIDER International School offer insightful lessons and a framework that can be adapted by other schools globally. The research underscores the potential of AI to enhance educational outcomes, provided that its integration is approached carefully considering ethical implications, stakeholder involvement, and a commitment to continuous improvement and adaptation.



British Council
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Levelling up Maths learning through digital platforms to improve fifth grade students' problem-solving skills

Shireen Hamdan, Jordan

Levelling up Maths learning through digital platforms: Using digital resources to improve fifth grade students' problem-solving skills

School context

Al-Ridwan School is located in Amman, Jordan. It was established 27 years ago and has taught the national Jordanian curriculum since then for pre-school to secondary students. In 2021, the Cambridge International Programme started with 60 students in grades one to five. Now in its third year, the international section has 240 students in grades one to eight and is expanding to the Cambridge Upper Secondary stage next year.

About the author

Shireen Hamdan has been in the field of education since 2006. She is currently the International Programme Coordinator at her school. Shireen and the school leadership team contributed to establishing the international section at Al-Ridwan School in 2021. She is responsible for ensuring the successful implementation of the curriculum. She also conducts and supervises training programmes for teachers and contributes to the selection of suitable learning resources at her school. Shireen holds a post-graduate degree in Advanced Instructional Leadership and has a great passion for teacher coaching and utilising technology in education.



Key learnings

This research studied how Maths digital resources could improve conceptual understanding for fifth-grade students.

- Students showed higher engagement levels and improved ability to achieve conceptual understanding of Maths concepts. They also appreciated continuous access and flexibility when using the resources independently.
- Teachers found the training satisfying as the programme addressed how digital resources could be integrated with teachers' regular practices and it offered practical ideas and tutorials.
- Teachers appreciated the categorisation of digital resources in the modules based on their usage, which helped them select the most suitable resource for their lesson objectives.
- The principal played an important role by integrating the training into the timetable. She emphasised the importance of exploring technology's role in education, and expanding the use of digital resources in other subjects.

‘Technology is an area where we really need to explore more in our practice. Once it works well in mathematics, we will be able to look into how we can use it in all subjects.’

Bahija Mawas, School Principal

Action research rationale

As a recently established Cambridge International School serving diverse learners from various backgrounds after the pandemic, it was evident that students faced significant challenges in problem-solving and retaining math skills. It was crucial to bridge proficiency gaps relative to Cambridge standards. Integrating technology both inside and outside the classroom could be a valuable tool to improve learning, engagement, and alignment with students’ digital competencies. Digital resources can also enable personalised remediation plans.

The aim of this research was to study how Maths digital resources, featuring interactive animations, activities and quizzes, can improve conceptual understanding and problem-solving skills for fifth-grade students. The research was conducted with the assistance of a fellow Maths teacher who teaches the fifth grade. The digital resources used align with the Cambridge Primary Framework; their inclusion of videos and manipulatives provides visualisation to enhance comprehension and performance. Students can progress at their own pace and revisit materials as needed.

This research is key as the fifth grade caps the primary curriculum, and strong Maths skills here facilitate the transition to the lower secondary stage.

Exploratory research questions

1. Why do I believe that implementation of digital resources in teaching Maths will positively affect the problem-solving skills of fifth grade students?
2. What are students’ perceptions of using digital resources in Maths?
3. How would other Maths teachers perceive the impact of using the digital resources to enhance students’ conceptual understanding and problem-solving skills in Maths?

Methodology

The primary aim of this research was to enhance Maths learning through the use of digital platforms. This study focused on fifth grade students in the international section of Al-Ridwan Schools in Amman, Jordan. The methodology incorporated a mixed-method approach, including lesson observations, a focus group of students, and a survey of teachers.

For lesson observations, four different maths classes at the fifth-grade level were observed on separate days. Two of these observations were conducted while employing digital platforms, and the other two were conducted without their use. Classes were recorded, and notes were taken regarding students’ engagement and problem-solving abilities.

A focus group discussion was held to allow students to articulate their opinions and thoughts regarding the use of digital resources in Maths. The class consisted of 15 students, and the focus group included eight students with varying levels of achievement.

