

**A Multiple-Case Study: The Deployment of Allied Educators
(Learning and Behavioural Support) in Singapore Mainstream
Primary Schools**

Siew Hui Li, June

UCL Institute of Education (IOE)
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DECLARATION

I, Siew Hui Li June, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

ABSTRACT

Despite the growth of international research on paraeducator deployment, the understanding of its working in Singapore remains nascent.

This study seeks to address the limited knowledge of paraeducator deployment in Singapore by examining how Allied Educator (Learning and Behavioural Support) [AED(LBS)] spend their time in school, how they work with the school community of teachers and school leaders, and the factors that affect the process of working together using Wenger's (1998) community of practice framework.

This study adopted a multiple case-study design with two phases. Phase One employed a survey questionnaire to determine how AEDs(LBS) spend their time in school. Its findings provided an objective understanding of the AED(LBS) role which is currently lacking in the literature. Its findings also assisted in the shortlisting of cases for Phase Two of the multiple-case study i.e. the interviews. Phase Two consisted of a multiple-case study involving in-depth interviews with AEDs(LBS), teachers and school leaders to understand how AEDs(LBS) worked with the school community. Both phases were piloted to refine the tools used in the main study. Data collected was analysed using the thematic analysis approach.

Findings revealed that AEDs(LBS) had an intangible impact on their school community in the form of *voice* and *visibility*. *Voice* enabled AEDs(LBS) to express their participation, proficiency, initiative or confidence while *visibility* enabled colleagues to see their role-related participation, through their physical presence and the products of their participation. AEDs(LBS) who demonstrated *voice* and *visibility*, gained the *trust* of the school community and were better able to influence the school community to take ownership of students with SEN. Leadership and AED(LBS) factors were found to influence *voice* and *visibility*.

Crucially, the study found that AEDs'(LBS) voice and visibility can be influenced to improve partnership outcomes in school. The findings encourage a reimagination of the paraeducator role as an agent of change who can influence the school community to assume a shared responsibility in SEN.

IMPACT STATEMENT

This research study was undertaken in response to the dearth of literature relating to paraeducator deployment in Singapore. Allied Educators (Learning and Behavioural Support) or AEDs(LBS) support students with Special Educational Needs (SEN) in mainstream schools. Within the whole-school approach to support that these schools subscribe to, partnership between AEDs(LBS), teachers and school leaders takes on an increased significance. Yet, little is known about AEDs'(LBS) role in relation to these colleagues. The inclusion of students can only be as successful as the inclusion of AEDs(LBS) into the school community. Therefore, this study sets out to understand AEDs(LBS) deployment in context of their partnership with teachers and school leaders.

Using deployment surveys and interviews, the study examined how AEDs(LBS) spent their time in school, how they worked with teachers and school leaders, and the factors that affect the process of working together. Findings revealed that AEDs(LBS) had an intangible impact on their school community in the form of *voice* and *visibility*. *Voice* enabled AEDs(LBS) to express their participation, proficiency, initiative or confidence while *visibility* enabled colleagues to see their role-related participation, through their physical presence and the products of their participation. AEDs(LBS) who demonstrated *voice* and *visibility*, gained the *trust* of the school community and were better able to influence the school community to take ownership of students with SEN.

Crucially, the study found that AEDs'(LBS) voice and visibility can be influenced to improve partnership outcomes in school. These findings encourage the Education Ministry, school leaders and AEDs(LBS) alike, to reimagine the AED(LBS) role as agents of change who can influence the school community to assume a shared responsibility in SEN. This role of influence that AEDs(LBS) can hold in school can enhance the appraisal of their paraeducator role, which has historically been held in low regard.

For a start, schools might find the AED(LBS) deployment survey, created as part of the study, useful for examining AEDs'(LBS) baseline visibility in schools. Education Ministry, school

leaders and AEDs(LBS) will also benefit from the practical recommendations that can elevate AEDs'(LBS) *voice* and *visibility* to increase AEDs'(LBS) influence on the school community.

This study also revisits the need for schools to become more “professionally inclusive” towards AEDs(LBS) (Lim et al., 2014, p. 123). Current findings extend that of the earlier study by presenting *voice* and *visibility* as concepts that can improve AEDs'(LBS) inclusion into their school communities. When AEDs'(LBS) *voice* and *visibility* increase, their school community's trust in them increases, facilitating their acceptance into the school community. More than the provision of tangible support, the AED(LBS) role has evolved into a role of influence in response to the whole-school approach that frames their employment and deployment. Therefore, the Education Ministry and training bodies which prepare the AEDs(LBS) for their employment in school need to be aware of this role shift and adjust their training curriculum to respond to this role shift.

The impact of the study provides Singapore mainstream schools with a roadmap of voice, visibility, and trust for effective partnerships among SEN stakeholders, enabling progression in their inclusive journey. The impact of study can also be applied in a global context. Singapore's deployment of paraeducators in a whole-school approach can be significant for education systems which are at the nascent stage of their inclusive education journey as a way of coping with limited resources. For countries with established SEN support systems in schools, the findings can provide guidance for the cultivation of SEN communities of practice in schools. A stable core community can be a source of strength and support for paraeducators, especially those who are learning to navigate deployment challenges in areas such as role definition, communication and collaboration, and training.

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I am so thankful for my course mates, my small community of practice who journeyed with me from the start, whose camaraderie provided assurance and comfort in this otherwise lonely undertaking.

Finally, my deepest gratitude to my family who walked with me throughout this long journey, for being my refuge, for understanding my long periods of “absence” and for selflessly providing the space for me to grow professionally.

REFLECTIVE STATEMENT

The reflective statement has been written to fulfill the following requirements:

- Brief description of and reflection on the content of the assignments
- Reflection on the relationship between assignments and on progression across the taught courses and assignments
- Evidence of the development of your ideas for the institution-focused study (IFS) and thesis and how the coursework you have done relates to them
- Consideration of the relationship between the work you have done as part of the EdD programme and your professional practice and development

Introduction

As an experienced practitioner in dyslexia and a programme leader of a higher degree programme in SEN, I came to a point of my career where I could benefit from greater engagement of theory to augment my existing practical knowledge and skills. I also needed to extend my education research skills which would benefit the students I would be supervising. With these motivating factors, I embarked on my Doctor in Education (EdD) journey.

The Taught Courses

In the first module (Professionalism, Ethics and the Self), I explored how professionalism could be developed and sustained within the practice of educational therapy. I had the chance to examine the concept of professionalism was examined against the unique context of my organisation, its regulatory board, and the market conditions surrounding the organisation. Reflections on professionalism highlighted the temptation that my non-profit organisation faces in the lucrative tuition industry in Singapore. A reconsideration of the organisation's deontological duties and a recommitment to its moral obligations was needed. The organisation has to remain true to its mission of helping dyslexics achieve and guard itself from the distractions of profits. Educational therapists should continue to be cognizant of how their role differs from that of tuition teachers. The example of Don Quixote, the fictitious knight in

the novel by Cervantes was insightful. He exemplified the quality of faithfulness to one's deontological duties, albeit in an extreme manner. He lived his life according to the 'logic of appropriateness or identity' which allows him to act according to the concept of himself, instead of the 'logic of consequences' and was hailed for his dogged persistence amidst ridicules (March & Weil, 2005, p. 86). Yet, when he regained his sense at the end of his life, he ironically regretted his obsession with the identity of a knight, his extreme actions and foolishness. This module impressed upon me the need to uphold my deontological duties with reflexivity. As a leader in a non-profit organisation, I am first and foremost guided by my values and ethical obligations. Yet, I must maintain a keenness for critical reflection, the wisdom to avoid absolutism, a sensitivity to nuances, the courage and humility to rectify one's position when required.

In the second module (Critical Inquiry in Educational Research and Professional Practice), I was introduced to the various framings of social sciences research and the methodological implications of these different views. Through the assignment, I established the philosophical framework for my proposed topic which guided my method and design of my study. I also discovered my inclination towards the positivist paradigm in research which was not surprising given my undergraduate training in psychology. The positivist paradigm is aligned with a deductive approach to research; it starts with a theory, making deductions and finally generalising (Hairon et al., 2007). This module made known to me the invisible philosophical forces that guided a researcher's study method and design.

The third module (Research Methods I: Answering Questions with Quantitative Data) followed up on what the previous module had established. I developed skills in using statistical tools that enabled me to analyse quantitative data. This module impressed upon me the elements of any good research: cohesion in ideas, rigour and thoroughness in design and perceptive data analysis. Beyond the research design, a good researcher should also be able to communicate his or her research effectively to an "outsider". The presentations I had to do in this module trained me to crystallise and simplify my convoluted thoughts and taught me to separate important information from contextual and background information. While I was unable to apply the quantitative research skills to my IFS and thesis which were of a qualitative

nature, the fundamentals of a robust research design acquired through this module nevertheless provided the foundation for the IFS and thesis.

The fourth module (Answering Questions with Qualitative Data) introduced me to the basics of a qualitative research. Influenced by my inclination towards the positivist paradigm, I used to value quantitative studies over qualitative ones, with a misconception that qualitative studies were inferior to quantitative ones. Therefore, this module was pivotal in bringing about a paradigm shift in my thinking. I started to appreciate the differences between quantitative and qualitative research and the different angles that they brought to the understanding of the phenomenon. I also learnt that the trustworthiness of findings did not depend on the nature of the study, but rather, the measures that had been put in place to increase credibility of findings. A careful and deliberate discussion on qualitative articles highlighted the characteristics of well written qualitative research articles which suitably became a set of criteria for me to evaluate my own IFS and thesis against. These characteristics included: clarity and transparency about data collection methods, detailed explanation about how researchers arrive at their findings, rich and descriptive information about the findings and the employment of techniques to ensure accuracy and reliability of data, such as the triangulation of data, use of inter-raters, and member-checking.

This last taught module (Conceptualising and Writing the Research Proposal) required me to refine my IFS research proposal in consultation with my assigned supervisor. Apart from the specialized knowledge that my supervisor was able to offer as an expert and practitioner in the field of dyslexia, what was significant for me in this module was also the initial experience of working together with a supervisor. This learning stood out for me because of my dual role; a supervisee on the EdD programme and a supervisor on the master programme in my workplace. In any supervisor-supervisee relationships, a mismatch of styles or any conflict can derail a student from the main focus – the completion of their studies. One might argue that different supervisory styles are expected, given their differing personalities; some leave you alone, while others assume a more supportive role. As a supervisor myself, I choose to be guided by my deontological duty and moral obligation as a supervisor, committing myself to provide the best support for students who have been placed in my care. This deliberate and

conscious decision translated to actions such as setting aside dedicated and protected time for one-to-one consultations with my students and contacting them regularly so that they feel supported throughout the entire journey.

Development of ideas for IFS and thesis and how the course work has related to them

While my Institution Focused Study (IFS) was originally of a positivist paradigm, a series of circumstances altered my plan. I had a change of supervisor because my initial supervisor left the university. Being more familiar with qualitative research, the new supervisor encouraged me to switch to a qualitative research study. As I had gained the necessary qualitative knowledge and skills in the earlier module, I was flexible enough to change. I also took the opportunity to examine a topic that would be more relevant to my current role as an educator in the field of SEN. I eventually arrived at my IFS which sought to understand how Allied Educators (Learning and Behavioural Support) or AEDs(LBS) and teachers collaborate in mainstream primary schools. While external circumstances provided the initial push for the shift of research paradigm, I did not take long to relate to the new interpretive paradigm. My past teaching experiences with adult learners had illustrated the existence of multiple realities, where the same information was often construed very differently by individuals because of their individual differences and varying social learning experiences. Therefore, my personal history had inadvertently helped me to embrace the ontological assumption of the interpretive paradigm. Thereafter, the epistemological assumption of the interpretive paradigm guided me to rely on AEDs'(LBS) sharing of experiences and views to understand the collaboration that they had with their teaching colleagues. Through the IFS, I was able to carry out an exploratory groundwork that provided an important foundation for the thesis. Through the IFS, I found that AED(LBS)-teacher collaboration rarely took place in the mainstream classrooms, contrary to the understanding in the international research literature. IFS findings also found that AED(LBS)-teacher collaboration did not involve classroom co-teaching arrangements as had been commonly reported in the literature. The preliminary investigation of the topic through the IFS has proven to be crucial in setting the context and tone for the thesis research. To distinguish between paraeducator-teacher collaboration as commonly depicted in the literature and AED(LBS)-teacher collaboration as what had been demonstrated in the IFS, I chose not to use

the term “collaboration” to describe the work between AEDs(LBS) and teachers in the thesis, preferring the term “partnership” because of its neutrality.

My focus on AED(LBS) deployment in the thesis was a natural extension of the work done in the IFS. In the IFS, AED(LBS)-teacher collaboration was explored as a stand-alone topic. In the thesis, my early understanding of how AEDs(LBS) and teachers work together developed into a more thorough and holistic investigation of the topic. I wanted to know how AED(LBS) deployment impacted how AEDs(LBS) worked together with their colleagues. The investigation of two constructs and their relationship led to factors that provided insights for improving AED(LBS) deployment and subsequently, educational inclusion.

How work on EdD has impacted professional practice and development

The work on EdD has impacted me at various levels: as an AED(LBS) educator, as a lecturer and as a manager in my organisation.

The thesis findings have important implications on my role as an AED(LBS) educator. The findings point to the role of training in enhancing AEDs’(LBS) impact visibility, which has the potential to increase their school community’s trust in them. Therefore, because the training that I provide to AEDs(LBS) have far reaching consequences on their influence and impact in school, there is greater professional and moral obligation for me to ensure that the training provided to AEDs(LBS) is relevant and responsive to their needs. Additionally, subject to minor modifications, the survey that has been developed as part of the thesis research can be used to ascertain the level of influence that AEDs(LBS) have on their wider school community. The tool can be a valuable conversation-starter for AEDs(LBS), school leaders, teachers and the Psychological Services Branch (PSB) of the Ministry of Education (MOE), all of whom will benefit from a clearer understanding of how AEDs(LBS) spend their time in school and the impact of their role on the school community, paving the way for a deeper discussion on ways to enhance AEDs’(LBS) influence in schools. The executive summary of recommendations arising from my findings provides a roadmap for schools who are keen to capitalize on AEDs’(LBS) influence on the school community through their voice and visibility, with the aim of inspiring teachers to take greater ownership of students with SEN. The thesis findings hold potential for a greater

involvement in SEN support among teachers, making our mainstream schools more inclusive for children with SEN.

As a lecturer on various courses including a higher degree programme, the rigorous EdD programme has directly enhanced my professional role. I have become more competent and confident in my research knowledge and skills which has directly enhanced my dissertation supervisory ability, placing me in a stronger position to guide students to produce quality and practical SEN research aimed at improving the provision of SEN support in Singapore. Furthermore, the theoretical insights gained through the EdD has provided an anchor for my 17 years of practical experience in the field. With my practical teachings now being strongly backed by a framework of theory and principles, my increased proficiency will directly impact my students, who will become well-equipped thinking professionals who can bring SEN support in Singapore to the next level, and importantly, contribute to the currently limited SEN expertise in Singapore mainstream schools (Ang, 2020).

The critical thinking ability which I have developed in my EdD journey has lent itself to the solving of practical issues that I encounter in my management role in my training organisation. It has also awakened in me the moral and ethical obligations I have as a leader in this field of work. As a manager, I am also in a position to steer my organisation in directions that fulfill our deontological duties of empowering parents and educators with dyslexia support skills. And conversely, to steer it away from activities that can distract us from our moral obligation. With greater proficiency and confidence in research skills, I am also now in a stronger position to provide direction or supervision for the research team in the organisation.

I embarked on the EdD, expecting to be challenged in my critical thinking, be intellectually stimulated, be engaged in a scholarly manner and be more skillful in my research and communication abilities. While I have certainly developed in all of these aspects, I have also unexpectedly gained in areas that I least expected. Beyond an academic pursuit, the EdD has developed me holistically as a person; it has built up my inner strength, grit and resilience. My seven-year long journey has been a constant struggle given the other multiple roles that I hold. Besides being a part-time EdD student, I hold leadership and teaching responsibilities at work

and mothering and tutoring responsibilities at home. These battles became even more pronounced during the pandemic in the last two years with the boundaries between work, study and family becoming more ambiguous as everyone started to work from home during the lockdowns. I could no longer rely on the physical boundaries to psychologically compartmentalise my multiple roles. The physical boundaries which once brought relief to me were suddenly removed, creating chaos as my multiple roles and responsibilities collapsed into a single space, all at once. When the journey got especially lonely and tough, I was only able to push ahead because of my faith, my community of practice which included my critical friends who kept me constantly engaged me in academic conversations, support from my family, and the many long jogs which gave me the private space to think and reflect. I do not recall any experience more challenging than the one the EdD has offered. Yet, without this EdD journey, I would not have had a chance to push my limits, to experience the sense of wholeness and self-fulfillment that I have otherwise gained.

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LIST OF ACRONYMS AND ABBREVIATIONS

AED(LBS)	Allied Educator (Learning and Behavioural Support)
ADHD	Attention-Deficit Hyperactivity Disorder
CMT	Case Management Team
DAS	Dyslexia Association of Singapore
DISE	Diploma in Special Education
HOD	Head of Department
MOE	Ministry of Education
NIE	National Institute of Education
PLCs	Professional Learning Communities
RO	Reporting Officer
RTI	Response-To-Intervention
SEN	Special Educational Needs
SENCos	Special Educational Needs Coordinators
SDT	Student Development Team
TSN	Teachers trained in Special Needs

CHAPTER 1

Introduction

Prelude

Paraeducators facilitate the inclusion of students with Special Educational Needs (SEN) in mainstream schools. The practice of using paraeducators in inclusive schools is evident across countries such as Australia, Hong Kong, Italy, United States (US), Singapore, United Kingdom (UK) and Ireland (Bourke, 2009; Chan et al., 2020; Devecchi et al., 2012; Giangreco, Edelman, Broer, et al., 2001; Walker & Musti-Rao, 2016; Webster et al., 2016; Zhao et al., 2021). “Paraeducator”, as its name suggests, is an individual who works alongside an educator. Tasked with facilitating the inclusion of pupils with SEN in mainstream schools (Webster & de Boer, 2021a), they have come to be known by a variety of terms, such as paraprofessionals in the US (Giangreco et al., 2010), teaching assistants (TAs) in Australia, Hong Kong and UK (Butt, 2016a; Chan et al., 2020; Webster et al., 2016), support teachers in Italy (Devecchi et al., 2012) and allied educators (learning and behavioural support) [AEDs(LBS)] in Singapore (Lim et al., 2014). In Singapore mainstream schools, AEDs(LBS) hold a non-teaching role and are given the important responsibility of supporting students with SEN in mainstream schools through intervention provision, consultation provision and liaison with stakeholders (Ministry of Education, 2021).

Previous research has examined deployment of paraeducators by understanding the paraeducator role in schools and classrooms. A common way of doing so is to examine the entire range of school tasks that paraeducators engage in to elicit a broad overview of the paraeducator role. Webster et al. (2016) described deployment of paraeducators in terms of all the tasks they perform in school, the frequency with which they perform those tasks and the time spent doing them. Devecchi et al. (2012) examined deployment in terms of the “hats” that paraeducators wear and the responsibilities they carry in school (p. 177). Likewise, Riggs and Mueller (2001), examined the “utilisation” of paraeducators by getting paraeducators to report how they spend their time on eight listed roles and responsibilities in school. Giangreco and Broer (2005) also examined how paraeducators are utilised in school by getting them to report

their time-use in seven listed task categories. Even though these researchers have used “utilisation” instead of “deployment”, essentially, these terms convey the same meaning; they describe the tasks paraeducators do at a general whole-school level (Giangreco & Broer, 2005; Riggs & Mueller, 2001). Other studies, instead of attaining a general understanding of the paraeducator’s role, have chosen to narrow in and focus on the paraeducators’ role within the classroom. Butt (2016b) provided insight on how paraeducators worked with students in classrooms through the five models of student support that were identified across four mainstream primary schools. Cremin et al. (2005), likewise, focused on the paraeducator’s role in the classroom but instead of examining how paraeducators worked with students, they were interested in understanding how paraeducators worked with teachers in three different models of partnership.

While international research on deployment of paraeducators has been rife, academics in the field have tended to fix their attention on the same small set of issues (Giangreco, 2021; Webster & De Boer, 2021b). Particularly, Giangreco (2021) noted that there has been an oversaturation of content in the domains of role clarity, training, planning time and supervision. Sharma and Salend (2016) similarly noted this trend in their analysis of paraeducators studies over a ten-year period from 2005 to 2015. There has been pronounced interest on role clarity because of the changing and increasingly instructional roles of paraeducators (Blatchford, Russell, et al., 2012; Butt, 2016b; Giangreco & Broer, 2005; Sharma & Salend, 2016). While some studies have demonstrated the positive impact of paraeducator deployment on student attention and learning (Angelides et al., 2009; Farrell et al., 2010; See et al., 2019; Webster et al., 2010) and on teachers’ job satisfaction and workload (Webster et al., 2010), many have also depicted the negative impact of paraeducator deployment. Symes and Humphrey (2012) found that paraeducators’ continued support negatively impacted students’ independence. Webster et al. (2010) found that paraeducator’ support negatively impacted students’ academic performance, and the relationship was mediated by the compromised quality of paraeducator-to-student interactions (Radford et al., 2011). Furthermore, the excessive paraeducator support that separated students from their mainstream classes (Blatchford, Russell, et al., 2012; Giangreco, 2010a) and reduced students’ interactions with teachers (Webster et al., 2010), was

often criticized for interfering with and even undermining inclusion (Giangreco, 2010b; Giangreco, 2021). In view of the negative outcomes of paraeducator deployment, paraeducator research has also attempted to identify best deployment practices. There has also been consistent interest in the domains of training, planning and supervision because these were deemed to be factors that increase paraeducators' effectiveness (Brock & Carter, 2017; Forlin et al., 2014; Sharma & Salend, 2016). Brock and Carter (2013) outlined certain guidelines in utilising paraeducators to help them to be most effective in the support of their students. Cremin et al. (2005) evaluated the effectiveness of three models of paraeducator deployment in the classroom and found them all to be effective in improving teacher-paraeducator working practices and increasing students' engagement. Blatchford, Webster, et al. (2012), in response to the startling discovery of paraeducators' negative impact on students' academic progress, devised, evaluated and recommended several deployment changes to improve paraeducators' preparedness for support and paraeducators' interactions with students. Few years later, Sharples et al. (2016) issued a practical, evidence-based guidance report for schools on how best to utilise paraeducators.

Yet, as the body of international research literature on paraeducator deployment grows, the understanding of paraeducator deployment in Singapore remains stagnant and limited. The only known qualitative study on paraeducators in Singapore has focused on understanding the identities of AEDs(LBS) in their first year of school (Lim et al., 2014). The study, carried out at a time when the AED(LBS) role was in the foundational years, has provided valuable insights on how AEDs(LBS) perceived their roles as they coped with existing issues of student diversity and their lack of acceptance in the school community. Despite the rapid progress of the SEN landscape in Singapore (Dutt et al., 2019), little is known about the progress we have made in terms of paraeducator deployment. Furthermore, with the Compulsory Education Act recently extended to all students, including those with moderate to severe disabilities (Teng & Goy, 2016), mainstream schools can expect to see a slight increase in the number of special needs students (Tan, 2020). Putting the two together, it is therefore timely to revisit and follow up on how Singapore schools are deploying AEDs(LBS). After all, improvements in how these "agents

of inclusion” (Strogilos & Lim, 2019, p. 373) are being deployed, provides an insight into the extent of progress Singapore has made with regards to educational inclusion.

Usage of Terms and Literature Review Parameter

In this thesis, the term “paraeducator” is employed as an umbrella term to collectively refer to educational practitioners who work alongside educators in mainstream schools to support students with SEN. The term “paraeducator” will replace the original terms used in the different research papers and these include “paraprofessional”, “teaching assistant” and “teacher assistant”. However, for the purpose of clarity, paraeducators in Singapore will be referred to as “AED(LBS)” whenever reference is made to the Singapore context.

Unique to Singapore mainstream schools, the AED(LBS) is a professional role that lies between the conventional roles of a special educator and a paraprofessional (Lim et al., 2014). This only known local study on AEDs(LBS) had relied on para-professional literature in the US for insights given the close similarity in status between AED(LBS) and paraeducators in the US (Lim et al., 2014). AEDs(LBS) have a humble status in schools and some AEDs(LBS) face exclusion in their school communities (Lim et al., 2014). Furthermore, unlike teachers, AEDs(LBS), do not possess formal teaching qualifications from the National Institute of Education (NIE) (Walker & Musti-Rao, 2016). A lack of formal teaching qualifications in a context dominated by trained teachers can exacerbate the sense of disparity that AEDs(LBS) are already feeling towards teachers. Therefore, taking a lead from Lim et al. (2014), this study examines literature that pertains to paraeducators with similar status as the AEDs(LBS). Paraeducators with similar status would hold comparable roles and have similar experiences, making it more equitable for comparisons. Similarity in status, is used as a key criterion for determining the bodies of literature that will be included in this study. Like the AEDs(LBS), “paraprofessionals” in the US (Giangreco et al., 2010), “teaching assistants” or “teacher assistants” in Australia (Anderson et al., 2007; Butt & Lowe, 2012) and “teaching assistants” in UK (Webster et al., 2010) do not possess formal teaching qualifications (Butt, 2017; Carter et al., 2009). They were regarded as having similar status as AEDs(LBS) and were therefore included in this literature review. On the other hand, another group of educational practitioners, Special Educational Needs Coordinators (SENCOs) in the UK were excluded because they tended to be “qualified teachers” (Mackenzie,

2007, p. 216) with a leading and strategic role in schools (Cole, 2005). The SENCo role requires them to implement inclusion policies in schools, deploy SEN resources and provide pedagogical advice to teachers and teaching assistants and work within the senior management team (Mackenzie, 2007). The responsibilities of a SENCo suggest a role with a status that is on par with teachers, if not higher, placing them in a category apart from the AEDs(LBS).

This study has also chosen to focus mainly on paraeducator literature in US, UK and Australia for the following reason. Paraeducator deployment is highly dependent on its context; it is country specific and even school specific. These three countries alone contributed to 84 per cent of paraeducator studies published between 2005 to 2015 (Sharma & Salend, 2016). The rich and robust paraeducator research in these countries allows readers to better access and attain a fuller appreciation of the contexts in which these studies are situated, ensuring a more accurate interpretation of findings.

In line with the inclusion criteria, relevant articles were retrieved from the electronic library search tool of University College London (UCL) using these primary phrases: teaching assistants, teacher assistants, teacher aides, paraprofessionals, special needs assistants, paraeducators, AED(LBS), mainstream SEN support, support staff. The titles of the articles were deemed to be relevant if they also contained any of the following key words: deployment, utilisation, inclusion, inclusive education, mainstream schools, primary schools, teacher collaboration, role, training, impact and effectiveness. Articles were mostly excluded if they did not: (a) focus on paraeducators who support students with SEN and (b) pertain to literature in US, UK or Australia.

Paraeducators in Singapore: AEDs(LBS)

Educational Context

A brief introduction to Singapore's Special Educational Needs (SEN) landscape is described to provide the context for AEDs'(LBS) practice. Singapore's journey toward inclusion started in 2004, when the government first announced the vision of an inclusive society at the 2004 National Day Rally (Ministry of Information Communication and the Arts, 2004). Amongst many other initiatives, this call towards an inclusive society created the role of the AED(LBS)

(then known as Special Needs Officers) in mainstream schools. With a continued emphasis on inclusion, Ministry of Education (MOE) has continued to reinforce the support system in mainstream schools. To date, other than the AEDs(LBS), schools are now staffed with a team of dedicated school personnel to provide SEN support for students who need it. Amongst them are Teachers trained in Special Needs (TSN), teachers who run the Learning Support programmes in literacy and math, allied school counsellors and visiting MOE Educational Psychologists (Dutt et al., 2019).

Singapore functions on a dual-track education system (Lim & Nam, 2000; Lim et al., 2014) where students with typical development attend mainstream schools while students with SEN attend special schools (Walker & Musti-Rao, 2016). Despite the commitment of mainstream schools to provide a “variegated education landscape” that will meet the needs of all students including those with SEN (Strogilos & Lim, 2019, p. 369), the nature of the dual-track system nevertheless renders access to the mainstream education system difficult for some, especially students with moderate to severe SEN (Poon et al., 2013). In fact, these students with higher needs comprise 20 per cent of the SEN population and they attend the Special Education (Sped) schools, while the other 80 per cent attend mainstream schools (Ang, 2020). Therefore, in mainstream schools, AEDs(LBS) hold the important role of supporting the learning and behaviour of students with milder SEN (Ministry of Education, 2021; Walker & Musti-Rao, 2016). Among the students that AEDs(LBS) supported, the top five most encountered SEN profiles are dyslexia (18.9 per cent), autism spectrum disorder (ASD; 16.4 per cent), attention-deficit hyperactivity disorder (ADHD; 13.8 percent), speech and language disorders (11 per cent) and intellectual disability (8.6 per cent) (Lim et al., 2014).

Role of AED(LBS) within the Educational Context

There are 600 AEDs(LBS) (Teng, 2020) distributed across 185 mainstream primary and 143 mainstream secondary schools (Ministry of Education, 2020), resulting in an average of one to two AEDs(LBS) (Strogilos & Lim, 2019), to support the population of about 1000 to 1500 students in each school (Ministry of Education, 2020). The modest AEDs(LBS) workforce size in Singapore is a stark contrast to the large paraeducator workforce in countries such Australia, US and UK (Butt, 2016b; Giangreco & Broer, 2005; Webster et al., 2016).

The model of support that is provided for students with SEN in mainstream school is based on the whole-school framework for learning, emotional and behavioural support (Chong et al., 2013; Dutt et al., 2019). This systematic whole-school framework is similar to that of the Response-to-Intervention (RTI) approach, which is built on the premise that timely detection and early intervention is as important as intensive intervention support (Berkeley et al., 2009). Essentially, when school-level programmes available to all students at the first tier are unable to sufficiently address the specific needs of certain students, support will be progressively intensified through the second tier and the third tier (Dutt et al., 2019).

In the three-tier whole-school support framework of support adopted by Singapore mainstream schools, AEDs(LBS) play the most critical role in the tier two and three where they are directly involved in supporting students, although they also have an indirect involvement at tier one. At tier one, the aim is to reduce academic risks and improve the outcomes of identified students with SEN through the teachers' frontline provision of effective teaching practices and their astute identification of students at-risk of SEN (Fuchs & Vaughn, 2012). At this point, teachers may involve various school personnel indirectly and approach them for support (Chong et al., 2013), such as the AEDs(LBS) to seek their SEN expertise. Students who remain unresponsive to classroom instructions at tier one, despite the quality instruction received, are supplemented with intensive group instruction at tier two (Fuchs & Fuchs, 2006; Fuchs & Vaughn, 2012). Tier two support involves the direct involvement of school personnel trained in SEN (Chong et al., 2013). Teachers trained as coordinators in literacy (Learning Support Coordinator, LSC) and math (Learning Support in Math, LSM), teachers trained in special needs (TSNs), as well as the AEDs(LBS), provide support to students with SEN in addition to the regular classroom instruction that they receive, through out-of-class small group intervention programmes (Dutt et al., 2019). Finally, students who remain unresponsive at tier two are given one-to-one instruction of highest intensity at tier three (Berkeley et al., 2009). At tier three, the aim is to provide immediate and intensive intervention (Fuchs & Vaughn, 2012), usually for students with severe SEN needs who need out-of-class one-to-one intervention support (Dutt et al., 2019). The supplementary one-to-one support was delivered mainly by the AEDs(LBS) who mostly withdrew students during their non-core curriculum hours (Lim et al.,

2014). AEDs(LBS), in contrast to their contemporaries in US and UK, have the liberty to provide in-class or withdrawal intervention support for students with SEN (Lim et al., 2014; Yeo et al., 2016). However, paraeducators in UK and US, often have to act under the direction of qualified teachers (Watkinson, 2002; Webster et al., 2010), especially because of legislation that stipulates that lesson planning belong to the purview of teachers, not paraeducators (Fisher & Pleasants, 2012).

A whole-school framework operates on the premise that the needs of the entire school population cannot be fully borne by the small group of SEN personnel within each school (Lam & Hui, 2010). This is especially important because of the very limited number of AEDs(LBS) within each Singapore mainstream primary or secondary school. A whole-school support framework seems logical for Singapore because the first tier plays a crucial role in reducing the number of students requiring intervention support over time (Fuchs & Vaughn, 2012). Therefore, the whole – school framework can possibly reduce a support bottleneck at the third tier and prevent a situation where demand for support services outweighs the availability of AED(LBS) support. However, the success of a whole-school framework hinges on a mind-set shift on the part of teachers as they must be willing to accommodate the additional responsibilities of their expanding role (Chong et al., 2013). They must be willing to cross the traditional lines that demarcate their practice. Furthermore, these teachers will require the necessary knowledge and skills to take the extra steps (Chong et al., 2013).

Therefore, the above-described educational context that forms the background of AEDs'(LBS) practice in mainstream schools and establishes how their practice stands alongside that of teachers in their school. In this current model of support, it is pivotal that the deployment of AEDs(LBS) also takes into consideration how AEDs(LBS) work and interact with their teaching colleagues to fulfill a whole-school approach to support.

AEDs'(LBS) Qualifications and Training

The minimum qualification to be an AED(LBS) is a polytechnic diploma or General Certificate of Education (Advanced Level) or GCE A-level qualifications (Yeo et al., 2016). The requirements are more demanding compared to that in other countries. In several large-scale

studies on paraeducators, a significant proportion of paraeducators only had an equivalent of high school education (equivalent to secondary school education). For example, in the Deployment and Impact of Support Staff (DISS) project in the UK, 59 per cent of paraeducators had their highest qualification below or at General Certificate of Secondary Education (GCSE) level while 16 per cent had a degree and beyond as their highest qualification (Blatchford, Bassett, Brown, Martin, et al., 2009). Giangreco and Broer (2005) noted 48 per cent of paraeducators surveyed were high school graduates while the others had qualifications beyond that. In Australia, about 30 per cent of paraeducators had high school qualifications and slightly less than 10 per cent had a bachelor's degree (Carter et al., 2019).

Upon employment, AEDs(LBS) are required to attend the one-year full-time programme (Diploma in Special Education) at Singapore's National Institute of Education (NIE) where they will be acquainted with the skills of identification, planning, intervention and progress monitoring (Walker & Musti-Rao, 2016). Upon completion of the DISE programme, AEDs(LBS) continue to have access to continuous professional development through a variety of modular, skills based in-service courses offered to them via an MOE digital learning space. While there are no statistics available regarding the enrolment size or effectiveness of the in-service training scheme, the intended overall training programme for AEDs(LBS) is in contrast with practices in other countries. In Australia, schools are allowed to employ casual paraeducators on a needs basis (Butt, 2016a) which can make the standardisation of training challenging. Moreover, in Queensland, there was an assumption that paraeducators' training needs were not unique and distinct from that of teachers, just that the former had to do it mostly within their own time and in a condensed manner (Bourke, 2009). In the UK, there are no national standards for support staff's qualifications (Ofsted, 2010). In US, districts provided little initial training which varied across the districts (Riggs & Mueller, 2001). Furthermore, on-the-job training continued to constitute almost half of all training compared to more formal and structured training such as in-service and conference training which were in the minority (Carter et al., 2009).

Statement of the Problem

Given the atypical paraeducator deployment context in Singapore, especially in terms of paraeducator workforce size and training differences, international research findings only have

partial relevance for understanding AED(LBS) deployment in Singapore. Furthermore, the whole-school support model adopted by Singapore mainstream to support pupils with learning, emotional and behavioural needs meant that the responsibility of meeting the needs of each student no longer lies solely with the AEDs(LBS), rather, the responsibility has to be shared among all teaching staff in school (Chong et al., 2013). The modest number of AEDs(LBS) within each school further reinforces the importance of AEDs'(LBS) partnership with teachers. With a joint responsibility in SEN support, every teaching staff eventually becomes a stakeholder who must partner the AEDs(LBS) to enable effective inclusion of students with SEN. In this context of a whole-school framework of support, understanding of AED(LBS) deployment must be examined alongside AEDs'(LBS) role and relevance in the wider community of teachers and school leaders. While informative, the conventional approach of understanding deployment solely through an analysis of the tasks paraeducators perform (Carter et al., 2019; Fisher & Pleasants, 2012; Giangreco et al., 2011; Riggs & Mueller, 2001; Webster et al., 2010) neglects the "fuller context" that frames deployment (Giangreco, 2021, p. 289). As Giangreco (2021) illustrates, while it is important to understand the paraeducator's role, it is equally important to understand the intersection of the role with that of other colleagues. The appropriateness of deployment should also be measured against what matters in its own unique context. Given the reality of the whole-school support model in Singapore mainstream schools, it becomes important to understand AED(LBS) deployment in context of their partnership with teachers and school leaders. Therefore, this study seeks to understand how AEDs(LBS) spend their time in schools, and how this impacts their partnership with teachers and school leaders.

Much of what we know about paraeducators' partnership with the school community comes from studies examining co-teaching between paraeducators and teachers in classrooms (Friend et al., 2010; Friend et al., 1993; Mastropieri et al., 2005; Murawski, 2011; Scruggs et al., 2007; Strogilos et al., 2016). While studies on collaboration extended the investigation to additional forms of teamwork, other than co-teaching, the focus continued to center on role division that occurs directly in classrooms (Devecchi & Rouse, 2010; Pellegrino, 2015; van Garderen et al., 2012). In comparison, fewer studies have focused on paraeducator-teacher collaboration at a broader level, which can involve on-going collaboration outside the

classrooms. For example, Jones (2012) discussed the use of shared documents and meetings outside the classrooms as means to coordinate the classroom support provided for students with the SEN. Lingo (2011) also suggested ways that paraeducators and teachers can work together inside and outside the classroom to collect data of students' academic learning and monitor their progress. In the Institutional Focused Study (IFS) that preceded this thesis, Siew (2018) described six components of collaboration that AEDs(LBS) and teachers in Singapore mainstream schools engaged in. While one component described collaboration in classrooms, the other five components described collaboration outside the classroom, suggesting the limited presence of in-class collaboration and the significance of out-of-class collaboration in Singapore mainstream schools. The only other known study on AEDs(LBS) also provided instances of collaboration that occurred both inside and outside classrooms (Lim et al., 2014), reinforcing the importance of looking beyond the classrooms to understand paraeducator-teacher partnership in Singapore mainstream schools. A thorough examination of collaboration in the appropriate places, not limited to classrooms, will ensure that AEDs'(LBS) partnership with their school community can be thoroughly understood.

Finally, this study seeks to fill the given the current dearth of knowledge regarding AED(LBS) deployment in Singapore. The only known study on AEDs(LBS) suggested teething issues in the deployment of AEDs(LBS) (Lim et al., 2014). There were signs that schools were not entirely "professionally inclusive" towards AEDs(LBS) (p. 123). While there were some AEDs(LBS) who were valued for complementing the teachers' work, valued for their specialist voice in the school community, had teaching colleagues who regarded them as equals and generously shared teaching manipulatives and curriculum pedagogy with them, there were also signs of deployment challenges (Lim et al., 2014). The study indicated that some AEDs(LBS) grappled with loneliness, had unsupportive school leaders and limited collaboration with teachers, some of whom opposed their presence in mainstream classes and were reluctant to meet up for discussions (Lim et al., 2014). However, the study was done at a time when schools were still adjusting to the placement of AEDs(LBS) in the school system, with AEDs(LBS) themselves exhibiting role confusion as they held varying and inconsistent professional identities (Lim et al., 2014). Given that the SEN landscape in Singapore has progressed rapidly

since (Dutt, Lim, & Thaver, 2019), the findings of the study may no longer be relevant given the passing of time. Additionally, while signs of AED(LBS) deployment woes were evident, previous research has not addressed the factors that can ameliorate or exacerbate these concerns. An understanding of these factors will allow school leaders and AEDs(LBS) to make wiser deployment decisions that can potentially reduce the deployment woes and help AEDs(LBS) to positively influence their teaching colleagues to perpetuate the culture of inclusion in schools. In view of the above reasons, it is timely to revisit and update our understanding of AED(LBS) deployment in Singapore.

Purpose Statement and Research Questions

To obtain a holistic understanding of AED(LBS) deployment in mainstream primary schools in Singapore, this study considers it from two approaches. Firstly, the conventional task-based approach understands AED(LBS) deployment through a systematic examination of the exact roles and responsibilities that AEDs(LBS) perform (questions a and b below). Secondly, the study seeks to understand deployment-in-context, specifically, how AEDs'(LBS) deployment impacts their partnership with their school community of teachers and school leaders (questions c and d below).

The study was guided by the following questions:

How are AEDs(LBS) deployed in Singapore mainstream primary schools?

- a) How frequently do the AEDs(LBS) perform the list of stated tasks?
- b) How much time do AEDs(LBS) spend on the task categories?
- c) How do AEDs(LBS) work with teachers and school leaders?
- d) What factors influenced the process of working with teachers and school leaders?

Personal Perspectives

My previous experience as an undergraduate student and current experience as a dyslexia educator play an important role in the development of the paradigm that I have taken as a researcher. In my undergraduate days, I was acquainted with the positivist/postpositivist interpretive framework (Creswell, 2013), because of my specialisation in psychology, a discipline which values the ability to predict and generalize human behaviour through

controlled experiments. Through this exposure, I used a straightforward, “black or white” pair of lenses to view reality, which was often single, one dimensional and absolute, reminiscent of the positivist/postpositivist paradigm. However, my experiences at the workplace reshaped my view of reality. My experiences with students showed me that the construction of reality often takes place in the minds of individuals, and also shaped by their interactions with the teacher, other students or even people outside their classrooms. Therefore, through my learners, I had the privilege of observing cognitive and social constructivism at play in the classrooms (Powell & Kalina, 2009). I saw how knowledge took on a life of its own in learners. Unknowingly, these experiences introduced me to the concept of multiple realities in the interpretive paradigm (Creswell, 2013). I have since learnt that reality can be subjective; there might be no single reality. This realisation challenged and stirred the ontological assumption of a single reality that I had been familiar with. Gradually, because of my lived experiences, I shifted my outlook, from one of a positivist/postpositivist to an interpretivist (Mackenzie & Knipe, 2006). Yet, while I consider myself a qualitative researcher, unintentionally, my earlier positivist/post-positivist roots had some bearings on the way this qualitative study was conducted. This influence will be addressed in Chapter 4 (Research Methodology: The Main Study).

With qualitative research, I am the main tool for data collection and analysis (Merriam & Tisdell, 2016). Therefore, I have an obligation to explain my experiences and values because these will inevitably influence the interpretation of the data (Creswell, 2013), given the vulnerabilities and prejudices of the human instrument (Merriam & Tisdell, 2016). I have been drawn to this field of SEN work because of professional and personal reasons. As a dyslexia educator, I have been constantly involved in the training and upskilling of AEDs(LBS) in the last 15 years. I do my best to make sure that AEDs(LBS) receive the best training, Yet, to ensure that AEDs(LBS) create the best impact in schools, they had to be deployed effectively, which was something I was uncertain about. My interactions with AEDs(LBS) revealed some inconsistencies in experiences, with some of them more included, supported and respected in their school communities than others. I questioned the factors that could have resulted in this. With this as a starting point, I embarked on this journey to understand AEDs’(LBS) deployment in school. A thorough understanding of AEDs’(LBS) roles and involvement in school informs my

role as a trainer, specifically, to create a training curriculum that is relevant and responsive to their context, which will help them to create the best possible impact on the wider school community of teachers and leaders in school. On a personal front, I am motivated to improve the support experiences of students with SEN in mainstream schools because of my two children who have been diagnosed with dyslexia/ attention-deficit hyperactivity disorder (ADHD). As a mother, I saw how difficult it would be for children with SEN to thrive in the mainstream system with inadequate support, especially since Singapore has one of the most competitive education systems in the world (Tan, 2018). Consequently, I approached this study with a desire to solve what I perceived as “real-life problems” to better the SEN support system in mainstream schools. Nevertheless, while my extensive experiences in this field might have contributed to some preconception in my starting point, it is also important to acknowledge that my access and connections to the AED(LBS) community have also given me a nuanced ability to fully understand their lived experiences, especially when I am not able to rely on the limited body of research on AED(LBS) to inform me of their role, the context they work in, their partnerships with colleagues and their pre-service and in-service training. Therefore, my insider insight becomes a valuable tool for me as a researcher who is committed to making informal knowledge formal through a systematic and methodological research process.

Theoretical Framework: Communities of Practice

Within each mainstream school in Singapore, there is a dedicated group of school personnel who provide educational support services to students with SEN. As trained professionals exclusively tasked with supporting students with SEN, AEDs(LBS) form the backbone of this SEN support infrastructure while being supported by several mainstream teachers who have received some SEN training, but as Yeo et al. (2016) noted, to a lesser extent than the AEDs(LBS). These mainstream teachers consist of teachers trained in Special Needs (TSNs), Learning Support Coordinators for literacy (LSC) and for math (LSM) (Dutt et al., 2019). The AEDs(LBS) and this group of personnel have a shared responsibility, and that is to improve the educational experiences of students with SEN in mainstream schools. They may also serve together on case management teams set up to focus on and discuss the progress of individual students (Lim et al., 2014; Poon et al., 2013; Yeo et al., 2016). With the initiative of the

aforementioned SEN infrastructures put in place in schools by the MOE, AEDs(LBS) now have the opportunity to work with a group of colleagues who share “a common set of situations, problems and perspectives” (Wenger et al., 2002, p. 25). Moreover, Singapore MOE has mandated all schools to become professional learning communities (PLCs) where schools as learning organisations are responsible for cultivating environments that encourage teachers to learn and collaborate together (Bautista et al., 2015). In this climate of strong community and collaborative culture among staff, schools are valuable sites for shared practices (Laluvein, 2010b). In view of the strong sense of interdependency among school educators, Wenger’s (1998) communities of practice framework is deemed as an appropriate lens through which the deployment of AEDs(LBS) will be examined

Wenger et al. (2002) explains that the structure of a community of practice has three essential features: a domain of knowledge, a community of people who are concerned about this domain and the shared practice they are creating to be effective in the domain. In this effect and with respect to this study, the domain of knowledge can be viewed as the provision of support for students with SEN. The AEDs(LBS) work with a community of personnel in school who are jointly dedicated to the work of supporting students with SEN and for that reason, regularly interact with one another to discuss, problem-solve, and learn from one another.

However, even as this study is framed through the lens of the communities of practice model, there is no assumption that every practice encountered in this study is a community of practice. Mindful that there are both communities of practice “to be” and thriving communities of practice (Pyrko et al., 2017), communities encountered in the study will be carefully examined according to the features that characterise a community of practice. The data will be coded without trying to fit it into a pre-conceived idea of Wenger’s (1998) communities of practice. Yet, employing it as a template for analysis provides a consistent and standardised frame to analyse AED(LBS) deployment practices across the schools. Particularly, it provides a framework to understand why some AEDs(LBS) have deeper connections with the wider school community and exert a greater influence on teachers and school leaders than others.

Significance of the Study

The current study makes three main contributions to the field. First, it fills the gap in knowledge regarding the AED(LBS) role. The only known study on AEDs(LBS) has examined the AED(LBS) role and responsibilities through the perceptions of AEDs(LBS) (Lim et al., 2014). This study seeks to provide a systematic and baseline understanding of the AED(LBS) role by examining AEDs'(LBS) reported task frequency and time-use.

Next, the study acknowledges the importance of situating AED(LBS) deployment in its context. Within the whole-school approach to support that mainstream schools subscribe to, the effective inclusion of students is dependent on effective partnerships between AEDs(LBS), teachers and school leaders. Therefore, when AED(LBS) deployment is examined in context of AEDs'(LBS) partnership with teachers and school leaders, the findings will be significant for understanding how schools are progressing in their inclusive journey. Wenger's (1998) communities of practice is a suitable framework for examining AED(LBS) deployment given schools' community and collaborative approach to SEN support.

Additionally, the current study seeks to propose a model of SEN support that is built on limited resources. Students with SEN in mainstream schools are supported by a conservative number of AEDs(LBS). It will be interesting to examine how schools are coping with their limited resources and find out if AED(LBS) role takes on a different interpretation from their contemporaries in other countries given the considerable differences in the circumstances surrounding their roles.

Finally, by understanding how AEDs(LBS) work with their school community, the current study seeks to identify deployment practices that can strengthen or weaken AEDs'(LBS) impact on their school community as well as the underlying influences of these practices. This insight will provide practical solutions for MOE and school leaders who wish to improve their deployment of AEDs(LBS). The findings will also be of value to AEDs(LBS) who will be able to make informed decisions about their deployment in school.

CHAPTER 2

Literature Review

Introduction

The current study is an inquiry into the deployment of Allied Educators (Learning and Behavioural Support) [AED(LBS)] in Singapore mainstream schools. It seeks to provide a holistic understanding of deployment by drawing upon two approaches. Firstly, as with the conventional approach, deployment is examined through the tasks that AEDs(LBS) perform. Additionally, this study also attempts to understand AED(LBS) deployment in context of the whole-school approach of support, through their partnership with the community of teachers and school leaders. Therefore, these two approaches provide the parameters for the literature review.

The key themes explored in the chapter are (1) rise of paraeducators (2) role of paraeducators (3) training of paraeducators (4) role appropriateness of paraeducators (5) impact of paraeducators (6) school's role in the deployment of paraeducators (7) communities of practice.

The Rise of Paraeducators

The increase in the utilization of paraeducators can be traced back to two main causes (Blatchford, Russell, et al., 2012). The recent proliferation of paraeducators had to do with schools' commitment to educational inclusion. The Salamanca Statement and Framework for Action on Special Needs Education [United Nations Educational, Scientific Cultural Organization (UNESCO, 1994)] encouraged schools in different countries to embrace student differences and diversity. Schools made it a priority for all students, regardless of ability, to be able to access high quality education in mainstream schools. Educational inclusion meant that the responsibility of children with SEN has become a general education issue (Mortier et al., 2010). With more students with diverse needs and profiles entering the general education schools, paraeducators in countries such as UK, Australia, Hong Kong, US, and Singapore became regarded as personnel who can improve educational experiences of students with SEN in those schools (Blatchford, Bassett, Brown, & Webster, 2009; Butt & Lowe, 2012; Chan et al., 2020;

Giangreco, Edelman, Broer, et al., 2001; Lim et al., 2014). Paraprofessionals in these schools support students in general education classes (Carter et al., 2019; Giangreco, Edelman, Broer, et al., 2001; Lim et al., 2014) and teach them during withdrawal classes (Blatchford, Russell, et al., 2012; Lim et al., 2014). Yet, even prior to this recent surge in the employment of paraeducators, paraeducators were not new to schools. It was a practice for some schools to rely on paraeducators to alleviate the pressure that teachers faced. In countries such as Hong Kong, US and UK, paraeducators were introduced to the mainstream system to assist teachers (Chan et al., 2020; French & Pickett, 1997; Trent, 2014; Webster et al., 2016; Wilson & Bedford, 2008). In UK, it was a response to lighten teachers' heavy workload and reduce teacher attrition by taking over some of the non-teaching responsibilities to allow teachers to focus on teaching. In US, the practice of using paraeducators started as early as the 1950s to cope with the post war shortage of teachers. The early use of paraeducators was seen mostly as "an extra pair of hands" to the teachers (Groom & Rose, 2005, p. 20).

The Role of Paraeducators

In understanding the role of paraeducators, it was common for research studies to examine the actual tasks that paraeducators undertake. The various methods for eliciting this information as reported in the research literature were time logs, surveys and interviews, with some studies relying on one method and others relying on a combination of methods. Time logs were used in a large-scale and longitudinal Deployment and Impact of Support Staff (DISS) project involving about 6000 schools in UK to understand how paraeducators' spend their time in schools. Paraeducators kept track of the tasks they do in real time by ticking off a list of 91 commonly performed tasks (belonging to six categories) every 20 minutes in one working day (Webster et al., 2010). Riggs and Mueller (2001), similarly, used a time log in their study. Other studies relied on surveys to understand paraeducators' role and involvement (Carter et al., 2009; Carter et al., 2019; Fisher & Pleasants, 2012; Giangreco & Broer, 2005; Hughes & Valle-Riestra, 2008; Lim et al., 2014; Riggs & Mueller, 2001; Webster et al., 2010). From a list of pre-identified tasks or categories of tasks, paraeducators were asked to report the frequency with which they performed each task or category, using a Likert-type frequency scale (Carter et al., 2009; Carter et al., 2019; Fisher & Pleasants, 2012; Hughes & Valle-Riestra, 2008). In other

surveys, paraeducators were asked how much time they spent engaged in the list of pre-identified task categories (Giangreco & Broer, 2005; Riggs & Mueller, 2001), their workload and how they spent their time in school (Lim et al., 2014). In one survey, perceptions of paraeducators and teachers regarding schoolwide practices were sought (Giangreco & Broer, 2005). Finally, several studies relied on interviews to understand paraeducators' role. With interviews, the studies inevitably involved a significantly smaller group of participants. Through phone interviews, Downing et al. (2000) interviewed 16 paraeducators about their background, training, daily responsibilities, partnership with colleagues and students' families, and perceived role pre-requisites and challenges. Lim et al. (2014) asked 30 AEDs(LBS) how they felt about their professional role in school, as well as their role in partnership with the school community. To supplement the initial quantitative survey findings, Riggs and Mueller (2001) interviewed a sub group of 23 paraeducators to further understand their role as expressed freely in their own words.

The literature revealed that the paraeducator's role could be broadly categorised into two main categories: direct instructional and non-instructional roles.

Direct instructional role. In general, there was consistency in the role of paraeducators in the literature. One theme was echoed throughout and that was the strong reliance on paraeducators to provide direct instructional support to students with SEN. Paraeducators teach skills directly to students with SEN to level the playing field for them, so that they too, will get a fair chance to access the same instruction and curriculum that others have access to. This instructional support can occur in class or out-of-class. Blatchford, Russell, et al. (2012), in the massive Deployment and Impact of Support Staff (DISS) project involving slightly more than 6000 schools in the UK, noted that while paraeducators used to support teachers, they now spent more than half their six-hour day on direct instructional support, assisting and supporting students directly. Similarly, Riggs and Mueller (2001) reported that 70 per cent of paraeducators in one US state spent at least three-quarter of their time providing direct instruction to students. In another US state, Giangreco and Broer (2005) found that paraeducators took on a greater role in the provision of direct instruction to students with SEN, than special education teachers. They engaged in the modification of activities and materials to

help learners with SEN access the curriculum (Downing et al., 2000). The situation was similar in one Australian state. Instructional support was identified as one of the top three most frequent tasks that paraeducators performed (Carter et al., 2019). In Singapore, while the provision of direct learning and behavioural support was formally stated as a role of the AEDs(LBS) (Ministry of Education, 2021), there has been no independent investigation on the range of tasks they engaged in and the time they spent on these tasks. In the only study on AEDs(LBS) to date, Lim et al. (2014) examined paraeducators' perceptions of their roles, as opposed to the actual tasks that they performed in school. Of the various role descriptions provided by AEDs(LBS), "individual tutor" was a description that most closely hinted at the instructional aspect of their role (p. 130). Instructional support not only entailed the teaching of academic content but also the teaching of non-academic content. Academic content involved teaching reading and math to small groups of students within mainstream classrooms, implementation of teacher planned instruction, reinforcement of skills previously taught by teachers (Carter et al., 2019; Hughes & Valle-Riestra, 2008) and covering classes in teachers' absence (Blatchford, Russell, et al., 2012), while non-academic content involved implementing classroom management strategies to reduce undesirable behaviours, through approaches such as prompting or redirection, on-task engagement strategies, motivational strategies, good behaviour game and reward systems (Downing et al., 2000; Dutt et al., 2019; Groom & Rose, 2005; Reddy et al., 2021).

Non-instructional role. Despite paraeducators' greater involvement in direct instructional role, they continued to be involved in non-instructional responsibilities, taking on administrative and clerical tasks (Devecchi et al., 2012; Downing et al., 2000; Giangreco, Edelman, & Broer, 2001), providing personal care supports (Fisher & Pleasants, 2012), being liaisons between teachers and students (Lehane, 2016), being a nanny and classroom assistant (Lim et al., 2014), monitoring students in non-classroom activities (Hughes & Valle-Riestra, 2008) and supporting school with administrative and logistical needs (Webster et al., 2016). Not surprisingly, paraeducators' involvement in non-instructional tasks made them feel undervalued because those tasks did not require specialised knowledge (Giangreco, Edelman, & Broer, 2001). For the same reason, AEDs(LBS) felt insignificant when they were asked to oversee students whom teachers did not want to manage (Lim et al., 2014).

The Training of Paraeducators

Besides the perennial focus on the role of paraeducators, literature is also rife with discussions about paraeducator training (Giangreco, 2021), because training contributes to improve the effectiveness of paraeducators in classrooms (Sharma & Salend, 2016). Furthermore, since the paraeducator role has expanded to include instructional responsibilities (Butt, 2017; Cremin et al., 2005; Mistry et al., 2004; Riggs & Mueller, 2001), training has increasingly been regarded as an important way to help paraeducators keep up with their evolving role. Unfortunately, to date, training has not been very effective at addressing paraeducators' role needs adequately because of its limited access and its questionable quality.

Limited access. Paraeducators' limited access to training has been widely reported. More than two decades back in one US state, opportunities for preservice training were reported to be non-existent while opportunities for in-service training were inadequate (Giangreco, Edelman, Broer, et al., 2001). More recently, in another US state, attendance on in-service training, and conferences was reported to be only 25 per cent and 10 per cent respectively, substantially lesser than attendance on-the job training where almost 50 per cent of paraeducators surveyed had attended (Carter et al., 2009). In an Australian state, less than half of paraeducators surveyed were had completed a registered teaching assistant training course (Carter et al., 2019). The unfavourable conditions surrounding paraeducators in Australia also limited their access to training. Training had to be attended at paraeducators' own time and expenses (Butt, 2016a), subject to principals' discretion and was not tailored for paraeducators (Butt, 2017). Comparatively, paraeducators in UK seemed to have lesser difficulty accessing training. The extensive DISS project involving about 6000 schools in UK found that approximately 80 per cent of paraeducators had received in-service training or training leading to a qualification within the last two years (Blatchford, Bassett, Brown, Martin, et al., 2009). While that seemed promising, paraeducators' attendance on external training formed only two-thirds of the attendance of school-based training (Blatchford, Russell, et al., 2012). Therefore, based on the examples in US, Australia and UK, paraeducators' limited access to training seemed to be most pronounced where external training was concerned. In contrast, AEDs(LBS) in Singapore do not face the same difficulties accessing external training. In fact, as

part of AEDs'(LBS) pre-service training, AEDs(LBS) undergo a one-year diploma in special needs (DISE) programme at the NIE before being deployed to schools (Walker, 2016). Access to training, however, must be considered together with the outcomes of training. Even though paraeducators' in UK had comparatively better access to training and were generally satisfied with the training received (Blatchford, Bassett, Brown, Martin, et al., 2009), paraeducator support nonetheless resulted in an unexpected negative impact on the academic progress of students (Webster et al., 2010), casting doubts on the efficacy of the training that paraeducators had access to. Therefore, while access to training was a good starting point, access to training would not necessarily translate to a positive training outcome. In the consideration of paraeducator training, equal importance must be placed on both access and quality.

Questionable quality of training. Teachers bore significant responsibility for paraeducators' training. In UK, about three-quarters of paraeducators had their work supervised by a teacher, more than half the teachers (54 per cent) reported that they were the line managers of paraeducators and at least half of the teachers also reported involvement in the training of support staff (Blatchford, Russell, et al., 2012). In the US, variations in teacher-implemented paraeducator training were noted. In one US state, teacher-implemented paraeducator training that was delivered by teachers seemed as common as that in UK. Half of paraeducators indicated that on-the-job training was the most common form of training that they received (Carter et al., 2009). However, in a review of 30 studies, teacher-implemented paraeducator training formed less than one-quarter of these studies (Walker & Smith, 2015). In a longitudinal study in four Australian primary schools, paraeducators were rarely trained by teachers. Out of the five deployment models that depicted how paraeducators and teachers worked together, paraeducator-teacher partnership was scarce and some teacher-training of a paraeducator was observed in only one model (Butt, 2016b). In Singapore, teachers are not responsible for the supervision or training of AEDs(LBS) since the latter would have undergone the mandatory one-year long special education diploma programme at NIE prior to joining schools (Walker, 2016). Furthermore, AEDs(LBS), most of the time, have received the most comprehensive SEN training among school personnel (Yeo et al., 2016). Nevertheless, apart

from Singapore, a consistent pattern that emerged from the discussed examples was the existence of teacher-implemented training for paraeducators in other countries. Yet, a significant number of these teachers in UK did not receive formal training for their work with paraeducators and if they did, the training did not last more than a day (Blatchford, Russell, et al., 2012). In one state in US, teachers reported spending only seven per cent of their time working with paraeducators (Giangreco & Broer, 2005), suggesting a very limited amount of time for any training or supervision to occur. Half of the educators interviewed acknowledged the need for formal pre-service training that would equip them to understand paraeducators' role and work effectively with them (Biggs, 2019). Therefore, while teachers were responsible for the training or supervision of paraeducators, the inadequate amount of time spent on preparing for training or the actual training, meant that training might be compromised. Though one might argue that the length of training was not an important factor in paraeducators' ability to implement effective intervention (Brock & Carter, 2017), teachers' lack of attention and priority towards paraeducator training could affect the way in which training was performed. Certain training strategies (modelling and performance feedback) and format (one-to-one coaching) facilitated paraeducators' implementation fidelity (Brock & Carter, 2017). Training that was clearly delivered, focused and supportive also enhanced paraeducators' effectiveness in helping students with intellectual and developmental disabilities attain educational progress (Brock & Carter, 2013). These discussed features, however, require deliberate planning for them to be included into paraeducators' training. Insufficient time and effort devoted to the preparation of training would render the inclusion of these effective training features challenging.

Role Appropriateness of Paraeducators

In evaluating role appropriateness, it was important to consider the tasks that paraeducators engage in against their skills and training (Giangreco & Broer, 2005). At one end of the spectrum, the assignment of instructional tasks to lowly trained paraeducators, coupled with their lack of qualifications (Butt, 2017; Fritzsche & Köpfer, 2021) sparked concerns regarding role appropriateness of paraeducators in Australia, US and UK (Carter et al., 2019; Chopra & Giangreco, 2019; Webster et al., 2013). Despite not being trained in the pedagogy of

teaching, paraeducators became the “primary educators” of these students (Webster et al., 2010, p. 319), impacting their academic progress negatively (Blatchford, Webster, et al., 2012). In the US and Australia, paraeducators who were not trained in the curriculum often supported students with SEN on a one-to-one basis (Carter et al., 2019; Giangreco, 2010a; Webster et al., 2010). Comparatively, AEDs(LBS) in Singapore face lesser challenges in role appropriateness because of their more elaborate training. Yet, despite the substantial preservice and in-service training they received, they were not spared from self-doubts of their abilities which came about as they encountered an unexpectedly diverse range of SENs which they were not prepared for (Lim et al., 2014). At the other end of the spectrum, the assignment of general, non-instructional tasks to highly skilled and specialised paraeducators similarly evoked concerns about role appropriateness, evident from the experiences of paraeducators in US and AEDs(LBS) in Singapore (Giangreco, Edelman, & Broer, 2001; Lim et al., 2014).

An alternative way to think about paraeducator role appropriateness is through the perspective of professionalism. Professionalism has the potential to enhance paraeducators’ modest sense of identity and self (Evetts, 2013), which has been identified as a pressing need in this field of work (Webster & De Boer, 2021b). Professionalism offers a form of inner-directed control where external supervision is no longer necessary (Evetts, 2013). Therefore, in an era where the role of paraeducators is evolving and expanding, and more opportunities are being created for paraeducators through newer roles such as higher level teaching assistants (HLTAs) in UK (Balshaw, 2010) and higher level positions for AEDs(LBS) in Singapore (Teng, 2020), schools must be prepared for a time when the paraeducator role becomes a high level, strategic and professional one. When that happens, it will be appropriate to evaluate the paraeducator role against the qualities of professionalism. The work of Fritzsche and Köpfer (2021) serves as a useful guide in thinking about role and professionalism. In their study, paraeducators’ professionalism was characterised by a strong sense of autonomy in the structuring of their own role, towards the student and the course of intervention. Additionally, professionalism also entailed trust (Evetts, 2013) and competence (Svensson, 2006). Putting these together, paraeducators engaged for higher level and strategic role can be evaluated against the elements of autonomy, competency and reliability, elements which promote

colleagues' trust in them. School leaders who intend for a strategic paraeducator role must invest resources to support the paraeducators towards these areas of growth.

Impact of Paraeducators

Paraeducators' Impact on Students

As it became clearer that paraeducators were providing a significant amount of direct instruction to students, researchers started to inquire into the impact of their support. The focus on the impact of paraeducators only gained traction recently (Giangreco et al., 2010). Research on impact of paraeducators has either focused on the effects of paraeducators' delivery of targeted intervention programmes or their general impact at the classroom level (Webster et al., 2016). In a literature review on the impact of paraeducators, Farrell et al. (2010) noted that all except one of the nine studies reviewed reported significant gains in learning for students who went through a period of targeted intervention in literacy and language with paraeducators. The dissimilarity in findings was attributed to the circumstances in which intervention was provided. The study that failed to demonstrate gains in learning involved in-class intervention while the others involved pull-out intervention. However, it must be noted that the research was done with trained and supported paraprofessionals and therefore the positive impact of paraeducators on students' academic gains was only possible if the paraeducators had received proper and sufficient training (Webster et al., 2016). Brock and Carter (2013) similarly documented the positive impact that trained paraeducators had on the achievements of students with SEN. In their review which included only studies that compared the effects of trained paraprofessionals to non-trained paraprofessionals, they found that trained paraprofessionals could deliver interventions that improved social, communication, academic and behavioural outcomes for students with intellectual and developmental disabilities. More recently, evidence of paraeducators' positive impact on students' academic skills came from a study where trained paraeducators who delivered a math intervention programme produced a modest positive effect on the math skills of primary school students struggling with math compared to a control group which did not receive the intervention (See et al., 2019). However, while research documenting the potentially positive impact of

paraeducators on targeted intervention programmes was generally positive, paraeducators' positive impact in the classrooms appeared more elusive.

Farrell et al. (2010) synthesised the findings of four early studies discussing the impact of paraeducators on students' academic learning in the classrooms. They noted the mixed findings, with two reporting positive impact and the other two reporting no impact. However, the studies that resulted in positive impact were one-school studies (Frelow et al., 1974; Loos et al., 1977), while studies that reported no impact were larger studies involving several schools (Blatchford et al., 2002; Gerber et al., 2001). With a larger sample, dilution of the positive effect can occur and that might explain the inconsistencies in findings. More recently, much of what is known in the literature about the impact of paraeducators on students in classrooms was provided by the Deployment and Impact of Support Staff (DISS) project, the most massive study on UK support staff by far (Blatchford, Russell, et al., 2012). Carried out between the period of 2003 to 2008 in three waves with a total of 18,000 respondents involved, the study revealed startling findings on paraeducator support in and away from classrooms. It found that paraeducator support made no difference to students' learning characteristics (e.g. distractibility, motivation, confidence), and instead resulted in a regression of students' academic attainments (Webster et al., 2010). The study relied on paraeducators' time logs and observations, collected as part of the study, to understand what might have led to the negative impact of paraeducators. Rubie-Davies et al. (2010) provided further elaboration of the differences between paraeducator and teacher interactions. They noted that while paraeducators' interactions with students were more prolonged and personal than that with teachers, paraeducators prioritised task completion over the learning process and were less adept at stimulating students' thinking and checking for understanding. The various interactions with students also revealed that teachers showed more control of the lesson and were more preemptive, compared to paraeducators who were more reactive. All in, paraeducators showed lesser elements of effective teaching which explained their negative impact on students' progress despite the substantial interactions with students. Blatchford, Russell, et al. (2012 p. 87) also reported concerns of "stereo teaching", an unintended consequence when paraeducators often sat next to students in class to repeat, simplify or

elaborate instructions, resulting in students being exposed to the teacher's and paraeducator's voices at any one time. Furthermore, the proliferation of one-to-one paraeducator support in classrooms in various countries exacerbated these concerns (Balshaw, 2010; Carter et al., 2019; Giangreco, 2010a). The strongest argument against the one-to-one use of paraprofessionals in classrooms came from Giangreco (2010a), who posited that it was fundamentally and conceptually wrong to rely on paraeducators who often have the lowest qualifications and training to provide most of the instruction for students with the highest needs. A high level of paraeducator support was also in danger of inducing students into a state of dependency (Blatchford, Russell, et al., 2012).

Paraeducators' Impact on Inclusion

A high level of paraeducator support in class corresponded to a reduction in interactions and attention from teachers (Blatchford, Bassett, Brown, & Webster, 2009; Webster et al., 2010), challenging the fundamental concept of inclusion. Eight students with moderate disabilities described the involvement of paraeducators in their learning (Tews & Lupart, 2008). Paraeducators accompanied them for solo activities outside their classrooms and majority of them were not placed in student groups, suggesting isolation from other students. Despite the threat that close paraeducator proximity poses to inclusion, half of the students expressed preference for paraeducators being close to them and were cognizant that they would not be able to cope in the mainstream system if not for them, highlighting that the perceived negative impact of paraeducators on inclusion was only through the adults' perspectives. Giangreco, Broer, et al. (2001) observed that the high paraeducator support and low engagement from teachers resulted in students with SEN being physically isolated from the rest of their classmates as they worked with paraeducators at the peripheral. Additionally, interviews with teachers and paraeducators revealed that students experienced a sense of stigma that resulted from the close but unwanted proximity of adults availing their help. The close proximity of adults created social interaction barriers, impeded social skills development, thereby breeding a cycle of dependency on paraeducators (Goodwin et al., 2021). Yet, Tews and Lupart (2008) noted that almost half of the eight students with moderate disabilities in their study appreciated the paraeducators' involvement in helping them to socialize as it offered them a

sense of protection. The differences in opinions again highlighted the different perspectives of adult and students regarding the impact on inclusion.

Paraeducators' Impact on Teachers and Teaching

Giangreco, Edelman, Broer, et al. (2001) noted that the topic of paraeducators' interactions and collaborations with school personnel was not a focus in early paraeducator literature. In fact, any mention of this topic was embedded in bigger discussions on roles and responsibilities and suggestions for collaboration. The initial lack of attention to the intersection between paraeducator role and the teacher's role could be attributed to the limited interactions between the two parties at that time, given the inadequate and questionable quality of supervision that paraeducators had from teachers (French, 2001; French & Pickett, 1997; Giangreco, Edelman, Broer, et al., 2001). However, as the use of paraeducators became more pervasive, the research on paraeducators also became more sophisticated. Furthermore, the startling results from the five-year landmark DISS study (Webster et al., 2010) provided the impetus for the new found attention to the impact of paraeducators, including their impact on teachers and teaching.

Perspective-based. Paraeducators' impact on teachers and teaching can be gleaned from paraeducators' perspectives, as well as teachers' perspectives. Chopra et al. (2004) examined paraeducators' perception of their roles as connectors in their school community and provided insights on how paraeducators act as liaisons between teachers and students. They noted that paraeducators helped teachers to better understand their students by encouraging them to communicate and filling teachers in on students' home background. Hughes and Valle-Riestra (2008) found that teachers respected and valued paraeducators' opinions. Lim et al. (2014) highlighted the contribution of an AED(LBS) who described her contribution in school as one that empowers teachers to help the students through the advice and mentorship she offered. Teachers in general, reported positive regards for paraeducators' support. Teachers expressed regards for paraeducators' informal and daily input, especially their recommendations (Giangreco, Edelman, & Broer, 2001). Teachers' responses on questionnaires indicated that paraeducator support in school had reduced their workload and stress, increased their job satisfaction, allowed them to focus on teaching and even take specific students

(Blatchford, Russell, et al., 2012; Webster et al., 2010). Devecchi and Rouse (2010) reported on the positive impact of paraeducators on teachers in four schools. Teachers appreciated paraeducators for sharing SEN knowledge, student information and teaching resources, for sticking to the rules and expectations teachers had set for students and being considerate of the teachers' personal needs and workload. Paraeducators also took the pressure off from them allowing them to focus on sharpening their teaching instruction. However, despite the unanimously positive regards that teachers professed they held for paraeducators, the actual paraeducator-teacher collaborative experiences (from perspectives of paraeducators) unfortunately did not always match up.

Experience-based. It is hard to find the same pattern of consistency in actual collaborative experiences between paraeducators and teachers. Varying experiences of collaboration have been reported, from positive to negative. When paraeducators and teachers collaborate, they engage in “an intensive joint working practice” (O'Toole & Kirkpatrick, 2007, p. 343). Collaboration enables different stakeholders with different areas of expertise to bring different but complementary perspectives to the classrooms, which ultimately benefits the student. Collaboration, however, comes with a caveat; stakeholders must accept the crossing of the traditional line that demarcates their practice, by themselves or by others. Symes and Humphrey (2012) reported paraeducator-teacher relationships at two ends of a spectrum. Paraeducators discussed about teachers who were reluctant to have paraeducators in their classrooms, and at the other extreme, teachers who relied completely on paraeducators. Takala (2007) also noted differences in paraeducators' joint planning experiences with teachers. Some paraeducators lamented about the lack of time for planning while others saw planning as a regular and indispensable part of their practice. Another example of conflicting collaborative experiences came from Downing et al. (2000). In their study, paraeducators impacted teachers positively by contributing information to meetings, made joint decisions with them with regards to material adaptations, behavioural and instructional strategies. Teachers' receptivity towards their input also demonstrated the positive impression they made on teachers. However, in the same study, there were also paraeducators who expressed directly conflicting experiences in terms of the lack of communication and collaboration, and teachers' lackluster regards for

them. In Singapore, Lim et al. (2014) similarly reported collaborative experiences that were very distinct. AEDs(LBS) reported that while there were teachers who rejected AEDs'(LBS) invitation to meet up for a discussion, there were also teachers who were willing to share their subject knowledge with the AEDs'(LBS) to help them with their support work, as well as those who were empowered by the school to guide teachers in SEN support.

There were some studies which provided a picture of mainly negative collaborative experiences. Fisher and Pleasants (2012) described collaborative experiences that were mainly negative. They surveyed paraeducators about their concerns and two categories of concerns that emerged, "received little respect" and "concerns about teacher colleagues", pertained to issues concerning collaborative relationships with teachers, where teachers seldom met with them, occasionally assigned inappropriate tasks to them and had a general disregard for their voice and opinion. Devecchi et al. (2012) noted that in both England and Italy, SEN support was provided solely by paraeducators and collaboration with classroom teachers was rare, despite the recommendations of the SEND Code of Practice (Department for Education and Department of Health, 2015) which outlined teachers' responsibility to work closely with paraeducators.

The varying collaborative experiences across studies and even within studies suggested that a substantial part of the collaborative experience hinges on the individual school context. In fact, Devecchi and Rouse (2010) also attributed the collaborative experiences between paraeducators and teachers to the educational environment they operated in.

School's Role in the Deployment of Paraeducators

Schools with an inclusive climate encourage the inclusive deployment of paraeducators and consequently maximize their potential (Balshaw, 2010; Fletcher-Campbell, 2010; Watkinson, 2002). An inclusive and non-judgmental climate that embraces diversity is built on the positive attitudes and beliefs of all members of the community, especially the leaders and teachers (Loreman et al., 2014). Similarly, an inclusive culture focuses on building a community where everyone despite their differences and status work with one another based on the values of inclusion and non-discrimination (Booth & Ainscow, 2002). Particularly, Watkinson

(2002) noted that schools that were inclusive towards paraeducators would be mindful of the boundaries in the role of the paraeducator, allow open communication between paraeducators, teachers and school leaders, encourage teachers to prepare paraeducators for in-class support, provide in-school training and support and change their opinions towards paraeducators' potential. Lim et al. (2014) also urged schools to be professionally inclusive towards them by perceiving them as important partners who can contribute to the students' learning journey.

Both school leaders and teachers play an important role in shaping a climate conducive for the effective deployment of paraeducators. Balshaw (2010) regarded school leaders' attitudes crucial for setting the climate and harnessing the full potential of paraeducators. He observed that leaders who have a positive regard and high expectations for paraeducators were able to deploy them more strategically and effectively, such as allowing experienced paraeducators to mentor the newer paraeducators. The exposure to a wider role would help them draw together various perspectives which can lead to more creative approaches with pupils. In fact, the engagement of paraeducators as leaders was also mentioned by Emira (2013). When paraeducators are deployed as leaders, they collaborate and support colleagues in their classes, make decisions and take ownership of their learning and practice. School leaders could also include paraeducators by facilitating a collaborative school culture which involves maintaining an oversight of the working relationships between paraeducators and teachers, communicating expectations of their roles, providing collaboration specific training and deliberately creating time for them to meet (Biggs et al., 2016). Ghore and York-Barr (2007), however, posited that special education teachers hold the keys to an inclusive climate because of their direct implications on the paraeducators' work. They are the ones who determine the paraeducators' schedule and provide them with opportunities on-the-job learning (Fisher & Pleasants, 2012). In the same vein, Fletcher-Campbell (2010) also noted the role of teachers in influencing classroom conditions where formation of communities of practice among teachers and paraeducators is promoted, so that they can collectively and actively, create a shared practice that they own. A successful collaborative team would allow open communication, regard and respect for team members and place the student at the

centre of everything (Ghere & York-Barr, 2007). Similarly, Webster et al. (2013) saw the potential of teachers in making a change to the climate of paraeducator deployment. In the Effective Deployment of Teaching Assistants project, researchers worked mainly with teachers and school leaders in 10 schools to develop relevant and tested processes and strategies that improved the deployment and preparation of paraeducators. These processes required the reorganization of the paraeducators workforce within schools and resulted in changes to paraeducators' immediate work conditions. With regards to deployment in general, school leaders thought about their overall strategy for utilising the paraeducators and make decisions that were consistent with the intended role of paraeducators. To help paraeducators become better prepared for classes, deliberate time was created for teachers and paraeducators to meet to coordinate expectations and clarify roles. To help paraeducators with their classroom practice, teachers explicitly discussed with them the value of questioning to encourage them to use effective questioning strategies, giving students wait time to think, to promote student independence.

Literature suggested that paraeducators, too, could influence the outcome of their deployment. Their ability and initiative in sharing pertinent information determined the success of the collaboration with teachers (Devecchi & Rouse, 2010). Paraeducators and teachers felt that paraeducators who positively influenced the paraeducator-teacher relationships were acquiescent and student-centered, proficient and professional, and had initiative or a voice (Biggs et al., 2016). Jortveit and Kovač (2021) found that paraeducators who connected cognitively and emotionally with teachers tended to collaborate well with them. Besides sharing common educational principles, they had “chemistry” when working together (p. 8).

The above discussion highlighted how the school community, especially school leaders and teachers, could encourage the inclusive and effective deployment of paraeducators. In fact, a community of practice within the school would further provide conditions that are conducive for harnessing the full potential of paraeducators.

Communities of Practice

Lim et al. (2014) described the need for schools to build communities of practice as platforms where AEDs(LBS) and teachers can come and work together with a shared purpose of meeting the needs of all students. In fact, Singapore's model of whole-school approach for SEN supports Wenger's (1998) community of practice framework. Luluvein (2010b) also alluded to schools' potential as promising sites for a community of practice to develop, where educators who often specialize in different areas come together to examine and modify their existing assumptions and perspectives to negotiate a shared practice.

According to Wenger et al. (2002), "communities of practice are groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis" (p. 4). A community of practice is made up of these core characteristics: an area of knowledge that motivates members to contribute, a community of people who care about this area, and the shared practice that they create to be effective in this area (Wenger et al., 2002). The area of knowledge defines the identity of the community and gives it a purpose, the community's common vision connects the members as they learn and grow together, and the shared practice results in a set of common approaches or procedures that in turn informs future practice (Wenger et al., 2002).

In addition to these three core dimensions, Wenger (1998) listed indicators that suggest the existence of a community of practice: A community of practice shares continued reciprocal relationships, whether positive or negative. Within the community of practice, the rapid flow of information enables problems to be rectified in quick time. Participants in the community speak easily and informally without having to 'fill' one another in because of previous shared contexts. While members of the community are aware of their specific roles in the community, they are also able to accept and deal with the overlaps in their roles. Most of all, members share identities, resources, and interpersonal relationships.

While they are aware of their mutual dependency and act as resources to each other, exchanging information, exploring ideas and solving problems (Wenger, 1998), they might not

even be aware they are part of a community of practice (Wenger et al., 2002). Communities of practice are informed by the social theory of learning, which views learning as an expression of social participation (Wenger, 1998). Therefore, communities of practice must bring about a form of learning. As a result of the members' social participation, knowledge accumulates and shared practice develops, and in that process, learning is created, negotiated and shared (Laluvein, 2010b). Wenger et al. (2002) clarifies the primary purpose of communities of practice is to create knowledge and learn, as such, not every community can be considered a community of practice.

A Practice that Belongs to the Community

Wenger (1998) notes that the term community of practice should always be viewed as one because practice essentially belongs to the community. The practice *belongs* to the community because of the mutual engagement of the participants, negotiation of a joint enterprise and the development of a shared repertoire (Wenger, 1998). These three dimensions are elaborated below.

Mutual engagement. A pre-requisite for engagement is to be included in what matters (Wenger, 1998). In the same manner, Laluvein (2010b) explains that mutual engagement involves and does not refuse the participation of stakeholders. Another pre-requisite for engagement is the work that must be done to maintain the community. There is someone servicing and sustaining the community but it may not be evident (Wenger, 1998). Laluvein (2010b) has referred to this person as the "initiator and broker" in the case of a parent who rallies to bring together different stakeholders to form a network of support and communication for her child. Most importantly, in mutual engagement, contributions are complementary because each participant in a community of practice has a special purpose and identity (Wenger, 1998). However, engagement does not necessarily mean the absence of conflicts and tensions (Wenger, 1998); examples of tension in communities of practice have been provided by Laluvein (2010b).

Negotiation of a joint enterprise. A practice is a joint enterprise; it is a community's response to the conditions that are out of the members' control (Wenger, 1998). Presented

with conditions which may involve opportunities and constraints, the members then jointly decide on an approach to take (Wenger, 1998). Mortier et al. (2010) describes communities of practice as an “in-between space that allows members to embrace doubt, curiosity, and subjectivity to develop *local knowledge*”. (p. 334). They build on each other’s inputs to come up with new ideas (Mortier et al., 2010). Practice as a joint enterprise also means that participants are accountable for what they do, and the way forward is always determined by themselves (Wenger, 1998).

Development of a shared repertoire. Over time, practice results in accumulated shared resources (Wenger et al., 2002). These could include physical items like documents, tools and record books, or non-physical items like words, stories, gestures or procedures (Wenger, 1998).

Communities of Practice in Inclusive Settings

Communities of practice are common in inclusive settings (Botha & Kourkoutas, 2016; Brandon & Charlton, 2011; Laluevein, 2010a, 2010b; Mortier et al., 2010; Taylor, 2014). Various researchers have encouraged the adoption of communities of practice as a way of facilitating inclusion within schools (Botha & Kourkoutas, 2016; Mortier, 2020) while others have examined communities of practice within inclusive settings (Laluevein, 2010b; Mortier et al., 2010; Taylor, 2014). Yet, despite the popularity of communities of practice in inclusive settings, there have been very limited research studies that examine how paraeducators work in communities of practice.

Mortier (2020) has encouraged the use of communities of practice to facilitate the inclusion of students with intellectual disabilities. She proposed four reasons why communities of practice can be relevant. Firstly, she described how communities of practice can facilitate the dynamic process which is needed to find practical solutions for a student with intellectual disabilities. Secondly, she clarified how communities of practice can accommodate the insecurities of working with students with disabilities by providing a space for a joint solution. Thirdly, she explained how communities of practice can allow tacit knowledge to be converted to shared practices. Finally, she suggested how communities of practice can be effective in diluting the unbalanced power relations and competing agendas of parents and teachers.

Similarly, Botha and Kourkoutas (2016) have argued for schools to form communities of practice for another group of students with SEN, that is, students with social, emotional and behavioural difficulties (SEBD). This was recommended in view of a thematic document analysis that they conducted. The analysis revealed weaknesses in the current system of support for students with SEBD. The current support model for SEBD was a medical model which focused on psychiatric treatment. The medical model neglected the contributions of environmental factors and the interactions between the different levels of support, which therefore discouraged the involvement of significant stakeholders in the child's social circle, such as parents and teachers. As a result, the current model of support could not provide the inclusive support that the students deserve. In view of the intricate, complex, and challenging nature of SEBD, the authors have argued for a community of support model so that all stakeholders can collaboratively co-construct a shared practice that would be effective for these students.

Other researchers took a step further to understand how working in communities of practice would be like. Mortier et al. (2010) studied parents and teachers in three communities of practice that worked towards the goal of including children with intellectual disabilities in mainstream classes. The parents and teams found the communities of practice useful and motivating for several reasons. First and foremost, through communities of practice, they had the opportunity to engage in practical problem-solving as a group. Moreover, because the group was small, it facilitated a safe and open discussion. Importantly, the teachers gained an important insight about themselves as teachers and realized that they have what it takes to support a child with intellectual disability. Additionally, the teachers also realized that parents were valuable as "educational problem-solvers" (p. 352).

Laluvein (2010b) did a thorough examination of the communities of practice between parents of students with SEN and teachers. From the research study, variations or "typologies" (p. 36) from three cases of successful communities were observed. These typologies explained how parents and teachers worked together in the community of practice. Typologies of working together that were identified included "networking" (p. 37), "procrastination" (p. 38), "positive deception" (p. 38) and "agreement to differ" (p. 38). In addition to naming them, Lалуvein (2010b) supplemented these various typologies with rich descriptions. For example, the

“networking” variant of working together was described as the sharing of practices amongst a team who are continuously in touch with one another. In such a team, contributions of knowledge are equal and complementary. Through this, knowledge about the pupil can be shared and extended through the web of relationships, resulting in the best possible support for the pupil. However, the ‘networking’ variant was also dependent on an initiator to start and sustain the web of relationships. On the other hand, “agreement to differ” (p. 38) was described to be accompanied by divergent perspectives and priorities between stakeholders. Adding to the rich descriptions, Laluein (2010b) also explained how each typology added value to the parent-teacher relationship. For example, “agreement to differ” sustained relationships and how “procrastination” delayed conflicts. Laluein (2010b) also demonstrated a meticulous analysis of the typologies of working together by explaining how seemingly different typologies were connected. For example, “procrastination” (p. 38) and “positive deception” (p. 38) were versions of “agreement to differ” (p. 38) because underlying these three variants was the tendency to disagree. “Procrastination” (p. 38) referred to waiting and monitoring while disagreeing and “positive deception” (p. 38) referred to a surface agreement with a sense of caution. Additionally, she drew attention to an important feature of working together in a community, which was, the possibility of transiting from one variant of working together to another variant. For example, an initial “agreement to differ” variant of working could later develop into a more positive “networking” mode of working together. Finally, Laluein (2010b) also examined how the parent-teacher relationship held up against the three dimensions of a community of practice: mutual engagement, joint enterprise and the development of a repertoire of shared practices.