A survey was completed by Maths teachers in the international section at Al-Ridwan Schools. This survey collected teachers’ reflections, notes and concerns regarding the use of digital resources.

Before commencing the research, consent was obtained from all participants, ensuring they understood the purpose of the study and their rights. For students, consent from guardians was mandatory. Guardians received information sheets and consent forms, and it was ensured that the students understood the research and were willing to participate. All participants and guardians were briefed on how their data would be employed, stored, and safeguarded. All data collected remained confidential, and any identifying particulars were anonymised to safeguard participants’ privacy.



Figure 1: Students of the focus group with their Maths teacher.

Key findings from exploration

The class observations revealed that digital resources facilitated clear content delivery through animated mathematical models and virtual manipulatives, smoothly benefiting the achievement of lesson objectives. These tools enhanced explanations, provided visual aids for complex concepts, and addressed diverse learning styles. In classes without digital resources, the teacher relied on pictorial models, which required more time for explanations and left less time for practice. Student engagement was notably lower in these classes, except during cooperative learning activities.

The focus group discussion highlighted students' appreciation for the accessibility of digital resources during vacations, which aided their understanding in areas like estimation and long division. While 60% of students preferred interactive exercises and videos, 40% favoured traditional methods due to perceived challenges or distractions. Despite digital resources increasing interest for 70% of the students, 30% found them occasionally boring or overwhelming. Additionally, 80% believed these resources improved their problem-solving skills, although 20% found certain questions overly challenging.

The teachers' survey indicated that 85% of Maths teachers used digital resources including videos and virtual manipulatives. Teachers found the digital resources beneficial in aiding students' understanding, making lessons engaging and interactive, particularly in reinforcing concepts or illustrating problems pictorially. Technical issues and complexities in concept presentation were reported by around 30% of teachers. Concerns regarding internet safety and distractions were voiced by 15% of teachers, while 10% were concerned about unequal student interaction due to device shortages.

Teachers recommended various resources like Marshall Cavendish Digital Suites and GeoGebra for modelling mathematical concepts.

The comprehensive analysis underscored the invaluable impact of digital resources in enhancing both teaching and learning experiences in mathematics. Students exhibited greater engagement, diverse learning opportunities, and improved problem-solving skills when aided by digital tools. However, the varied preferences and challenges highlighted, such as technical issues and concerns about access and complexity, emphasised the need for a balanced approach to accommodate different learning styles and address technological problems.

Action plan

After analysing the findings from our exploration, the following action plan was formulated to address the identified needs.

- Provide a professional development programme for teachers by developing online training modules for teachers. The training modules are to introduce best instructional practice for utilising digital resources in teaching Maths.
- Enhance Maths lesson plans for better implementation of digital resources in teaching and assessment.
- Provide the required resources such as enough devices for students, internet connection, and a reliable digital platform that can be used in Maths classes.