Taylor (2014) explored the interactions between three primary school paraeducators and their mentors (teachers) in schools through the framework of *situated learning* (Lave & Wenger, 2013). The notion of situated learning is based on a model of apprenticeship which sees new participants joining communities and growing gradually to become a full member of the community (Lave & Wenger, 2013). In the research study, the paraeducators were enrolled in a higher education work-based course and attached to primary schools during the duration of the course. Taylor (2014) explored how the mentors inducted paraeducators into the

community of practice in schools and found concrete examples of situated learning in the workplace through these instances: The mentors ensured the paraeducators were fully included in the community of practice, supported the paraeducators' work-based tasks which were set by their course tutors and exposed the paraeducators to the full range of experiences at the workplace to enhance learning. Furthermore, Taylor (2014) examined how these communities of practice held up against the notion of situated learning and observed that the notion of situated learning was not evident in all three cases. While the phenomenon of situated learning was facilitated through the example of a supportive mentor who empowered the paraeducator, it was not evident in the other two cases. For the other two cases, the concept of situated learning seemed elusive although in different ways. In one, the model of participation was more proactive than the situated learning model developed by Lave and Wenger (2013) (Taylor, 2014). The paraeducator, unlike a novice, had a good amount of experience and was able to bring knowledge to the community of practice. In the other case, the model of participation was disempowering; the paraeducator received a low level of mentoring support because of the mentor's lack of knowledge about the paraeducator's higher education course (Taylor, 2014).

All in all, the above examples of working relationships in communities of practice have laid the foundation for using communities of practice as a theoretical framework to interpret the findings of the current study.

Paraeducators in Community of Practice

The marginalization of paraeducators has been an issue, even in inclusive schools (Devecchi et al., 2012; Lehane, 2016; Lim et al., 2014; Riggs & Mueller, 2001). A big part of it has to do with the nature of the paraeducator role. Paraeducators play a fringe role in school compared to teachers who play the main role with regards to the curriculum (Mansaray, 2006). Furthermore, the SEN unit has been referred to as "a unit within and apart from the school" (Lehane, 2016 p. 12) with paraeducators as "second-class members of staff" (Devecchi et al., 2012 p. 173).

"Valuing all students and staff equally" is articulated as one of the main ideas of inclusion (Booth & Ainscow, 2002, p. 3). Inclusion stems from values of equality, participation

and respect for diversity (Ainscow et al., 2006). In the same vein, inclusion should be seen as a whole school approach to social interactions with an equal regard for the knowledge and contributions of each stakeholder (Laluvein, 2010b). By its very nature, a community of practice invites participation and values diversity. In a community of practice, “each participant finds a unique place and gains a unique identity” (Wenger, 1998, p. 76). Therefore, paraeducators’ participation in communities of practice might hold possibilities for the return of the sense of agency to paraeducators. “Participation allows for experiences to be shared between more and less experienced members. This is a process which by itself can begin to overcome the underlying power relations, reproduced and recognisable in processes and practices which can compromise the fine-tuning of experience and competence.” (Laluvein, 2010b, p. 43). A community of practice makes it possible for paraeducators to be heard and respected for their expertise in SEN, to be valued for their opinions and “complementary contributions” (Wenger, 1998, p. 76), and to participate actively towards a common goal of improving the educational experiences of students with SEN. Framing the study through a community of practice approach might provide us with alternative perspective to mitigate the persistent low esteem issues that paraeducators have been facing (Webster & De Boer, 2021b). It provides a refreshing perspective to the deployment of paraeducators.

Conclusion

This section has examined the main issues associated with paraeducator deployment from an international perspective to help with the methodology and interpretation of findings in this study. It has also introduced the communities of practice framework as an alternative lens through which deployment of AEDs(LBS) can be perceived. Examining how AEDs(LBS) work with teachers and school leaders to support students offers insights into mainstream schools’ progression towards the whole-school support model and allows us to improve experiences of educational inclusion for students with SEN.

CHAPTER 3

Research Methodology: The Pilot Study

Introduction

This chapter discusses the research methodology for the pilot study. The pilot study mirrors the main study and has been conducted to sharpen the design of the main study. The pilot study is designed as a two-phase study, with a survey preceding a multiple-case study. This chapter opens by introducing the research design and then elaborates on the methods and procedures, findings and/or learning points of each phase.

Research Design

The pilot study sought to understand the deployment of AEDs(LBS) in Singapore mainstream schools through the following research sub-questions:

- a. How frequently do the AEDs(LBS) perform the list of stated tasks?
- b. How much time do AEDs(LBS) spend on the task categories?
- c. How do AEDs(LBS) work with teachers and school leaders?
- d. What factors influenced how AEDs(LBS) work with teachers and school leaders?

The pilot study sought to answer the above research questions using a case-study that gathered data using a survey and interviews. The two instruments represented different approaches of understanding deployment. The survey examined AED(LBS) deployment from a task-based perspective while the interviews used Wenger's (1998) community of practice perspective to examine AED(LBS) deployment in context of their partnership with teachers and school leaders. The survey formed the first phase of the pilot study while the interviews formed the second phase of the pilot study. Together, the two instruments enabled a fuller understanding of AED(LBS) deployment in Singapore.

Pilot Study Phase One: Survey

Pilot studies are capable of testing the adequacy and assess the feasibility of the instrument (van Teijlingen & Hundley, 2002). For this reason, the survey was piloted with a

group of eight individuals to sharpen its design and content. The objectives of the pilot survey were to:

1. Ensure a smooth administration of the survey
2. Ensure relevance and clarity in survey content
3. Ensure the length of survey was reasonable.

Survey Method

Ethics Approval. The pilot survey commenced after obtaining ethics approval from the Institutional Review Board (IRB) of the University College London (UCL), Institute of Education (IOE) and data collection approval from the Ministry of Education (MOE), Singapore.

Respondents. Data was collected from eight individuals. Respondents were eight AEDs(LBS). All were women. Four were AEDs(LBS) and four were senior AEDs(LBS). Years of service as AED(LBS) were reported to range from 5 to 12 years (M = 6.8 years).

Pilot Instrument. The pilot instrument was a survey designed to understand how AEDs(LBS) are deployed in mainstream primary schools and aimed to answer these questions:

- a. How frequently do AEDs(LBS) perform the listed tasks?
- b. How much time do AEDs(LBS) spend on the task categories?

The pilot instrument consisted of five sections. The first section requested for demographics, specifically, personal details, years of experience, training, and work-related conditions. The second section was adapted from the instrument in Webster et al. (2016), originally used in the Deployment and Impact of Support Staff (DISS) study in UK (Blatchford, Russell, et al., 2012). Five of six categories in the original instrument were maintained. The category “support for school environment” in the original instrument was removed as it contained tasks that were beyond the purview of the AED(LBS) role (Ministry of Education, 2021). A new category “behavioural support” for pupils was added, to capture AEDs’(LBS) role in behavioural support as reflected in their job title. For the adopted categories, task descriptions were revised to ensure relevance for the local participants. Field notes from school observations of AEDs(LBS) undertaken as part of an unpublished Institution Focused Study (IFS)

(Siew, 2018) informed the modifications to the task descriptions. The adapted survey examined how frequently the AEDs(LBS) perform the specific tasks listed in the six broad categories of tasks, specifically, (a) learning support for pupils, (b) behavioural support for pupils, (c) pastoral support for pupils, (d) Indirect support for pupils, (e) support for teachers and (f) support for school. For each task, participants were asked to select the frequency that best represents their involvement on a response scale (*Hardly any involvement, several times a year, at least once a month, once a day, several times a day*). The third section measured respondents' time allotment across the task categories in real time, expressed in hours and minutes. The fourth section examined how respondents worked with teachers in the classroom, in terms of the quality of preparation and the post-lesson follow-up. The items were adapted from Webster et al. (2016). The final section was an open-ended section that elicited feedback about content validity, survey length and general suggestions for improvements. The pilot survey instrument can be found in Appendix 1.

Survey Procedure

An email describing the pilot survey was sent via email to the researcher's personal AED(LBS) contacts. The email contained the following documents: survey consent form and the MOE data collection approval letter, found in Appendix 2 and 3 respectively. Eight AEDs(LBS) expressed interest to participate, and informed consent was obtained from them. The pilot survey was sent to participants as an electronic Google Form, in the same manner and layout as it would be in the main study. Administering the pilot survey in the same way as it would be administered in the main survey would improve the internal validity of the survey (van Teijlingen & Hundley, 2002).

Learning Points from Pilot Survey

To reiterate, the objectives of the pilot survey were to:

1. Ensure a smooth administration of the survey
2. Ensure relevance and clarity in survey content
3. Ensure the length of survey was reasonable.

The pilot survey was administered smoothly as planned. Respondents received the link to the survey and all of them completed the survey successfully without any reports of difficulty. The method of survey administration was therefore fully adopted for the main study.

Pertaining to the survey content, seven out of eight respondents agreed that the survey reflected an accurate sense of AED(LBS) deployment in Singapore. The respondent who disagreed reported through her written feedback that she was not used to thinking about her AED(LBS) role in terms of the given categories. To facilitate her experience, she appreciated a more explicit description of the categories (see feedback summary item 1 below) and this was recorded as a required modification. Additionally, respondents listed tasks which were relevant to their line of work, but which had been omitted from the pilot survey (see feedback summary item 2 below) and this was recorded as a required modification to survey. Furthermore, one respondent provided feedback about a greater clarity for certain terms used in the survey e.g. specialist teaching and curriculum teaching (see feedback summary item 3 below). This was also recorded as a required modification to the survey.

With regards to the survey length, similarly, seven out of eight respondents agreed that the survey length was reasonable. The respondent who disagreed took one hour to complete the survey compared to the average time of 31 mins that the others took. It was noted that she provided comments on how the response scale could be improved. Considering that her speed of completion might have been impeded by the response scale, improvement to the response scale was recorded as a required modification (see feedback summary item 4 below).

The items below summarised the respondents' feedback regarding the pilot survey:

1. Lack of definition for each category of support
2. Incomplete list of tasks performed by AEDs(LBS)
3. Certain terms used in the survey were ambiguous
4. Wording used in response scale was confusing and not user-friendly

Based on the feedback received, the following modifications to the pilot survey were necessary:

1. Task category to be described before presenting the list of tasks

2. Additional tasks were added to the relevant categories
3. Examples provided alongside ambiguous terms to bring clarity
4. Wording in response scale was revised to reflect a more natural progression in intensity

The pilot survey analysis matrix in Table 1 below sums up the necessary modifications and/or additions that were subsequently adopted for the survey used in the main study.

No.	Description of changes	Pilot survey content	Reason	Modifications/ Additions
1	Task category to be described before list of tasks	Initially lacking	Pilot respondent indicated the need for description of the six categories	<p>Description of six categories:</p> <ol style="list-style-type: none"> 1. Learning support: Using the scales, indicate the extent to which you are involved in the following tasks, which directly support students in their learning. 2. Behavioural support: Using the scales, indicate the extent to which you are involved in the following tasks, which directly support students in their behaviour. 3. Pastoral support: Using the scales, indicate the extent to which you are involved in the following tasks, which directly support students in their personal needs, beyond learning and behaviour. 4. Indirect student support: Using the scales, indicate the extent to which you are involved in the following tasks, which are tasks that you have to follow-up on after the direct support of students. 5. Teacher support: Using the scales, indicate the extent to which you are involved in the following tasks, which support teachers. 6. School support: Using the scales, indicate the extent to which you are involved in the following tasks, which support the school.

2	Additional content to be added	Initially lacking	Additional questions to aid sample selection for Main Study. These measure extent of AEDs'(LBS) partnership with teachers and school leaders	<ol style="list-style-type: none"> 1. I can influence the SEN decisions that are made in school. 2. There is a well-defined Special Educational Needs team which I work with in my school.
		Initially lacking	Pilot respondents indicated these have been left out	<p>Teacher support items:</p> <ol style="list-style-type: none"> 1. Organise group/1-1 meeting with relevant teachers to discuss a specific case 2. In consult with teachers, prepare appropriately differentiated resources for pupils
		Initially lacking	Pilot respondents indicated these have been left out	<p>School support items</p> <ol style="list-style-type: none"> 1. Participate in scheduled meetings 2. Mentor new AEDs(LBS)
3	Examples provided alongside ambiguous terms to bring clarity	<p>Learning support items</p> <ol style="list-style-type: none"> 1. Provide out-of-class specialist support 2. Provide out-of-class curriculum support 	<p>Pilot respondent indicated the need to explain differences between "specialist" and "curriculum" support</p>	<p>Learning support items</p> <ol style="list-style-type: none"> 1. Provide out-of-class intervention support e.g. reading, numeracy and social skills 2. Provide out-of-class support for school curriculum content
4	Wording in response scale was revised to reflect a more natural progression in intensity	<p>Initial scale</p> <ol style="list-style-type: none"> 1: Hardly any involvement 2: Several times a year 3: At least once a month 4: Once a day 5: Several times a day 	<p>Pilot respondent indicated that scale is confusing</p>	<p>New scale</p> <ol style="list-style-type: none"> 1: Once a year or less 2: Once a month 3: Once a week 4: Once a day 5: Several times a day

Table 1. Pilot survey analysis matrix

In summary, the conduct of the pilot survey achieved the objective of enhancing the effectiveness of the instrument for the main study. Inadequacies in the instrument were found, leading to an improved version that was administered to 40 AEDs(LBS) across 25 schools in the main study. From AEDs' (LBS) survey responses in the main study, a pilot case (pilot school) was shortlisted, providing a testing ground for phase two of the pilot study – the interviews.

Pilot Study Phase Two: Interviews

The pilot interviews served several objectives:

1. Evaluate the relevance of the interview schedule (Malmqvist et al., 2019; Mikuska, 2017), in eliciting content from participants to address the research questions
1. Evaluate the appropriateness of the data collection procedure (Malmqvist et al., 2019), in terms of the recruitment process, the order of interviews and the effectiveness of video conferencing platform for conducting the interviews.
2. Develop interviewing skills (Mikuska, 2017), to learn to listen to participants, to be sensitive in following their cues while still being quietly guided by the interview agenda in the background.

Interview Method

Ethics Approval. The interviews with the pilot case commenced after obtaining ethics approval from the Institutional Review Board (IRB) of the University College London (UCL), Institute of Education (IOE) and data collection approval from the Ministry of Education (MOE), Singapore.

Pilot Research Site. The interviews were piloted in School A. School A was a Singapore co-educational government-funded mainstream primary school located in the West of Singapore. The school was attended by students from primary one to primary six, aged between 7 years to 12 years. Table 2 provides the demographics for pilot school A.

Research Site	Type	No. of reported students with SEN	Total student population	SEN profiles of students
School A	Co-educational	60	803	Dyslexia, Autism, Attention-Deficit Hyperactivity Disorder, Mild Intellectual Disability, Global Developmental Delay, Hearing Impairment, Visual Impairment

Table 2. Demographics of pilot school

Pilot Participants. Participants were four school personnel from School A. Participants comprised two AEDs(LBS), one teacher and one school leader. The unit of analysis, AED(LBS) deployment within School A, was examined through the insights of four participants which comprised two AEDs(LBS), one teacher and one school leader. Table 3 provides the demographics of the participants.

Participants	Position	Age	Length of current role (years)
AED(LBS)1A	Senior AED(LBS)	30 - 41	10
AED(LBS) 2A	AED(LBS)	30 - 41	3
Teacher	General Education Officer	30 - 41	3
School leader	Vice-principal	42 - 53	7

Table 3. Profiles of pilot participants

Pilot Interview Instrument. The interview instrument was designed to obtain insights into AED(LBS) deployment in Singapore mainstream primary schools and aimed to answer these questions:

- c) How do AEDs(LBS) work with teachers and school leaders?
- d) What factors influenced how AEDs(LBS) work with teachers and school leaders?

Being semi-structured, the interview schedule ensured that relevant topics of interest were covered yet allowing the researcher the flexibility to delve deeper into insights raised by participants whenever necessary. The interview schedule first elicited an overview of the

school's background and SEN strategy, subsequently narrowed in to focus on the specific AED(LBS) role within the school community and then widened out to examine the AED(LBS) role at a general level. Guided by the communities of practice framework (Wenger, 1998), the interview schedule covered questions pertaining to AED'(LBS) immediate community of practice, as well as their practice in the wider school community. The interview schedule examined the various ecological levels that AEDs(LBS) functioned in, namely, individual level, classroom level and the school level. The same interview schedule was used for the different groups of participants [AEDs(LBS), teachers and school leaders] with some questions being phrased differently for each group. Prompts were available for certain questions as a reminder of key areas for the researcher to explore when necessary. Table 4 provides the pilot interview schedule.

Focus	Question No.	Participants	Interview Questions	Further Prompts
School's background and SEN support strategy	1	All	Can you describe your school's objectives and values?	What is the school's attitude towards diversity and inclusion?
	2	All	How do these objectives and values influence the way you support students, including students with SEN?	What is the attitude towards students who need more help?
	3	All	What kind of approach does the school take in supporting pupils with SEN?	How did that come about?
	4	School leader, AED(LBS)	Your school has two AEDs(LBS) supporting the population of pupils with SEN. How does your school cope with this?	What are some strategies that have been put in place?
Specific AED(LBS) role within the school community	5	All	Can you describe the current role of the AED(LBS) in your school?	How are teachers involved? How are school leaders involved?
	6	All	Do you work with an SEN team in school? Tell me more. [AED(LBS)] Do the AEDs(LBS) work with an SEN team in school? Tell me more. (teachers and school leaders)	How is the school leader involved?
	7	All	How has your role impacted your colleagues? [AED(LBS)] How has the AED(LBS) role impacted you? (teachers and school leaders)	What is the impact on staff, students or school direction?
	8	AED(LBS), teachers	Can you describe how you provide in-class support? [AED(LBS)] Can you describe how AED(LBS) provide in-class support? (teachers)	Can you describe a particular example? Does the teacher help? How?
	9	AEDs(LBS), teachers	Do you work with the teachers before the in-class support? How? [AED(LBS)] Do you work with the AED(LBS) before the in-class support? How? (teachers)	
	10	AED(LBS)	Can you describe a typical withdrawal support session?	Does the teacher have any influence in this?

	11	AED(LBS), teacher	Have you been asked to take a student out of the class because he or she was too disruptive to the lesson? [AED(LBS)] Have you had to ask the AED(LBS) to take the student out because you could not go on with the lesson? (teacher)	Can you describe the situation?
	12	All	Other than what we have discussed, what are some other support that AEDs(LBS) provide to the school?	
AED(LBS) role in general	13	All	Over the years, what are some changes you have observed in the AED(LBS) role?	Are the changes welcomed?
	14	AED(LBS)	Reflecting on your role, can you tell me about the challenges involved?	What helped you? How can the school make it easier for you?
	15	All	With regards to training, what are your views on continuous professional training that can further enhance the AED(LBS) role in school?	
	16	All	Do you have additional views on how the impact of AEDs(LBS) in school can be maximised?	

Table 4. Pilot interview schedule

Interview Procedure

School A was the pilot site of the interviews. School A was shortlisted after the survey was administered to 40 AEDs(LBS) in the main study. Specifically, 11 items in the survey that provided an insight on their partnership with their school community were analysed and scored. Table 5 presents the 11 survey items used to shortlist the pilot site for the interviews. In comparison with AEDs(LBS) from other schools, AEDs(LBS) from School A attained the highest combined score 74 (mean = 60.4, standard deviation = 8.7) which indicated they had the highest possible level of partnership with their school community of teachers and school leaders. Consistent with intensity sampling strategy, an “information-rich” case was employed to shed light on the phenomenon of interest (Patton, 1990, p. 169). School A was selected as a site for the pilot study. As a school characterised by a high level of partnership between AEDs(LBS) and their school community of teachers and school leaders, School A was selected as a pilot case to provide a benchmark against which subsequent cases can be compared.

Survey Items	Links to Literature
<ul style="list-style-type: none"> • There is a well-defined Special Educational Needs team which I work with in my school 	Works in a team: Ghere and York-Barr (2007); Fisher and Pleasants (2012)
<ul style="list-style-type: none"> • I provide advice and guidance for teachers with regards to various Special Educational Needs (SEN) • I organise group/1-1 meeting with relevant teachers to discuss a specific case • I participate in pre-lesson support discussion • I participate in post-lesson debrief • I prepare appropriately differentiated resources for pupils in consult with teachers • I have the opportunity to clarify my role in the in-class support (2 sub-questions) • I have the opportunity to communicate with regards to in-class support (2 sub-questions) 	Works with teachers: Fisher and Pleasants (2012); Lim et al. (2014); Blatchford, Webster, et al. (2012)
<ul style="list-style-type: none"> • I can influence the SEN decisions that are made in school 	Voice of AED(LBS): Biggs et al. (2016); Fisher and Pleasants (2012)

Table 5. Survey items used to shortlist pilot interview site

Following the identification of School A as the site of the pilot case-study, an email inviting participation was sent to the AEDs(LBS) and school leaders of School A. Each email

contained the MOE data collection approval letter and a case-study consent form. The documents can be found in Appendix 3 and 4 respectively. Within each school, the invitation to participate was addressed to two AEDs(LBS), as well as a teacher and a school leader who worked with the AEDs(LBS). Upon the principals' consent for their schools to participate in the study, signed consent was obtained from all four participants from School A.

As the study took place during the Covid-19 pandemic, social distancing restrictions necessitated the use of virtual platforms for the one-to-one interviews. Without the option of traditional physical face-to-face interactions to build research-participant rapport, an alternative yet familiar virtual platform had to be chosen. Zoom, an online meeting video conferencing programme was chosen as the platform of choice as it was widely used among MOE educators. The order of the four individual interviews were conducted as such: AED(LBS)1, vice-principal, teacher and AED(LBS)2, each on a different day. The order of the interviews was determined by the schedule of the participants. During the interviews on the Zoom platform, the video and audio functions were turned on so that the researcher and participant were always both visible and audible to each other. Each interview session lasted approximately one hour. Before each interview started, the research reminded participants of the topic of interest, assured anonymity and verified consent regarding the audio recording of the interview. Notes were taken down during each interview to remind the researcher of questions to follow-up on and potential leads or ideas pertinent to the research question. The notes provided a source of insights which were followed up on in subsequent interviews. The interviews were audio recorded with the VideoSolo software to allow the transcription of the interviews.

Data Analysis

The interview data from the pilot case had to be prepared for analysis, prior to the actual analysis.

Preparation for Analysis. The preparation of transcripts for analysis involved three phases. First, the audio recordings from the pilot interviews were imported into an online transcription programme Otter.ai. The programme aided with the speech-to-text translation and generated a first draft of the transcript. The next stage involved the refinement of the

transcripts where the first draft of the transcripts was scrutinised for inaccuracies against the audio playback of the original interview from beginning to end. Participants' local accents, slangs and non-verbal utterances which were not picked up accurately in the transcription were corrected manually by the researcher. Common non-verbal utterance included speech sounds such as er, erm, mm, hm, as well as expressions made by Singlish speakers, such as yar, lor, lar, wah. This verbatim transcription kept the interview data as close to its original form as much as possible and ensured the integrity of the transcription. At the last stage of the process, participants were invited to read the transcripts and raise required amendments via email communication. With their consent, the transcripts were used for the next stage of analysis.

Actual Analysis. The interview data from the pilot case was examined using the six phases of thematic analysis (Braun & Clarke, 2006). First, the transcripts were read through several times, and initial ideas were noted down. Second, codes were assigned to units of data using an inductive approach (Terry et al., 2017). In this approach, coding was done in a bottom-up manner, with the data driving the codes. Third, the long list of codes was compiled, and similar codes were grouped into themes. Fourth, the themes went through an iterative process of review and refinement. The coded data extracts for each theme were examined to ensure coherence in the theme identified. Coded data extracts that were not relevant in supporting a theme were either dropped or housed under another theme. When the themes reached a point of equilibrium, they were represented using a thematic map. Once done, all the coded transcripts were read through once again to ensure the themes made sense. At the same time, the transcripts were scrutinised to pick up data extracts that supported the themes but had been missed out in the initial coding stages. Fifth, each theme was examined for the story it told, in relation to the overall story of the case. Sub-themes were created when necessary, to bring out the intricacy of certain themes. Finally, the entire analysis process culminated in a written case report which provided a concise summary of the case through the illustration of themes that were generated.

Learning Points from Pilot Interviews

To recapitulate, the objectives of the pilot interviews were to:

1. Evaluate the relevance of the interview schedule in eliciting content from participants to address the research questions
2. Evaluate the appropriateness of the data collection procedure, specifically the recruitment process, order of interviews and effectiveness of the interview platform
3. Develop interviewing skills

Analysis of the data from the pilot interviews indicated the need to sharpen the interview schedule. An interview questions analysis matrix adapted from Malmqvist et al. (2019) provided structure for the review of the entire interview schedule. The complete list of questions to be reviewed, accompanying reasons and revisions is captured in the interview questions analysis matrix in Table 6 below. Questions to be reviewed were classified into three groups: questions to be modified, questions to be added and questions to be removed. Questions were reviewed for various reasons. Firstly, it was observed that easy and friendly opening question to build the rapport between researcher and participant was lacking (McGrath et al., 2019) (see question 1 below). Furthermore, certain questions proved too formal for the setting and the language was adapted to reduce the formality, to allow the researcher to get “closer” to the participants (see question 3, 7 & 15). Additionally, certain questions were not relevant and were difficult for participants to answer (see questions 2 & 13). To get nearer to participants’ inner voice, light-hearted hypothetical questions (see question 1 & new insert - 3) were also added to the repertoire of main interview questions (Seidman, 2013). Finally, questions and prompts were added to elicit more information about the community of teachers and school leaders that AEDs(LBS) are working with (see question 6 and new insert – 1 and 2). When the data collected through the pilot interviews were analysed, it was observed that the themes derived had little relation to Wenger’s (1998) community of practice perspective, the theoretical framework adopted for this study. Detailed description of the pilot case, along with its thematic map can be found in Appendix 5. The unintended digression from the theoretical framework during the pilot interviews highlighted the need for the interview schedule to be more effective in eliciting information about AEDs’(LBS) partnership with their SEN community and their wider school community.

Focus	Question No.	Participants	Pilot interview questions	Type of change (modification/ addition/ replacement/ removal)	Revision to questions
School's background and SEN support strategy	1	All	Can you describe your school's objectives and values?	Replacement: Necessary for a non-intimidating opening question to help participants warm-up to researcher	Imagine that I am a parent wanting to enrol my child in your school, how would you describe your school?
	2	All	How do these objectives and values influence the way you support students, including students with SEN?	Removal: Participants either found it hard to answer or answered it superficially. Number of variables in question posed confusion for participants	NA. Allow values on SEN support to emerge naturally from the interviews. Probe when necessary.
	3	All	What kind of approach does the school take in supporting pupils with SEN?	Modification: Simplify wording to keep question conversational	How are students with SEN supported in your school?
AED(LBS) role within the school community	6	All	Do you work with an SEN team in school? Tell me more. [AED(LBS)] Do the AEDs(LBS) work with an SEN team in school? Tell me more. (teachers and school leaders)	Modification: Add prompts to allow elaboration on their community of practice	In addition to "what is the role of school leaders?", these prompts were added: What are the platforms for working together? What is being discussed? How do you complement each other's role?
	7	All	How has your role impacted your colleagues? [AED(LBS)] How has the AED(LBS) role impacted you?	Modification: Simplify wording to keep question conversational	How has your role helped the school? How has the AED(LBS) role helped the school?

			(teachers and school leaders)		
	New insert - 1	Teacher	NA	Addition: Necessary for a question to understand teacher's attitude towards students with SEN	Looking back at your experiences, when you get a student with SEN, what are some considerations or changes you've had to make to your teaching?
	New insert - 2	School leaders	NA	Addition: To provide insights on aspects of AEDs'(LBS) work that school leaders value	How do you know the AEDs(LBS) are doing good in the school?
AED(LBS) role in general	13	All	Over the years, what are some changes you have observed in the AED(LBS) role?	Removal: Did not yield relevant information, two participants found it hard to relate because of their shorter years of service	
	15	AEDs(LBS)	With regards to training, what are your views on continuous professional training that can further enhance the AED(LBS) role in school?	Modification: a) Simplify wording to keep question conversational b) Modify target participants: Other participants found it hard to answer; only relevant to AEDs(LBS)	Do you have adequate knowledge and skills to cope with your current role? Tell me more.
	New insert - 3	AEDs(LBS)	NA	Addition: Necessary for a question to elicit inner voice to uncover additional challenges at work which have not been shared.	What advice would you give to newer AEDs(LBS) who are navigating this new role?

Table 6. Interview questions analysis matrix

Based on the pilot interviews conducted with four participants, the data collection procedure was deemed to be appropriate and effective. The two AEDs(LBS) showed a clear understanding of the research study communicated to them via email and responded positively (with their principal's approval) to the invitation to participate. The details of the two additional participants (school leader and teacher) required for the study were also provided to the researcher upon the school's confirmation to participate. The sequence of the interviews, determined by the participants' schedule, proved effective. The interviews started with one AED(LBS), followed by the school leader, teacher and the other AED(LBS). The sequence suggested that there was merit in having at least one AED(LBS) as the first participant to be interviewed, as he or she was the best person to provide an overview of the AED(LBS) role in the school. This information enabled the researcher to establish a baseline understanding of the AED(LBS) role in the school prior to the other interviews. All participants responded well to the interview questions and yielded rich and deep insights about AED(LBS) deployment in School A. Even though the teacher was not part of the working SEN community in school, she was able to provide rich insights nonetheless because of her ongoing partnership with the AEDs(LBS) in the support of students with SEN. Therefore, the choice of interviewing two AEDs(LBS), one school leader and one teacher [whom AEDs(LBS) have worked with] demonstrated effectiveness in shedding light on the phenomenon. Finally, the online conferencing platform proved as an effective alternative to face-to-face interviews. Both the participants and interviewer were well acquainted with this platform and navigated the software comfortably, from the initial log-in to the audio and video functions.

The play back of the audio recording, the transcripts of the pilot interviews as well as notes taken during the interview process provided insights into researcher's interviewing skills and highlighted areas of improvements needed. Prior to the interviews, the researcher sent individual emails to participants to introduce herself and the rationale for the study, an important step for establishing the trust and rapport needed for the interviews (McGrath et al., 2019). During the interviews, the researcher maintained a friendly and open demeanour which encouraged participants to share. Participants' forthcoming responses negated the concerns of

a reduced rapport between researcher and participants on a virtual interview platform. The researcher also demonstrated flexibility in the use of the semi-structured interview schedule. She used the interview schedule to create the structure for the interview but remained sensitive to participants' sharing and deviated from the schedule whenever necessary. Overall, the pilot interviews were conducted smoothly and elicited the necessary information from participants. Yet, the pilot interviews were not without flaws. In acknowledging what was shared by the participant through utterances of "right" or "ok", the researcher might have inadvertently disrupted the thoughts of participants. Additionally, it was observed that there were instances where the researcher could have held back interjections to allow more time for participants to process their thoughts or complete their sharing. These actions resembled that of an "overly active interviewer" (McGrath et al., 2019, p. 1004) and suggested the need to listen more and talk less.

Conclusion

The two phases in the pilot study yielded significant learning points for the main study, in terms of the technical aspects of conducting the study and the conceptual insights associated with the research topic. These learning points were incorporated into the main study and provided a firm footing on which the main study would be built upon.

CHAPTER 4

Research Methodology: The Main Study

Introduction

This chapter discusses the research methodology of the main study. The main study builds upon the strengths of the pilot study and learns from the weaknesses of the pilot study. Like the pilot study, the main study is designed as a two-phase study, with a survey preceding the interviews. This chapter introduces the research design, methods and procedures used to answer the research questions.

Research Design

The study sought to understand the deployment of AEDs(LBS) in Singapore mainstream schools through the following research sub-questions:

- a. How frequently do the AEDs(LBS) perform the list of stated tasks?
- b. How much time do AEDs(LBS) spend on the task categories?
- c. How do AEDs(LBS) work with teachers and school leaders?
- d. What factors influenced how AEDs(LBS) work with teachers and school leaders?

The research questions were answered through a qualitative multiple case-study that gathered data using a survey and interviews. The two instruments represented different approaches of understanding deployment. The survey examined AED(LBS) deployment from a task-based perspective while the interviews used Wenger's (1998) community of practice perspective to examine AED(LBS) deployment in the context of their partnership with teachers and school leaders. The survey formed the first phase of the study and aided in the selection of cases for the second phase, the interviews. Together, the two instruments enabled a fuller understanding of AED(LBS) deployment in Singapore.

Qualitative Study

Qualitative Design. Even though schools were governed by the same authority, MOE Singapore, the deployment of AEDs(LBS) differed from school to school because of the different

contexts, culture, and leadership within each school . An interest in “multiple realities” aligned with the ontological assumption of qualitative studies and rendered the qualitative approach a suitable design for this study (Creswell, 2013, p. 20). Thereafter, the study was guided by the epistemological assumption of qualitative studies, in which the multiple realities could be obtained from the varied experiences and subjective perspectives of participants from different schools (Creswell, 2013). Because knowledge was assumed to be found in the views of participants, in-depth interviews with participants were used to collect information and probe insights. Through this qualitative research design, a contextualised, rich and layered understanding of AED(LBS) deployment was developed (Creswell, 2008).

Multiple-Case Study Design. Thereafter, a case study design was selected as the approach of inquiry because of the context-dependent nature of AED(LBS) deployment. Lim et al. (2014) indicated that how AEDs(LBS) worked with other colleagues varied across schools and depended on school culture and leadership styles. Yin (2014) noted that case studies were suited for these situations, in which it was not possible to separate the phenomenon of interest from its context. A case study research involves a study of “a unit around which there boundaries” (Merriam, 2009). In each case, AED(LBS) deployment within the school, with a focus on partnerships with colleagues, was analysed through the experiences of a group of educators from the school. Merriam (2009) described a qualitative case study as being particularistic, descriptive and heuristic. These characteristics rendered the qualitative case study a suitable research design for this study. The uniqueness of AED(LBS) deployment within the boundary of each school was consistent with the particularistic trait of case studies, making case study a suitable approach for understanding AED(LBS) deployment. The study’s research questions also required descriptions and explanation, complementing the descriptive trait of case studies. Finally, the heuristic nature of case study promised to offer new insights into paraeducator deployment through the unique contribution of each case, which can promote “a rethinking of the phenomenon being studied” (Merriam, 2009, p. 44.).

Having determined the case study design as an approach for this study, the multiple-case study design was selected as the type of case study to be used (Yin, 2014). Firstly, the awareness of similarities and differences across several cases (Baxter & Jack, 2008) deepened

the researcher's engagement with the phenomenon. The differences, especially, provoked investigation into the reasons for the distinctions. Furthermore, with multiple-case study, analysis of theory can occur across cases (Yin, 2014), lending more credibility and strength to the theories created since the theories have been built upon on several cases (Gustafsson, 2017).

Positivist/ postpositivist influence. While the qualitative research approach has been chosen for its ability to use human perceptions and experiences to elucidate our understanding on AED(LBS) deployment (Merriam & Tisdell, 2016), it was evident that my positivist beginnings continued to exert a subtle influence on the way the study has been conducted. First, the research question with its sub-questions were framed like questions in a quantitative study. The multiple research sub-questions were specific and designed to elicit both quantitative and qualitative data. Second, a lingering positivist influence explained why I felt obliged to collect quantitative data to augment my qualitative interview data. The measurable and absolute quantitative data would provide a form of triangulation for the qualitative data, improving the trustworthiness of my findings. Finally, my positivist roots also inspired the priorities I held for the study. Influenced by the nature of quantitative studies, there was a desire for the case study findings to be generalisable (de Saint-Georges, 2017). A multiple-case study, having gone through several replications of a theory (Yin, 2014), would produce stronger and more reliable findings (Baxter & Jack, 2008). This is akin to the repeated conduct of quantitative experiments to achieve consistent findings that can improve the reliability of a study. Therefore, a multiple case-study was chosen as a study design despite being cognizant of the potential trade-off; a longer observation time and a deeper engagement with the phenomenon, both of which are frequently associated with a single case-study (Gustafsson, 2017).

Events Leading to Main Study

The main study had two phases: survey and interviews. Each phase in the main study was preceded by a pilot. The events in this research study unfolded in this chronological sequence: pilot survey, main study survey, pilot interviews and main study interviews. Figure 1 presents an overview of the timeline of events.

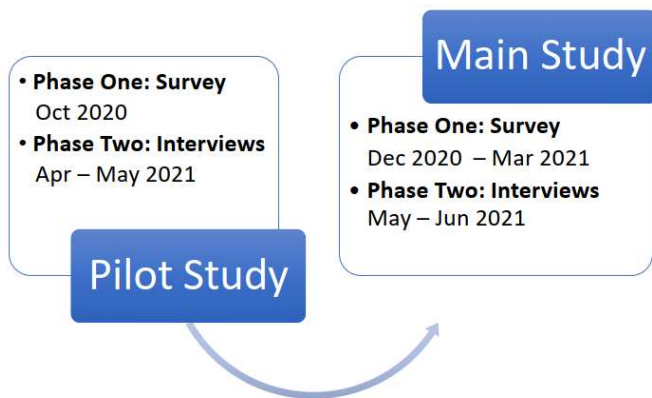


Figure 1. Timeline of events leading to main study.

Phase One of Main Study: Survey

Survey Method

Ethics Approval. The survey commenced after obtaining ethics approval from the Institutional Review Board (IRB) of the University College London (UCL), Institute of Education (IOE) and data collection approval from the Ministry of Education (MOE), Singapore.

Respondents. Data was collected from 40 individuals. Respondents were 40 AEDs(LBS) representing 25 mainstream primary schools. The respondents represented approximately 7% of all AEDs(LBS) in primary and secondary schools. 80 per cent were female and 20 per cent male. 70 per cent were AEDs(LBS) and 30 per cent were senior AEDs(LBS). Years of service as AED(LBS) were reported to range from 7 months to 15 years (Mean = 6.8 years). Highest level of education was reported as such: 12.5 per cent of AEDs(LBS) attained a master’s degree, 50 per cent attained a bachelor’s degree, 37.5 per cent attained a diploma. In addition to a full-time one-year Diploma in Special Education that was compulsory for all AED(LBS) to complete, 40 per cent received specialised training (lasting several months) in at least one specific area of SEN, dyslexia or autism and 22 per cent completed the Advanced Diploma in Special Education.

Survey Instrument. The survey instrument had two purposes. First, it assisted in the shortlisting of cases for the second phase of the multiple-case study i.e. the interviews. Additionally, it yielded AED(LBS) deployment data from a task-based perspective that would

complement the data gathered from the second phase of the study by examining the following research sub-questions:

- a. How frequently do the AEDs(LBS) perform the list of stated tasks?
- b. How much time do AEDs(LBS) spend on the task categories?

The survey used in the main study contained revisions based on feedback gathered from the pilot survey. Like the pilot survey, it consisted of five sections. The first section requested for demographics, specifically, personal details, years of experience, training, and work-related conditions. The second section, adapted from the instrument in Webster et al. (2016), examined how frequently the AEDs(LBS) perform the specific tasks listed in six categories of tasks, specifically, (a) learning support for pupils, (b) behavioural support for pupils, (c) pastoral support for pupils, (d) Indirect support for pupils, (e) support for teachers and (f) support for school. For each task, participants were asked to select the frequency that best represents their involvement on a response scale (*Once a year or less, once a month, once a week, once a day, several times a day*). The third section measured respondents' time allotment across the task categories in real time, expressed in hours and minutes. The fourth section, adapted from Webster et al. (2016), examined how respondents worked with teachers in the classroom, in terms of the quality of preparation and the post-lesson follow-up. The final section of the survey purposed to understand the content validity and the appropriateness of the length of survey. The main study survey instrument can be found in Appendix 6.

Survey Procedure

A list of potential participants for the main study survey was obtained from MOE's Psychological Services Branch (PSB), the SEN division in MOE. The list contained an unbiased representation of AEDs(LBS) with varying years of experience as AEDs(LBS), as well as an equal representation of schools from the four school cluster zones (North, South, East, West). An email describing the survey was sent to a total of 76 AEDs(LBS). The email contained the survey consent form and MOE data collection approval letter. The attachments to the email can be found in Appendix 2 and 3 respectively. 40 AEDs(LBS) responded with written consent to participate. Thereafter, the survey was sent to respondents as an electronic Google Form. Out

of 76 AEDs(LBS) who were contacted, a total of 40 respondents completed the online survey, representing a survey response rate of 53% . The 40 respondents represented 25 primary schools.

Analysis of Survey Findings

The survey was carried out for two reasons. Very importantly, the survey generated AED(LBS)-school partnership scores that enabled a thoughtful and purposeful case selection for the subsequent interview phase. This two-step sampling process (Patton, 1999), enabled the shortlisting of three schools that eventually became the research sites for phase two of the study - the interviews. Additionally, descriptive statistics derived from the survey responses provided insights on how six AEDs(LBS) from the three schools spent their time in schools.

Phase Two of Main Study: Interviews

Interview Method

Ethics Approval. The main study involved multiple (three) case studies. The interviews commenced with full ethics approval from the Institutional Review Board (IRB) of the University College London (UCL), Institute of Education (IOE). Data collection approval was also sought from the Ministry of Education (MOE), Singapore.

Research sites. School B, C and D were the research sites for the main study. They were Singapore co-educational government-funded mainstream primary schools located in the North, East and West of Singapore. The schools are attended by students who are in primary one to primary six, aged between 7 years to 12 years. Table 7 provides the demographics for schools B, C and D.

Research Site	Type	No. of reported students with SEN	Total student population	SEN profiles of students
School B	Co-educational	39	1285	Dyslexia, Attention Deficit Hyperactivity Disorder (ADHD), Autism, Selective Mutism & Mild Intellectual Disability, Global Developmental Delay, Severe Developmental Language Disorder, Sensory Processing Disorder, Mild Expressive Language Disorder, Social

				Communication Disorder, Hearing Impairment, Delayed Speech and Fine Motor Development, Developmental Coordination Disorder
School C	Co-educational	73	1282	Dyslexia, Autism, ADHD, Social Emotional Behavioural difficulties, Hearing impairment, Speech and language difficulties, Dyscalculia, Global Developmental Delay, Intellectual Disability, Selective Mutism, Auditory processing disorder, Cerebral Palsy, Visual difficulties, Dysgraphia
School D	Co-educational	62	1400	Dyslexia, Autism, ADHD, Dyspraxia, Speech & Language Difficulties, Hearing Difficulties, Selective Mutism, Tourette's Syndrome, Irlen Syndrome

Table 7. Demographics of schools in main study

Participants. Participants in the main study were 12 school personnel from School B, C and D. Participants comprised eight AEDs(LBS), four teachers and four school leaders. Within each school, the unit of analysis, AED(LBS) deployment, was examined through the insights of four participants which comprised two AEDs(LBS), one teacher and one school leader. Table 8 provides the profile of the participants.

School	Participants	Position	Age	Gender	Years in current role
B	AED(LBS)1B	Senior AED(LBS)	30 – 41	F	8
B	AED(LBS)2B	AED(LBS)	30 – 41	F	1
B	Teacher TB	Education Officer SEN coordinator Teacher trained in Special Needs (TSN)	42 – 53	F	20 3 Training in progress
B	School Leader VPB	Vice-principal (Academic)	42 – 53	F	9
C	AED(LBS)1C	Senior AED(LBS)	30 – 41	F	7
C	AED(LBS)2C	AED(LBS)	30 – 41	F	10
C	Teacher TC	Education Officer	42 – 53	M	20
C	School Leader VPC	Vice-principal (Academic)	Above 54	M	10
D	AED(LBS)1D	AED(LBS)	30 – 41	F	12
D	AED(LBS)2D	AED(LBS)	30 – 41	M	1
D	Teacher TD	Education Officer	42 - 53	F	23

		Teacher trained in Special Needs (TSN)			10
		Learning Support Coordinator			10
D	School Leader VPD	Vice-principal (Academic)	42 - 53	F	8.5

Table 8. Profiles of multiple-case study participants

Interview Instrument. The main study interview instrument was designed to obtain insights into AED(LBS) deployment in Singapore mainstream primary schools, through the following research sub-questions:

- c. How do AEDs(LBS) work with teachers and school leaders?
- d. What factors influenced how AEDs(LBS) work with teachers and school leaders?

The interview was guided by a semi-structured interview schedule which incorporated the necessary changes identified during the pilot case interviews. Being semi-structured, the interview schedule ensured that relevant topics of interest were covered yet allowing the researcher the flexibility to delve deeper into insights raised by participants whenever necessary. The interview schedule first elicited an overview of the school’s background and SEN strategy, subsequently narrowed in to focus on the AED(LBS) role within the school community and then widened out again to understand the AED(LBS) role in general. Guided by the communities of practice framework (Wenger, 1998), the interview schedule covered questions pertaining to AED’(LBS) immediate community of practice, as well as their practice in the wider school community. The interview schedule examined the various ecological levels that AEDs(LBS) functioned in: individual level, classroom level and the school level. The same interview schedule was used for the different groups of participants [AEDs(LBS), teachers and school leaders] with some questions being phrased differently for each group. Prompts were available for certain questions which called for deeper exploration. Table 9 provides the main study interview schedule.

Focus	No.	Participant	Interview schedule	Further prompts
School's background and SEN support strategy	1	All	Imagine that I am a parent wanting to enrol my child in your school, how would you describe your school?	Would my child with SEN be able to fit into your school?
	2	All	How are students with SEN supported in your school?	How do the AEDs(LBS) fit into the tiered approach of support?
	3	All	Your school has two AEDs(LBS) supporting the population of pupils with SEN. How does your school cope with this?	How do AEDs(LBS) work alongside other SEN personnel?
AED(LBS) role within the school community	4	All	Can you describe the current role of the AED(LBS) in your school?	How are teachers involved? How are school leaders involved?
	5	All	Do you work with an SEN team in school? Tell me more. [AED(LBS)] Do the AEDs(LBS) work with an SEN team in school? Tell me more. (teachers and school leaders)	How is the school leader involved? What are the platforms for working together? What is being discussed? How do you complement each other's role?
	6	All	How has your role helped the school? [AED(LBS)] How has the AED(LBS) role helped the school? (teachers and school leaders)	How has it helped colleagues, students and parents?
	7	AED(LBS), teachers	Can you describe how you provide in-class support? [AED(LBS)] Can you describe how AED(LBS) provide in-class support? (teachers)	Can you describe a particular example? Does the teacher help? How?
	8	Teachers	Looking back at your experiences, when you get a student with SEN, what are some considerations or changes you've had to make to your teaching?	Why?
	9	AEDs(LBS), teachers	Do you work with the teachers before the in-class support? How? [AED(LBS)] Do you work with the AED(LBS) before the in-class support? How? (teachers)	
	10	AED(LBS)	Can you describe a typical withdrawal support session?	Does the teacher have any influence in this?

	11	AED(LBS), teacher	Have you been asked to take a student out of the class because he or she was too disruptive to the lesson? [AED(LBS)] Have you had to ask the AED(LBS) to take the student out because you could not go on with the lesson? (teachers)	Can you describe the situation?
	12	All	Other than what we have discussed, what are some other support that AEDs(LBS) provide to the school?	
	13	School leaders	How do you know the AEDs(LBS) are doing good?	
AED(LBS) role in general	14	AED(LBS)	Reflecting on your role, can you tell me about the challenges involved?	How can the school make it easier for you?
	15	AED(LBS)	Do you have adequate knowledge and skills to cope with your current role? Tell me more.	
	16	AED(LBS)	What advice would you give to newer AEDs(LBS) who are navigating this new role?	Why?
	17	All	Do you have additional views on how the impact of AEDs(LBS) in school can be maximised?	

Table 9. Main study interview schedule

Interview Procedure

Participants for the main study interview phase were shortlisted from the pool of AEDs(LBS) who participated in the main study survey. Even though there were 40 survey respondents, only 30 AEDs(LBS) from 15 schools were considered for the interview phase. The study required two participating AEDs(LBS) from each school and schools that did not fulfil this criteria were not considered. Subsequently, the responses of 30 AEDs(LBS) on 11 survey questions were analysed for an indication of their level of AED(LBS)-school partnership. Table 10 presents the presents the 11 survey items used to shortlist three schools for the main study interviews.

Survey Items	Links to Literature
<ul style="list-style-type: none"> • There is a well-defined Special Educational Needs team which I work with in my school 	Works in a team: Ghere and York-Barr (2007)
<ul style="list-style-type: none"> • I provide advice and guidance for teachers with regards to various Special Educational Needs (SEN) • I organise group/1-1 meeting with relevant teachers to discuss a specific case • I participate in pre-lesson support discussion • I participate in post-lesson debrief • I prepare appropriately differentiated resources for pupils in consult with teachers • I have the opportunity to clarify my role in the in-class support (2 sub-questions) • I have the opportunity to communicate regarding in-class support (2 sub-questions) 	Works with teachers: Fisher and Pleasants (2012); Lim et al. (2014); Blatchford, Webster, et al. (2012)
<ul style="list-style-type: none"> • I can influence the SEN decisions that are made in school 	Voice of AED(LBS): Fisher and Pleasants (2012); Biggs et al. (2016)

Table 10. Survey items used to shortlist main study interview sites

The AEDs'(LBS) individual responses on the above 11 Likert-scale questions were converted into scores, with the rating for each question being directly translated into a score (e.g. a rating of 5 translated into a score of 5). For each participant, the scores for 11 questions

were added up, with higher scores representing a higher level of partnership between individual AEDs(LBS) and their school community. The combined scores of each pair of AEDs(LBS) provided an indication of the overall level of AED(LBS)-school partnership in a specific school. The combined scores of AEDs(LBS) are presented in descending order in Table 11 below, with the three shortlisted schools being highlighted.

	AED(LBS)1	AED(LBS)2	Combined Score
Pilot School A	36	42	78
School C	32	36	68
School 1	27	40	67
School B	31	32	63
School 2	37	26	63
School 3	30	32	62
School 4	34	27	61
School 5	30	31	61
School 6	35	25	60
School 7	27	33	60
School 8	34	26	60
School 9	32	26	58
School D	29	28	57
School 10	27	23	50
School 11	18	20	38
Mean score	---	---	60
Standard deviation	---	---	8.7

Table 11. Table of scores indicating AEDs'(LBS) level of partnership with school

The selection of the three school sites were guided by the maximum variation sampling strategy, the practice of selecting sites that are different on a certain set of criteria (Creswell, 2013). Excluding Pilot School A, three schools with varying levels of partnership (low, mid and high) between AEDs(LBS) and the school community were approached to participate. With a mean of 60 and standard deviation of 8.7, a low score was determined by having at least one deviation below the mean, a mid-score was at the mean, and a high score was about one deviation above the mean. While maximum variation sampling was planned for, the execution was subject to the agreement of participating schools. Eventually, School D provided a case with low partnership (Schools 10 & 11 declined to participate when approached), School B provided a case with moderate partnership and School C provided a case with high partnership.

Emails inviting participation in the main study were sent to the AEDs(LBS) and school leaders of the three schools. Each email contained the MOE data collection approval letter and a case-study consent form. The attachments to the email can be found in Appendix 3 and 4 respectively. Within each school, the invitation to participate was addressed to two AEDs(LBS), as well as a teacher and a school leader who worked with the AEDs(LBS). Upon the principals' consent for their schools to be represented in the study, signed consent was obtained from all twelve participants from School B, C and D.

As much as possible, interviews with participants from each school were scheduled in close intervals, albeit each on a separate day, and avoided overlaps in interviews with participants from another school. This way of scheduling interviews allowed the focused attention on one case at a time and encouraged a deeper engagement with each case. Within each school, the interviews started with the AED(LBS) and the school leader, respectively. Subsequently, the other AED(LBS) and teacher were interviewed in no particular order. Rudimentary notes taken during each interview provided reminders of initial ideas that were subsequently followed up or cross-checked across participants within a school, facilitating the "triangulation of sources" (Patton, 1999, p. 1193). Furthermore, within each school, the series of interviews began with at least one AED(LBS). It was important that the subject of investigation herself or himself provided the first perspective of AED(LBS) deployment within the school.

As the study took place during the Covid-19 pandemic, social distancing restrictions meant that the traditional face-to-face interactions to build research-participant rapport was no longer possible. A virtual platform had to be chosen for the one-to-one interviews. Zoom, an online meeting video conferencing programme was chosen as the platform of choice as it was widely used among MOE educators. It was hoped that the familiarity with the virtual platform would compensate for the departure from the traditional face-to-face interviews that participants were used to before the pandemic. During the interviews, the video and audio functions were turned on so that the researcher and participant were always both visible and audible to each other. Each interview session lasted approximately one hour. Before each interview started, the research reminded participants of the topic of interest, assured

anonymity and verified consent regarding the audio recording of the interview. Notes were taken during each interview to remind the researcher of questions to follow-up on and potential leads pertinent to the research question. The notes were a source of insights which could be followed up on in subsequent interviews. The interviews were audio recorded with the VideoSolo software to allow the transcription of the interviews.

Data Analysis

Analysis of interview data from the main study occurred in two stages of pre-analysis and actual analysis.

Preparation for Analysis. The preparation of transcripts for analysis involved three phases. First, the audio recordings were imported into an online transcription programme Otter.ai. The programme aided with the speech-to-text translation and generated a first draft of the transcript. The next stage involved the refinement of the transcripts where the first draft of the transcripts was scrutinised for inaccuracies against the audio playback of the original interview from beginning to end. Participants' local accents, slangs and non-verbal utterances which were not picked up accurately in the transcription were corrected manually by the researcher. Common non-verbal utterance included speech sounds such as er, erm, mm, hm, as well as expressions made by Singlish speakers, such as yar, lor, lar, wah. This verbatim transcription kept the interview data as close to its original form as much as possible and ensured the integrity of the transcription. At the last stage of the process, participants were invited to read the transcripts and raise amendments via email communication. With their consent, the transcripts were used for the next stage of analysis.

Actual Analysis. Using interview data from multiple cases, analysis was conducted at two levels: within-case and cross-case levels (Creswell, 2013).

This study relied on the six phases of thematic analysis to interpret the data collected (Braun & Clarke, 2006) with careful considerations of the values and assumptions that influenced the process (Braun & Clarke, 2019). Each piece of transcript went through the six phases of analysis. First, the transcript was read through once, and initial ideas were noted down. Second, codes were assigned to units of data with a primary reliance on the inductive

approach (Terry et al., 2017). In this approach, coding was done in a bottom-up manner, with the data driving the codes. Data-driven codes included those that were named after the exact words of participants (also known as “in vivo codes”) (Creswell, 2013, p. 185) and those invented by researcher to best capture the meaning of the data. Yet, the subtle top-down influence of the theoretical lens on the coding process needed to be acknowledged especially because “the researcher is never a blank slate” (Terry et al., 2017, p. 9). As such, it was inevitable that the invented codes bore influence of the theoretical lens used in this study. The codes were also analysed using a surface level of analysis (Terry et al., 2017) which meant that the data was coded mainly according to what was seen, and not what was inferred. Third, the long list of codes was compiled and similar codes were grouped into themes. Table 12 below presents an extract from a transcript to illustrate the first three phases of thematic analysis, mainly the progression from initial ideas to codes to themes. A more elaborate demonstration of coding in the first three phases of analysis is provided in Appendix 7. Fourth, the themes went through an iterative process of review and refinement. The coded data extracts for each theme were examined to ensure coherence in the theme identified. Coded data extracts that were not relevant in supporting a theme were either dropped or housed under another theme. Initial themes generated from the first case-study provided the foundation for the analysis of two other cases. As analysis progressed, the three cases were constantly compared against one another for similarities and differences (Stake, 2006). As a result of these comparisons, the initial themes from the first case (School B) went through an iterative process of refinement, deletions and additions to accommodate the codes in other cases, before arriving at the final set of themes. Table 13 below presents examples of initial themes, changes that took place and the final set of themes. A detailed explanation of the evolution of themes in the fourth phase of analysis is provided in Appendix 8. Eventually, the themes reached a point of equilibrium where the existing themes proved effective in capturing most of the codes. The individual themes were then assembled to explain the phenomenon in the respective case [see Figure 2 “Ecological Map of AED(LBS) Deployment” in Chapter 5: Findings]. Thereafter, all the coded transcripts were read through once again to ensure the themes made sense. At the same time, the transcripts were examined once again to pick up data extracts that supported the themes

but had been missed out in the initial coding stages. In the fifth phase of analysis, each theme was examined for the story it told, in relation to the overall story. Sub-themes were created when necessary, to bring out the intricacy of certain themes. Finally, the entire process culminated in detailed individual case findings to capture the distinctiveness of each case, as well as a synthesised story of the phenomenon (see Chapter 5: Findings).

Transcript	Themes	Second Reading : Codes	First Reading: Initial Ideas
1. because some of the teachers may <i>come straight to the AEDs(LBS)</i> ,	Making teachers' lives easier	Teachers <i>come straight to AEDs(LBS)</i>	Teachers are comfortable with AEDs(LBS)
2. to talk about very serious cases, like, okay, they need us to come in <i>immediately</i> .	Making teachers' lives easier	AED(LBS) provide <i>immediate</i> support to teachers	AED(LBS) is flexible with processes
3. You know, then we... then we will usually...okay, after I come in to work on this case, I would actually <i>update the year head</i> and say,	Voice	AED(LBS) <i>update year head</i>	Accountable to year head
4. Look, I've gone in and <i>observe</i> ,	Role visibility	AED(LBS) <i>observes</i> class	AED(LBS) exudes confidence
5. and I think this case requires a direct referral to the psychologist, which has, which has been happening. Yeah. So usually, when we refer to the year head, usually we will take on the cases and do some intervention.	Voice	Makes professional judgement to year head	AED(LBS) is knowledgeable
6. However, cases like this over the years, we also see that, in fact, sometimes, in fact, a lot of times because we are the <i>experts</i> , I refer the case.	Sense of place in school	AED(LBS) <i>as experts</i>	Years of experience provide confidence
7. I refer the case rather than the teachers, so because I know when is it that I have to surface to a psychologist. Yeah. So then we bypass the referral process.	Sense of place in school	AED(LBS) shows confidence in professional judgment	AED(LBS) exudes confidence

8. It comes straight to me, I do intervention and then I decide whether...Okay, the next step is we <i>discuss with CMT</i> . Can I refer this case to psychologist?	Shared practice in working community	<i>Discuss with CMT</i>	Reliant on Case Management Team (CMT)
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Table 12. First three phases of thematic analysis (initial ideas to codes to themes)

Initial themes	Changes to theme	Final themes
AEDs(LBS)	No change	AEDs(LBS)
Sense of inferiority	Subsumed under new theme	Sense of place
Alignment to teachers	Removed	NA
Inner SEN Community	Renamed	Working/learning community
Pillar of support	Removed	NA
Shared beliefs and practices	Renamed	Shared goals and practices
Interpersonal relationships	Removed	NA
Visibility	Redefined	Voice
		Support from leaders
Wider school community	No change	Wider school community
Support from leaders	Position of theme shifted from “wider school community” to “working/learning community”	Support from leaders
Building capacity	Subsumed under new theme	Visibility
Making teachers’ lives bearable	Renamed	Making teachers’ lives easier
Getting teachers’ engagement	Expanded into new themes	Working together, getting teachers over to their side

Table 13. Initial themes, changes, and final themes

Establishing trustworthiness

With the researcher as “the instrument in qualitative inquiry” (Patton, 1999, p. 1198), it was necessary to use a variety of measures to guard against the issues of researcher subjectivity and researcher biasness. Furthermore, it was important for the researchers to ensure credibility of the findings.

To manage researcher biasness, the researcher’s position and assumptions that might influence the interpretations of the findings were described in Chapter 1. The ongoing conversations with my IFS supervisor and her colleague, both of whom assumed the role of being my critical friends throughout the whole course of the research study, provided the opportunity for bringing to light any implicit assumptions that might have shaped the analyses.

To improve credibility of the findings, three important steps were taken. Firstly, the multiple case-study was built upon a pilot case-study which identified potential weaknesses in the initial method and procedure, all of which were addressed and rectified in the multiple case-study. Secondly, the multiple case-study relied on multiple data sources to understand AED(LBS) deployment within a school. AEDs(LBS), teachers and school leaders were interviewed to provide insights on the same phenomenon from multiple perspectives. This “triangulation of data sources” offered the researcher opportunity to clarify meaning, reduced the likelihood of researcher misinterpretation and provided a fuller picture of the phenomenon of interest (Creswell, 2008, p. 266). Finally, member checking was practised to manage researcher subjectivity (Merriam & Tisdell, 2016). A case description of each school was taken back to the participants of the respective school to allow them to comment on the accuracy of the account of AEDs’(LBS) deployment. The brief case descriptions can be found in Appendix 9. 11 out of 12 participants responded to the invitation to comment, and all 11 of them agreed on the representativeness of the accounts. Further endorsement of the quality of case descriptions were provided by participants who used phrases such as "well crafted" and "detailed" to describe the case descriptions.

Ethical Considerations. Several measures were taken to adhere to the ethical responsibilities of a researcher. Firstly, the research only commenced after obtaining ethics clearance from IOE UCL and data collection approval from MOE. Secondly, to help participants make an informed decision to participate, the email invitation communicated the purpose of the multiple case-study, its significance, and the level of commitment the study entailed. Participants were also informed that they could withdraw from the research at any point of time with no obligations or consequences. Thirdly, to protect the confidentiality of the data collected, the audio recordings of the interviews and the transcripts were stored in the researcher’s password protected computer. Careful steps were also taken to anonymise the schools’ names and AEDs’(LBS) identities in the interview transcripts and thesis. Prior to the interviews, participants’ permission was once again sought for the audio recordings. Additionally, participants were given a voice during the processing of the data. They were

invited to make amendments to the transcripts and as part of member checking, invited to share their opinions on the researchers' interpretation of their deployment in school.

Limitations

Despite the best efforts to establish trustworthiness, this study faced a certain limitation. That is, the lack of generalisability of the findings to the general population of AEDs(LBS) in Singapore. Although the maximum variation sampling strategy was used to select the three cases (schools), the schools had to agree to participate. One of the originally approached schools declined to participate and was replaced by another school. Schools that eventually agreed to take part were likely those which were confident of their own AED(LBS) deployment practices, especially because these practices would be subject to scrutiny. In view of this, the three cases might represent schools with more effective deployment of AEDs(LBS).

Conclusion

This chapter outlined the methodology of the main study which had a two-phase design. The chapter opened by explaining the rationale for the overall research design, and subsequently detailed the methods and procedures of the survey and the interviews. Finally, measures to uphold validity and reliability were discussed.

CHAPTER 5

Findings

Introduction

This chapter presents the research findings in three main sections. The first section begins by presenting findings gathered through the conventional approach of examining paraeducator deployment using task analysis. The second section presents the three cases of AED(LBS) deployment in context of their partnership with teachers and school leaders through Wenger's (1998) community of practice lens. Finally, the chapter closes by synthesising the findings of the three cases.

AED(LBS) Deployment: Task Analysis

This section understands AED(LBS) deployment through the tasks that AEDs(LBS) engage in. Specifically, it presents the findings of the first two research sub-questions:

- a. How frequently do the AEDs(LBS) perform the list of stated tasks?
- b. How much time do AEDs(LBS) spend on the task categories?

(a) How frequently do the AEDs(LBS) perform the list of stated tasks?

The survey findings revealed how six AEDs(LBS) from the three schools spent their time in school, according to a pre-determined list of tasks. Table 14 presents the findings of the AEDs'(LBS) time-use according to the frequency of occurrence. In Table 14, AEDs(LBS) from School A, B and C had their responses represented by A, B or C respectively and when two AEDs(LBS) from the same school responded similarly, their responses were consolidated as one.

Tasks that were performed frequently were highlighted in grey in Table 14. Frequently performed tasks were defined as tasks that were reported by AEDs(LBS) to have been performed daily, weekly or monthly. If the task was found to be performed yearly by at least one AED(LBS), it would not qualify as a frequently performed task. For the category "learning support of pupils", AEDs(LBS) frequently conducted screening tests, out-of-class specialist intervention support and in-class support. For the category "behavioural support for pupils", AEDs(LBS) frequently provided out-of-class behavioural support, in-class behavioural support

and spontaneous behavioural support. For the category “pastoral support for pupils”, AEDs(LBS) frequently attended to pupils’ personal needs and support pupils with social or peer interaction difficulties. For the category “indirect pupil support”, AEDs(LBS) frequently planned and prepared for in-class or out-of-class support sessions and liaise with other stakeholders. For the category “support for teachers”, AEDs(LBS) frequently provided SEN advice to teachers, organise meetings with teachers to discuss cases, manage pupils with SEN in class so that teachers can teach without disruption and respond to teachers’ ad-hoc requests to manage pupils with SEN. For the category “support for school”, AEDs(LBS) frequently participated in scheduled meetings. For the tasks in this category, the occurrence rate varied greatly among AEDs(LBS), suggesting that these tasks were largely determined by the unique needs of individual schools.

Task category	Once a year or less	Once a month	Once a week	Once a day	Several times a day
1. Learning support for pupils					
Conduct screening tests for pupils with Special Educational Needs (e.g. to inform support work)		B C D			
Deliver school-based dyslexia remediation programme	B C D			B D	
Provide out-of-class specialist intervention support during school hours (e.g. reading skills, numeracy skills, social skills)			C	C	B D
Provide out-of-class specialist intervention support after school hours	C D B		C		B
Provide out-of-class support for school curriculum content during school hours	C B D		C		B

Provide out-of-class support for school curriculum content after school hours	B C D				
Provide general supervision for pupils who are out of mainstream class	C B		C	D	
Provide in-class support to allow pupils to keep up with the class (e.g. simplify instructions, remind and prompt)		C		D	B C
2. Behavioural Support for pupils					
Implement out-of-class behavioural support plan during school hours			C	D C	B, D
Implement out-of-class behavioural support plan after school hours	D C	C B			B
Implement in-class behavioural support				D C	C B
Provide spontaneous support for pupils who require behavioural support when incidents arise			B	B	C D
3. Pastoral support for pupils					
Attend to pupils' personal needs (e.g. be the familiar face at school entrance, buy food in canteen)			B	C B	D
Follow a pupil throughout or for most of the school day	B	C		D	C
Support pupils with social/peer interaction difficulties		B	C D	B C	

Carry out transitional support plan for pupils e.g. primary one, primary six pupils	B D C	C B			
4. Indirect support for pupils					
Develop Individual Education Plans (IEP)	D C	B	C	B	
Monitor and record pupil progress	D	B D	B C		C
Plan and prepare for out-of-class/ withdrawal support session		D	C	C	B
Plan and prepare for an in-class support session		D	C		B
Interact with parents/care-givers/other agencies with regards to pupil's development			B D C	C D	
Facilitate pupils' access arrangement applications	D	B C			
Collaborate and consult with MOE psychologists with regards to cases		B D C			
5. Support for teachers					
Provide advice and guidance for teachers with regards to various SEN			B D	B C	C
Organise group/1-1 meeting with relevant teachers to discuss a specific case		B D C	B		
Participate in pre-lesson support discussion	C D	B C	B		
Participate in post-lesson debrief	C D	B C	B		
In consult with teachers, prepare appropriately	D	B	C		

differentiated resources for pupils					
Assist teachers with curricular activities in the classrooms	B C	D			C
Manage pupils with SEN so that teachers can continue to teach without disruption		C	B	D	C B
Respond to teachers' ad-hoc requests for help to manage pupils with SEN		C	C D	B	B
6. Support for school					
Perform school duties (e.g. assembly, recess, safety, first aid duties etc)	C		B	B D	
Arrange SEN training for school	C B D	C B			
Conduct SEN training for school	C B D	C			
Participate in scheduled meetings e.g. level meetings, subject meetings, case management meetings etc		C D	B		
Carry out induction for new teaching staff with regards to SEN support	C B D	C			
Mentor new AED(LBS)s	C B D				
Carry out invigilation duties during examinations	C B D				
Relief teach (to cover teacher's absence)	C B D				
Co-teach with teachers e.g. Form Teacher Guidance Period (FTGP)	C B D				

Provide support during field trips organised by schools e.g. Learning Journeys	C B D				
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Table 14. Results of the AED(LBS) time-use survey

(b) How much time do AEDs(LBS) spend on the task categories?

Each week, AEDs(LBS) in School B spent the most time on out-of-class learning and behavioural support (weekly average of 5.75 hours), followed by in-class learning and behavioural support (weekly average of 5.25 hours) and support for teachers (weekly average of 3.25 hours). AEDs(LBS) in School C had the same pattern in time use for the top three task categories. Similarly, they spent the most time on providing out-of-class learning and behavioural support (weekly average of 10.5 hours), followed by in-class learning and behavioural support (weekly average of 7 hours) and support for teachers (weekly average of 5.5 hours). In contrast, AEDs(LBS) in School D had a time-use pattern that was somewhat different. They spent the most time on out-of-class learning and behavioural support (weekly average of 11 hours), followed by pastoral support for pupils (weekly average of 7 hours) and indirect support for pupils (weekly average of 6 hours). Table 15 presents AEDs'(LBS) weekly time-use on task categories in actual hours.

Based on the AED'(LBS) pattern of time-use, AEDs(LBS) across the three schools consistently spent the most time on providing out-of-class learning and behavioural support. Yet, there were also differences. AEDs(LBS) in School D, spent most of their time working behind the scenes and away from colleagues in the wider school community because they were with pupils providing out-of-class and pastoral support. A significant proportion of time was also spent on indirect pupil support work which further limited their visibility in school. Therefore, they had lesser exposure to colleagues in the wider school community compared to AEDs(LBS) in School B and C who made their presence known to teachers through the provision of in-class support and the support that they rendered to teachers.

Task category	Time spent by AEDs(LBS) per week (hours)					
	School B		School C		School D	
	AED(LBS)1B	AED(LBS)2B	AED(LBS)1C	AED(LBS)2C	AED(LBS)1D	AED(LBS)2D
School-based Dyslexia Remediation	0	0	0	3.5	3	0
Average	0		1.75		1.5	
Out-of-class learning and behavioural support	9.5	2	15	6	12	10
Average	5.75		10.5		11	
In-class learning and behavioural support	8	2.5	5	9	5	6
Average	5.25		7		5.5	
Pastoral support for pupils	2	0	3	2.5	7	7
Average	1		2.75		7	
Indirect support for pupils	2	2.5	3	1	7	5
Average	2.25		2		6	
Providing support for teachers	2.5	4	10	1	4	4
Average	3.25		5.5		4	
Support for the school	1	4	2	1	2	4
Average	2.5		1.5		3	

Table 15. AEDs'(LBS) weekly time use on task categories (actual hours)

AED(LBS) Deployment: Partnership with School Community

Having presented the findings of the deployment survey, this section presents the findings derived from an analysis of AEDs'(LBS) partnership with their wider community of teachers and school leaders through Wenger's (1998) community of practice lens. The findings, presented in the form of an ecological map of AED(LBS) deployment, guide the three individual detailed case descriptions that follow.

Ecological Map of AED(LBS) Deployment

The ecological map of AED(LBS) deployment contains the themes observed across the three cases. The map is presented in Figure 2 below.

In each school, AEDs(LBS) are positioned at the centre, encircled by two larger circles representing communities. Within each school, the AEDs(LBS) have a distinct “sense of place in school”. Moving outwards from their small unit, the AEDs(LBS) operate within a “working/learning community”. This is a group of colleagues whom AEDs(LBS) work closely with on a regular basis, to discuss SEN related work. In this working/learning community, the AEDs(LBS) receive “support from leaders” that helps them to be more effective in their roles. They “share goals and practices” with the community and through that, attain a sense of predictability and confidence. In this community, the AEDs(LBS) do not merely receive, they also contribute and exert an intangible influence through their “voice”. Enveloping this working/learning community is the “wider school community”. Due to the nature of the support work with students, AEDs(LBS) must often work beyond their immediate working/learning community, as they engage and partner teachers in the wider school community, to support students together. As they do that, AEDs(LBS) are supported by “Teachers trained in Special Needs” or (TSNs) who have been appointed as the mediators between mainstream and SEN fields. In this wider school community, AEDs(LBS) have a tangible and overt impact on colleagues, by “making lives easier for teachers”, “working together” with teachers and “getting teachers over to their side”. Besides this tangible impact on colleagues, AEDs(LBS) have an intangible and less quantifiable impact on their colleagues, through their “visibility”. Paradoxically, it is not the tangible impact that has the most influence on teachers. Instead, it is AEDs’(LBS) intangible influence on school communities, through voice and visibility, that will gain the trust of their colleagues and help teachers transcend their imaginary boundaries, to have the courage to step out of their comfort zone and partake in any additional support of a student.

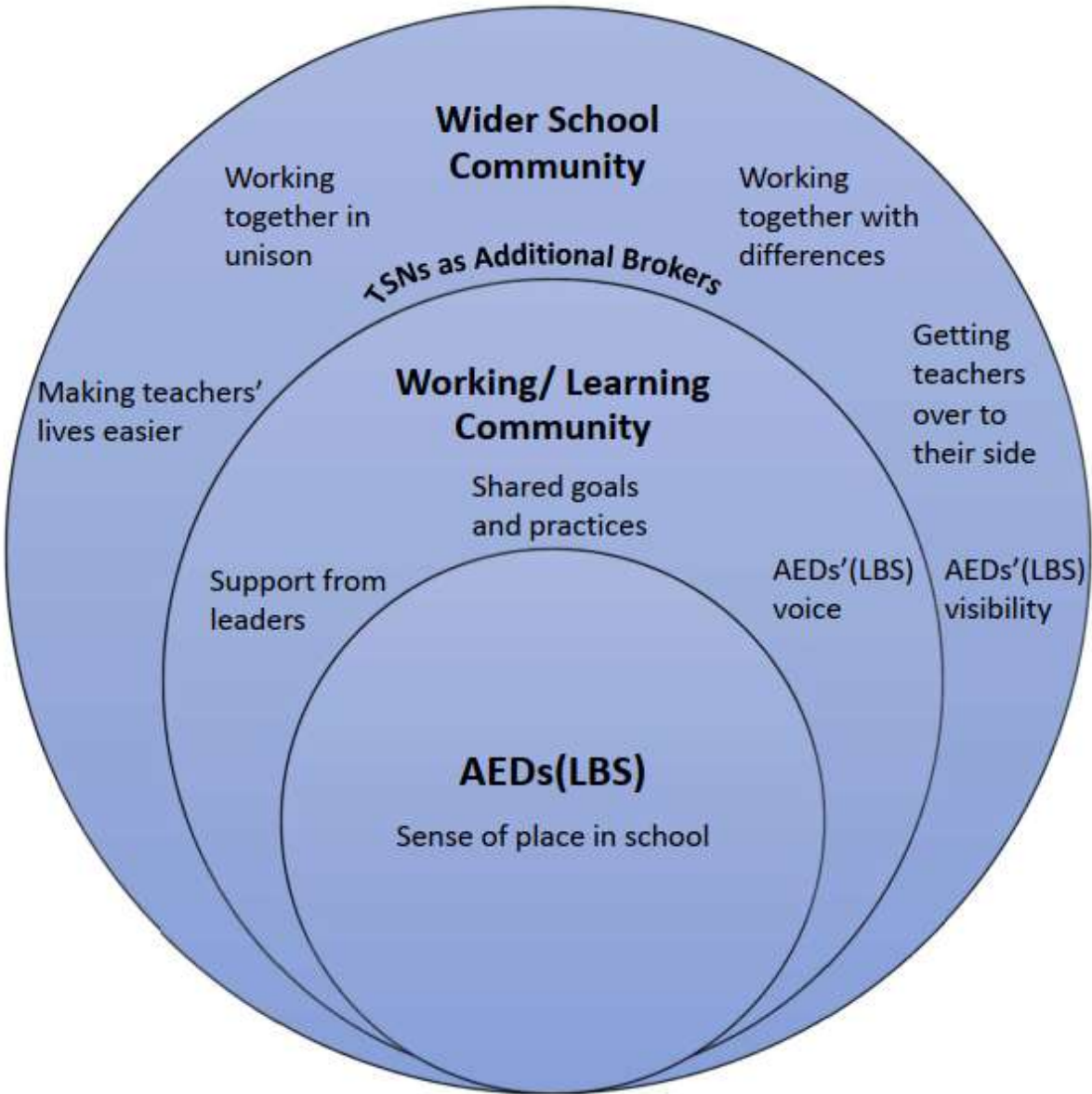


Figure 2. Ecological map of AED(LBS) deployment

Detailed Case Description of School B

School B is a co-educational government-funded mainstream primary school in the heartlands. The school is attended by students from primary one to primary six, aged between 7 years to 12 years old. School B is a “warm and friendly place” where teachers are seen to “care for their kids, like their own” (AED2B, 12). While there are a “sizable group” of students with SEN, the number is modest compared to other schools (VPB, 86).

School B: AEDs(LBS)

Sense of place. Knowing their place, AEDs(LBS) in School B were careful in their interactions with teachers. Keenly aware that teachers and AEDs(LBS) were on different “sides” (AED1B, 136), they were not confident of persuading teachers. This sense of inferiority was also demonstrated through how the AEDs’(LBS) managed the differences between themselves and teachers. In managing teachers who were less engaged in supporting students, AEDs(LBS) generally adopted a non-confrontational approach with the teachers. They would either retreat and seek advice from those in higher positions or find ways to circumvent the barrier. AED(LBS)2B elaborated how she would work on the strategies alone, even without the teachers’ cooperation (AED2B, 210):

But if I can’t enforce it in my in-class support, I will enforce to the kids in my withdrawal sessions (...) Doesn't matter if the teacher doesn't want to, you know, listen to my strategy, but I will input some of the strategies that are doable in class, within my means (AED2B, 47 – 48).

AED(LBS)1B relied on the SEN coordinator to be the “stronger voice” (AED1B, 146) to speak up to the teachers. The sense of unspoken inferiority was evident when she shared:

(...) Yeah. So for me, like, I don't know, cos like for me, it's like, how do I tell the teachers, there’s this always...but with her around it will be easier, you have another someone to support you lar (AED1B, 146).

School B: AEDs’(LBS) Working/ Learning Community

The two AEDs(LBS) belonged to a *working community* known as the Case Management Team (CMT). The group met quarterly to discuss student cases. The quarterly meetings involved

AEDs(LBS), MOE psychologist, school counsellor, SEN coordinator, various heads and school leaders. Within the CMT, the AEDs(LBS) worked most closely with four other members, mainly, their reporting officer, an SEN coordinator (Teacher TB), the discipline master, and the school counsellor. Therefore, a part of their working community became the AEDs'(LBS) *learning community* (community of practice). In this learning community, they met weekly to discuss student cases comprising a mix of “discipline”, “counselling” and “special needs” issues (AED1B, 99). The weekly CMT meetings provided a regular, formal and structured platform of support for the AEDs(LBS). While school leader VPB, did not attend the weekly meetings, she determined the frequency of the meeting and blocked teachers' time-table to ensure weekly meetings with the AEDs(LBS). She also influenced the “big picture” of the CMT meeting (TB, 163). The SEN community was a source of support, provided a platform for joint decision making, gave them a sense of belonging and protection and supported their heavy caseloads and communication with teachers.

AED(LBS)1B appreciated her team for providing her with a platform for joint decision making. She recounted how it was like working on her own without a team:

(...) this CMT team started last year only. Back then a lot of things that are being decided by myself, or for example certain AA (access arrangements for exams), then my school leader come in, or year head come in and “Eh, how come this decision made by yourself only?” But it's not that we want to make decision, yar you know, we don't have a team what (AED1B, 350 – 352).

Similarly, AED(LBS)2B explained how her team provided her with a sense of belonging, security and protection. She said:

As a department everyone is like, I feel that we know what each other are doing. And who to go for help, who to go for advices (advice). You feel protected. Yeah, because everyone knows what you're doing (AED2B, 81).

Belonging to a team, the AEDs(LBS) had teachers to share their load. AED(LBS)1B shared how teacher TB who was also the school's SEN coordinator supported them in their case load:

By doing that, our cases are manageable, however, if we find too many and we don't have enough hands, then my SEN coordinator will come in to support (AED1B, 276).

Other than physical support, AEDs(LBS) were also supported in the affective aspects. AED(LBS)1B described her confidence and relief when she could rely on Teacher TB to get teachers' cooperation:

So she will be the so called the voice also, a stronger voice... that tells the teacher. Okay. So, we have to also cater to the child. Yeah. So for me, like, I don't know, cos like for me, it's like, how do I tell the teachers, there's this always...but with her around it will be easier, you have another someone to support you lar (AED1B, 146 – 147).

Their close seating proximity in the staff room facilitated the development of a casual and close working relationship between the AEDs(LBS) and Teacher TB as they sat very "close to each other" (TB, 55). This allowed them to discuss cases and offer "inputs or suggestions" to one another (AED2B, 69).

In this learning community, AEDs(LBS) were supported by school leaders, had shared goals and a voice.

Support from leaders. School Leader VPB supported AEDs'(LBS) by advising and guiding them in their work. Additionally, she also used her position to smoothen AEDs'(LBS) working experiences with other stakeholders.

Being the "SEN champion for the whole cluster (of schools)" (TB, 162) and responsible for "deployment" in School B (VPB, 18), School Leader VPB was the person they approached whenever the team was "lost" (TB, 164). School Leader VPD supported the AEDs(LBS) by availing herself whenever AEDs(LBS) needed to consult her for "severe" cases (VPB, 115), when they needed her to meet parents, and when it was necessary for her to personally manage the students' "melt downs" (VPB, 128). While she did not "micromanage in terms of the what-to-do", she did not think it was fair to "leave them alone to conceptualise everything" (VPB, 150). Therefore, she exercised the practice of providing "broad principles" for AEDs(LBS) to follow, principles to guide them in thinking about and approaching a case (VPD, 149). She believed that

leadership was “the reason why some of those models in some schools work, some doesn't (don't) work” (VPB, 151). Therefore, it was important for “somebody within the hierarchy who can make a decision” to support the AEDs(LBS) (VPB, 158).

Consistent with her belief, School Leader VPB took it upon herself to be a “mediator” between AEDs(LBS) and parents, and AEDs(LBS) and teachers (VPD, 19). Highly cognizant of the difficulties AEDs(LBS) encountered while working with teachers, she showed her support for AEDs(LBS) by “planting” herself (VPB, 32) in the WhatsApp messaging chat group with AEDs(LBS) and teachers to create pressure for teachers to respond to AEDs'(LBS) updates, requests for actions and face-to-face meetings. School Leader VPB explained her communication with teachers regarding her position on AEDs(LBS):

And I told the teachers that you can do your job well in class, because the girls are here to support us. So minimally we must at least accord the due respect and work with them. So these are things ah whereby...little things that ministry never say you must do but I put it in place because I want to make sure that the girls really feel good about what they are doing (VPB, 32).

Teacher TB provided a matching account of how school leaders' expectations of teachers made AEDs'(LBS) work easier. When equipped with the appropriate skills, teachers in School B were expected to participate in the support of students with SEN. She illustrated:

And our principal's stand is that everyone owns the child (...) I mean, we can say we own the child, but then we need to also equip them with the necessary skills. So yeah, that's how it comes in here. So that's our school's stand in that. So that's, that's where the Teachers trained in Special Needs (TSNs) come in. The principal, the VP (vice-principal), the VPs (vice-principals) comes in, and our counsellor comes in, our discipline master comes in, everybody comes in” (TB, 327).

Shared goals and practices. The AEDs(LBS) and the SEN coordinator practised consistent operating procedures, from how cases were referred to them, to the categorisation of cases, to the joint decision of taking up the cases and the follow-up processes. They honoured the same shared goal of having “consistency in practices” for students, which was evidently impressed

upon them by school leader VPB who emphasised that “the consistency in practices is important” (VPB, 35). Teacher TB described their concern about teachers not maintaining the consistency in strategies for students:

So what happens is sometimes, one particular teacher puts it in place, and it's not followed up by the other teachers, right. So that's why we felt that there was a gap (TB, 197).

This belief pushed the AEDs(LBS) to work closely with other teachers in the wider school community to maintain the consistency of strategies used across teachers. And if there were teachers who were not practising the same strategies with the student, they were encouraged to “zoom in” on that missing link and explore “the challenges that he or she face” (VPB, 155).

AEDs'(LBS) voice. In School B, through AEDs'(LBS) voice, colleagues learnt about their participation, saw their initiative and assessed their work proficiency.

AED(LBS)2B explained how the weekly meetings with members of the working community gave her a platform to explain and provide updates on her support work with students. Her voice brought to light what would otherwise be unseen and made her feel valued:

So, because of that (CMT), everyone in the department knows who are my students (my students are), and what I do for my students and how my students have progressed over this one year. Okay, so they can, they can actually see it, they can really, really see it so, and I'm being appreciated for what I have done because they can see it...(AED2B, 78 – 79).

From a different side of the same coin, School Leader VPB shared how the weekly meetings allowed her and other colleagues to gauge the participation and commitment of AEDs(LBS). She elaborated:

That is when, the weekly meeting is very important, we start sensing that this officer doesn't seem to know about the cases (...) a very superficial statement being made, you

can see that the involvement is not there. Straight away, you know. I think we need to follow up with this officer (VPB, 124).

Therefore, through AEDs'(LBS) voice, school leaders saw their participation (or lack of) which determined the level of trust that school leaders held towards AEDs(LBS).

AED'(LBS) voice also demonstrated their initiative. Teacher TB described how AEDs(LBS) would show initiative in voicing out opinions and suggestions to improve the system. She said:

And they every now and then they see some flaw in the system, they will initiate, "Like...why don't we do this, why don't we do that?" (TB, 363)

AEDs'(LBS) sense of initiative might have been influenced by her leaders. School Leader VPB provided an insight to her message to AEDs(LBS):

You must be bold enough to raise questions for us to contemplate. And I think I say all this is important, it has nothing to do with whether you're senior or junior (VPB, 163).

Last of all, AEDs(LBS) were also able to demonstrate their proficiency and confidence through their voice. School Leader VPB offered:

Initially was "But how to go about it. I don't know whether the teacher will be pleased, I don't know whether...you know...will this thing work out?" To things such as...now, you know, now my involvement with her, she will be able to tell me things such as, "Okay, Mrs VPB, I think I'll do this, I can also tell the teacher this, that" (VPB, 168).

Therefore, AEDs'(LBS) assured school leaders of their proficiency through their voice, which often took the form of case update presentations and conversations that show their understanding of "processes" and "protocol" (VPB, 168).

All in all, AEDs'(LBS) voice in the working community, conveyed to colleagues their level of participation, initiative and proficiency. Importantly, it also determined the level of trust colleagues have for AEDs(LBS).