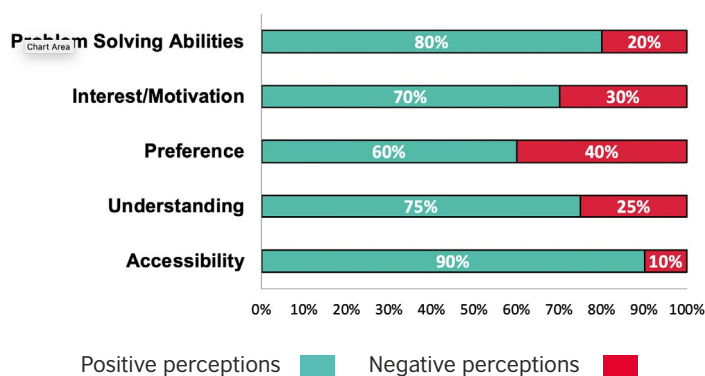


Figure 2: Students' perceptions of using digital resources in Maths

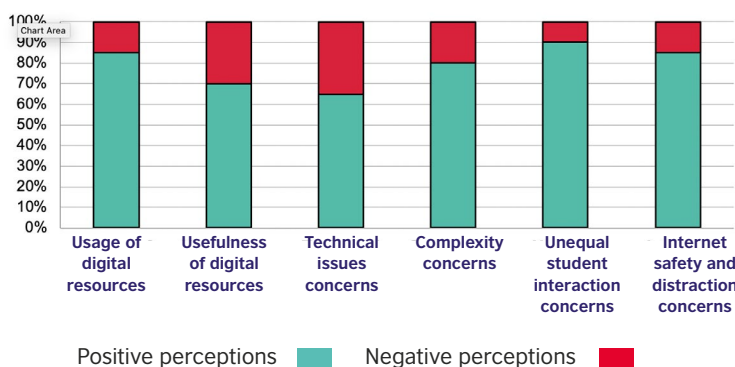


Figure 3: Teachers' perceptions of using digital resources in Maths

Action plan implementation

Online training modules were designed in collaboration with Maths teachers to identify and incorporate the best instructional practices for integrating digital resources into Maths teaching. Teachers were asked to send all resources they thought might be useful to share among the Maths team. The contributions from the teachers were combined to create the material for the training. Microsoft Teams was used to create user-friendly, engaging, and accessible training modules.

The training programme included reading materials, recorded videos, and downloadable resources featuring various suggested Maths applications and platforms that can be integrated into Maths classes. It also focused on the value that can be added by using these resources within the Concrete – Pictorial – Abstract approach, which is employed in teaching Maths at the primary stage in Al-Ridwan International Section.

The training was self-paced, allowing teachers to access it at their convenience. Teachers were required to fill in a pre-training survey and a post-training survey to reflect on their experience and the benefits of the training. A collaborative learning environment was fostered, encouraging participation through discussion groups.

Feedback and reflection were essential components of the implementation process. Feedback was collected from teachers regarding the effectiveness and relevance of the training modules and was then analysed to identify strengths and areas for improvement. Reflection on the implementation process allowed for the identification of successes, challenges, and lessons learned.

Data collection procedure

Data was collected to explore the challenges and benefits anticipated by the researcher in implementing the teacher training on using digital resources. It also aimed to examine the teachers' expectations and concerns before and after the training, as well as to understand the leaders' perceptions of the action plan regarding resources, support and expectations.

The researcher kept a reflective journal for the purpose of exploring her own perceptions of implementing the training. This journal served to reflect the researcher's thoughts and feelings about the training, including potential challenges and benefits. It also explored the researcher's perspective on the best method to implement the action plan and assess its effectiveness.

Surveys were administered to teachers before and after the training to explore the impact of the training on their confidence in using digital resources in their Maths classes and the frequency of their usage. These surveys also aimed to gather feedback on the training's benefits and possible improvements.

'Detailing the benefits and providing explanations about digital resources has enlightened me and drawn my attention to benefits I hadn't previously noticed.'
A Maths teacher reflecting on the training programme