School B: TSNs as Additional Brokers for SEN

In addition to the various heads and SEN coordinator, Teachers trained in Special Needs (TSNs) were additional brokers for SEN in the wider school community. TSNs were “full-fledged teachers who teach English, Math, Science and Mother Tongue, even PE as well” (VPB, 3) and have undergone some training in SEN. Previously “inactive” (AED1B, 140), the TSNs were now matched to students with SEN and were often the “subject teachers” or “form teachers” of students with SEN (TB, 217). The TSNs not only supported the AEDs(LBS) in their SEN work but were also an alternative source of support for teachers. AED(LBS)1B explained:

They (teachers) can also go to the TSNs for support lar then the TSNs can also ask us right, so more people to go to lar for the school (AED1A, 320 – 321).

Furthermore, the TSNs now assumed the role of conducting the “15 minutes bite-sized sharing” with teachers, a role previously held by the AEDs(LBS). AED(LBS)1B explained:

Instead of coming from AED(LBS) point of view, where it’s more of strategies after strategies, they want to hear from TSNs who have tried the strategies and their own personal experiences so it’s more...they can connect to them better lar (AED1B, 311 – 312).

The AEDs(LBS) and TSNs also worked together. They “sit down” (TB, 180) together once a term to discuss the general problems that teachers faced in classes. To aid the TSNs in providing support, the AEDs(LBS) helped them identify the “focus areas” and create a “monitoring chart” for them to use in class (TB, 212).

School B: AED’(LBS) Wider School Community

In the wider school community, the AEDs’(LBS) partnership with teachers involved making teachers’ lives easier, working together with teachers, getting teachers over to their side and being visible to the school.

Making Teachers’ Lives Easier. The AEDs(LBS) made teachers’ lives easier by supporting them in and outside the classrooms.

The AEDs(LBS) availed their support to teachers whenever teachers encountered students with challenging behaviour and required additional support in the classrooms. Upon receiving the teacher's WhatsApp phone message for assistance, the AEDs(LBS) or those in their SEN team would "rush" over to assist the teacher in managing the student who is "acting up" (TB, 238). AED(LBS)1B also met teachers' request to withdraw students from physical education classes because they were "too disruptive" (AED2B, 179). With the mainstream classroom context in mind, the AEDs(LBS) were careful to recommend tools that were relevant and "less stressful" for teachers, such as those that were "easier to fill up so it's more like a checklist" (TB, 213). Furthermore, having worked with teachers for many years, AED(LBS)1B learnt to see from the teachers' perspective, anticipated and considered the challenges when creating strategies for teachers to use with students. She explained:

I can see their point of view, their perspective. Because over the years I also need to know what are the difficulties the teachers are facing in terms of carrying out certain strategies as well. So these are the things I have to put in mind when I come up with the strategies to share with them lar (AED1B, 261).

Outside the classrooms, the AEDs(LBS) were the point of reference for teachers when they encountered at-risk students and needed someone to talk to and to "ask for advice" (TB, 47). The AEDs(LBS) also conducted class observations to ascertain the teachers' feedback. AED(LBS)2B elaborated:

So when they need help, they will come to me, I think he might be having, okay. Sometimes teacher will say, I suspect he's having this. I suspect he's having that, then I will ask them, okay, you just give me their work samples, and then I will come into the class and observe (AED2B, 160).

Working together in unison. Teachers who worked well with the AEDs(LBS) adopted the strategies that AEDs(LBS) recommended enabling positive outcomes for students. Furthermore, they displayed ownership of the support they provided.

AED(LBS)2B narrated how a teacher's adoption of the behavioural chart effectively helped a student with autism with his behaviour. She shared:

(...) there's this one student (...) he has autism lar so he will run, after finish eating his food. Lunch time when the bell rings, he will straight away, run up to the classroom because he wants to be first. So after implementing the strategies...he has this behavioural reward chart lar so the teacher will put a tick if he doesn't run up, so now he's ok (AED2B, 324).

AED(LBS)1B also shared about how she and the teacher adopted parallel practices that reinforced each other. For another student, the teacher gave the "praise" while the AED(LBS) provided the "reward" (AED2B, 201). Together, they managed to help him overcome his undesirable behaviour.

Teachers who worked in unison with the AEDs(LBS) often exercised initiative and ownership. AED(LBS)2B was heartened by a teacher who tried her best in managing the student's behaviour during Physical Education class before approaching the AED(LBS) for help. Similarly, AED(LBS)1B recounted an incident in which a teacher not only adopted the strategy but also started to take ownership of it. The teacher was able to offer her perspective and "improvised" a reward corner "to become a reward box" that can be passed from teacher to teacher and "implemented in any venue" (AED1B, 63).

Working together with differences. Even as there were moments of unity between AEDs(LBS) and teachers, there were moments of differences as well. Some teachers displayed a reluctance to disengage themselves from their role as mainstream teachers, were hesitant about adopting strategies to help the students and did not take ownership of the students and the situation.

AED(LBS)1B recalled her encounter with teachers who were either "very, very busy to meet up" with them discuss the case or would leave halfway (AED1B, 327). School Leader VPB echoed the same challenges that the AEDs(LBS) faced; the unwillingness of teachers to put aside their curriculum responsibilities. She offered:

Many of them will start telling them [AEDs(LBS)], "Oh, I'm not free at this time."

Actually, they are free, then they will rather, prefer to do the marking. Like what I say,

being relegated to the last in the list. “And I'm not free at this hour...” They will always face this issue of not meeting up with the team in its entirety (VPB, 34).

AED(LBS)2B also noticed how teachers were unwilling to provide that extra support because they were “very focused on the mainstream teaching” (AED2B, 40). They were contented with having “99 per cent (of the) class” and were fine with neglecting the “one per cent” who were not following (AED2B, 40).

With the teachers’ pre-occupation on mainstream responsibilities, it proved difficult for them to consider other ways of doing things. As a result, AEDs(LBS) faced difficulties in fostering teachers’ adoption of their strategies. Teacher TB shared:

Not everyone is opened to the suggestion of the LBS here. So they said, “Oh I’ve tried it, it doesn’t work” (TB, 61).

AED(LBS)2B recounted how a teacher was unwilling to put the students’ needs before her own needs as a teacher. She related:

I actually told the teacher that the parents requested but the teacher said, “Oh the parents didn't tell me. And even if I'm going to put him in the front, I will get...he will disrupt my teaching, because I have to keep reminding him and I have to keep asking him to sit properly and all” (AED2B, 216).

She felt that teachers should allow “more time” (AED2B, 33) for the strategies to work and were concerned that they were “skeptical” (AED2B, 34) about its effectiveness without having tried it.

Additionally, AEDs(LBS) also worked with teachers who had little ownership of the students and the difficulties they faced. AED(LBS)2B illustrated how teachers’ inability to do their part in the referral process resulted in the delay of the whole referral process:

It'd be great if the teachers before they refer to us, they do all this part first then we come in to observe because our job usually starts from observation, collecting of data then book and sorry, call up the parents, book an appointment with the psychologist to

ask for advice first, so if I think the teacher is not doing the part that, the admin part that they are required to do so it becomes a long process for us (...)(AED2B, 273 – 274).

The referral of students to AEDs(LBS) could have possibly been perceived by teachers as a transfer of “the problem” to the AEDs(LBS) (TB, 62) and this was seen as also “the school’s concern” because they wanted “every teacher to own the child” (TB, 63). place

Getting teachers over to their side. AEDs(LBS) got teachers to transcend the traditional zone of education and curriculum they were most comfortable in to participate in the support of students with SEN. They negotiated with teachers to participate in supporting students by relying on the voice of brokers. When faced with resistance, AEDs(LBS) in School B adopted a measured and gentle approach in getting teachers to participate. They depended on brokers, mainly the SEN coordinator or their reporting officer, to persuade teachers to cooperate. AED(LBS)1B shared how the SEN coordinator would help her to convince teachers to meet the needs of the students:

So she will be the so called the voice also, a stronger voice... that tells the teacher. Okay. So, we have to also cater to the child (AED1B, 146).

AEDs’(LBS) Visibility. Visibility of AED(LBS) presented itself in the form of visibility of role and impact visibility. In School B, role visibility helped teachers to understand the relevance of the AED(LBS) role and inspired them to take responsibility in supporting students with SEN, while impact visibility allowed teachers and school leaders to see the fruit of AEDs’(LBS) labour.

Role visibility. Visibility of role was evident through capacity building, participation in meetings and the active support of students in school.

Although the AEDs(LBS) no longer conducted the formal training for the teachers in their school, they continued to be involved in building the capacity of teachers when they met them at “level meetings” (AED1B, 277) or “beginning of the year” meetings with all the subject teachers of the student (TB, 198) to convey information about students and to provide strategies to use. AED(LBS)1B elaborated:

Ok so we don't do first-hand of presenting already lar. Ours is more of the discussion, when it comes to meeting the teachers, what can be done for the child, that is called our so called presentation lar (AED1B, 312).

The team was heartened that capacity building among teachers was effective in extending the knowledge and awareness of the teachers. Teacher TB was pleased that the teachers were "getting better at picking up SEN now" through their sharing session (TB, 39). AED(LBS)2A also shared how teachers learnt "when to flag out and what to do for students with dyslexia" (AED1B, 125). She elaborated how this knowledge translated to greater awareness of students' difficulties and subsequently improved the quality of the collaboration:

(...) instead of asking me to find out what's wrong, they know what it is now. "Okay, is it a behavior one or is it a learning one?" So if it's learning, they will also pass to me the work sample. So I know. Then they will say, "Oh, see ah this one got letter reversal 'b' and 'd', you know, or the language they don't understand So they can tell me more information that is useful for me to decide what to do (AED1B, 131).

The AEDs(LBS) also made their role known through several kinds of meetings. One such meeting was the one at the "beginning of the year" where they met up with "all the subject teachers related to the SEN kid", where they would impart strategies and provide documentation to everyone" (TB, 198). Additionally, the AEDs(LBS) also called for occasional meetings with subject teachers to "review" cases (AED1B, 327). Apart from that, they also attended "level meetings" (AED1B, 279) with teachers where they would provide input about the support for a particular child.

Through the active support of students around the school, AEDs(LBS) created awareness of SEN among teachers. In the excerpt below, AED(LBS)1B described how teachers gained awareness of SEN when they worked with her to support a student or had seen her work in school:

Okay, so teachers wise, now teachers are more aware but of course, it's not 100 per cent. Those that I've worked with if they know, or they have seen what I've done, then they will understand lar (AED1B, 233).

Role visibility also helped AEDs(LBS) to secure school leaders' trust and support. AED'(LBS) visible support of a student caught the eye of the school leaders who provided her with more funds to support her work with the student. She shared:

Like, for example, now I have this student who is very severe (...) Last time I used to run around and all that. So they can see, basically, the school leaders can also see that it's actually a lot of work, to put in lar to...in order to help a child, especially those who are severe. Yeah. And the school leaders are supportive lar, they will chip in, "Oh AED(LBS)1B, your reward chart ah, if you need some funds, because this child is motivated by extrinsic rewards (...) if you need to buy more, you can use my vice – principal fund." So they are supportive and you know they are on board lar (AED1B, 236 – 237).

In fact, the deployment survey findings provided further support for AEDs'(LBS) visibility in school B. It showed that two of their top three most frequently performed task categories provided them with visibility among teachers. Time spent on providing "in-class learning and behavioural support" and "support for teachers" allowed them to work among teachers, to influence and inspire them to take responsibility for SEN support.

Impact visibility. The SEN community in School B was focused on ensuring "consistency in practices" across teachers for the sake of the student (VPB, 27). Teacher TB explained how the AEDs(LBS) were impactful and "strong" in the management of this practice among teachers. Teacher TB elaborated:

So what happens is sometimes, one particular teacher puts it in place, and it's not followed up by the other teachers, so that's why we felt that there was a gap. So slowly, we started building that. We're closing that. So the AEDs come in very strongly this time. (TB, 198).

A consistent observation was provided by School Leader VPB who said:

(...) which is what my counsellor and my two AEDs have been doing. You know, meet up with different teachers, meet with form teacher to make sure there's consistency in practices (...) (VPB, 30 – 31).

Both School Leader VPB and Teacher TB observed that the AEDs(LBS) were working tirelessly to maintain a “consistency in practices” across the stakeholders supporting the student. They showed proficiency in the management of stakeholders.

Detailed Case Description of School C

School C was a Singapore co-educational government-funded mainstream primary school in the heartlands. The school was attended by students from primary one to primary six, aged between 7 years to 12 years old. These were mostly children in the neighbourhood, with more than half of them with parents who belong to the “working class” or manual-labour occupations (VPC, 9). The school was well known in “market talks” for taking good care of their students and for the quality experience and education that they provide (VPC, 18). This was facilitated by the strong, positive and collaborative culture of care among staff, who were with the school for a long time and shared close working relationships.

School C: AEDs(LBS)

Sense of place. The AEDs(LBS) have a healthy sense of place in school, even though there were some initial struggles. AED(LBS)2C previously perceived herself as inferior to teachers and that affected her confidence in engaging with teachers. She explained,

I mean, like, it doesn't come in one day that you know, oh, I can just talk to the teachers straightaway, I mean...it takes time lar, I mean, because this comes in (as a) process.

Back then also I feel very inferior because like what if this teacher dislike me? What if this and that? (AED2C, 292-293)

However, gradually along the way, she was able to realign herself by thinking about the purpose of support. It was a moral commitment towards the individual child, akin to the shared belief that cascaded down from the school leaders, that enabled her to change her perspective. She elaborated:

And I think back, like, why am I thinking like this... I mean you are working with the child, for the child. It's for the best of the child (AED2C, 294).

The realignment of her identity allowed her to direct her energy towards the bigger purpose. The quote below illustrated her ability to negotiate the meaning of her identity and her ensuing satisfaction:

I've achieved my goal, because I've seen the success in this child. It could be like maybe simple steps of like, oh, picking up a pencil and starting to write or writing. Or maybe like reading certain words or maybe like, you know, for me to like Miss "Ee-yah" to Miss Idah...these kind of little things (...) (AED2C, 9).

AED(LBS)1C also showed a strong sense of place in school. She was able to adopt the support system's goal as her own, hoping for a day where the system becomes like a piece of machinery that can run on its own, without her intervention:

(...) such that eventually, I want to fade myself away. And I guess this is the preparation that I do, like, how can I eventually work towards that? To wean myself off this, this thing? (AED1C, 324-325)

And that entailed creating a "sustainable support" system in school (AED1C, 327), as what MOE had intended:

(...) to really equip our teachers to build an inclusive environment for every school for every teacher to know how to support the children (AED1C, 332).

AED(LBS)1C was seen to align her efforts with the needs of the school's support system. Being committed to the needs of the support system, she constantly sought improvements to the system (AED1C, 130) by focusing on the "identification of gaps" (AED1C, 150). As a result, she initiated the Futsal programme, the first of its kind in primary schools (VPC, 75). She was also responsible for the school's overall SEN support plan and facilitated inputs from the other CMT members (AED1C, 344). Furthermore, because she directed energy to something bigger than herself, she often exceeded the traditional boundaries of her SEN role. In addition to supporting students with SEN, she also took in children who were on the financial assistance scheme and

at-risk children into the Futsal programme (AED1C, 161). Beyond that, she also monitored “students with high absenteeism” rate (AED1C, 115). Her alignment to the needs of the school’s support system made her larger than herself and contributed to her identity of AEDs(LBS) as “experts” (AED1C, 84).

School C: Working/ Learning Community

The two AEDs(LBS) in School C were members of the school’s Case Management Team (CMT) which had 11 members. Other than the two AEDs(LBS) and the school counsellor, the other members were members of the school’s management team, mainly School Leader VPC and the various heads. The CMT was AEDs’(LBS) *working community* for SEN and they met monthly to discuss and work on the “extreme” student cases that happened in the classrooms (VPC, 96). With the involvement of the senior educators in the CMT, AEDs(LBS) no longer struggled and worked on their own, unlike previously where they used to bear the entire SEN responsibility of the school. The CMT supported the AEDs(LBS) by providing alternative contact points for teachers in SEN matters. Teachers in the CMT were the first contact point for their fellow teachers who referred cases, took time to understand what these teachers were facing, provided them with advice, and hands-on in-class support and stepped in to resolve any challenges between these fellow teachers and AEDs(LBS). As teachers, they identified better with teachers than AEDs(LBS) and therefore became the bridge between the AEDs(LBS) and the wider school community. Their brokering between the two communities effectively negotiated the differences that might arise in the cross-boundary interactions and provided a great source of support for the AEDs(LBS). The CMT was also the AEDs’(LBS) platform for learning. With school leader VPC providing clear expectations for the team, the CMT meetings became a platform for knowledge sharing, “good quality discussion” (VPC, 85), problem solving and refinement of processes and systems. The CMT was an inner circle for the AEDs(LBS) to discuss with before disseminating information to the other teachers. Through the CMT, mainstream educators became increasingly involved in SEN students and modelled to the rest of the teachers that the responsibility of students with SEN also lay with mainstream educators, not just the AEDs(LBS). With the AEDs(LBS) working hand in hand and actively learning together with other members in the CMT, it was evident that the CMT was not only a formal working

community, but it was also a *learning community* (community of practice) for the AEDs(LBS). In this learning community, AEDs(LBS) were supported in their learning through their community of practice, supported by school leaders, had shared goals and a voice.

Support from leaders. School Leader VPC, a vice-principal and one of the three school leaders, oversaw the SEN support in school with the senior AED(LBS) reporting to him. The other AED(LBS) reported to the Head of Department (Student Management). School leader VPC had a strong involvement in SEN matters, both in leadership as well as actual hands-on support.

He provided support for the AEDs(LBS) through his value-driven leadership which emphasised on qualities such as “humanity and empathy” (VPC, 164), “commitment” and “dedication” (VPC, 168). He advocated the message that “every student matters” and focused on the well-being of every individual student (VPC, 31). He reminded the AEDs(LBS) that the qualities of “empathy and humanity” were at the core of their work and as they lived this out, this would “inspire others in the fraternity” (VPC, 164). The school leader’s commitment towards each child provided endorsement for the teachers to take “ownership” of students with SEN (AED1C, 64). He explained:

So, this kind of collaboration, beyond the case management team, to the whole staff, it comes as a whole school approach working. And in that sense, it also takes off the burden, from our AEDs, as well as on our counsellors (VPC, 105).

The “whole school approach” was made possible by the “tiered system of support” where “every student receives the programme that is tailored to each student's learning” (VPC, 275). This approach to support ensured that every member of staff contributed to the support system, at different levels and in different capacity, ensuring that students with SEN were not solely the AEDs’(LBS) responsibility.

School leader VPC also provided supported for AEDs(LBS) through his direct and “hands-on” involvement (AED1C, 435). He participated in the monthly CMT meetings, where “meaningful time, dedicated time” (VPC, 85) was spent on discussing about “individual students” (VPC, 87). He was often “discussing cases” with year heads and AEDs(LBS) (AED1C,

113). His efforts to “reach out” (AED2C, 48) to students at a personal level helped the AEDs(LBS) to feel that they were “not alone” (AED2C, 50).

Shared goals and practices. School Leader VPC led the SEN community with a value-driven practice; a practice characterised by “empathy and humanity” (VPC, 164) and “dedication” which led to their “success story” (VPC, 168). The school’s commitment to every individual child was best encapsulated through School Leader VPC’s expression, “for us, every student matters” (VPC, 31). School leader VPC recounted one of the defining moments of success he shared with his team. He recalled:

I told the staff about how they should be proud, you know, that, despite the fact that we may receive children, a greater number of children with learning needs, number one. And number two, some of the learning needs were tougher to, you know, unknot, but we were able to overcome all of that. So then be able to sustain that for every three children that entered School B at Primary One, when they leave us at Primary Six, two out of three will be in express stream. So for a heartland school like ours, we beat the national average (...) (VPC, 168 – 169).

Therefore, in School C, their shared goal was to help the child overcome their initial struggles, and to prepare and build the child for such a time that he or she would be “resilient enough to leave us” and “go on to the next level” (VPC, 237 – 239). As such, AEDs(LBS) were expected to have a “rapport” with the child, implement effective “programmes” and a “close understanding of the child” to achieve the desired success story (VPC, 237 – 239).

AEDs’(LBS) voice. Through their voice, AEDs(LBS) demonstrated their proficiency and initiative.

AEDs’(LBS) expert voice came through in their practice of giving thorough and detailed presentation of student cases supplemented by a visual “eco (ecological) map” (VPC, 212). It also came through when they held their ground and defended “tough questions” during CMT discussions (VPC, 258-259). AED(LBS)2C described how she would convey her action plan for a case to the year heads, therefore allowing them access into her professional role. She offered:

So even before these discussions (with teachers), I will actually seek help from the year heads (telling them) “So, this is what I'm gonna do. I am going to rope in the teachers...I'm going to discuss these things with the teachers”. (AED2C, 177 – 178)

AEDs(LBS) initiated improvements to their support system through their voice.

AED(LBS)1C explained how she would voice her concerns and initiated discussions for gaps she observed in the system, which resulted in a futsal programme to meet the needs of students who would otherwise be deprived of co-curricular activities, due to their on-going involvement in remedial classes. She described the thinking behind her initiative:

I thought, maybe to close the gaps, because I think what we need is that other than academics (which doesn't motivate the children), is to look at something that they can find their worth, and to also showcase their abilities to the teachers, and that's how we got the Sports Care in, to really work with us on this (AED1C, 151).

School Leader VPC provided a further explanation of her initiative in “seeding down systemic gaps” (VPC, 73). It was driven by her passion for her work. He shared:

She is so passionate and she's so driven you know...to do so much for these children (VPC, 123)

Moreover, AEDs'(LBS) voice was not restricted only to the CMT meetings. Data showed the presence of a close, informal working relationships in their working community. Informal ad-hoc discussions between AED(LBS)1C and School Leader VPC took place along the “corridors” (AED1C, 114, 131) and meetings with year heads took place informally “every other day” (AED1B, 55). These casual talks created additional platform for AEDs'(LBS) voice to be heard.

Because of AEDs'(LBS) ability to demonstrate their competence and expertise through their voice, year heads trusted them and sought their views and opinions on matters pertaining to other students, even though it was not with regards to students with SEN. She offered:

(...) so the year heads do come to me and say, “Okay, AED1C, I got this case”. Although (it is) not special needs but we discuss. “What do you observe?” So she asked me to sit

in some of the conversation that she has, with the child, and asked me to just observe, “what do you see in the child, what do you think could be the issue?” (AED1C, 288-289).

In summary, AEDs’(LBS) voice conveyed their proficiency and initiative, which earned them trust from their colleagues.

School C: TSNs as Additional Brokers for SEN

The AEDs(LBS) were being supported by a group of “five to six” (AED2C, 237) Teachers trained in Special Needs (TSNs). TSNs were allocated to classes to observe the “identified students” (TC, 326) suspected to have some learning needs. The support from TSNs helped to ease her work, allowing her to “concentrate on other students” (AED2C, 232). The AEDs(LBS) would also “check in” and follow up with the TSNs after the observations on the work that has been done for the child (AED2C, 244).

School C: Wider Community of Teachers

In the wider school community, the AEDs’(LBS) partnership with teachers involved making teachers’ lives easier, working together with teachers, getting teachers over to their side and being visible to the school.

Making Teachers’ Lives Easier. As they supported students with SEN, AEDs(LBS) inevitably made lives easier for teachers. AEDs(LBS) attended to teachers’ requests for student-related help in and outside the classrooms.

AEDs(LBS) were needed in classrooms in both planned and unplanned manners. When teachers surfaced new cases, AEDs(LBS) often supported teachers by scheduling classroom visits to observe the cases. Teachers also engaged their assistance with certain scheduled class activities which posed challenges to students with SEN, such as a “class test” (TC, 46), “spelling test” (TC, 188) or an “online survey” (TC, 249). Teacher TC shared:

(...) most of the time, they are able to help. So whenever I have like a class test, or what, the AED will be the first person I will approach lar” (TC, 46).

Besides planned visits, AEDs(LBS) often made unplanned visits to classrooms. These came in the form of immediate assistance to teachers’ urgent and impromptu requests for help with

students who displayed “melt-downs” (AED2C, 153) or students who refused work and class participation. AEDs(LBS) would manage those students, allowing the teacher to attend to other students.

AED(LBS)2C described:

(...) I know teachers do struggle, like they really don't know what to do with their child. So they will just leave it we'll just walk out, and then they will call me and ask us, like, What do I do? Then I will come in, to the rescue (...) (AED2C, 139).

Outside the classrooms, AEDs(LBS) responded to teachers' spontaneous and informal consultations, acted as the effective middleman for communication between parents and teachers, between student and teacher, and assisted teachers in case referral process and forms when they found it tedious to complete.

Working together in unison. Working together in unison was evident through the AEDs(LBS) and teachers assuming equal levels of ownership of a student, as well as convergence in the approach they used with students. AED(LBS)1C described how teachers shared the load in SEN support with the AEDs(LBS):

I do see that teachers are really spending a lot of time trying to manage the children, taking ownership on their own, (such) that sometimes when you sit in the office, you'll be wondering why (is it) so quiet today. You realize that the teachers are really trying to manage (AED1C, 411).

The AEDs(LBS) and teachers also exercised convergence in the approaches they used with students. When managing a student with aggressive tendencies, AED(LBS)1C and Teacher C agreed that they would prioritise the involvement of parents and safety of class in managing their student. When faced with a student with emotional outbursts, AED(LBS)2C and the subject teachers agreed on the use of a special calm down corner in the classroom.

Additionally, AEDs(LBS) and teachers often persisted together despite the uncertainty.

AED(LBS)2C explained, “So we set some rules, we set some rules, some routines, and then we

try to do it again and again until the child gets it.” (73). Similarly, Teacher TC said, “So we are still working very hard on this particular child (TC, 157).

Working together with differences. While the AEDs(LBS) and teachers had moments when they worked together in unison, they unavoidably encountered moments of differences when working together. The inability of teachers to step out of the mainstream context contributed significantly to their differences. Although AEDs(LBS) valued the case referral process for its ability to collect useful and complete information about the child and preferred that teachers adhere to the steps, teachers found it tedious and lacked bandwidth to follow because of their existing heavy curriculum responsibilities. The packed daily time-table of teachers and students also deterred Teacher TC from trying out the recommended strategy because “the setting is different” (TC, 171). Instead, the teacher reverted to the “normal way to handle these students”, through rebukes or warnings (Teacher TC, 91-92). Additionally, AEDs(LBS) still faced unequal levels of ownership, which was seen as a challenge “across all schools” (AED1C, 399).

Getting teachers over to their side. AEDs(LBS) got teachers to cross their traditional boundary of education and curriculum to get acquainted with AED’(LBS) realm of work by persuading them to participate, sometimes with the help of brokers. The AEDs(LBS) enlisted teachers’ direct participation in the support of students with SEN, through physical meet-ups and virtual chats. They invited teachers to meet to discuss cases to obtain feedback and updates. They also got teachers to update parents. When required, AEDs(LBS) also relied on year heads as brokers who would staddle the boundaries of SEN and mainstream to negotiate with teachers when necessary. AED(LBS)1C shared:

So when it comes to some of this issue where I don't have the knowledge, I think it's better for the year heads to come in because they teach classes. They can quote examples. Look, I also teach a class of forty...I understand your struggle, but for AED(LBS), I can't say that (AED1C, 316).

AEDs’(LBS) Visibility. Visibility of AEDs(LBS) presented as visibility of role and impact. In School C, role visibility inspired teachers to take more ownership of students with SEN while

impact visibility allowed teachers and school leaders to see their effectiveness in managing students.

Visibility of role. The AEDs'(LBS) role was visible through capacity building of teachers, the programmes they ran and the active support of students in school.

In line with the ministry and school leaders' directives to put teachers at the "front line" in the support of students with SEN (AED1C, 74), the AEDs(LBS) devoted much of their effort and time to the capacity building of teachers. The AEDs(LBS) conveyed details and information of students with SEN to teachers during level transition meetings at the "beginning of the year" (AED2C, 55). In classrooms, AEDs(LBS) demonstrated how they could work with the child and provided strategies to use. AEDs(LBS) were given "slots" in the school's calendar of events to "empower" teachers with knowledge on managing students with SEN (TC, 310; VPC, 220). This opportunity from the school provided them with formal exposure to the wider school community and buttressed their status as the "experts" (AED1C, 84) in SEN within the school. When building teachers' capacity, they were keenly aware of the need to understand and support teachers, to increase teachers' receptivity to their suggestions.

Additionally, colleagues also saw the contributions of AEDs(LBS) through the programmes they delivered. The futsal programme was known to "everyone" in school (AED1C, 141). School Leader VPC 's account below demonstrated the visibility of the AED(LBS) role in School C and fuelled his admiration of her commitment to her work:

You know, when I first joined, you know, I saw a group of primary five children playing soccer, playing football and the tournament was held in a field big enough (inaudible). And then what happened was that I saw AED(LBS) literally tracking, pacing outside the field, up and down. Okay, what part of her work is this? (VPC, 245-246).

The AEDs(LBS) were very much seen supporting students in school, "walking along the corridor to like, to maybe look out for like, any students who need help..." (TC, 334) and were seldom doing desk work.

Through the AEDs'(LBS) ability to “demonstrate” to teachers how to work with the children, they hoped to inspire teachers to do the same (AED1C, 407). AED(LBS)1C shed light on the bigger purpose of her classroom visits; her role visibility was a means to engage teachers in SEN support:

It's not so much of disciplining that I'm going in, it is more of modelling, what I can demonstrate to the teachers, and the peers, how to work with this child (AED1C, 323).

When “teachers see that supporting the children in a school is not a difficult job” (AED1C, 451), then it would help them develop “that willingness to work with children” (AED1C, 406). School leader VPC provided a similar insight on how the visibility of AEDs'(LBS) role would inspire teachers to start supporting students on their own. Besides the immediate relief that the SEN team’s support brought to teachers, seeing how “these teachers” [and AEDs(LBS)] do it would motivate teachers to take ownership of the students in future. He explained:

But if the team can come together to try and solve the so called extreme cases, not only does it render support to the teachers who struggle with some of their... in their normal classes, what it does is also that it inspires them, because they can actually see how these teachers are able to show that some really key problems, wicked problems that the child is experiencing can actually be untangled in some ways, you know (VPC, 96 - 98).

The deployment survey findings provided further support for AEDs'(LBS) visibility in school C. It showed that two of their top three most frequently performed task categories provided them with visibility among teachers. Time spent on providing “in-class learning and behavioural support” and “support for teachers” allowed them to work among teachers and enabled teachers to see the relevance of their role in school.

Impact visibility. In School C, AEDs'(LBS) efforts translated into visible outcomes, in the form of the proficient administration and quality student support.

AEDs(LBS) demonstrated quality and judicious administrative ability by getting complete information of students way ahead of time. As a result, their school leader expressed trust and respect for their efficiency. He elaborated:

So what happens when the child comes for the primary one, registration or orientation before they actually start school, (...) information (has already been) gathered by AEDs(LBS), this is something I'm very proud of, you know (VPC, 109).

The AEDs(LBS) were not only administratively efficient, they were also proficient in the way they supported students. Teacher TC described how the AED's(LBS) connection with the student enabled her to manage his behaviour, expressing trust in her ability to manage the student. He shared:

He responds to AED(LBS)1C...I think they have somehow connection. Somehow, like, you know, maybe he...you know...AED(LBS)1C has a way to handle this kid. (TC, 150 – 151)

Additionally, AEDs'(LBS) impact on students' social functioning skills was also "visible" through students' development over the years. School Leader VPC shared:

You know, so it's really about whether or not this child has become more resilient, whether this child is able to cope with society. Visible... we can see it, over the years, we can see the lessening, we can see better socialization, you know, better and also better coping with academic work." (VPC, 262).

Furthermore, AEDs'(LBS) "quality" work enabled their students to find success in both academic and non-academic areas. Academically, some of them were able to outperform their peers to attain the "Edusave Merit Award" (VPC, 113). The visibility of AEDs'(LBS) impact also culminated in the "success stories" of students who beat the odds (VPC, 216). Despite their struggles in learning, the support of the AEDs(LBS) as well as the opportunities that the school provided allowed these students to blossom in other areas, such as sports. School Leader VPC recounted:

Not only do they represent school, they were the zonal champions and then they were like national top four. So obviously, we celebrated that and we tell them that really it's a

holistic support, you know, that has groomed with such individuals who had struggled earlier on to even achieve the kind of success that their so called “normal peers” can’t reach... (VPC, 246).

In summary, the visible impact of the AED(LBS) role, expressed in terms of administrative and student support proficiency, earned respect and trust from colleagues. In fact, the school leader described their work as a “glorious work in action” (VPC, 216).

Detailed Case Description of School D

School D was a Singapore co-educational government-funded mainstream primary school attended by primary one to primary six students, aged between 7 years to 12 years old. Situated in a private housing enclave, School D was a school attended by a good proportion of students from well-resourced families. As a school known for its academic excellence, their students came in with high standards having gone for tuition since their kindergarten years. The high ability of the student cohort contributed to the strong academic emphasis in the school. Learning was highly valued in the school and the strong objective for students with SEN, like those in mainstream, was to be able to learn. Therefore, AEDs(LBS) held the important role of helping teachers “create a safe and conducive environment in the classroom” to enable learning (VPD, 174). The school’s priority in SEN support was to reduce or resolve the behavioural challenges that students with SEN might have.

School D: AEDs(LBS)

Sense of Place. The AEDs(LBS) had a modest evaluation of their positions in school. They considered TSNs to be more knowing and persuasive than themselves in convincing teachers to “buy in” to their advice (AED1D, 309). They placed value on the classroom experiences that these TSNs had, that which would enable them to suggest “things that are realistic enough” for their fellow teaching colleagues to apply in class (AED2D, 43). They were also cautious about overstepping their boundaries, and generally adopted a more passive approach in their interactions with teachers. Teacher TD provided a glimpse of this apprehension:

But I think she doesn't dare. You know, she's always afraid that the teacher will be offended, like, “Oh, are you here to tell me what to do?” So at the end of the day, it

must be the teacher asking for help. “You would like me to help you, can I sit in? If I sit in, I'll be using this visual? Are you okay with it?” (TD, 152 - 153).

And so, the AEDs(LBS) usually “look at what the teachers want” and would “try to meet their expectations” (CAED1D, 219 – 220). The AED(LBS)1D also depended on Teacher TD to be the “middleman” between herself and the teachers (TD, 154). Furthermore, the AEDs(LBS) displayed a very cautious and measured approach in their interactions in school, sharing advice how “not to offend our school leaders” and how to get around certain colleagues (AED1D, 9 – 10). They saw themselves in a delicate position where they were “in the middle...like a bridge” and “connected to everybody else” (CAED1D, 489). They were concerned about speaking the right thing at the right time and saw the importance of high “EQ” to “survive” (CAED1D, 493).

School D: Working/ Learning Community

The two AEDs(LBS) in School D were members of the Case Management team (CMT), a team dedicated to the support of students who struggle with learning and school because of various challenges. However, two years ago, to reduce the number of meeting groups, the CMT was subsequently “parked under” under the Student Development Team (SDT) (CAED1D, 316). The monthly meetings involved a 13-member team which comprised the AEDs(LBS), counsellors, year heads, assistant year heads, discipline master, and school leaders. This platform allowed cases to be discussed “all under one roof” with cases pertaining to different domains of special needs, discipline or counselling (AED1D, 40). The AEDs(LBS) were present to “chip in” whenever cases discussed were relevant to them (AED1D, 41). The lack of ownership or control towards the meeting agenda indicated that the CMT/SDT was largely the AEDs’(LBS) formal *working community*. Inadvertently, the different priorities of the two teams (CMT and SDT) deterred them from developing a collaborative type of relationship; their working community remained mostly formal and did not become a learning community. Instead, the AEDs(LBS) were observed to form a small *learning community* with other two counsellors, whom they “work(ed) hand in hand with” (AED2D, 11). It formed organically without intervention from school leaders. Together, they negotiated responses to what they perceive to be their situation, figured out what matters, what works and what to watch out for in their bound context. AED(LBS)2D added, “So yeah, most of it, it’s us AED(LBS) as well as school

counsellors” (AED2D, 11). School Leader VPD was aware of their camaraderie, describing them as a “bunch” who were “close to each other” (VPD, 308). Rarely seeking help for student cases from others, the AEDs(LBS) complemented each other in the support they provided to each other. AED(LBS)2D sought help from AED(LBS)2D with regards to knowledge and everything else, while he offered the physical support to AED(LBS)1D in managing certain students.

While AEDs’(LBS) inability to learn casually and comfortably with their working community reduced their voice in that community, being in that community continued to provide them with support from school leaders and provided shared goals for them to work towards.

Support from leaders. With SEN matters being led at school leader level (VPD, 241), School Leader VPD, one of the three school leaders, oversaw SEN support in School D (VPD, 233). AEDs(LBS) and School Leader VPD communicated mainly via formal platforms, at meetings where relevant information was disseminated to AEDs(LBS) (CAED1D, 434-435). Although the AEDs(LBS) did not report directly to any of the school leaders, they approached school leaders whenever they needed help or advice for cases, especially for “extreme cases” (VPD, 208). School leaders in School D provided the space for AEDs(LBS) to own their work and did not dictate the details of what the AEDs(LBS) would do (CAED1D, 271). School leaders showed AEDs(LBS) support by lending them their authoritative voice whenever AEDs(LBS) needed the cooperation of the teachers (AED1D, 297). Occasionally, school leaders also supported the AEDs(LBS) by taking a hands-on approach with students. With a student who tended to run out from classrooms, the school leaders would “walk with him, bring him into another room...just talk to him” (AED1D, 179).

Shared goals and practices. It was important for AEDs(LBS) to help teachers “create a safe and conducive environment in the classroom” (VPD, 174). In School D, SEN was managed by focusing on its behavioural impact on students. She shared:

Yeah, we don't talk about SEN students lar because now I think it's very behaviour based (VPD, 98).

Because of this, it was necessary for teachers to manage students with SEN, with a focus on their behaviours. She said:

(...) every teacher (to be) at least be equipped to handle certain SEN behaviors because, like what we rightfully say, it's no more just an SEN child, it's an SEN behavior (VPD, 285).

Therefore, the AEDs'(LBS) role in school revolved very much around managing "SEN behaviours". As such, the AEDs(LBS) were often "on standby" for "unplanned" incidents (AED2D, 129). AED2D shared how the teachers contacted the AEDs(LBS) via WhatsApp for unforeseen incidents involving the students:

So anything like they want to SOS, they just message. So this thing happen...So SOS so they just message then we'll come over (AED2D, 81).

AEDs'(LBS) voice. The AEDs(LBS) had a modest voice at the monthly SDT team meeting. AED(LBS)1D described to the meeting as one with an agenda that they flowed along with, referring to the team as "they" which revealed a lack of ownership of the meeting (AED1D, 41). She also assumed a role that seemed to be less pivotal than others, and instead perceived her role as a peripheral, one that only required her to "chip in". She said:

So sometimes when they talk about a particular case, the child may have special needs or the child may be receiving counseling also. So that's when we... that's why we have to be together and we chip in... (AED1D, 41).

Even though AEDs(LBS) did not seem to regard meetings as a platform where they could showcase their knowledge, School Leader VPD did. She saw AEDs'(LBS) knowledge and competency being displayed through "the kind of things they are able to tell us" (VPD, 335). AEDs'(LBS) voice at meetings demonstrated their participation (or lack of) and determined the level of trust that school leaders had in them. School Leader VPD revealed:

(...) and then at the meetings, the kind of things they are able to tell us, meaning that they've done their homework, this is how we know that they are doing their job (VPD, 334 – 337).

Leader VPD suggested the importance of AEDs(LBS) having an expert and proficient voice:

(...) these are the kinds of things and they will update us lah. Like so-and-so is this, so-and-so is that, that means having oversight of these cases...knowing the right follow-through because different kids have different follow throughs and also being able to advise us with their expertise knowledge right on what action to do next (...) (VPD, 337 – 340)

Therefore, AEDs'(LBS) voice had the ability to convey their participation in school and their proficiency. Their voice (or lack of) determined the level of trust school leaders had in them.

School D: TSNs as Additional Brokers for SEN

The school had 15 Teachers trained in Special Needs (TSNs) distributed across the six levels, “with about two teachers” at each level (TD, 58). These TSNs were allocated to classes with students with special needs whenever possible. TSNs joined school leaders and department heads to advocate for SEN matters in the wider community of teachers. Because TSNs were also teachers, it was easier for them to convince fellow teachers compared to the AEDs(LBS). While AEDs(LBS) and TSNs were encouraged by the school to work together, they mostly worked independently.

There was, however, a TSN who supported the AEDs(LBS) significantly because of her extensive experience in SEN. As AED(LBS)2D shared, “the first person that the teachers go to, aside from us is usually her because she has the experience...” (AED2D, 39). An “unique” (AED1D, 73) and uncommon sight in mainstream schools (VPD, 154), Teacher TD was a strong advocate for SEN and a supporter of the AEDs(LBS) in the wider school community. Besides advising teachers (CAED1D, 278; AED2D, 40; TD, 79), Teacher TD worked with students directly (AED2D, 45), created support tools which were shared with teachers (TD, 86), engaged in case discussions with the AEDs(LBS) (AED1D, 74; TD, 75) and conducted yearly training for teachers together with AEDs(LBS) (TD, 163). Being “friends” who “always chit-chat” (TD, 277), the AEDs(LBS) were casual and comfortable around her. She was the “middleman” (TD, 154) for AEDs(LBS) and teachers whenever the AEDs(LBS) needed her help to speak to teachers and was

better able to influence her teaching colleagues to adopt strategies or accommodations for students because she was a teacher, like the others. She revealed:

(...) they think that I am a teacher. I can understand (TD, 148).

School D: Wider School Community

In the wider school community, AEDs'(LBS) partnership with teachers involved making teachers' lives easier, working together with teachers, getting teachers over to their side and being visible in school.

Making teachers' lives easier. Within the wider school community, AEDs(LBS) dedicated much of their time providing support to teachers, in and outside of classrooms. Well connected with AEDs(LBS) via WhatsApp, the teachers frequently used this platform to send messages of assistance or "SOS" to the AEDs(LBS) (AED2D, 81), to which the AEDs(LBS) would avail themselves to render support. It was common for teachers to get AEDs'(LBS) help in managing behavioural issues ranging from "temper tantrums" (CAED1D, 232) to task avoidance to disruptive behaviour. Besides providing spontaneous and immediate help to teachers, the AEDs(LBS) also provided planned in-class support to teachers. In doing so, they conducted observations of at-risk students, supported students' completion of important class activities, and were responsive to teachers' needs, helping in "whichever the teacher asked..." (AED2D, 127). Additionally, the AEDs(LBS) also assisted teachers through the withdrawal support they provided to students with SEN. They taught skills identified by teachers to be lacking in students, such as "reading comprehension skills" or "writing skills" (TD, 136). They also managed students out of class when the need arose. However, these withdrawal sessions were typically done only during non-core subjects like "art or music" (TD, 235). Furthermore, the AEDs(LBS) frequently facilitated communication between teachers and parents, as well as between teachers and students.

Working together in unison. Besides receiving support from AEDs(LBS), the teachers were observed to reciprocate the help by working together with AEDs(LBS) to support students. Holding different but complementary roles, they worked together with the "same commitment to the child" (VPD, 73) and with the same purpose to "prevent the ship from sinking" (VPD,

322). Teachers were responsible for the curriculum while AEDs(LBS) addressed deficit skills in the child. Together, they coordinated their support for the students. They took turns to take the student for phonics, shared resources, improved the resources and adopted consistent management approaches. AED(LBS)1D revealed their synchrony in supporting a student who frequently ran out of classrooms in the middle of lessons:

This one (student), the whole village is involved... Every teacher knows what to do. And yeah, everyone knows what to do with him (AED1D, 175).

Working together with differences. While working together, the AEDs(LBS) unavoidably encountered teachers who held differing opinions and practices from themselves. These teachers tended to be “fixated on their own way of teaching” (AED1D, 17), who had only “one way” of solving problems (TD, 167). These teachers struggled with “flexibility” (TD, 167) and found it hard to move away from the conventions of their practice. With a curriculum to follow, they were “results-focused” (AED1D, 318) and got “frustrated” when their lesson is “destroyed” (TD, 165). Particularly, teachers found it hard to moderate their expectations of students with SEN. Teacher TD shared about how certain teachers “got very upset” and when “discounts” were provided to students for wordy and difficult assignments (TD, 127). Similarly, AED(LBS)1D recounted her experience with teachers who found it hard to adjust their expectations for students:

(...) some of the experienced teachers...they will tell me, “No, no, no, this child actually can do it one, he's just lazy. Not that he cannot do.” So they will actually push and then sometimes scold and scold and scold (CAED1D, 358).

Teachers also continued to use the standards of typically developing peers as the benchmark for students with SEN. AED(LBS)2D shared:

So, sometimes, what the teacher looks at is, “Oh the kid like this, the student must be like other classmates.” But for us, we look at it in a different way (...) (CAED2D, 369).

The difficulty that teachers faced in disengaging from their current practice contributed to the lack of receptivity to AEDs'(LBS) suggestions. Teachers were “not willing to follow their advice”

(TD, 267) with regards to the use of visuals in class and it was “just easier” for them to do things their “usual way” (TD, 139).

Getting teachers over to their side. AEDs(LBS) used several means to get teachers to cross the traditional boundary of education and curriculum to participate in a scope of work that is less familiar to them i.e. SEN support. To do so, AEDs(LBS) negotiated with teachers to adopt certain practices and relied on external help or pressure. During negotiations, they persuaded teachers to reduce the homework, reduce spelling words or use a certain type of visual for a student. AED(LBS)1D also encouraged teachers to do things differently for the child’s sake and “to help a child, ultimately” (CAED1D, 226). Additionally, AEDs(LBS) depended on parents’ wishes or the psychologists’ voice to create external pressure that would provide that extra push. AEDs(LBS) also approached the TSN to be the “middleman” to convey information (TD, 154). However, AED(LBS)1D also recognised the limitations in getting teachers over to their side. She said:

It's really...his own character. And whether they have the heart to do it or not.

I cannot say why or...we just have to accept lor (AED1D, 318 – 319).

This echoed the School Leader VPD’s description of a teacher committed to working with students with SEN:

You need that kind of patience, that kind of willingness to, to read up and then like, you know, that this may fail tomorrow, but it might work today and (that) kind of stamina (VPD, 158).

AEDs’(LBS) Visibility. Visibility of AEDs(LBS) presented as visibility of role, impact visibility and assigned visibility. In School D, role visibility of AEDs(LBS) was important for securing school leaders’ trust in the AEDs(LBS). When role visibility was lacking, school leaders resorted to assigning them visibility. Impact visibility affected school leaders’ evaluation of AEDs’(LBS) proficiency.

Visibility of role. The AEDs(LBS) made their role known through their in-class support and observations, participation in formal meetings and capacity building. However, their visibility was also reduced by the personal choices they made when carrying out their role.

In School D, AEDs(LBS) conducted systematic classroom observations to identify at-risk students. Seeing AEDs(LBS) in classrooms encouraged teachers to be more pro-active in SEN matters and resulted in more cases being referred to them. AEDs(LBS) were also able to showcase their expertise to colleagues when they offered their perspectives and inputs on students during “results review meetings” (VPD, 406) and “level meetings” (CAED1D, 307). Furthermore, AEDs(LBS), together with teacher TD, also conducted yearly training for the teachers. In this workshop or “clinic” (TD, 139; AED1D, 207), AEDs(LBS) provided teachers with ideas, resources and taught how to use the visuals. However, even as their visibility was heightened through those opportunities provided by the school, the AEDs(LBS) in School D inadvertently reduced their visibility because of their chosen mode of communication with teachers and the way they spent their time in school. When communicating with teachers, AEDs(LBS) relied on virtual modes such as phone messages or emails because of the difficulties in meeting up physically. Typically, a WhatsApp online messaging chatgroup “tied to a particular student” (AED1D, 94) would be set up to connect all the stakeholders involved in supporting the student. WhatsApp was used as a platform for providing updates on students, communicating intervention strategies for everyone to adopt, and sharing the “soft copies” of the intervention resources (AED1D, 106). Additionally, AEDs(LBS) relied on emails, rather than face to face meetings, to highlight to teachers the needs of students and the support needed. AED(LBS)2D explained how pivotal the communication via WhatsApp was:

Definitely everything we share about is via WhatsApp. Usually the teacher...Let's say if there's something on that day that they think is not right, they will usually put inside the WhatsApp group (...) So usually, the communication is via WhatsApp (AED2D, 147).

School leader in School D took the lack of role visibility seriously. Teacher TD offered:

So my suspicion is... that the principal thinks that the AED are not working, because they cannot see (TD, 252).

The deployment survey findings provided additional support for AEDs'(LBS) lack of role visibility in school D. It showed that none of their top three most frequently performed task categories provided them with visibility among teachers. Time spent on providing “out-of-class learning and behavioural support”, “pastoral support for pupils” and “indirect pupil support” took time away from being among teachers and placed them in the background. As a result, time spent on these low visibility tasks limited teachers’ ability to see the relevance of the AEDs'(LBS) role in school.

Impact visibility. Additionally, School Leader VPD had concerns about AEDs'(LBS) impact on students’ behaviour. She observed that despite AEDs'(LBS) best efforts, students were not able to internalise the behaviour independently. She shared:

So the greater impact would be, you know, if...being with the kid there, and then when they let go, the kids also can't, just wondering how they can be better equipped to help these kids exercise the expected behavior independently. I mean, it's my wishlist lah, I can also understand that this one many factors come into play (VPD, 374 – 375).

Assigned visibility. To increase the role visibility of the AEDs(LBS), School Leaders in School C resorted to creating visibility for them artificially. School leaders assigned AEDs(LBS) certain school duties which required them to be physically present at different places at certain fixed times. These included morning “gate duties” (AED2D, 114), “temperature taking, recess duties and after school duties” (AED2D, 121), as well as “patrol duties” (AED1D, 145). Teacher TD provided an insight on the patrolling duty:

They send them on patrol. “AED(LBS)1D and AED(LBS)2D”, they tell them, “Within this time to this time, you must walk along the lobby” (TD, 251).

Therefore, while visibility mostly generated positive impact, this assigned visibility which was role unrelated was not a productive form of visibility. It took away AEDs(LBS) away from work that mattered. Teacher TD reasoned:

(...) if you don't assign them to all these recess duties, right, maybe they can have the leeway to plan their own intervention lessons for other students, you know they probably can do more (...) (TD, 255)

Synthesis of Case Findings

This section synthesises and compares the findings across three cases with reference to the last two research sub-questions below.

- c. How do AEDs(LBS) work with teachers and school leaders?
- d. What factors influenced how AEDs(LBS) work with teachers and school leaders?

c) How do AEDs(LBS) work with teachers and school leaders?

Sense of place. In the working/learning community and the wider school community, the nature of AEDs'(LBS) interactions with colleagues depended on their sense of place in school. AEDs(LBS) in School B and School D were cautious as they approached teachers because of their modest sense of place in schools. Careful not to overstep their boundaries, they adopted a submission and non-confrontational approach with teachers. In contrast, AEDs(LBS) in School C exuded confidence in their roles because their identities were found in the SEN support system in school. They adopted the identity of an established system that was bigger than themselves which gave them the confidence and courage to reach out to engage teachers.

Working/ learning community. In all three schools, AEDs(LBS) belonged to a working community which gave them support and confidence. In this community, AEDs(LBS) also had an intangible influence on colleagues through their voice. AEDs'(LBS) voice communicated their level of participation, level of proficiency, level of initiative or level of confidence. However, their voices varied. Table 16 below shows the quotes to illustrate the variability in their voice, from limited to evident. An AED(LBS) who viewed oneself as a peripheral player in a meeting and “chip(ped)” in when needed showed a lower level of participation and ownership compared to another who “initiate(ed)” improvements to system.

Limited voice	Evident voice
So sometimes when they talk about a particular case, the child may have special needs or the child may be receiving counseling also. So that's when we... that's why we have to be together and we chip in (...) (AED1D, 41)	Every now and then they see some flaw in the system, they will initiate, "Like...why don't we do this, why don't we do that?" (TB, 363)

Table 16. Variability in AEDs'(LBS) voice.

AEDs'(LBS) voice enabled both school leaders and teachers to trust in their diligence and proficiency. As an expression of trust, teachers sought AEDs'(LBS) opinions on students, even when these students did not come under the AEDs'(LBS) support.

AEDs(LBS) in School D had lesser opportunity to demonstrate their voice, compared to those in Schools B and C. It was also observed that AEDs(LBS) in School B and C had working communities that dedicated focus to student case discussions, whereas AEDs(LBS) in School D had a working community with a more diverse agenda. In Schools B and C, the working communities resembled Wenger's community of practice (1998) as they allowed learning to take place. Being a dynamic and energetic community with one agenda, it provided a conducive space for AEDs(LBS) to negotiate shared beliefs and practices with other colleagues, allowing them to develop their own voice. In contrast, because the working community in School D consisted of stakeholders with a more diverse agenda, it limited the time and opportunities for robust like-minded discussions and negotiation of shared practices. Their working community remained a formal working platform and did not evolve to become a dynamic learning community. Therefore, findings suggested that the transformation of AEDs'(LBS) working communities into learning communities had much significance for AEDs(LBS). The dynamism of learning communities gave AEDs(LBS) courage to proactively contribute thoughts and opinions, allowing their voice to be heard by teachers and school leaders in their working communities.

TSNs as additional brokers. In all the schools, the AEDs(LBS) appreciated the TSNs who were additional advocates for SEN in the wider teaching community. These teachers, armed with SEN knowledge and skills, supported AEDs'(LBS) work by assuming classes with students with SEN, conducting observations of students suspected of SEN, conducting SEN training and championing SEN issues among their teaching colleagues especially when AEDs(LBS) faced opposition from teachers.

Wider School Community. In the wider school community, the AEDs(LBS) across the three schools showed convergence in how they worked with teachers and school leaders. They had a tangible impact on colleagues, by making lives easier for teachers, working together with teachers in unison and with differences as well as getting teachers over to their side. More importantly, they also exerted an intangible influence in school through their role visibility and impact visibility. Role visibility was demonstrated through AEDs'(LBS) role in school programmes, student support, meetings, and capacity building of teachers, while impact visibility was demonstrated through AEDs'(LBS) proficiency in stakeholder management, administration and student support. However, AEDs'(LBS) visibility varied. Table 17 below shows the quotes to illustrate the variability in their role and impact visibility, from limited to evident. Role visibility became limited when the principal cannot see the AEDs(LBS) at work, resulting in uncertainty and distrust. This is in stark contrast with another situation where the principal was able to see the AED(LBS) in his or her support role and developed trust and respect for the work that AED(LBS) did. Similarly, limited impact visibility brought disappointment to a principal who was not able to witness the AED's(LBS) effectiveness in managing a student's behaviour, compared to another principal who saw the impact that the AED(LBS) had on students through the visible improvements they made in academic and social functioning.

Limited role visibility	Evident role visibility
So my suspicion is... that the principal thinks that the AEDs are not working, because they cannot see (TD, 252).	I have this student who is very severe (...) Last time I used to run around and all that. So they can see , basically, the school leaders can also see that it's actually a lot of work , to put in lar to...in order to help a child, especially those who are severe. Yeah. And the school leaders are supportive lar, they will chip in, "Oh AED(LBS)1B, your reward chart ah, if you need some funds, because this child is motivated by extrinsic rewards (...) if you need to buy more, you can use my vice – principal fund." So they are supportive and you know they are on board lar (AED1B, 236 – 237).
Limited impact visibility	Evident impact visibility
So the greater impact would be, you know, if...being with the kid there, and then when they let go, the kids also can't, just wondering how	You know, so it's really about whether or not this child has become more resilient, whether this child is able to cope with society. Visible... we can

<p>they can be better equipped to help these kids exercise the expected behavior independently. I mean, it's my wishlist lah, I can also understand that this one many factors come into play (VPD, 374 – 375).</p>	<p>see it, over the years, we can see the lessening, we can see better socialization, you know, better and also better coping with academic work.” (VPC, 262).</p>
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Table 17. Variability in AEDs'(LBS) visibility

Overall, role and impact visibility enabled school leaders to trust that AEDs(LBS) were diligent and proficient. It also enabled teachers to imagine and see possibilities in assuming greater ownership of students with SEN.

AEDs(LBS) in School B and C were observed to have higher role and impact visibility compared to AEDs(LBS) in School D. The former spent more time on tasks which gave them more opportunities to be among teachers and school leaders, resulting in a higher role visibility compared to AEDs(LBS) in School D. In School D, AEDs(LBS) spent more time engaging in tasks which took them away from being among teachers and school leaders. They were also more likely to shy away from face-to-face communication and relied on virtual communication which reduced their visibility. Similarly, AEDs(LBS) in School B and C seemed to have more impact visibility than those in School D. Their impact was evident in different areas such as student outcomes in the areas of academic and social functioning (School C), and stakeholder management (School B). In contrast, AEDs(LBS) in School D were not able to demonstrate their impact in the form of effective behavioural management of students.

Summary. As AEDs(LBS) worked with teachers and school leaders, they impacted them in tangible and intangible ways. Tangible impact included student support that helped to make teachers' lives easier. Intangible support referred to voice and visibility, which developed colleagues' trust in them and sparked teachers' imagination of a support role they never saw themselves in. Figure 3 presents a visual summary of AEDs'(LBS) intangible impact on their school communities.

Community	Members	AEDs'(LBS) impact	Community's response
Working/ learning community	AEDs(LBS), counsellors, teachers with SEN role, teachers with leadership roles, school leader	Voice: <ul style="list-style-type: none"> - Participation - Proficiency - Initiative - Confidence 	Trust
Wider school community	Teachers, school leaders	Role visibility: <ul style="list-style-type: none"> - Programme involvement - Student support - Meetings - Capacity building Impact visibility: <ul style="list-style-type: none"> - Stakeholder management proficiency - administrative proficiency - Student support proficiency 	Trust Imagination and willingness to participate in support Trust

Figure 3. Visual summary of AEDs'(LBS) intangible impact on school communities

d) What factors influenced the process of working with teachers and school leaders?

While AEDs'(LBS) tangible impact on their school communities was comparable across the three schools, they differed in the level of intangible impact, expressed through their voice and visibility. This section presents the factors that contribute to the differences in intangible impact, which have been identified to be leadership and AED(LBS) factors.

AEDs'(LBS) voice. AEDs'(LBS) influenced their working community through their voice. Leadership and AEDs(LBS) factors determined the extent of their voice.

School leaders enhanced AEDs'(LBS) voice by ensuring they had working communities that encouraged them to dialogue, negotiate shared practices, and problem solve with other members. To achieve that, school leaders ensured the regularity of community meetings, encouraged a dynamic communication culture and provided AEDs(LBS) with a teacher mentor who would work closely with them in this inner community. The teacher mentor provided

guidance for the AEDs(LBS), problem solve together and most importantly, smoothed their communication with teachers in their wider school community.

AEDs(LBS) too, had a control over their voice in the working community. AEDs(LBS) who were respected within their working community demonstrated authoritative grasps of cases through ecological frameworks and presentations, their background investigation and confident recommendations. They also showed initiative by thinking ahead, raising issues for school leaders to contemplate, and thinking strategically to plug gaps in the current system. AEDs(LBS) who displayed their competency and knowledge through their voices earned trust from teachers and school leaders in their immediate working community. These colleagues subsequently endorsed the AEDs(LBS) in the wider community, by becoming brokers for SEN and negotiated with fellow teachers when they resisted AEDs'(LBS) suggestions.

AEDs'(LBS) role visibility. AEDs(LBS) influenced their wider school community through their role visibility. Leadership and AEDs(LBS) factors determined the level of role visibility.

Leaders who enhanced the role visibility of AEDs(LBS) were observed to have a strong regard for AEDs'(LBS) SEN knowledge and skills. They gave AEDs(LBS) the chance to conduct SEN training during staff meetings, which allowed them to showcase their SEN expertise to fellow teachers, raising the visibility of the AEDs'(LBS) role. In contrast, leaders who reduced AEDs'(LBS) role visibility deployed AEDs(LBS) in a manner that reduced the opportunity to showcase their role related competency and knowledge to colleagues. They deployed AEDs(LBS) in generic roles unrelated to SEN work, such as patrolling, recess, temperature-taking and morning gate duties. These roles took time away from their rightful field of work and jeopardised their visibility in role-related work.

While leaders made decisions that could affect AEDs'(LBS) role visibility, AEDs(LBS) themselves also had a role to play. Role visibility was determined by their time-use and communication practices. AEDs(LBS) who spent more time on task categories that were performed in the presence of teachers and school leaders had better role visibility in school. Task categories that gave AEDs(LBS) high role visibility were in-class learning and behavioural support, support for teachers and support for school. Task categories that gave AEDs(LBS) low

role visibility were those that required AEDs(LBS) to work by themselves or privately with students, mainly out-of-class learning and behavioural support, pastoral support and indirect pupil support. When AEDs(LBS) chose to spend time on these tasks during school hours, they reduced teachers' exposure to their role therefore limiting their role visibility. AEDs(LBS) role visibility was also affected by the way they communicated with teachers. When AEDs(LBS) relied mainly on emails and WhatsApp messaging to communicate with teachers, information communicated through these means easily lose its impact because of teachers' busy teaching load. This lack of attention and understanding to the information communicated by AEDs'(LBS) limited teachers' understanding of their role and reduced their role visibility.

AEDs'(LBS) impact visibility. AEDs'(LBS) also influenced their wider school community through impact visibility. While AEDs'(LBS) impact visibility could earn trust from colleagues, it could also cast doubt on AEDs'(LBS) proficiency when it was not present. Findings showed that some AEDs(LBS) made more impact compared to others, and this could be explained by leadership and AEDs(LBS) factors.

Leaders who clearly communicated their goal in SEN support were able to help AEDs(LBS) attain the desired outcome and achieve impact visibility. Across the three schools, goals varied from meeting the needs of every student, to the attainment of consistency in practices across teachers to the effective management of students' behavioural difficulties. Other than communicating these goals, these leaders also constantly reiterated the work that mattered, and empowered them with authority to pursue the desired outcome.

AEDs'(LBS) SEN skills was seen to influence their impact visibility. A lack of SEN skills impacted AEDs'(LBS) effectiveness in intervention, affecting their school leaders' trust in their proficiency.

Summary. All in all, AEDs'(LBS) differences in their voice and visibility could be attributed to leadership and AED(LBS) factors.

Conclusion

As seen from the detailed case descriptions above, AEDs(LBS) across the three schools had differing levels of influence on their working community and wider school community, in

terms of their voice, role visibility and impact visibility. Leadership and AED(LBS) factors that could have caused the differences were discussed.

CHAPTER 6

Discussions, Implications & Conclusion

Introduction

This chapter opens with a review of the study purpose and a summary of main findings, paving the way for a detailed discussion of the deployment of AEDs(LBS) in Singapore, first by understanding the role within themselves, and then their role as they interact with their school communities. The chapter closes by presenting how schools can elicit a whole-school approach to SEN support through an executive summary of recommendations. Recommendations pertain to the development of the paraeducators' voice and visibility to maximise their influence on the school community.

Review of Study Purpose

In a quest to understand effective paraeducator deployment, research studies have been preoccupied on the same, small set of issues, especially role clarity, training and supervision, only to arrive at conclusions that continue to perpetuate the undesirable over-reliance on paraeducators (Giangreco, 2021). However, considering a dearth of research on the role of AEDs(LBS) in Singapore, understanding the AED(LBS) role remains necessary and relevant. This study takes an interest in the role of AEDs(LBS) by understanding how they are deployed in school. For those who remain interested in exploring these issues, Giangreco (2021) urged them to situate the research in a fuller context. Given the whole-school approach to support adopted in Singapore MOE schools, partnership between teachers and AEDs(LBS) takes on an increased significance. Therefore, this study found it necessary to understand the AED(LBS) role in relation to their partnership with teachers and school leaders. Situating the research in a fuller context can help this study to avoid arriving at superficial conclusions, those that seemingly confront the deployment issue but do not nip the problem in the bud (Giangreco, 2021). Therefore, being mindful and sensitive to the context of AEDs'(LBS) deployment, this study made recommendations to help AEDs(LBS) increase their sphere of influence in schools to enable success in the whole-school approach to support. In summary, this study hopes to present an alternative to schools' longstanding practice of an over-reliance

on paraeducators as the only solution to inclusion. It also hopes to add new insights to the “old and tired” paraeducator deployment topics through a less used perspective, Wenger’s (1998) communities of practice.

Summary of Main Findings

Findings revealed that in addition to the tangible and traditional impact that AEDs(LBS) had on their school community, they also had an intangible impact in the form of voice and visibility. When AEDs(LBS) demonstrated voice and visibility, they gained the trust of the school community and were better able to influence the school community to take ownership of students with SEN. AEDs(LBS) also differed in their levels of intangible impact, and it was attributed to leadership and AED(LBS) factors.

Discussion of Findings

Having reiterated the main research findings, this section discusses how the detailed research findings relate to existing literature. Beginning with AEDs(LBS) and what they do in schools, the discussion first examines AEDs’(LBS) responsibilities against that of paraeducators in other countries. The focus then shifts outwards from AEDs(LBS) to their sphere of influence and discusses the two-way interactions between AEDs(LBS) and their school communities. Specifically, how AEDs(LBS) impact teachers and school leaders and the significant role of trust and imagination in these interactions, as well as how AEDs’(LBS) working/learning communities impact AEDs’(LBS) sense of place in school, their voice and visibility.

Deployment Practices of AEDs(LBS)

AEDs’(LBS) deployment is compared to that of paraeducators in other countries. The similarities and differences are discussed below.

Similarities in deployment. AEDs(LBS) in Singapore and paraeducators in other countries shared similar roles in the provision of instructional support and pastoral support to students, and the provision of teacher support.

AEDs(LBS) across the three schools spent a significant proportion of their time providing out-of-class and in-class learning and behavioural support to students, ranging from 11 to 17 hours weekly. Their instructional role was consistent with the mandate they had been given

according to their job description on MOE's website (Ministry of Education, 2021). This finding was also comparable to the paraeducator time-use pattern in international literature. In UK, TAs also spent most of their time in an instructional role, directly supporting and interacting with students (Webster et al., 2013). Likewise, the provision of behavioural and social support was reported by most paraprofessionals in US to be their primary role (Fisher & Pleasants, 2012). In Australia, the provision of instructional support similarly emerged as one of the top three tasks that paraeducators do (Carter et al., 2019).

Apart from the holding an instructional role, AEDs(LBS) also provided pastoral support to their students, ranging from one to seven hours weekly. Like their contemporaries in other countries, AEDs(LBS) engaged in pastoral support tasks that required them to be like a mother, protector or friend (Broer et al., 2005), helping students with their personal needs (Carter et al., 2019; Giangreco & Broer, 2005). When providing pastoral support, half of the AEDs(LBS) reported following a student throughout or for most of the school day on a daily basis, resembling the phenomenon of one-to-one paraeducator support in inclusive schools (Carter et al., 2019; Giangreco et al., 2013; Webster et al., 2010), which was concerning because of its detrimental effects on students' personal, social and educational development (Giangreco, 2010a). Yet, AEDs'(LBS) time-use data on pastoral support seemed insignificant and could not justify AEDs'(LBS) self-reported practice of following students around in school. This inconsistency in findings revealed the constraints of self-reported task frequency surveys. Paraeducator deployment studies which rely on self-reports of task frequency risk subjectivity, compared to studies (Webster et al., 2010) which rely on more objective means to understand paraeducator roles, such as the observation of paraeducators or structured time logs. As such, this highlighted the importance of using more than one data source to understand how paraeducators spend their time in schools. This study relied on both self-reported deployment task frequency and time-use, and the findings were triangulated to enhance the credibility of the findings (Patton, 1999).

Finally, it was observed that AEDs(LBS) spent a considerable portion of their time supporting teachers in school, ranging from three to six hours weekly. This coincided with themes that were generated from the findings, mainly "making lives easier for teachers",

“working together in unison” and “working together with differences”. The disparate collaborative experiences reflected what was previously reported in the literature (Downing et al., 2000; Lim et al., 2014; Symes & Humphrey, 2012; Takala, 2007) where paraeducators experienced both seamless partnership with teachers and oppositions from teachers.

Differences in deployment. While paraeducators in other countries met with inappropriate roles, AEDs(LBS) seemed to face less challenges with this. Compared to them, AEDs(LBS) also had more pro-active role in SEN support. AEDs(LBS) led teachers in SEN support, as compared to paraeducators who were led by teachers.

AEDs'(LBS) responsibilities in student support and teacher support, as revealed through this study, mirrored the role descriptions on MOE's website which included intervention support, systems consultation and liaison with stakeholders (Ministry of Education, 2021). From this study, AEDs(LBS) were observed to provide instructional and pastoral support to students. They also engaged in consultation work, captured through the themes of “voice” and “visibility” in which AEDs(LBS) built the capacity of teachers by advising or training them in the provision of SEN support. Finally, current findings also demonstrated AEDs'(LBS) liaison work with teachers, expressed through the themes of “making teachers' lives easier” and “working together”. Taken together, these findings suggest that AEDs'(LBS) role-in-practice matches the role prescribed by MOE. Therefore, the pervasive concern of role inappropriateness that confront paraeducators in Australia, US and UK (Carter et al., 2019; Chopra & Giangreco, 2019; Webster et al., 2013) seemed to be less of an issue faced by AEDs(LBS) in this study. Yet, this picture of role appropriateness might not be consistent across all schools. In one school, trained AEDs(LBS) were observed to be assigned general tasks that were basic and non-SEN related such as gate and patrol duties. These general and basic tasks were assigned by school leaders to increase their “visibility” but were in danger of making them feel undervalued (Giangreco, Edelman, & Broer, 2001).

AEDs(LBS) also differed in the ways they worked with teachers, compared to paraeducators in other countries. Current findings revealed that AEDs(LBS) took the lead in the provision of SEN support and galvanised the participation of teachers when required. They

influenced and inspired teachers through the themes of “voice” and “visibility”. They actively negotiated with teachers to adopt their strategies through the theme of “getting teachers over to their side”. The influence that AEDs(LBS) had on teachers through their voice and visibility reflected the headway AEDs(LBS) have made towards the professionalism of their role (Evetts, 2013). AEDs’(LBS) strategic and influential role contrasted with international practices in Australia, UK and US where paraeducators assumed a less assertive role. Teachers made decisions about paraeducators’ deployment (Webster et al., 2012), planned lessons for them (Butt & Lowe, 2012; Giangreco et al., 2003) and provided instructions for classroom support of students with SEN (Butt, 2017; Giangreco et al., 2003; Webster et al., 2010). Ironically, despite their seemingly more significant role, majority of the AEDs(LBS), like paraeducators elsewhere (Devecchi et al., 2012; Fisher & Pleasants, 2012; Giangreco, Edelman, & Broer, 2001), had a low esteem of their role. AEDs(LBS) in two of three schools were observed to have a low “sense of place in school”. They preferred to adopt a non-confrontational approach with teachers, retreated whenever there were any disagreements in how things were done and preferred to rely on colleagues with greater authority than themselves to convince teachers. Yet, this perception could also be partly attributed to largely hierarchical and top-down nature of the school system (Hairon & Dimmock, 2012) governed by traditional school leader practices (Dimmock & Goh, 2011). Expecting AEDs(LBS) to take up basic and generic school tasks could have also contributed to this sense of being undervalued. Finally, in Singapore, AEDs’(LBS) partnership with teachers was observed to take place both within and outside of classrooms, similar to what Lim et al. (2014) and Siew (2018) had reported. However, international studies tended to rely on classrooms as the preferred context for examining teacher-paraeducator collaboration (Butt, 2016b; Devecchi et al., 2012; Friend et al., 2010; Scruggs et al., 2007; Solis et al., 2012; Vaughn et al., 1998). This finding illustrated the need for researchers to go beyond the classroom context when examining paraeducator-teacher partnership to capture the full range of collaborative practices.

How AEDs(LBS) Impact Community of Teachers and School Leaders

AEDs’(LBS) work had both tangible and intangible impact on their community of teachers and school leaders.

Tangible impact. Tangible impact referred to the often physical and practical effects that AEDs(LBS) had on their colleagues. This was evident through the theme of “making teachers’ lives easier”, which entailed AEDs(LBS) providing support to teachers in classrooms (e.g. manage disruptive behaviour) and out-of-classrooms (e.g. middleman between teachers and parents). It was also observed through the themes of “working together in unison” and “working together with differences”. In working together in unison, the goal of supporting students took centerstage for both AEDs(LBS) and teachers. AEDs(LBS) and teachers assumed equal ownership of students and converged in their purpose and strategies for students. In working together with differences, AEDs(LBS) held the same goal of helping students, but this was met with resistance by teachers who had different goals. They were more concerned with keeping their lives simple, preferring to adhere to the conventions of their practice and the same expectations for all students. Nevertheless, in both situations, even though AEDs(LBS) were focused on the support of students, their support inevitably provided some form of tangible relief for teachers, albeit indirectly. Finally, tangible impact also presented itself through AEDs’(LBS) efforts in “getting teachers over to their side”, to participate in student support. AEDs’(LBS) tangible impact on teachers has likewise been reported in the literature. Paraeducators have been observed to reduce teachers’ workload and stress (Blatchford, Russell, et al., 2012; Webster et al., 2010), facilitate communication between students and teachers (Chopra et al., 2004) and general and special education teachers (Fisher & Pleasants, 2012), share SEN knowledge and advice with teachers (Devecchi & Rouse, 2010; Lim et al., 2014), and act as “an extra pair of eyes” for teachers in class (Devecchi & Rouse, 2010, p. 96), provide administrative support and advice for teachers (Webster et al., 2016).

Intangible impact. Intangible impact presented as AEDs’(LBS) influence on their community of teachers and school leaders, through the themes of “voice” and “visibility”.

The concept of voice is not new (Biggs et al., 2016; Giangreco, Edelman, & Broer, 2001; Roberts, 2006). In Biggs et al. (2016), voice demonstrated paraeducators’ level of initiative in the classrooms, which positively influenced paraeducator-teacher relationships. In Giangreco, Edelman and Broer (2001), it demonstrated knowledge proficiency. The findings in this study mirrored the findings of previous studies reported. Similarly, AEDs’(LBS) voice conveyed their

initiative and proficiency. The AEDs(LBS) were pro-active at identifying gaps and initiating improvements to the existing SEN support system. Their proficiency and confidence were also evident through their ability to independently devise well thought-out action plans to address problems. In addition to what literature has found, AEDs'(LBS) voice was observed to make known their participation in school. It allowed others into the lesser-known world of support provision. It enabled others to hear about the detailed thought and effort put into supporting the students. All in all, AEDs'(LBS) voice conveyed their initiative, proficiency, confidence and participation, and enabled colleagues to trust them. AEDs'(LBS) voice was not only significant for AEDs(LBS) themselves; it was also important to school leaders. For school leaders, AEDs'(LBS) voice in their working communities acted as a validation of AEDs'(LBS) participation in school. Unlike teachers, AEDs'(LBS) participation would not show in the form of students' grades. School leaders needed to validate their participation to trust that AEDs(LBS) knew what they were doing, and AEDs'(LBS) voice became that validation. Therefore, in their working communities, AEDs'(LBS) voice became the important "reification" that gave meaning to their participation as members of the team (Wenger, 1998, p. 57). This reification, AEDs'(LBS) voice (and words), provided the starting point for further participation in the community. The interconnectedness of reification and participation demonstrated a duality that is pivotal to the structure of a community of practice (Wenger, 1998). Therefore, it can be said that the AEDs'(LBS) voice is crucial for sustaining a community of practice. Yet, the school community's regard for the paraeducator voice was not always observed in the literature. Roffey-Barentsen and Watt (2014) found that paraeducators' reported that their desire to be included in lesson planning decisions was ignored by teachers. Similarly, Fisher and Pleasants (2012) and Devecchi et al. (2012), in studies involving paraeducators and teachers, reported about teachers' neglect towards the paraeducators' voice. The level of importance attached to the paraeducators' voice might depend on the profile of participants in the studies. The current study elicited views of teachers and school leaders tasked to champion SEN support in their schools (except for one teacher). Compared to other studies which examined the view of regular teachers, educators in the current study were naturally more invested in SEN support provision which explained the greater value they placed on AEDs'(LBS) voice.

This study also found that AEDs'(LBS) impacted their school communities through the theme of "visibility". AEDs'(LBS) visibility, both role and impact visibility, allowed colleagues to witness their overall relevance and effectiveness in school and through that, won colleagues' trust and willingness to participate in SEN work. AEDs(LBS) gained role visibility when they did role-related work in the presence of their school community, such as engaging in student support, meetings and teachers' capacity building. AEDs(LBS) gained impact visibility when the fruit of their labour became evident, demonstrated through effective student support, stakeholder management or administration. The significance of role and impact visibility has been reported in the literature. Jardí et al. (2022) found that teachers, after being in the presence of paraeducators and working alongside them for a period, developed trust in them. Particularly, trust was also established when either party "fulfilled their professional expectations" (p. 6). Similarly, Biggs et al. (2016) highlighted the contribution of paraeducator proficiency to the quality of paraeducator and teacher relationships. According to Wenger's lens of communities of practice (1998), AEDs'(LBS) visibility also had a significant role. For school leaders, AEDs'(LBS) visibility in their wider communities was an authentication of their participation in school. In the absence of quantitative measures such as students' grades to show their involvement and proficiency, AEDs(LBS) must rely on visibility to demonstrate their participation and engagement in schools. Therefore, their visible participation in SEN related work and the outcomes of this participation such as SEN advice, student resources, administrative records or success stories, brought "thingness" or reification to their participation in school (Wenger, 1998, p. 58). Subsequently, this reification elicited further participation of teachers, producing another round of reification in the form of jointly created practices. This continuous interplay of participation and reification is a fundamental characteristic of a community of practice (Wenger, 1998). Therefore, AEDs'(LBS) visibility can be said to hold an important role in sustaining a community of practice.

Reflections on Trust

In this study, *trust* played a pivotal role in the partnership between AEDs(LBS) and their school communities. AEDs(LBS), through their voice and visibility (role and impact visibility), earned the trust of colleagues in their school communities. In an earlier study on AEDs(LBS),

Lim et al. (2014) found that AEDs(LBS) who were more knowledgeable in their area of work and more proactive in sharing that knowledge fitted in better with their school communities. Translating the findings to this study, the display of knowledge is reminiscent of “role visibility” and the ability to share that knowledge is indicative of “voice”. Therefore, it can be suggested that visibility and voice, respectively, led to an inclusion of AEDs(LBS) in the school communities. AEDs(LBS), through voice and visibility, were trusted and allowed entry into the school communities. The role of trust in communities of practice has been established in earlier literature. Laluevein (2010a) discussed how an individual’s demonstration of reliable knowledge could establish trust and allow membership into a community of practice. In this study, AEDs’(LBS) membership into school communities were significant in two ways; AEDs(LBS) were accepted into the world of mainstream educators while mainstream educators, through their receptivity to AEDs’(LBS) work, also gained entry into the SEN world.

Reflections on Imagination

The theme “getting teachers over to their side” demonstrated AEDs’(LBS) substantial effort in convincing teachers to adopt their support recommendations for students. Likewise, past research has demonstrated how teachers’ heavy responsibilities contributed to their reluctance to include students with SEN. In Singapore, the work and pressure associated with the preparation of students for high stakes national examination contributed to teachers’ negative experiences with inclusion (Yeo et al., 2016). Similarly, in Hong Kong, teachers’ heavy workload deterred their involvement in providing students with guidance and counselling (Lam & Hui, 2010). Teachers needed help to disengage from their current realm of academic and curriculum responsibilities and imagine an alternative realm where they take greater charge of students with SEN. Findings demonstrated that AEDs(LBS) hold the potential to help teachers disengage from preoccupation with curriculum and results to see possibilities of an alternative role of support. “Imagination” can help one to belong to a community (Wenger, 1998, p. 174) and teachers needed this imagination to develop a sense of belonging to the SEN support community. Sharma et al. (2007) investigated teachers’ concerns about inclusion in the hope of understanding what could be manipulated to facilitate their willingness to participate. They found that Singaporean pre-service teachers’ willingness to participate in inclusion was

hindered mostly by their lack of knowledge and skills, lack of SEN materials and lack of support resources including human support (Sharma et al., 2007). AEDs'(LBS) visibility in schools, therefore, allowed teachers to witness AEDs(LBS) supporting students and helped teachers to imagine themselves doing the same. This ability to imagine has the potential to assuage teachers' lack of knowledge and skills and increase their willingness to participate in SEN support.

How Working/Learning Community Impacts AEDs(LBS)

AEDs(LBS) with more voice and higher role visibility were observed to be supported by working communities which learned and grew with them. This was the case in Schools B and C, where AEDs'(LBS) working communities were also learning communities (or communities of practice) (Wenger, 1998). These learning communities shared relationships which continued beyond their regular meetings, held shared goals and SEN processes, solved problems and learned together, and were familiar with one another's cases. Above all, they displayed a "sense of aliveness" (Wenger et al., 2002, p. 50). They also resembled what Boud and Middleton (2003) described as "tightly coupled" communities (p. 200). In contrast, AEDs(LBS) in School D belonged to a working community which did not seem to develop into a learning community. As their working community was made up of two sub-groups with differing agendas, there was inevitably less harmony in priorities and practices, less sharing of meaning, and a lower degree of solidarity as seen by AEDs'(LBS) inclination to draw on other support networks more than the immediate members in their working community. This working community resembled a "loosely coupled" (p. 200) community described in Boud and Middleton (2003). Nevertheless, a working community still had its relevance. After all, teachers reported that working with paraeducators in a team led to a higher trust in them (Jardí et al., 2022).

AEDs(LBS) from "tightly coupled" learning communities demonstrated a stronger voice and higher role visibility among teachers and school leaders, suggesting that learning communities were able to draw out AEDs'(LBS) potential, provided them with the confidence and courage to speak up and step out into the wider school community to influence teachers (Boud & Middleton, 2003, p.200). Additionally, learning communities were also observed to

have the potential to enhance “AEDs’(LBS) sense of place in school”. AEDs(LBS) from School C had a healthy sense of place. They did not see themselves as being inferior to teachers, suggesting that they had developed an “identification through alignment” (Wenger, 1998, p. 196). As members of a “tightly coupled” learning community, they were able to align themselves with the purpose and pride of the community (Boud & Middleton, 2003, p.200). They adopted the identity of the community, which was greater than themselves, thereby elevating their sense of self. With a stronger sense of self, AEDs(LBS) possessed greater courage to be in the foreground instead of being in the background, increasing their voice and role visibility in school.

Implications for Practice

This section discusses a model of paraeducator deployment that results in SEN support as a shared responsibility and provides an executive summary of the recommendations arising from the findings of the study.

An Alternative to Maslow’s Hammer: SEN Support as a Shared Responsibility

Through AEDs’(LBS) voice and visibility, AEDs(LBS) were better able to harness the involvement of teachers and school leaders in SEN support, enabling a more equitable distribution of SEN responsibility among all. Specifically, AEDs’(LBS) voice and visibility earned trust from school leaders while AEDs’(LBS) role visibility also influenced teachers to take greater ownership of students. An enhancement of AEDs’(LBS) voice and visibility can potentially relieve AEDs(LBS) from being regarded as “Maslow’s Hammer” (Giangreco, 2021, p. 281) and the sole “agents of inclusion” (Strogilos & Lim, 2019, p. 373) in schools, therefore eliciting a whole school participation in the support of students with SEN. Both school leaders and AEDs(LBS) play a role in facilitating a shared responsibility in SEN through effective partnerships.

Executive Summary of Recommendations

The following executive summary of recommendations is made based on the model of AED(LBS) deployment reported in this study. This deployment model encourages AEDs(LBS) to influence teachers and school leaders through their voice and visibility to elicit a whole-school

effort in SEN support. These recommendations may be of interest to education authorities, school leaders and teachers who are involved in the deployment of paraeducators.

Role of School Leaders. Providing a team for paraeducators to work with is a significant first step in include them in the school community. However, school leaders also need to ensure that these working groups have the right conditions to flourish into dynamic learning communities that provide AEDs(LBS) with the opportunities to dialogue and learn, that which accommodate informal discussions and tolerate trials and errors. Subsequently, this dynamic working/ learning community becomes a strong core that encourages AEDs'(LBS) voice and gives them confidence to venture into the wider community of school to influence teachers and be agents of change to the school's SEN culture. Consistent with the principles important for the cultivation of communities of practice (Wenger et al., 2002), school leaders can encourage working communities to develop into learning communities by (a) ensuring the working community meets regularly, usually weekly or monthly, (b) involving members with varying backgrounds and training, mainly school leaders, senior teachers, counsellors and AEDs(LBS) to encourage a dialogue between inside (SEN) and outside (mainstream) perspectives, (c) attending and being personally involved in the regular meetings, (d) encouraging sustained and dynamic conversations that extended beyond the formal meetings, into private spaces of members, since these informal and behind-the-scene discussions were regarded as pivotal to successful community meetings (Wenger et al., 2002), and (e) ensuring the working community is focused on one dedicated topic of SEN support.

To increase AEDs'(LBS) role and impact visibility in the wider school community, school leaders can (a) create platforms for AEDs(LBS) to share their SEN knowledge with teachers during staff meetings, (b) assign only SEN-related tasks to them, (c) involve AEDs(LBS) in non-academic schoolwide programmes aimed at students' holistic development, (d) communicate clearly the schools' priorities in SEN support to ensure match between AEDs'(LBS) efforts and outcome, and (e) encourage AEDs(LBS) to receive training in areas that are important to the school to improve their impact visibility.

Role of AEDs(LBS). AEDs(LBS) likewise, have a role to play in increasing their voice and visibility. They need to be cognizant of how the way they work in schools might undermine their voice and visibility. They also need to recognise the merit of having strong voice and visibility in schools because that will help them gain the trust of school leaders and teachers. Trust facilitates their inclusion into the community and helps to elevate their sense of place in school.

AEDs(LBS) can demonstrate a stronger voice in their working/learning community by (a) learning to communicate effectively to make known the support work that they do behind-the-scenes, (b) possessing an authoritative grasp of students through elaborate investigation and presentation of cases, (c) showing initiative by identifying gaps and proposing solutions and (d) demonstrating independent thinking and confidence in solving problems.

AEDs(LBS) also need to understand how their role and impact visibility can increase their influence in school to positively encourage colleagues' participation in SEN support. AEDs(LBS) can increase role and impact visibility by (a) spending more time doing role-related work in the presence of colleagues during school hours, (b) reducing time spent on low visibility tasks during school hours such as administrative work, (c) joining face-to-face meetings instead of virtual communication since the former creates opportunities for rapport building which is important in facilitating collaboration (Biggs et al., 2016), (d) communicating with school leaders to understand their priorities SEN support (e) actively seeking out training that can enhance their effectiveness in areas valued by the school.

Who Takes Greater Responsibility?