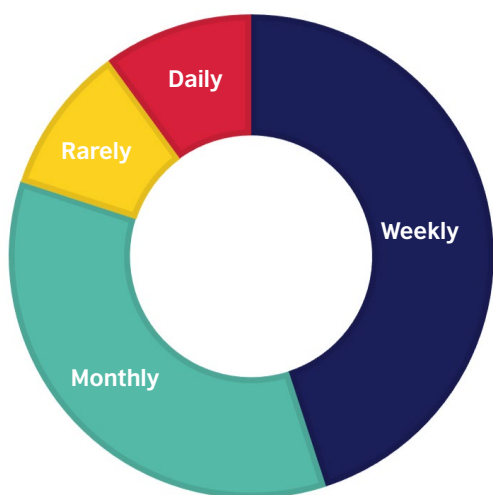


Figure 4: Frequency of using digital resources in Maths before training

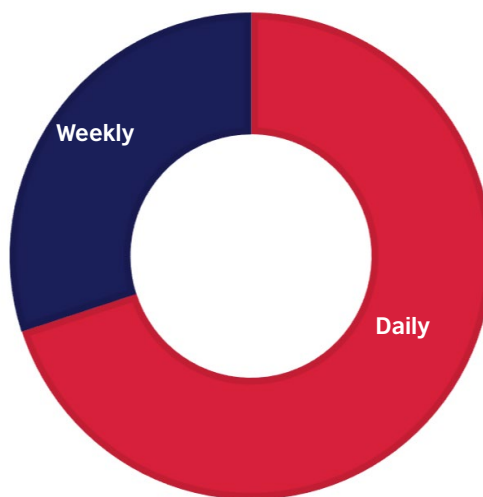


Figure 5: Frequency of using digital resources in Maths after training

To collect data related to the support provided by school leaders, an interview was conducted with the principal of the international section. This interview aimed to provide insights into how school leaders were involved in facilitating the training programme and their expectations of it. It also sought to explore their assessment of the training's impact on teachers and students, as well as their views on the next steps in the research process.

All participants granted their consent to take part in the data collection process.

Key findings

These are the key findings from a study on the implementation of a teacher training programme designed to enhance the integration of digital resources in maths teaching.

- The researcher had positive thoughts towards implementing the teacher training programme, despite potential challenges in finding the appropriate time and format for training.
- The researcher believed the training would be highly beneficial for Maths teachers due to several reasons: the programme addressed the 'why' behind using digital resources and how they could be integrated in harmony with teachers' regular practices. It also offered practical ideas and tutorials for various digital resources applicable to Maths instruction.
- Teachers found the training satisfying, leading to increased usage of digital resources in Maths teaching.
- Teachers appreciated the categorisation of digital resources in the modules based on their usage, which greatly assisted in selecting the most suitable resource for lesson objectives.
- Teachers found that further training on finding the suitable digital resources can assist them further in their practice.
- The principal played an extremely important role in implementing the training programme by facilitating arrangements and integrating it into the timetable alongside other training programmes. She held high expectations for the training to equip Maths teachers with new skills to effectively utilise digital resources in Maths classes.
- The principal emphasised the importance of exploring technology's role in education, suggesting potential expansion of research to improve student outcomes across various subjects beyond mathematics.





**‘I love how it’s like playing a video game,
but I’m learning at the same time!’
A fifth grader in the focus group discussion**

Conclusion

The action research on integrating digital resources in Maths instruction provided valuable insights. Students showed higher engagement levels and improved ability to achieve conceptual understanding of Maths concepts. They also appreciated continuous access and flexibility when using independently. The teacher training programme, focusing on the expected benefits and providing practical tools, contributed to enhanced teachers’ confidence and increased digital resource usage in their Maths classes. The principal’s beliefs regarding using digital resources in education, assisted in successful implementation of the training programme and will direct its application for a larger number of students and for multiple subjects other than Maths.

Moving forward, enhancements in the school development cycle could include refining and expanding teacher training programmes, and incorporating feedback to meet evolving needs. Efforts to ensure equitable access to digital resources for all students are also crucial.

Use of digital resources can be expanded to other subjects aiming to enhance students’ learning in all subjects. By prioritising the integration of digital resources and leveraging insights from this research, the school can foster innovation and excellence in mathematics education, benefiting both students and educators.

These findings are not confined to the specific school but hold relevance globally. The successful integration of digital resources is imperative, as demonstrated by the outcomes of this research. It emphasises the need for ongoing professional development opportunities to equip educators with the skills to effectively integrate digital tools into their teaching practices.

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Acknowledgements

I would like to thank the British Council for funding and facilitating this research. I am sincerely thankful to my mentors, Sirin Soyoz and Kathleen O’Hare, for their guidance and support throughout this journey.

I would also like to express my gratitude to the leadership team at Al-Ridwan Schools for their encouragement and facilitation of this research. My thanks also extend to the Maths teachers, students, and parents who took part in this study.

Lastly, I am grateful to my family for the help and support they provided, without which this work would not have been possible.

AI tools were utilised for data analysis and summarisation.

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