Even though both leadership and AEDs(LBS) factors impacted the quality of partnership in schools, school leaders must take the initiative in leading the changes given a largely hierarchical and top-down nature of the Singapore school system (Hairon & Dimmock, 2012). Historically, researchers have mainly held school leaders and supervising teachers responsible for the outcomes of paraeducator deployment (Balshaw, 2010; Sharples et al., 2016; Webster et al., 2011; Webster et al., 2013). However, in a climate of shared responsibility, this study likewise is encouraging AEDs(LBS) to think about how their style of working might have impacted their partnership with teachers.

Conclusion

A whole-school approach to support and partnership between educators are inseparable concepts in the effective inclusion of students with SEN (Giangreco, 1997). Tasked to support students with SEN, AEDs(LBS) in Singapore mainstream schools work with teachers and school leaders to achieve the mandate of inclusive education. Yet, little is known about their role in relation to these colleagues. This study sets out to understand AEDs(LBS) deployment in context of their partnership with teachers and school leaders. The findings of this study, represented using the ecological map of AED(LBS) deployment, situates the role of AEDs(LBS) within two communities that AEDs(LBS) work in and highlights the impact of AEDs(LBS) on each community. AEDs'(LBS) impact was expressed as voice and visibility, both of which lead to trust and acceptance of AEDs(LBS) by their school communities. Furthermore, visibility also leads to teachers' increased willingness to participate in SEN support. Crucially, AEDs(LBS) and school leaders have the ability to manipulate AEDs'(LBS) voice and visibility, to maximise the effectiveness of the partnership.

The study findings can help Singapore mainstream schools progress in their inclusive journey through the promotion of shared SEN responsibility, offering an alternative to the over-reliance on AEDs(LBS) as vehicles of inclusion. Globally, Singapore's deployment of paraeducators in a whole-school approach can be significant for education systems which are at the nascent stage of their inclusive education journey as it presents a way of maximising limited resources. For countries with established SEN support systems in schools, the findings can provide guidance for the cultivation of SEN communities of practice in schools. A stable core community can be a source of strength and support for paraeducators, especially those who are learning to navigate deployment challenges in the areas such as role definition, communication and collaboration, and training.

This study contributes to existing literature on paraeducator-teacher partnership. In the existing literature, partnership was mostly understood in the form of functional support rendered to teachers (Blatchford, Russell, et al., 2012; Chopra et al., 2004; Devecchi & Rouse, 2010; Lim et al., 2014; Webster et al., 2010). This study adds to the scarce existing literature on intangible but influential aspects of partnership (Biggs et al., 2016; Devecchi & Rouse, 2010;

Jardí et al., 2022). In those studies, individual interpersonal factors that influenced partnership were documented. This study enhances current understanding of the factors by drawing connections between the factors and using the Wenger's communities of practice framework (1998), clearly outlines the context that surround these factors. The presentation of interconnected factors that influence partnership within a fixed context might improve the applicability of the findings.

This study addresses the dearth of AED(LBS) deployment research in Singapore and revisits the need for schools to become more “professionally inclusive” towards AEDs(LBS) (Lim et al., 2014, p. 123). Current findings extend that of the earlier study by providing suggestions to improve AEDs'(LBS) inclusion into their school communities, through the concepts of voice, visibility, trust and acceptance. When AEDs'(LBS) voice and visibility increase, their school community's trust in them increase, facilitating their acceptance into the school community. Therefore, MOE, school leaders and AEDs(LBS) alike, need to reimagine the AED(LBS) role. Findings showed that the AED(LBS) role has evolved to suit its current context, from a predominantly functional role (Lim et al., 2014) to one of influence. This role shift is necessary to cope with the demands posed by its context. The constraints in AED(LBS) manpower limits their capacity to support in functional ways while the whole-school approach to support makes their role of influence relevant. With AEDs(LBS) as agents of influence, this role shift can bring about “a higher esteeming” of their role (Webster & De Boer, 2021b, p. 303).

To conclude, this study has allowed a thorough exploration of AED's(LBS) role and deployment through the lens of Wenger's (1998) community of practice. The deployment of AEDs(LBS) in a manner that increases their professional inclusion in schools will no doubt lead to a more effective inclusion of students with SEN.

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APPENDICES

Appendix 1. Pilot Survey Instrument

It has been 15 years since the inception of the role of the AED(LBS), then known as Special Needs Officers. Yet, to date, we have not systematically studied how AED(LBS)s are deployed across various schools. The efficient deployment of AED(LBS) is increasingly important given a tight demand for Special Educational Needs (SEN) support services in mainstream schools.

This pilot survey has been crafted based on an initial study, and is part of a doctoral study designed to better understand the current practices of preparing and deploying AED(LBS)s for their role in mainstream schools. Eventually, this study hopes to understand the impact of preparedness and deployment on the support provided to pupils, and through this, suggest improvements to the current model.

The doctoral study has obtained ethics clearance from the Institute of Education (University College London) and NIE and has also attained data collection approval from MOE, Singapore.

Thank you for being part of this pilot survey. Having attempted the questions, I look forward to your feedback with regards to the length of survey, relevance of questions, and areas of deployment which I might have overlooked.

As this is only a pilot survey, your responses will not be recorded as part of the data collected for the doctoral study. Please be assured that any information you provide will NOT be reproduced, altered or sold to any organisation. The data collected will be treated with the strictest confidentiality and all respondents will remain anonymous.

Part A: Demographics

1. Name:
2. Email:
3. Job title:
4. Age Range: 18-29/ 30 – 41/ 42 -53/ 54 and above
5. Gender: M/F
6. Highest level of education: Diploma/ Bachelor's degree/Master's degree/ Doctorate/ Other:
7. How long have you been in service as an AED(LBS)?
8. Please state the school of deployment
9. This is the (1/2/3/4)school you have been deployed to as an AED(LBS).
10. How many AEDs(LBS) are there in your school including yourself?
11. What is the job title of your reporting officer?
12. Have you received in-service training in a specific area of SEN support (eg. Dyslexia, autism/ADHD)? Yes/No
13. State the specific area(s) of SEN you have been trained in
14. What was the format of in-service training? Part-time/ full-time/NA

15. What was the training duration? If you have received training in more than one SEN, estimate the overall training duration

Rate according to a scale of 1 -5 (1: Strong disagree; 5 : Strongly agree)

16. The job descriptions and expectations of my role are very clear to me.

17. The pre-service training and in-service training (if any) have enabled me to provide adequate support to my pupils.

18. I am confident in meeting the demands and expectations of my role

19. I can influence the SEN decisions that are made in school.

20. I can get through to the most challenging pupils.

21. There is a well-defined Special Educational Needs team which I work with in my school.

23. How many pupils receive support from you (in-class support and/or withdrawal support)?

24. What are the ages of the pupils? Tick all that apply. (Primary 1/2/3/4/5/6)

25. Do you teach on the School-based Dyslexia Remediation (SDR) Programme?

26. How many pupils do you support on the SDR programme?

27. What are the three most common Special Educational Needs (SEN) you encounter in pupils?
Start with the most common.

Part B: AED(LBS) Task Frequency

Using the scales on the right, indicate the extent to which you are involved in the following tasks	Hardly any involvement	Several times a year	At least once a month	Once a day	Several times a day
1. Learning Support					
1. Conduct screening tests for pupils with SEN					
2. Deliver school-based dyslexia remediation programme					
3. Provide out-of-class specialist intervention support during school hours (e.g. reading skills, numeracy skills, social skills)					
4. Provide out-of-class specialist intervention support after school hours (e.g. reading skills, numeracy skills, social skills)					
5. Provide out-of-class support for school curriculum content during school hours					
6. Provide out-of-class support for school curriculum content after school hours					

7. Provide general supervision for pupils who are out of mainstream classes					
8. Support pupils to understand instructions in classrooms					
9. Support pupils to achieve curriculum goals in classrooms					
9. Other than the above, are there any other forms of learning support that you provide to pupils? (Y/N)					
10. If yes, please describe the other forms of learning support that you provide to pupils.					
2. Behavioural Support					
1. Implement in-class behavioural support plan					
2. Implement out-of-class behavioural support plan during school hours					
3. Implement out-of-class behavioural support plan after school hours					
4. Provide spontaneous support for pupils who require behavioural support when incidents arise					
5. Other than the above, are there other forms of behavioural support that you provide to pupils? (Y/N)					
6. Please describe the other forms of behavioural support that you provide to pupils.					
3. Pastoral Support					
1. Attend to pupils' personal needs (e.g. be the familiar face at school entrance, buy food in canteen)					
2. Follow a pupil throughout or for most of the school day					
3. Support pupils with social/ peer interaction difficulties					
4. Carry out transitional support plan for pupils e.g. primary one/ primary six pupils					
5. Other than the above, are there other forms of pastoral support that you provide to pupils? Y/ N					
6. Please describe the other forms of pastoral support that you provide to pupils.					
4. Indirect support for pupils					
1. Develop individual education plans (IEP) for pupils					
2. Monitor and record pupil progress					
3. Plan and prepare for specialist intervention session					

4. Plan and prepare for in-class support session					
5. Interact with parents/ care-givers/ other agencies with regards to pupil's development					
6. Facilitate pupils' access arrangement applications					
7. Collaborate and consult with MOE psychologists with regards to cases					
8. Other than the above, are there other forms of indirect support that you provide to pupils?					
9. Please describe the other forms of indirect support that you provide to pupils.					
Others (specify)					
5. Support for teachers					
1. Provide advice and guidance for teachers with regards to various SEN					
2. Participate in during scheduled meetings (e.g. level meetings, subject meetings, Case Management Team meetings etc)					
3. Participate in pre-lesson support discussion					
4. Participate in post-lesson debrief					
5. Assist teachers with curricular activities in the classrooms					
6. Manage pupils with SEN so that teachers can continue to teach without disruption					
7. Respond to teachers' requests to observe/manage pupils with SEN					
9. Other than the above, are there any other forms of support that you provide to teachers? Y/N					
10. Please describe the other forms of support that you provide to teachers					
6. Support for school					
1. Perform school duties (e.g. assembly, recess, safety, first aid duties etc)					
2. Arrange SEN training for school					
3. Conduct SEN training for school					
4. Carry out induction for new teaching staff with regards to SEN support					
5. Carry out invigilation duties for mainstream classes					

6. Relief teach (cover teacher's absence)					
7. Co-teach (e.g. Form Teacher Guidance Period - FTGP)					
8. Provide support during field trips organised by schools e.g. Learning Journeys					
11. Other than the above, are there other forms of support that you provide to the school? Y/N					
12. Please describe the other forms of support that you provide to the school.					

Part C: Time use survey

1. How much time do you spend on the six categories of deployment, comparatively? Rank them from first to sixth (first being the category that you spend the most time on)

	Learning support for pupils	Behavioural support for pupils	Pastoral support for pupils	Indirect support for pupils	Support for teachers	Support for schools
1						
2						
3						
4						
5						
6						

2. In a typical week, estimate the time you spend on delivering the School-based Dyslexia Remediation (SDR) programme.

3. In a typical week, estimate the time you spend on delivering out-of-class learning and behavioural support.

4. In a typical week, estimate the time you spend on delivering in-class learning and behavioural support.

5. In a typical week, estimate the time you spend providing pastoral support for pupils.

6. In a typical week, estimate the time you spend providing indirect support for pupils.

7. In a typical week, estimate the time you spend providing support for teachers.

8. In a typical week, estimate the time you spend providing support for the school.

Part D: AED(LBS) preparedness

1. Role clarity (for in-class learning support)

Choose the most common experience

Mark only one oval.

AED(LBS) goes into lesson blind. Independently implements learning support.

AED(LBS) is given lesson plan/brief. Limited information about role in class is given.

AED(LBS) is given lesson plan/brief. Some information about role in class is given.

AED(LBS) is given lesson plan/brief. Specific information about role in class is given.

2. Role clarity (for in-class behavioural support) *

Choose the most common experience

Mark only one oval.

AED(LBS) goes into lesson blind. Independently implements behavioural support.

AED(LBS) is given limited information about role in class.

AED(LBS) is given some information about role in class.

AED(LBS) is given specific information about role in class.

3. Opportunity for teacher-AED(LBS) pre-lesson communication

Choose the most common experience

Mark only one oval.

No opportunity/time to communicate before lessons

Limited communication before lessons, generally ad-hoc and unplanned

Some planned communication before lesson e.g. emails, video call

Thorough communication before lesson, have scheduled time within school hours to meet

4. Opportunity for teacher-AED(LBS) post-lesson communication

Choose the most common experience

Mark only one oval.

No opportunity/time to communicate after lessons

Limited communication after lessons, generally ad-hoc and unplanned

Some planned communication after lesson e.g. emails, video call

Thorough communication after lesson, have scheduled time within school hours to meet

5. Quality of AED(LBS) feedback to teachers

Choose the most common experience

Mark only one oval.

AED(LBS) does not provide feedback to teacher

AED(LBS) provides brief feedback (e.g. task completed)

AED(LBS) provides essential feedback (e.g. descriptions of what went well/what did not go well)

AED(LBS) provides thorough feedback (e.g. analysis of continued concerns/progress towards goals)

6. Preparation for withdrawal interventions

Choose the most common experience.

AED(LBS) plans and prepares intervention, with no influence from teacher

AED(LBS) plans and prepares intervention, with limited influence from teacher

AED(LBS) plans and prepares intervention, with some influence from teacher

AED(LBS) plans and prepares intervention, with substantial influence from teacher

7. Feedback pupil's progress on specialist intervention to teacher

Mark only one oval.

AED(LBS) does not provide feedback to teacher

AED(LBS) provides brief feedback (e.g. task completed)

AED(LBS) provides essential feedback (e.g. descriptions of what went well/what did not go well)

AED(LBS) provides thorough feedback (e.g. analysis of continued concerns/progress towards goals)

8. Acquisition of subject knowledge

Mark only one oval.

AED(LBS) gains subject knowledge by tuning in to teacher delivery (e.g. as part of class audience)

AED(LBS) gains subject knowledge from lesson plans/ schemes of work

AED(LBS) gains subject knowledge via ad hoc communication with teacher

AED(LBS) gains subject knowledge via substantial briefing/training from teacher

9. Acquisition of SEN support knowledge

Mark only one oval.

AED(LBS) gains SEN support knowledge gained through the Diploma in Special Needs (DISE)

AED(LBS) gains SEN support knowledge gained through the Diploma in Special Needs (DISE) and in-service courses in dyslexia/ autism/ ADHD

AED(LBS) gains SEN support knowledge gained through the Diploma and Advanced Diploma in Special Needs (DISE, ADISE)

AED(LBS) gains SEN support knowledge gained through the Diploma and Advanced Diploma in Special Needs (DISE, ADISE), as well as in-service courses in dyslexia/ autism/ ADHD

10. What is the level of involvement that your Reporting Officer has in providing leadership and guidance in your daily roles?

Mark only one oval.

High

Moderate

Low

No involvement

Thank you for your responses.

PART E: Survey Feedback

On a scale of 1 - 4, rate the statements (1: Strongly disagree; 4: Strongly agree)

1. How much time did you take to complete the survey
2. The length of the survey was reasonable.
3. The questions were relevant to your context.
4. The survey captured an accurate sense of deployment of AED(LBS) in Singapore mainstream primary schools.
5. What are the areas of deployment that have been overlooked and you wish to highlight?
6. Please provide any other feedback that can improve the survey.

Participant Information Sheet

Dear AED(LBS),

I invite you to participate in a research study entitled:

A Multiple Case Study: The Deployment of Allied Educators (Learning and Behavioural Support) in Singapore Mainstream Primary Schools

I am conducting a research project under my capacity as a doctoral student at the Institute of Education (IOE), University College London (UCL) and the National Institute of Education (NIE), Singapore (under the supervision of Dr Zachary Walker & Dr Loh Pek Ru) on the topic of THE DEPLOYMENT OF ALLIED EDUCATORS (LEARNING AND BEHAVIOURAL SUPPORT) [AED(LBS)] IN SINGAPORE MAINSTREAM PRIMARY SCHOOLS.

Data collection request has been approved by the Ministry Of Education (MOE), Singapore [Approval no.: RQ44-20(06)]. This research has also been reviewed according to UCL procedures which govern your participation in this research.

While the AED(LBS) role has been in the system for 15 years, there is currently little research about how AED(LBS)s are deployed in mainstream primary schools. This is especially important in a context where demand for their services and support is currently tight and will continue to increase. It is therefore timely to establish a thorough understanding of the deployment of AED(LBS)s in mainstream schools. After all, effective AED(LBS)s deployment is paramount in our progress towards inclusive schools. Eventually, this study seeks to understand how deployment can affect AED(LBS)-pupil interactions and suggest factors that could improve the deployment of AED(LBS)s.

I wish to invite you to participate in Phase 1 of this study. The consent obtained is applicable only for **Phase 1** of the study.

Phase 1: You will be required to complete an online survey that aims to understand AED(LBS) deployment.

There is no risk to you participating in this study. Although co-operation with this study is purely voluntary, I do hope you will agree to take part, because your input would contribute to the understanding of the deployment of AED(LBS) and provide insight on the factors that influence deployment. Consequently, recommendations to improve deployment of AED(LBS) in schools can be suggested. **Any information you provide will NOT be reproduced, altered or sold to any organisation. The data collected will be treated with the strictest *confidentiality* and all respondents will remain *anonymous*.** The information you will provide will not be released to your employer. If you decide to

participate, you are free to withdraw your agreement at any time with no consequences to your relationship to anyone at your school or at the UCL.

Please fill in the form below regarding your participation. Thank you for your assistance in this important endeavour.

If you have any questions or comments regarding your rights as a participant in the research please contact IOE Research Ethics Co-ordinator via email: ethics@ucl.ac.uk or tel: 020 7679 8717.

Should you have any questions concerning this research, or you wish to discuss accessibility process, please do not hesitate to contact me at:

Tel: [REDACTED]

Email: [REDACTED]

Sincerely yours,

June Siew
EdD student at IOE, UCL

AED(LBS) CONSENT FORM

This page is to be returned to the researcher

Name of participant: _____

School: _____

Position: _____

- I agree to participate in Phase 1 of this study [Approval number: RQ44-20(06)]. I agree to the use of anonymised primary data in publications in academic journals.
- I do not agree to participate in Phase 1 of this study [Approval number: RQ44-20(06)]

Date:

Signature:

.....

.....

If you are willing to participate, please provide the following details:

Contact Number: _____ (Office)

_____ (Mobile number)

Appendix 3. MOE Data Collection Approval Letter

North Buona Vista Drive Singapore 138675
Robinson Road P.O. Box 746 Telephone :
(65) 68722220
Facsimile : (65) 67755826 Website



Ministry of Education
SINGAPORE

EDUN N32-07-005

Request No.: **RQ44-20(06)**

10 June 2020
[REDACTED]

Dear Ms Siew Hui Li June,

A MULTIPLE-CASE STUDY: THE DEPLOYMENT OF ALLIED EDUCATORS (LEARNING BEHAVIOURAL SUPPORT) IN SINGAPORE MAINSTREAM PRIMARY SCHOOLS

I refer to your application for approval to collect data from schools.

1. I am pleased to inform you that the Ministry has no objections to your request to conduct the research in **25 primary schools**, subjected to the following conditions:
 - a. the approved research proposal is adhered to during the actual study in the school;
 - b. the data collected is kept strictly confidential and used for the stated purpose only; and
 - c. the findings are not published without written approval from the Ministry and a copy of the findings is shared with the Ministry upon request.

2. When conducting the data collection in the school, please ensure that the following are carried out:
 - a. consent is obtained from the Principal for the study to be conducted in the school;
 - b. written parental consent is obtained before conducting the study with the students;
 - c. teachers are informed that participation in the study is voluntary and they do not need to provide any sensitive information (e.g. name and NRIC No.);
 - d. participation by the school is duly recorded in Annex A; and
 - e. the data collection in the school is completed within 1 year from the date of this letter.

3. Please show this letter and all the documents included in this mail package (i.e. form, research proposal and research instrument(s) marked as seen by MOE) to seek approval from the Principal and during the actual study.

Yours sincerely

████████████████████
Senior Research Analyst, Corporate Research Office Research
& Management Information Division
for Permanent Secretary (Education)

Note to Principal: Please refer to MOE notification PA/02/17 for the Guidelines on Data Collection for Schools.

This is a computer-generated letter. No signature is required.



Participant Information Sheet

Dear AED(LBS)/Teacher/School Leader,

I invite you to participate in a research study titled:

A Multiple Case Study: The Deployment of Allied Educators (Learning and Behavioural Support) in Singapore Mainstream Primary Schools

I am conducting a research project under my capacity as a doctoral student at the Institute of Education (IOE), University College London (UCL) and the National Institute of Education (NIE), Singapore (under the supervision of Dr Zachary Walker & Dr Loh Pek Ru) on the topic of THE DEPLOYMENT OF ALLIED EDUCATORS (LEARNING AND BEHAVIOURAL SUPPORT) [AED(LBS)] IN SINGAPORE MAINSTREAM PRIMARY SCHOOLS.

Data collection request has been approved by the Ministry Of Education (MOE), Singapore [Approval no.: RQ44-20(06)]. This research has also been reviewed according to UCL procedures which govern your participation in this research.

Following your school's participation in Phase 1 of the study, I wish to invite you to participate in Phase 2 of this study. The consent obtained in this form is for Phase 2 of the study.

Rationale of study

It has been 16 years since the inception of the role of the AED(LBS)s. The deployment of teaching assistants has received significant attention in other countries. Yet, in Singapore, we have not systematically studied how AED(LBS)s are deployed across various schools. The efficient deployment of AED(LBS) is increasingly important given a tight demand for Special Educational Needs (SEN) support services in mainstream schools.

Research aims for Phase 2

Phase 2 is a multiple-case study of up to 5 schools with regards to the deployment of AEDs(LBS). The semi-structured interviews and observations are designed to find out the following:

- (a) What are the factors that facilitate a school's deployment of AEDs(LBS)?
- (b) How does deployment affect AED(LBS)' interactions with pupils in a withdrawal setting?
- (c) How does deployment affect AED(LBS)' interactions with teachers in the classroom?

Level of Involvement

Phase Two involves interviews:

1-1 interview with:

- a) One AED(LBS)
- b) One school leader [one whom AED(LBS) reports to]

c) One teacher [one who has worked with AED(LBS) in supporting a student].

Each interview is about 60-minute long and will be audio recorded.

This knowledge will be especially meaningful for principals and school leaders who make strategic decisions about the best way to deploy AEDs(LBS). It will also be highly relevant for teachers looking for strategies to better involve the AEDs(LBS) in the support of pupils with SEN.

Be assured that no personal information about the participants or the school will be revealed through the study, and neither the participants nor the school can be identified through the study at any point of time. The study has obtained ethics clearance from the IOE UCL, attained data collection approval [RQ44-20(06)] from the Ministry of Education (MOE), Singapore and has the support of the MOE Psychological Branch Services (PSB). Please find the attached approval letter. The key information of the study is also stated below in this email for easy access.

Period of data collection

Data collection can be completed in one week, between 26 April – 21 May 2021. Upon your consent to proceed, mutually agreeable dates will be worked out with the participants involved.

Low risk study

There is no risk to you participating in this study. Although co-operation with this study is purely voluntary, I do hope you will agree to take part, because your input would contribute to the understanding of the deployment of AED(LBS) and provide insight on the factors that influence deployment. Consequently, recommendations to improve deployment of AED(LBS) in schools can be suggested. Any information you provide will NOT be reproduced, altered or sold to any organisation. The data collected will be treated with the strictest confidentiality and all respondents will remain anonymous. The information you will provide will not be released to your employer. If you decide to participate, you are free to withdraw your agreement at any time with no consequences to your relationship to anyone at your school or at the UCL.

Please fill in the form below regarding your participation. Thank you for your assistance in this important endeavour.

If you have any questions or comments regarding your rights as a participant in the research please contact IOE Research Ethics Co-ordinator via email: ethics@ucl.ac.uk or tel: 020 7679 8717.

Should you have any questions concerning this research, or you wish to discuss accessibility process, please do not hesitate to contact me at:

Tel: [REDACTED]

Email: [REDACTED]

Sincerely yours,

June Siew
EdD student at IOE, UCL

AED(LBS) CONSENT FORM

This page is to be returned to the researcher

Name of participant: _____

School: _____

Position: _____

Please tick accordingly:

- I agree to participate in Phase 2 of this study [Approval number: RQ44-20(06)]. I agree to the use of anonymised primary data in publications in academic journals.
- I am aware of the level of involvement (bolded in participant information sheet) as an AED(LBS) participant.
- I do not agree to participate in Phase 2 of this study [Approval number: RQ44-20(06)]

Date:

Signature:

.....

.....

If you are willing to participate, please provide the following details:

Contact Number: _____ (Office)

_____ (Mobile number)

Appendix 5. Pilot Case-Study Report

Data analysis of the pilot case revealed the presence of three main themes: AED(LBS) deployment was shaped by both leadership and AED(LBS) factors, which interacted and resulted in a shared practice that was unique to the AEDs(LBS) in the school (Figure 1). In school A, leadership factors consisted of inclusive vision, inclusion strategy and AED(LBS) deployment strategy, while AEDs(LBS) factors consisted of alignment with leadership, imagination of possibilities and interpersonal relationships. The resulting shared practice that formed in school A had the characteristics of high visibility, capacity building and bridge building.

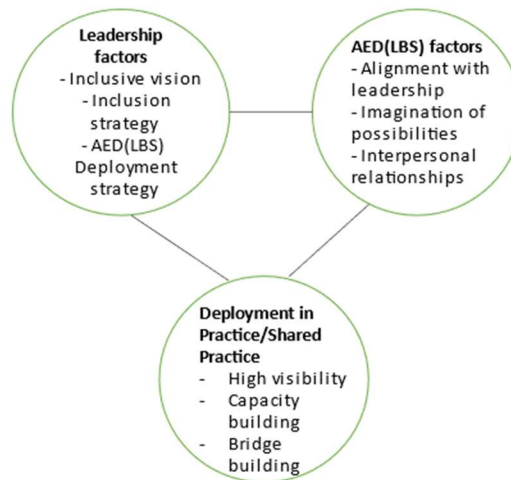


Figure 1. Pilot thematic map of AED(LBS) deployment.

Leadership Factors. Leadership factors influenced the deployment of AEDs(LBS). These factors were out of the AEDs'(LBS) control but influenced their deployment in practice. Leadership factors contained leaders' inclusive vision, inclusion strategy and AED(LBS) deployment strategy.

Leaders' Inclusive Vision. School leader VPA demonstrated a strong inclusive vision. She explained that School A made a deliberate choice to be inclusive, not because of the number of students with SEN but because of a bigger picture perspective (VPA, 23). In School A, inclusion

was perceived to benefit all children, not just those who got included. School leader A believed that the early experiences of inclusion in school would in turn prepare students to embrace diversity and inclusion in the society:

Because it is about teaching the rest of the children, how we interact with these children. These are very good things that they are learning because it's (school's) like a microcosm of the entire society when they go out to work. It's not when you go to a society you will learn. It's not (VPA, 24-25).

School leader VPA perceived the responsibility as an inclusive school as, keeping students with the school, not discounting the progress that the child is making (no matter how small), keeping hope alive for parents and journeying with them, every step of the way. She provided a poignant explanation of their commitment:

Because to any parent, any sliver of hope. Hope...so meaning to say, if the child can improve by just that little bit, but not good enough for a primary school, not good enough for mainstream school, to them is, is that improvement good enough for us to see that he is making progress? So, I told them (team) unless they (parents) are with us, we should not (refer students out) because they must know that school is every step...in every step of the way with parents...(VPA, 178-180).

The school leaders in school A emphasised the importance of inclusion and effectively communicated to everyone in the school their expectations of the inclusive agenda using consistent and impactful language. Teachers were regarded as important stakeholders in the school's inclusive agenda and were expected to accept and cater to students of all abilities in their classrooms. AED(LBS)1A shared:

(...) if we talk about our area of work, special education or learning and behavioural support, the importance of it is driven down not just by us, but also from, from our school leaders, so accepting in our classroom there are different kind of students with different abilities that we need to cater to students of all the abilities, so these are all the things and you know, our school leaders use phrases, things that can really drive

down to you and it's very consistent so those things really, it goes into levels and classrooms as well for the teachers [AED(LBS)1A, 40-43].

In school A, the school leaders' strong vision of inclusion in the school prepared the ground for AEDs'(LBS) deployment in school. The school leaders' vision of inclusion was supported by an inclusion strategy.

School Leaders' Inclusion Strategy. School A, like all other mainstream schools managed by Singapore's Ministry of Education (MOE), relied on a whole-school framework to meet students' learning, emotional and behavioural needs (Chong et al., 2013) (see Chapter 2 for elaboration). In the excerpt below, AED(LBS)1A described the use of the three-tier whole-school support framework in School A. Teachers in School A were expected to take responsibility of their students' development throughout the three tiers of support. Form teachers were encouraged to take ownership of students especially at Tier One and Two, with AEDs(LBS) supporting by providing consultations. At Tier Three, the Case Management Team (CMT) consisting of School leader VPA, the two AEDs(LBS) and several other colleagues would take greater responsibility through the provision of intervention and liaison with stakeholders, but that itself would not dissolve the responsibility of the form teacher in the management of the students. The expected active involvement of teachers in supporting inclusion school influenced how AEDs(LBS) were deployed in school A. AED(LBS)1A shared:

So of course, we also go by a tiered system of support. Tier One and Tier Two, again our year heads as well, they really drive down this message during level meetings that you know...Tier One and Tier Two, the responsibility, in fact even at Tier Three, the responsibility of this child is to you, as form teachers, but you can always consult at Tier One, Tier Two. Tier Three is where Case Management Team takes a more active role in coming up with interventions, reach out to external agencies and all that [AED(LBS)1A, 64 - 69].

Teacher A was observed to align with the inclusive strategy of the school. Even though she had been previously told by her professor that the support of students with SEN was out of her

official role as a teacher, she found it incumbent to take a pro-active role in the support of a student with autism in her class, given the lack of AEDs(LBS) in school. She revealed:

Honestly, a lot of the profs (professors) they tell us it's out of the...the job. And he also told us there's AEDs but reality is not enough AEDs. So teachers learn lar (TA, 227) .

In summary, school leaders' overall inclusion strategy not only set the tone for teachers in supporting students with SEN, it also determined how the AEDs(LBS) or "agents of inclusion" (Strogilos & Lim, 2019, p. 373) would be deployed in the overall scheme of things.

School Leaders' AED(LBS) Deployment Strategy. Leadership's strategy for AED(LBS) deployment in school A was expressed through their perception of the AED(LBS) role and their intended purpose of the AED(LBS) role in supporting the school's overall inclusion strategy.

In an excerpt of the interview with School leader VPA below, she expressed her perception of the AED(LBS) role. She considered the AEDs(LBS) as "expert people" who should be managing student cases requiring a higher level of skills. Her expectations for her teachers with regards to supporting inclusions were tied to her intentions for the AEDs'(LBS) role. Teachers were expected to be diligent in carrying out basic intervention at the classroom level, before raising those cases to the AEDs(LBS) who can offer the professional help. She was judicious in her utilisation of AEDs'(LBS) time and expertise. She said:

(...) they [AEDs(LBS)] were expressing that there are more and more in-take cases that have come up. But I told them that this shouldn't be it, because whenever the teachers come to you, it may be something that they are calling for help, yes, but we haven't explored, like, whether they have done their own intervention, whether they have gathered all the subject teachers to do a class based intervention before is escalated to the AED the expert people, that expert people coming in, because the understanding is that if they were to like just refer and expect help to come in straightaway, then the AED(LBS)...there won't be enough time for them to do any other work (...) (VPA, 81-85).

With regards to SEN matters, School leader VPA did not assume superiority over the AED(LBS) but perceived the AED(LBS) role as being complementary to her leadership role:

I think she, she works more closely with me this year than previous years, because I'm new to this, but I see us doing and her role, being very important because she's the expert. I'm not as expert as she is (...) I lend my leadership point of view, and then they give me the expertise point of something (VPA, 130).

School leader VPA intended the AED(LBS) role in school A to have a strategic purpose, and not one that was relegated to picking up cases from teachers along the corridors:

Now if they were to take up any intake cases, along the corridor and things like that, there is very little time for my AED(LBS) to do things that are more strategic (VPA, 128).

In the quote below, School leader VPA elaborated on the “strategic” purpose of the AEDs(LBS). That is, for them to impart and transfer their SEN knowledge and skills to teachers. She saw the enlistment of teachers’ help as an approach to increase the school’s capacity of managing the current 60 student cases. However, to enlist teachers’ help, the AEDs(LBS) had to equip the teachers with necessary knowledge and skills:

And so something more strategic will be for her to impart all this knowledge and skills to the teachers. That will be a more strategic move, I'd rather she do more of such to take up a time than to zoom in on the child and to intervention by herself. Because that will mean she has many cases. But actually, the 60 cases, if the teachers are equipped, and then the capacity to deal with them, is increased, that will be more strategic. So that's how I see their role (VPA, 139).

However, while School leader VPA had a strategic role for her AEDs(LBS), it was not a role that had been given unconditionally; the AEDs(LBS) had gained her trust to be given their strategic role. This was evident through an account of the relationship between a principal in her and an AED(LBS) from the previous school she was based in. In the account, she explained how the lack of visibility led her principal to distrust the AED(LBS) and as a result did not entrust her with a strategic role:

(...) she gave me the comment that my then AED(LBS) is not doing enough. It's not doing enough as in the visibility is not there, always within the class doing paperwork,

paperwork. So, so much so that she demanded to see her time-table, her time sheets. I've never heard of, but she actually asked for it. And so, so that part, do I attribute it to her not, not being supportive of AED? I don't think so, it's more of it takes two hands. If, if the, if the effectiveness of the AED(LBS) is not there so the trust of the school leaders to ensure that she does a good job is quite low, right. So the attention given to a piece of work is not there, then the urge for her to do something more strategic is quite lacking (VPA, 220-223).

From the above, School leader VPA valued visibility of AEDs(LBS). Visibility of AEDs(LBS) presented as a valuable factor in gaining the trust of School Leader VPA. For the AEDs(LBS) in School A, their visibility contributed to their leader's perception of "effectiveness" and determined the level of "trust" their school leader had in them (VPA, 220-223).

Summary. In summary, the leader's inclusive vision, inclusive strategy and AED(LBS) deployment strategy shaped how AEDs(LBS) were deployed in School A.

AED(LBS) Factors. The data revealed that factors within the AEDs(LBS) themselves also shaped their deployment. The AED(LBS) factors consisted of alignment with leadership, imagination of possibilities and interpersonal relationships.

Alignment with Leadership. The AEDs(LBS) in School A were able to align their practice to that constructed by their leadership. It was clear from AED(LBS)2A expression below that she had internalised the leadership's intended strategic role for them, which was to empower teachers. In the excerpt below, she described the process of empowering the teachers, from imparting to them the skills, to the scaffolding and finally to the independent practice:

(...) part of it can actually be passed down to the teachers because the teachers are always there. So can empower them the skills, so that whatever I do you can also do the same, just that at the beginning, we really hand hold a lot for them, and after that, we slowly let go so that they can also practice it and get at it practical lar. So, actually, the...part of it can actually be passed down to the teachers because the teachers are always there [AED(LBS)2A, 88-89].

Other than aligning themselves to the leadership's AED(LBS) deployment strategy, AED(LBS)1A made a deliberate effort to align her practice with the values and themes set by school leaders. In the example below, she coordinated student talk in her own programmes such that it was aligned to the leadership's tone setting theme for students. She offered:

(...) we have this weekly tone setting, so every Wednesday the year head talks to the whole school about a specific theme, so if it is for example being a positive influence so even in our pull-out programmes or the programmes we have for the term or the semester, we try to tap onto that, and we are encouraged to do that, all the teachers, no matter what kind of programmes we run, we are encouraged to tap onto those tone setting themes...[AED(LBS)1A, 24].

School leader VPA commented on how the work of AED(LBS)1A has been aligned with the school's values and overall inclusive agenda. She recognised how her work had been coordinated with the school's efforts and expressed appreciation for what she had done for the school:

So I must say, AED(LBS)1A's area of work, really, really helps a lot in us, getting the children to be empathetic. As for her to come up with the wall, the posters or the postcards and things like that. It's the awareness that we have constantly been building within the school. And then, for her to come (communicate) with the teachers on regular basis for them to know how the other children should respond and react to this special girl or boy within a school. Her area of work is very influential (VPA, 120-123).

While leadership provided the overall direction for AED(LBS) deployment, the AEDs(LBS) in school A responded by aligning themselves according to how the leaders had intended to deploy them.

Imagination of Possibilities. In addition to aligning themselves with the deployment strategy intended by their school leaders, the AEDs(LBS) in School A were able to value add to the leadership intended deployment through their imagination of possibilities. This sense of imagination allowed them to devise innovative ways of helping the students with SEN in school,

navigate the constraints in their context and keep improving their practice. While the AEDs(LBS) were regarded as the “expert people” (VPA, 84), AED(LBS)1A did not think that this expertise should reside in her alone. She imagined a time where the school did not have to rely on her and worked towards this vision by training the teachers. She shared:

Even though I’ve been here 10 years, I’ve always told myself that if I remove myself from the picture, can the school, can the school, the staff and the students manage. So the way I’ve do it is, whatever content knowledge, whenever I go for my courses, I do have, I do run autism workshops in school, I do run literacy workshops in school so teachers know how to handle it as well [AED(LBS)1A, 117-120].

Besides involving the teachers, the AEDs(LBS) also actively involved the student community in supporting these students with SEN. AED(LBS)1A described how the challenges of withdrawal students from classes spurred them on to push the boundaries and think of new approaches to help struggling readers. She shared:

And the thing about mainstream school is, if you keep pulling them out of class, teachers get worried because eh you keep taking them out of class, I need them in class too. So then what we did was, fine, let’s find out a way how we can expand ourselves out to help these kids [AED(LBS)1A, 123-124].

Through their imagination of possibilities, the AEDs(LBS) were always driven to improve their practice for their students, to bring them to another level. School leader VPA excitedly shared about this aspect of her AEDs(LBS):

So that led to that led to them having a lot of ownership. I must tell you our AEDs(LBS) have got a lot of ownership. Yeah, a lot of commitment. Their commitment level is very high. So much so that when they are so tied up with work, they are still thinking about how to, how to better them, what activities that we should have, to make sure that they are okay, well and good now, quite stable, how can we bring them a level higher, so it's amazing to hear (...) (VPA, 154-155).

Imagination took the AEDs(LBS) “through time and space” and gave their role “new dimensions” (Wenger, 1998, p.194).

Interpersonal Relationships. Other than the ability to align and imagine, the data showed that the AEDs(LBS) were able to build strong interpersonal relationships with colleagues through their easy-going and helpful personalities. Evidence pointed to the presence of mutual friendship, connection and inside jokes between the AED(LBS) and the teacher in School A, which supported their engagement with one another. Although the AEDs(LBS) and teacher were from different practices in school, the mutual friendship contributed to their shared engagement. Teacher TA recounted a casual and playful exchange of email and text messages between AED(LBS)1A and her:

AED(LBS)1A sent this email yesterday. She has a lot of funny, like...(it was) celebrate autism day. Yesterday...For us, you know, yesterday (was) orange juice day so I started texting her all the funny things. And then, “She’s like, oh my God, thank you for entertaining my lameness.” I just text her. I say, “Yeah, we eighties kids ah, we connect.” Yar I told her that. Really really. So I guess I mean, it helps. I mean yes...it does play a part but I think it’s the demeanor and the disposition of the AED(LBS) and what kind of policy do they have, the kind of policy they have, it really helps in how we work together [TA, 158].

Teacher TA also appreciated the AEDs’(LBS) openness and approachability which made them so much easier to work with:

They are very open, it’s really open-door policy as in it’s so easy to just... they are very approachable and able to connect (TA, 153).

In fact, the AEDs’(LBS) open-door policy contrasted with what School leader VPA had intended for them to do. School leader VPA strongly encouraged her teachers to follow the case referral flowchart (VPA, 80, 128, 134), stressing the importance of adhering to this flowchart. She mentioned during the interview what she conveyed to her teachers:

But let's support each other by following this flow chart. Because until you have done your teacher intervention, your class intervention, then we have the expert people [AEDs(LBS)] coming in (VPA, 134).

The flowchart was put in place to help the AEDs(LBS) manage their workflow. Yet, because of their easy-going demeanor, they did not adhere strictly to this procedure but had the interpersonal skills to show flexibility in the use of this document, gaining the teachers' favour and trust. Teacher TA drew a comparison between the "policy" of the current AEDs(LBS) and the one at her previous school:

(...) but I think it's the demeanor and the disposition of the AED(LBS) and what kind of policy do they have, the kind of policy they have, it really helps in how we work together. I mean just to share the previous AED(LBS) in my contract school was quite... everything must be very official and formalized. Before you can even go to her, she don't (doesn't) even want to hear anything. No words, nothing. I showed up. I don't really have documents yet. Just hear me out. Oh, but no. So first thing she'll tell you show me document then put in this request form. I mean, for the lack of a better work, it kind of puts me off (TA, 158).

Summary. The AEDs(LBS) contributed personal factors that shaped their deployment in practice. These personal factors, mainly alignment, imagination of possibilities and interpersonal skills interacted with leadership factors and eventually resulted in a "deployment in practice" that was unique to the AEDs(LBS) in School A.

Shared Practice. Data suggested that AEDs'(LBS) deployment-in-practice was influenced by both leadership and AED(LBS) factors. These factors interacted with one another and culminated in a practice shared by both AEDs(LBS) in school A. The shared practice of the AEDs(LBS) in School A had features of high visibility, focused on capacity building and bridge building.

High Visibility. The data demonstrated that deployment in practice at School A was characterised by the high visibility of AEDs(LBS). Through AED's(LBS)2A active visibility in the

classrooms in her first year, teachers started to gain awareness of what her job entailed and that eventually resulted in more student referrals from teachers [AED(LBS)2A, 117]. School leader VPA also expressed her “salute” and respect for the AEDs(LBS) when she saw that they put students and teachers first, before their own important paperwork (VPA, 167-171). Two forms of visibility were evident: visibility of AEDs(LBS) through physical presence and through AEDs’(LBS) works.

The AEDs(LBS) in School A placed value on being physically visible to colleagues and were proud of their visibility in school. She recounted her advice for newer AEDs(LBS), “Don’t feel like you are in the background, you have to come out to the foreground. You have to go and talk to the teachers” [AED(LBS)2A, 221-222]. She also explained that visibility facilitated the process of teachers getting help from them:

And I think that’s why it is very important for AEDs to know that... like I said, cannot be in the background. If you’re in the background, nobody will come and look for you. Nobody will even know you exist, so we are quite loud in announcing we are here so teachers know that they can come and look for us at any time lar [AED(LBS)1A, 292-293].

For AED(LBS)1A, her identity as an AED(LBS) was linked to her availability to help teachers, and this availability for teachers was expressed through her deliberate visibility in the foreground. Teacher TA provided further insight on the statement made by AED(LBS)1A through her sharing:

You can visually see for yourself how they are always there. They make their presence known. Not like, “Hey, I’m here.” They really walk the talk. They are there during PE lesson. They are there in the canteen (TA, 167).

AED(LBS)2A pride herself on how AEDs(LBS) in School A might be different from other AEDs(LBS) in terms of their physical visibility. Not unlike AED(LBS)1A, her identity as an AED(LBS) was also associated with her being in the foreground, involved in supporting students in class. She commented:

So we are seen, like, er, I know LBS we have a lot of paper work but some LBS you won't really see them upfront doing work... upfront in the class supporting the kids, yeah but over here... [AED(LBS)2A, 79].

Similarly, School leader VPA attested to the AEDs'(LBS) visibility. She remarked at their high visibility in school, at recesses with the students, in the classrooms with the students and teacher, in the withdrawal sessions with students and presenting to teachers at behavioural clinics:

...the visibility of them at recesses, within the class, withdrawal, behavioural clinics and all that's when they are very visible, they both are very visible" (VPA, 86).

Other than being physically visible, the AEDs'(LBS) visibility was expressed through their works. School leader VPA enthusiastically shared about the projects that AED(LBS)2A had initiated and worked on. These projects included the gardening activity for students with low progress, a big wall display outside the AEDs'(LBS) room to celebrate inclusion with slogans such as "to inclusivity and beyond" and acrylic artwork by students with SEN which had been made into postcards (VPA, 93-96). Below is one of the quotes from School leader VPA:

I tell you this is amazing (VPA held up postcards on camera). This was just last year. Respect, acceptance, understanding, equity and all. All drawn by our SEN children so these were made into postcards, made into postcards that children can use and we have printed lots of them. It's going to be used for the next few years, so these are done, whenever there are any works like that done, it will be up on our inclusive, inclusion wall. So this is the new pet project by AED(LBS)1A. That's all visible, all these are within our school (VPA, 97)

Teacher TA offered other examples of visibility of AEDs'(LBS) works through the AEDs'(LBS) awareness raising activities during the Autism Awareness Month. Teachers in School A had their awareness of autism raised through "a lot of inclusion activity" as a result of "little bite size things" planned for teachers [AED(LBS)2A, 45], as well as through the AEDs'(LBS) display of photos and videos:

It's Autism Awareness Month last month. Yeah. So they have been doing a lot of photos, videos. I think AED(LBS)1A must have shared with you, to raise the awareness of autism. Yeah. To raise the awareness about autism. You can visually see the impact. As teachers, we can see it (TA, 292-293).

Visibility of AEDs'(LBS) works was not only expressed through visually completed products of the AEDs(LBS), but also through the success of their support work with students. Teacher TA expressed that through their support of students during school hours, she was able to "witness how they [AEDs(LBS)] really helped the students" (TA 166). School leader VPA also shared:

Ok, when I see the child in P4, having journeyed with them for the past few years. You see marked improvement. Then, I've read, even reports like initial referral to which and which school. But after observation and then the improvement made by the child, child should remain in mainstream and these are diagnosed cases (VPA, 156-157).

Capacity Building. The data showed the prominence of capacity building in the AEDs'(LBS) practice in school. School leaders intended for AED(LBS) to build the capacity of teachers within School A. Yet, through the AEDs'(LBS) imagination, the concept of capacity building was extended to students in their school community, as well as teachers outside of their school.

In the excerpt below, AED(LBS)1A explained her role in terms of "building capacity for teachers". This was aligned with School leader VPA's intended role for the AEDs(LBS) in school A. As explained by AEDs(LBS)1A, an important part of the AED(LBS) role in School A was to engage in capacity building of the teachers, to enrich their knowledge of SEN through "information loading" during "case clinics" and to follow-up with them on how these strategies have been practically implemented in the classrooms.:

(...) one thing that we [AED(LBS) and VPA] constantly talk about is building capacity for teachers. So you know, again, reality is, if you've not really had a child with special needs in your class, you are most likely going to, in the course of you being a teacher and being an educator. So the building capacity segment in our area of work is very

important. Not just information loading. We have learnt throughout the years that you can load teachers with all this information, but the practice part comes in lacking sometimes. And so, what we do now is we do this kind of case clinics, where we give information, we information load, and then we meet on a regular basis, sometimes once a week, sometimes once every couple of weeks, to look at progress [AED(LBS), 147-149].

Other than building the capacity of teachers within the school, the AED(LBS)1A extended her work to teachers beyond the walls of the school. School A housed an independently run student care centre within their compound. When the teachers at the student care encountered difficulties in managing the behaviour of several School A's students, AED(LBS)1A immediately reached out to the teachers of the after-school care centre and conducted training sessions for them VPA, 88). School leader VPA shared how AED(LBS)1A reacted and extended the model of capacity building beyond the walls of their school, into the student care compound:

So, so we reacted quite swiftly and I must say AED(LBS)1A was really quite fast in gathering the teachers to take them through and then when she sees that not, not a lot commitment is coming from the teachers, she showed them how to create the plans and how to be consistent and all and she followed up very closely. It is something that is over and beyond (...) (VPA, 88).

Capacity building in School A extended to students as well. Teachers were concerned about AEDs(LBS) withdrawing students from mainstream classes because it was likely to disrupt students' curriculum learning [AED(LBS)1A, 123]. At the same time, the number of AEDs(LBS) in the school limited the help that was available to students. AED(LBS)2A explained her limitations in providing support:

So in the morning, I'll spend that 10 minutes to do with them. But it's like one person, one morning, how much can I do, so even if I do five days, I only can do five kids [AED(LBS)2A, 92].

Faced with both teacher concerns about withdrawals and manpower constraints, the AEDs(LBS) imagination circumvented the constraints by teaching students to provide support for the poor readers. AED(LBS)1A shared:

So we got our P4 pupils who are really good readers, fluent readers, so every morning these P4 pupils they carry their files and they go to the P1 & 2 pupils, they read to these kids. They read and they do drilling, they do word drill and they do one minute dash and they do all kinds of little things and what we are doing is again we are extending out to more people to help [AED(LBS)1A, 123-125].

Bridge Building. In building the capacity of teachers, AEDs(LBS) in School A often had to persuade teachers to adopt their ideas and to work in unison. Therefore, building bridges presented as an important feature in the AEDs'(LBS) practice. There were two main ways of building bridges: Through people and through tools.

Getting teachers' cooperation can be challenging because "they (teachers) have their own pedagogy, they have their own sort of things they need to finish up in that lesson, that all these additional things that you put in, sometimes I can understand lar, it's not easy for teachers, really not easy (...)" [AED(LBS)1A, 287]. AED(LBS)2A described how it was difficult to get all the teachers to cooperate with their recommended routine for a student during a form and subject teaching meeting that she organised:

So I think for our SEN kids, routines, in terms of routines, erm expectation wise, it is quite a standard. And it's important to follow through, not only with the form teachers, as well with all the subject teachers, we also need to experience, like sometimes the subject teachers don't feel the need. So like, sometimes when we call upon meetings, it's not easy to get everyone, to buy in lar, the ideas. Yeah. So this is something that we are working on [AED(LBS)2A, 83-84].

The AEDs(LBS) in School A described the various ways they used to get teachers to align with their practice. For example, AED(LBS)1A described how she leveraged on a successful partnership with a teacher to persuade the other teachers. She arranged for the teacher to

attend her case clinic where she could share about her success story with the rest of the teachers who were facing the same issues with their students. Because they were contemporaries, it was easier for one to influence and convince the other. AED(LBS)1A shared:

...So I will do the workshop, and then I call it case clinic, so in my case clinic session I invited this teacher to come in and she shared. So when she shared right and the teachers had questions they are communicating from teacher to teacher who are in the same exact shoes, because teachers sometimes go aiyah but you only got one student, I got 40 students, that's always that phrase I always hear. So if I get the teacher to share and the effort she has put in is a lot, but she also is in the same shoes as you, you're on the same boat so that becomes more effective I feel [AED(LBS)1A, 279].

Similarly, AED(LBS)2A described how she worked with a willing teacher and subsequently used this willing teacher and the positive student outcomes to win the other teachers over:

There will still bound to be teachers that (who) don't believe in certain things. So, yeah. So after, when teachers are more willing to work with me, we'll start off with them first, I think if the kid is able to sort of behave or perform better in that class, so we can collect the results, and then really like show to the teachers who don't trust it. So maybe you can try...need to encourage lar [AED(LBS)2A, 127-128].

Tools to help students were jointly created by AEDs(LBS) and teachers. These tools enable them to speak the same language for the good of the student and bridged their otherwise diverse practices. AED(LBS)1A illustrated how she worked closely with a teacher to support a student who displayed traits of autism. Together, they coordinated and created a list of behaviour to focus on, taught him a repertoire of sequenced skills to manage his behaviour, and implemented modifications to his environment. She shared:

So this one I really worked very very closely and I give it to the form teacher, she was excellent, easy to work with. She took a lot of the reins by herself. So we came up with the expected behaviours, a list of it, we taught him, so I taught him the skills in my withdrawal session, so whether it is seated behaviour, your transition, what you do, if

you need to stand up what do you need to ask. We allocated a space for him to walk in different settings, not just in classrooms but in PE lesson he had pull-out groups where he can move around, in a controlled manner, not just haphazard anywhere but in a controlled manner [AED(LBS)1A, 261-263].

In another account, Teacher TA described tools that she and AEDs(LBS) created together to support Student A who has autism. These tools included a collated list of things that triggered the student, a shared routine for the student, The AEDs(LBS) provided teacher TA with the physical, mental and practical support she needed and worked together with her to learn about the student, to investigate her triggers. They also shared and coordinated the routines they used for the student:

Because she's like a blank slate now. We are collecting data to understand what triggers her. This and that, yeah. So along the way, we found out the hard way, what makes her upset? What are those things? And also, they teach me certain ways or things...we share routines. Yeah. So they know what routines are used, then they tell me what routine she uses also so we sing the same tune (TA, 116-120).

Among the AEDs(LBS) and Teacher TA, they also created a system of communication via text messages (TA, 134) that allowed Teacher TA to seamlessly convey to the AEDs(LBS) the specific areas that she needed help with. Upon receiving her feedback, they would support her by working on various areas during the withdrawal sessions, such as taking out her pencil case, putting homework in file and writing homework down (TA, 125-126).

Summary. The shared practice created by the AEDs(LBS) in School A bore characteristics of high visibility, capacity building and bridge building. Their shared practice was one with strong semblances of their leadership's influence but also contained traces of their own influences. The AEDs(LBS) aligned themselves with the deployment initiatives imparted to them by their leaders, resulting in a shared practice focused on high visibility and capacity building. However, they also brought the feature of bridge building into their shared practice. Through bridge building, they were able to transcend the boundaries between the AED(LBS) and teaching communities.

Appendix 6. Main Study Survey Instrument

It has been 15 years since the inception of the role of the AED(LBS), then known as Special Needs Officers. Yet, to date, we have not systematically studied how AED(LBS)s are deployed across various schools. The efficient deployment of AED(LBS) is increasingly important given a tight demand for Special Educational Needs (SEN) support services in mainstream schools.

Thank you for agreeing to take part in the survey. This survey has been crafted based on a pilot survey, and is part of a doctoral study designed to better understand the current practices of preparing and deploying AED(LBS)s for their role in mainstream schools. Eventually, this study hopes to understand the impact of preparedness and deployment on the support provided to pupils, and through this, suggest improvements to the current model.

The doctoral study has obtained ethics clearance from the Institute of Education (University College London) and NIE and has also attained data collection approval from MOE, Singapore.

Please be assured that any information you provide will NOT be reproduced, altered or sold to any organisation. The data collected will be treated with the strictest confidentiality and all respondents will remain anonymous.

Part A: Demographics

28. Name:

29. Email:

30. Job title:

31. Age Range: 18-29/ 30 – 41/ 42 -53/ 54 and above

32. Gender: M/F

33. Highest level of education: Diploma/ Bachelor's degree/Master's degree/ Doctorate/
Other:

34. How long have you been in service as an AED(LBS)?

35. Please state the school of deployment

36. This is the (1/2/3/4) school you have been deployed to as an AED(LBS).

37. How many AEDs(LBS) are there in your school including yourself?

38. What is the job title of your reporting officer?

39. Have you received in-service training in a specific area of SEN support (eg. Dyslexia, autism/ADHD)? Yes/No

40. State the specific area(s) of SEN you have been trained in

41. What was the format of in-service training? Part-time/ full-time/NA

42. What was the training duration? If you have received training in more than one SEN, estimate the overall training duration

Rate according to a scale of 1 -5 (1: Strong disagree; 5 : Strongly agree)

43. The job descriptions and expectations of my role are very clear to me.

44. The pre-service training and in-service training (if any) have enabled me to provide adequate support to my pupils.

45. I am confident in meeting the demands and expectations of my role

46. I can influence the SEN decisions that are made in school.

47. I can get through to the most challenging pupils.

48. There is a well-defined Special Educational Needs team which I work with in my

49. school.

50. How many pupils receive support from you (in-class support and/or withdrawal support)?

51. What are the ages of the pupils? Tick all that apply. (Primary 1/2/3/4/5/6)

52. Do you teach on the School-based Dyslexia Remediation (SDR) Programme?

53. How many pupils do you support on the SDR programme?

54. What are the three most common Special Educational Needs (SEN) you encounter in pupils? Start with the most common.

Part B: AED(LBS) Task Frequency

	Once a year or less	Once a month	Once a week	Once a day	Several times a day
Using the scales on the right, indicate the extent to which you are involved in the following tasks					
1. Learning Support					
1. Conduct screening tests for pupils with SEN					
2. Deliver school-based dyslexia remediation programme					
3. Provide out-of-class specialist intervention support during school hours (e.g. reading skills, numeracy skills, social skills)					
4. Provide out-of-class specialist intervention support after school hours (e.g. reading skills, numeracy skills, social skills)					

5. Provide out-of-class support for school curriculum content during school hours					
6. Provide out-of-class support for school curriculum content after school hours					
7. Provide general supervision for pupils who are out of mainstream classes					
8. Provide in-class support to allow pupils to keep up with the class (e.g. simplify instructions, remind and prompt)					
9. Other than the above, are there any other forms of learning support that you provide to pupils? (Y/N)					
10. If yes, please describe the other forms of learning support that you provide to pupils.					
2. Behavioural Support					
1. Implement out-of-class behavioural support plan during school hours					
2. Implement out-of-class behavioural support plan after school hours					
3. Implement in-class behavioural support					
4. Provide spontaneous support for pupils who require behavioural support when incidents arise					
5. Other than the above, are there other forms of behavioural support that you provide to pupils? (Y/N)					
6. Please describe the other forms of behavioural support that you provide to pupils.					
3. Pastoral Support					
1. Attend to pupils' personal needs (e.g. be the familiar face at school entrance, buy food in canteen)					
2. Follow a pupil throughout or for most of the school day					
3. Support pupils with social/peer interaction difficulties					

4. Carry out transitional support plan for pupils e.g. primary one/ primary six pupils					
5. Other than the above, are there other forms of pastoral support that you provide to pupils? Y/ N					
6. Please describe the other forms of pastoral support that you provide to pupils.					
4. Indirect support for pupils					
1. Develop individual education plans (IEP) for pupils					
2. Monitor and record pupil progress					
3. Plan and prepare for out-of-class/withdrawal support session					
4. Plan and prepare for in-class support session					
5. Interact with parents/ care-givers/ other agencies with regards to pupil's development					
6. Facilitate pupils' access arrangement applications					
7. Collaborate and consult with MOE psychologists with regards to cases					
8. Other than the above, are there other forms of indirect support that you provide to pupils?					
9. Please describe the other forms of indirect support that you provide to pupils.					
Others (specify)					
5. Support for teachers					
1. Provide advice and guidance for teachers with regards to various SEN					
2. Organise group/1-1 meeting with relevant teachers to discuss a specific case					
3. Participate in pre-lesson support discussion					
4. Participate in post-lesson debrief					

5. In consult with teachers, prepare appropriately differentiated resources for pupils					
6. Assist teachers with curricular activities in the classrooms					
7. Manage pupils with SEN so that teachers can continue to teach without disruption					
8. Respond to teachers' requests to observe/manage pupils with SEN					
9. Other than the above, are there any other forms of support that you provide to teachers? Y/N					
10. Please describe the other forms of support that you provide to teachers					
6. Support for school					
1. Perform school duties (e.g. assembly, recess, safety, first aid duties etc)					
2. Arrange SEN training for school					
3. Conduct SEN training for school					
4. Participate in scheduled meetings e.g. level meetings, subject meetings, case management meetings etc					
5. Carry out induction for new teaching staff with regards to SEN support					
6. Mentor new AED(LBS)s					
7. Carry out invigilation duties during examinations					
8. Relief teach (to cover teacher's absence)					
9. Co-teach with teacher (e.g. Form Teacher Guidance Period - FTGP)					
10. Provide support during field trips organised by schools e.g. Learning Journeys					
11. Other than the above, are there other forms of support that you provide to the school? Y/N					

12. Please describe the other forms of support that you provide to the school.

Part C: Time use survey

1. How much time do you spend on the six categories of deployment, comparatively? Rank them from first to sixth (first being the category that you spend the most time on)

	Learning support for pupils	Behavioural support for pupils	Pastoral support for pupils	Indirect support for pupils	Support for teachers	Support for schools
1						
2						
3						
4						
5						
6						

2. In a typical week, estimate the time you spend on delivering the School-based Dyslexia Remediation (SDR) programme.

3. In a typical week, estimate the time you spend on delivering out-of-class learning and behavioural support.

4. In a typical week, estimate the time you spend on delivering in-class learning and behavioural support.

5. In a typical week, estimate the time you spend providing pastoral support for pupils.

6. In a typical week, estimate the time you spend providing indirect support for pupils.

7. In a typical week, estimate the time you spend providing support for teachers.

8. In a typical week, estimate the time you spend providing support for the school.

Part D: AED(LBS)' preparedness

1. Role clarity (for in-class learning support)

Choose the most common experience

Mark only one oval.

AED(LBS) independently implements learning support.

AED(LBS) and teacher have limited discussion about required role in class.

AED(LBS) and teacher have some discussion about required role in class.

AED(LBS) and teacher have thorough discussion about required role in class.

2. Preparation (for in-class learning support) *

Choose the most common experience

Mark only one oval.

AED(LBS) goes into lesson blind and is on stand-by to provide learning support when needed

AED(LBS) is given lesson plan/brief and is on stand-by to provide learning support when needed

AED(LBS) is given lesson plan/brief and prepares an adapted set of instructions to suit the pupil

AED(LBS) is given lesson plan/brief and prepares additional materials for pupil(e.g. differentiated task, teaching manipulatives)

3. Role clarity (for in-class behavioural support) *

Choose the most common experience

Mark only one oval.

AED(LBS) independently implements behavioural support.

AED(LBS) and teacher have limited discussion about required role in class.

AED(LBS) and teacher have some discussion about required role in class.

AED(LBS) and teacher have thorough discussion about required role in class.

4. Preparation (for in-class behavioural support) *

Choose the most common experience

Mark only one oval.

AED(LBS) goes into lesson blind and is on stand-by to provide behavioural support when needed

AED(LBS) is given lesson plan/brief and is on stand-by to provide behavioural support when needed

AED(LBS) goes into lesson blind with preventive strategies selected for pupil

AED(LBS) is given lesson plan/brief and prepares preventive strategies selected for pupil

5. Opportunity for AED(LBS) and teacher to communication before the lesson involving in-class support *

Choose the most common experience

Mark only one oval.

No opportunity/time to communicate before lessons

Limited communication before lessons, generally brief and ad-hoc

Some planned communication before lesson e.g. emails, video call

Thorough communication before lesson, have scheduled time within school hours to meet

6. Opportunity for AED(LBS) and teacher to communication after the lesson involving in-class support *

Choose the most common experience.

Mark only one oval.

No opportunity/time to communicate after lessons

Limited communication after lessons, generally brief and ad-hoc

Some planned communication after lesson e.g. emails, video call

Thorough communication after lesson, have scheduled time within school hours to meet

7. Nature of feedback to teacher after in-class support

Mark only one oval.

AED(LBS) does not provide feedback to teacher AED(LBS) provides brief feedback (e.g. task completed)

AED(LBS) provides essential feedback (e.g. descriptions of what went well/what did not go well)

AED(LBS) provides thorough feedback (e.g. analysis of continued concerns/progress towards goals)

8. Preparation for withdrawal intervention support

Mark only one oval.

AED(LBS) plans and prepares intervention, with no influence from teacher

AED(LBS) plans and prepares intervention, with limited influence from teacher

AED(LBS) plans and prepares intervention, with some influence from teacher

AED(LBS) plans and prepares intervention, with substantial influence from teacher

9. Nature of feedback to teacher after withdrawal intervention support

Mark only one oval.

AED(LBS) does not provide feedback to teacher

AED(LBS) provides brief feedback (e.g. task completed)

AED(LBS) provides essential feedback (e.g. descriptions of what went well/what did not go well)

AED(LBS) provides thorough feedback (e.g. analysis of continued concerns/ progress towards goals)

10. Acquisition of subject knowledge

Mark only one oval.

AED(LBS) gains subject knowledge by tuning in to teacher delivery (e.g. as part of class audience)

AED(LBS) gains subject knowledge from pre-shared lesson plans

AED(LBS) gains subject knowledge via brief communication with teacher

AED(LBS) gains subject knowledge via substantial briefing/training from teacher

11. Acquisition of SEN support knowledge

Mark only one oval.

AED(LBS) gains SEN support knowledge gained through the Diploma in Special Needs (DISE)

AED(LBS) gains SEN support knowledge gained through the Diploma in Special Needs (DISE) and in-service courses in dyslexia/ autism/ ADHD

AED(LBS) gains SEN support knowledge gained through the Diploma and Advanced Diploma in Special Needs (DISE, ADISE)

AED(LBS) gains SEN support knowledge gained through the Diploma and Advanced Diploma in Special Needs (DISE, ADISE), as well as in-service courses in dyslexia/ autism/ ADHD

12. What is the level of involvement that your school leader has in providing leadership and guidance in your daily role?

Mark only one oval.

High

Moderate

Low

No involvement

Thank you for your responses.

PART E: Survey Feedback

On a scale of 1 - 4, rate the statements (1: Strongly disagree; 4: Strongly agree)

1. The questions were relevant to your context.
2. The survey has covered the fundamental components of the AED(LBS)' role in Singapore mainstream primary schools.
3. Have there been areas of deployment that have been overlooked and you wish to highlight?

Appendix 7. An example of coding [An extract from AED(LBS)1C transcript]

1. Data	Themes	Reading 2: Codes	Reading 1: Initial ideas
<p>2. Interviewer 0:00</p> <p>3. So before we start, I just want to reassure you that the data collection will be treated with the strictest confidentiality, and all respondents will remain anonymous. So neither you nor the school will be identified at any point of time. Okay, yeah. And thank you for consenting to the audio recording of this interview as well. Okay, yeah. Okay. Sure. So, um, yeah. Okay, so let's just start with, like, general questions about your school class. Okay, so can you tell me about your school's values?</p> <p>4. AED(LBS)1C 0:47</p> <p>5. Okay, school values...</p> <p>6. Interviewer 0:48</p> <p>7. Yes...</p> <p>8. AED(LBS)1C 0:55</p> <p>9. Yeah, okay. I think in terms of the values we you can see from the classes, so from P one to P six. So P one is teamwork, P2... honesty, p three, innovativeness, p 4 kindness, p five, enthusiasm and P six, resilience. So we base, we work with the children based on these six values.</p> <p>10. Interviewer 1:18</p>			

<p>11. Right...right. Okay. Okay. So then, how do you think you know your values influence the culture of your school?</p> <p>12. AED(LBS)1C 1:29</p> <p>13. In most of our programs, I think in rolling them out, including support, the support programs for the children with special needs, they, we want to really consider these six values. So firstly, is based on each level, we want to target that value, for example, p six, is resilience. We talked about that. Yeah. And then in our programs, we also want to see how we can suss out all these values and inculcate them in the children. Yeah. Hmm.</p> <p>14. Interviewer 2:00</p> <p>15. Okay. Okay. So that means your, for example, your your special needs programs would be bringing these values forward as well?</p> <p>16. AED(LBS)1C 2:14</p> <p>17. Yes, I think in terms of the school, school run programs, like the whole school kind of things, and but we also have some that are also rolled out but the target of the special needs children. Yes, that would be really on that that based on the values, but if you're talking about, say, certain ad hoc programs, I think as much as we can, we don't really tweak it to certain values, but we try to reinforce some of these behaviors based on these values as much as we can.</p>			
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<p>18. Interviewer 2:47</p> <p>19. Right. Right, right. Yes. Okay. So how is, how do these values filter down to the, you know, the culture between the staff working relationship between the staff, how does it, does it affect or?</p> <p>20. AED(LBS)1C 3:08</p> <p>21. I think as we I wouldn't say that it is really very apparent. I think as educators we walk the talk, so if we're gonna inculcate resilience to our children, we also must share how we are able to overcome adversities and share, share, I think in terms of sharing with children, how these values come in play in our life, we should be the role models to talk about how we may be able to model this value lah. Yeah, right. Yeah. Right. But I would say it's really not very obvious like among the interaction between teachers, we demonstrate that or we say out so much, yes.</p> <p>22. Interviewer 3:53</p> <p>23. Right. So how would you describe like the school in general, like, School C is a...</p> <p>24. AED(LBS)1C 4:05</p> <p>25. Okay, I, I think it's a school that values...what kind of school...How shall I say? I think when I look at the teachers and the staff, they they Okay, I think previously ours when when with the staff, the previous principal, we had this culture of care and excellence. Yes. And I think that</p>	<p>School description</p>	<p>Culture of care and excellence (AED1C, 25)</p>	<p>School culture is independent of leadership</p>
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<p>teachers still value this care for our children, care for the different staff we work with, as well as the mindset of excellence. And I think even though we have changed the principal, we still hold this very dearly in us.</p> <p>26. Interviewer 4:44</p> <p>27. Right? Okay. Okay. Okay. When did the principal change?</p> <p>28. AED(LBS)1C 4:50</p> <p>29. 2017?</p> <p>30. Interviewer 4:52</p> <p>31. Oh, okay. Okay, right. Okay. So then how about the SEN support in the school, how accommodating is the school towards pupils with SEN?</p> <p>32. AED(LBS)1C 5:07</p> <p>33. I would say, based on my observations is that the teachers are, SEN or not, as long as the child struggles in some way or another, the teachers are more than happy and willing to work with them.</p> <p>34. Because I think I think most of the teachers, many of the teachers that are here they don't mind putting in extra time to work with the children, so long as the children do want to work on the getting better. Yeah, so if you ask me, we have a pretty supportive culture for children with special needs.</p>	<p>School description</p> <p>School description</p> <p>Getting teachers over to their side</p>	<p>Teachers willing to support students who struggle (AED1C, 33)</p> <p>Supportive culture (AED1C, 34)</p> <p>Lack of knowledge or skills impedes teachers'</p>	<p>Teachers willing to spend extra time and effort on students to help them</p> <p>Teachers' lack of knowledge</p>
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<p>47.AED(LBS)1C 6:42</p> <p>48.Yes.</p> <p>49.Interviewer 6:43</p> <p>50.Do you have another smaller working team?</p> <p>51.AED(LBS)1C 6:50</p> <p>52.If you talk about smaller then it is where by the AED LBS, and the counselor works directly with the year head, the different year heads... we are based on the middle block, upper block and the lower block. Yeah, that will be a smaller team, of course, then you talk about if we're talking about children, requiring requiring learning support needs, then we will work directly with the LSCs the Learning Support coordinators. Yeah, but those are so called informal. We don't have like "Okay...this is a fixed team, we meet up often, we meet up regularly, we don't have that, it's on adhoc basis".</p> <p>53.Interviewer 7:27</p> <p>54.Right. Okay. So whenever something crops up, yes. Okay. Yes. So and how that means how of like, once a month, at least.</p> <p>AED(LBS)1C 7:40</p> <p>55.Okay, if, for example, the year heads we can have I mean, when when cases arise, we can have meetings, every other day, yeah, very informal meetings,</p>	<p>Working community</p>	<p>AED(LBS) and counsellor works with year heads within CMT (AED1C, 52)</p> <p>Engaging one another in</p>	<p>CMT as a working team</p> <p>Interactions in CMT not confined to meetings</p>
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<p>56.but we discuss cases, what's the way forward and what could be the potential issues?</p> <p>57.Interviewer 7:55</p> <p>58.Okay. Okay. Yeah,right. Right. Okay. So when the need arises? Yes. Okay. Okay. And like the communication is like, through its face to face meeting, or you have a WhatsApp chat or</p> <p>AED(LBS)1C 8:11</p> <p>59.we do have a WhatsApp chat for the CMT.</p> <p>60.But mostly, it's face to face meeting because, again, if we need to meet because of this case, this will be really very complex cases where we really need to talk about the different things. Yeah.</p> <p>61.Interviewer 8:25</p> <p>62.Right. Okay. Okay. Okay. Okay, so</p> <p>63.AED(LBS)1C 8:32</p> <p>64.let me see.....</p> <p>65.Interviewer 8:35</p> <p>66.So let's go to your role. Okay. In this school, can you just describe your role in the school?</p> <p>AED(LBS)1C 8:43</p>	<p>Mutual engagement in working community</p> <p>Shared practice in working community</p> <p>Mutual engagement in working community</p> <p>Mutual engagement in working community</p>	<p>informal meetings (AED1B, 55)</p> <p>Discuss and troubleshoot cases (AED1B, 56)</p> <p>Whatsapp enables mutual engagement in CMT (AED1C, 59)</p> <p>Face to face meeting enables mutual engagement in CMT (AED1C, 60)</p>	<p>CMT not confined to geographical location</p>
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<p>67. Okay, basically, as simple as this is that we provide support to the children with special educational needs.</p> <p>68. In any forms lar, as long as children with special educational needs needs help, we will be there in terms of the administrative support,</p> <p>69. the physical support, yeah. Anything to do with special needs... Yeah.</p> <p>70. And I think but in the recent years, we also see children without diagnosis. So that that's where our work also have evolved. Like we provide support based on needs not diagnosis. So any teachers who, who needs help with certain children, but if the child, the child doesn't have a diagnosis, we also come in to support them.</p> <p>Interviewer 9:28</p> <p>71. Okay, okay. Right. So then, for these children, right, like the teachers, do they, once they notice something, what is the process of referral to you? Like, do they have to go through like a formal process or they can just say, text you like AED(LBS)1C, I need help.</p> <p>AED(LBS)1C 9:49</p> <p>72. So I think this one comes in several levels. So I think at the end of the day, we are also moving towards this about building capacities in our teachers because we cannot be there all the time.</p>	<p>AED(LBS) role</p> <p>AED(LBS) role</p> <p>AED(LBS) role</p> <p>Making teachers' lives easier</p> <p>AED(LBS) role</p> <p>Role visibility (capacity building)</p>	<p>Support students with SEN (AED1C, 67)</p> <p>Administrative support for students with SEN (AED1C, 68)</p> <p>Physical support for students with SEN (AED1C, 69)</p> <p>Help teachers with students with or without diagnosis (AED1C, 70)</p> <p>Evolution of AED(LBS) role (AED1C, 70)</p> <p>Build capacity in teachers to extend AEDs' influence (AED1C, 72)</p>	<p>Support students with SEN</p> <p>Building capacity in teachers as an end goal</p>
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<p>73. So first cut, although we do have a formal reference system, but before the actual referral, what we do is that we have informal consultation.</p>	<p>Role visibility (capacity building)</p>	<p>Conduct informal consultation with teachers (AED1C, 73)</p>	
<p>74. So the teacher may come and say, Eh AED(LBS)1C, I suspect this thing, I observed this thing and I need some help, can you provide me some advice?</p>	<p>Role visibility (capacity building)</p>	<p>Provide teachers with recommendations (AED1C, 74)</p>	
<p>75. So, then, on the front line will be the teachers. If they need to work with the parents, we give our advice, what do you ask the parents? What kind of information do you? How do you tell the parents?</p>	<p>Role visibility (Capacity building)</p>	<p>Teachers as front liners (AED1C, 75)</p>	<p>Working together through capacity building</p>
<p>76. Then secondly, we provide strategies to the teachers. Now, what can you do,</p>	<p>Role visibility (Capacity building)</p>	<p>Teach teachers how to work with parents (AED1C, 75)</p>	
<p>77. if really there is a need, I actually go in and observe the child, and then I'll give the advice to the teacher what to do, then we'll monitor for about two, three months, see if there's any help based on the intervention or strategies used, if really, the parents agree that there's something really my child is having a lot of difficulty with. The teacher also sees that and I think, when the child, you also see that there doesn't seem to be much response to intervention.</p>	<p>Role visibility (Capacity building)</p>	<p>Provide strategies to teachers (AED1C, 76)</p>	
<p>78. That's when we recommend the teachers, okay, collate all kinds of information across all subject teachers, discuss among you if there is really an issue. If there is, somebody will have to bring this out for the year head. Yeah.</p>	<p>Role visibility (Capacity building)</p>	<p>Advice teacher on what to do (AED1C, 77)</p>	
<p>79. And then they will have to fill in the proper forms, to refer the case to the case management team.</p>	<p>Role visibility (Capacity building)</p>	<p>AED supports teacher and monitor student</p>	<p>Shows support to teachers through hand-holding</p>

<p>Interviewer 11:26</p> <p>Right, right. Right. Okay. So it's a very systematic process. Has it always been in place like that? Or did you create it? How did it come about?</p> <p>AED(LBS)1C 11:37</p> <p>80. I think it was already, the referral process was already here when I joined the school. Yes, it's just along the way, we do we refine some of these nitty gritty things such as because some of the teachers may come straight to the AED LBS,</p> <p>81. to talk about very serious cases, like, okay, they need us to come in immediately.</p> <p>82. You know, then we then we will usually, okay, after I come in to work on this case, I would actually update the year head and say, Look, I've gone in and observe, and I think this case requires a direct referral to the psychologist, which has, which has been happening. Yeah. So usually, when we refer to the year head, usually we will take on the cases and do some intervention.</p> <p>83. However, cases like this over the years, we also see that, in fact, sometimes, in fact, a lot of times because we are the experts, I refer the case.</p> <p>84. I refer the case rather than the teachers, so because I know when is it that I have to surface to a psychologist. Yeah. So then we bypass the referral process.</p>	<p>Making teachers' lives easier</p> <p>Making teachers' lives easier</p> <p>Making teachers' lives easier</p> <p>Making teachers' lives easier</p> <p>Making teachers' lives easier</p> <p>Making teachers' lives easier</p> <p>Sense of place in school</p>	<p>together (AED1C, 77)</p> <p>Advise teachers on SEN referral procedures (AED1C, 79)</p> <p>Teachers bypass formal referral procedures (AED1C, 80)</p> <p>Teachers need AEDs to go into classrooms immediately (AED1C, 81)</p> <p>AED helps teachers do direct referrals to psychologists (AED1C, 82)</p> <p>SEN expert (AED1C, 83)</p> <p>AED shows confidence in professional judgment (AED1C, 84)</p>	<p>AED is flexible with processes</p> <p>AED exudes confidence</p>
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<p>95. Right. Okay. Okay. I see. So how has this referral process helped you, you know, in your management of time, because you have so many roles, right, today? Yeah.</p> <p>96. AED(LBS)1C 13:54</p> <p>97. I think it's, it actually reduces, say, because previously, when the referral process I mean,</p> <p>98. Teachers come to us every now and then you have you realize that you're basically consulting teachers, quite a lot. Yes. And then maybe some of these cases are sort of, after a while we forget about it. When we have a proper formal referral process, it's more clear cut that</p> <p>99. Oh, we've got this form. It has been referred, there is a black and white. I know that okay. Even after sometimes, the teachers don't bring up this case, I can still refer back one day and I actually brought this 3, 5 months ago...yes ..yeah</p> <p>100. Interviewer 14:35</p> <p>101. yeah. Does that deter teachers from you know, referring students?</p> <p>102. AED(LBS)1C 14:43</p> <p>103. No, no...I think, ermm...as in School C here, we also, like I say, it's a culture of care and excellence. Sometimes, when we see that there's really urgent need then we also try not to tell the teachers Okay,</p>	<p>Shared practice in working community</p> <p>Making teachers' lives easier</p> <p>Making teachers' lives easier</p>	<p>Referral process streamlines work (AED1C, 97)</p> <p>AED attends to teachers' impromptu consultations (AED1C, 98)</p> <p>Referral process provides record (AED1C, 99)</p> <p>Compromise on procedures for urgent cases (AED1C, 103)</p>	<p>Teachers are familiar with AEDs(LBS)</p> <p>AEDs extend the same supporting culture to teachers</p>
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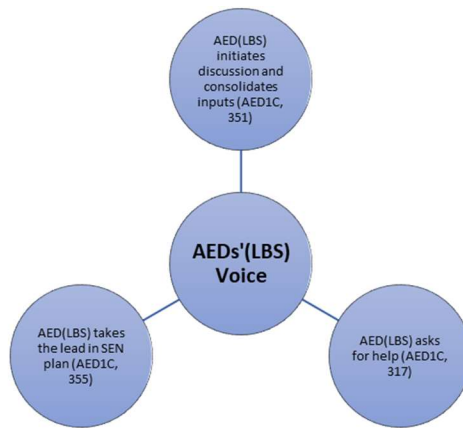
<p>please go and fill this out, fill this up. Immediately, we actually highlight to the case management team.</p> <p>104. And I think yeah, that is very important because, again, having to fill out so many forms, we are really...does deter teachers....sometimes they come to me, AED(LBS)1C, can you just do all the forms...tick, tick, tick, tick... Because if I have to write so many things I don't have time to write. So I tell them, don't worry...verbally.... Tell me I will jot down everything for you.</p> <p>105. Interviewer 15:26</p> <p>106. Right. Yeah, okay. Okay. Yes. Right. Okay. I see. Okay, so I'm okay. Talking about. Okay, so just now we were talking about CMT right. And how does your.... Who is your reporting officer? Is your reporting officer in the CMT? HOD? Right?</p> <p>107. AED(LBS)1C 15:49</p> <p>108. Uh, yes. My reporting officer at the moment is the VP</p> <p>109. Interviewer 15:54</p> <p>110. Okay, VP now, okay. So then oh, which is Mr. VPC? Yes. Okay. Okay. Right. So what will you and him discuss about? If he is not in the CMT? Then, you know, when you meet with him, how often do you meet with him? And like, what do you talk about?</p> <p>111. AED(LBS)1C 16:19</p>	<p>Making teachers' lives easier</p>	<p>AED fills form for teachers (AED1C, 104)</p>	<p>Casual, comfortable relationship with principal</p>
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<p>112. Okay, actually, Mr. VPC is a very, very hands-on person. So no issue with discussing cases.</p> <p>113. In fact, we talk about case cases every now and then when I bump into him along the corridor.</p> <p>114. Yeah, but we do talk more formally on cases like, wow, every maybe two or three times per month, at least. Yeah. Because we do.</p> <p>115. Because in terms of my work, I also help with looking after some of the children with high absenteeism. That means they do have resolve potential risk of being diagnosed with some kind of special needs lar, or have their academics affected because of the absenteeism.</p> <p>116. So Mr. VPC looks very closely into this cases. And I also discussed with him and the year heads on cases like this.</p> <p>117. Interviewer 17:17</p> <p>118. Right. Okay. Okay. I see. Okay, so you're talking about cases? And, um, do you have regular meetings with him? Or is like, based on a needs basis? Yeah.</p> <p>119. AED(LBS)1C 17:28</p> <p>120. Based on needs basis</p> <p>121. Interviewer 17:31</p> <p>122. Okay. Okay. Right. And he's also the one who appraises you.</p>	<p>Support from working community</p> <p>Mutual engagement in working community</p> <p>AED(LBS) role</p> <p>Support from school leaders</p>	<p>VP is hands-on and personally involved (AED1C, 112)</p> <p>AED has discussion with VP along corridors (AED1C, 112)</p> <p>AED's work goes beyond SEN students (AED1C, 115)</p> <p>Discuss cases with VP and year head (AED1C, 116)</p>	<p>VPC is also involved in AEDs' work</p>
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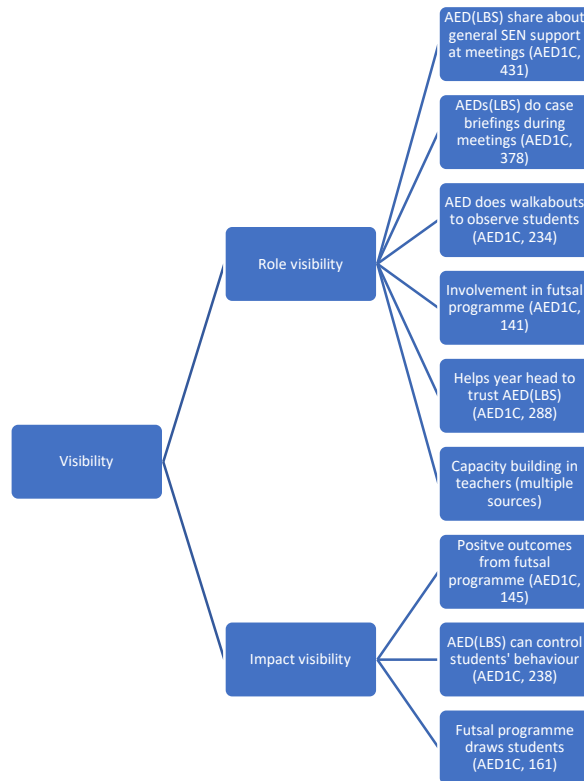
<p>123. AED(LBS)1C 17:35</p> <p>124. Yes.</p> <p>125. Interviewer 17:37</p> <p>126. Okay. So then what are some areas that, you know, your your appraiser will be looking at?</p> <p>127. AED(LBS)1C 17:46</p> <p>128. Okay, for for AEDs. Based on the HR, they are just, actually, we do have a standardized form lar. So he appraised like, what are the kind of work that we do for students? For the school, for the say cluster and beyond thing of things? So there are I think, five criteria, external agencies liaison work... What are what is it that we done, but most of the time, we don't go into all these details. For previously, when I don't report to the VP, like my RO, we don't go into every single detail. So in general, we look at Okay, what are the kinds of work that we've done? Yeah. So I think for me will be basically we, we talked about really case... supporting cases for children.</p> <p>129. As far as and I do some of the systemic work, for example, or I do see this gap, what, what do I propose that we do? What can the school implement?</p> <p>130. So these are some of the discussion even on the ad hoc basis, I will talk to Mr. VPC.</p> <p>131. Interviewer 18:52</p>	<p>Shared practices in working community</p> <p>Sense of place in school</p> <p>AED(LBS) role</p>	<p>Case discussions (AED1C, 128)</p> <p>AED aligns herself to the SEN support system; pursues improvements (AED1C, 129)</p> <p>AED engages VPC on strategic matters on adhoc basis (AED1C, 130)</p>	
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<p>146. Interviewer 21:40</p>			
<p>147. Okay, how did it start? Yeah.</p>			
<p>AED(LBS)1C 21:46</p>			
<p>148. It started off, like I say, again, it's identification of gaps.</p>			
<p>149. So we saw that children who are under the so called literacy and mathematics Support Program, they are constantly having to attend this literacy program. So they are mostly not on CCAs. And you also realize that a lot of children with SEN sort of not taken in for CCAs because either they don't mix very well with the peers, or they don't behave themselves very well. Or they just don't find the motivation to join CCA. So and then when, when sport cares, presented on several external conferences, I actually attended,</p>	<p>Sense of place in school</p>	<p>Identify systematic gaps (AED1C, 148)</p>	
<p>150. and I thought, maybe to close the gaps, because I think what we need is that other than academics, which doesn't motivate the children, is to look at something that they can find their worth, and to also showcase their abilities to the teachers, and that's how we got the sport care into, to really work with us on this.</p>	<p>Sense of place in school</p>	<p>Strong sense of initiative (AED1C, 149)</p>	<p>Alignment to SEN system enables her to identify systematic gaps</p>
	<p>Sense of place in school</p>	<p>Desire to close gaps motivate her to seek new collaborations (AED1C, 150)</p>	

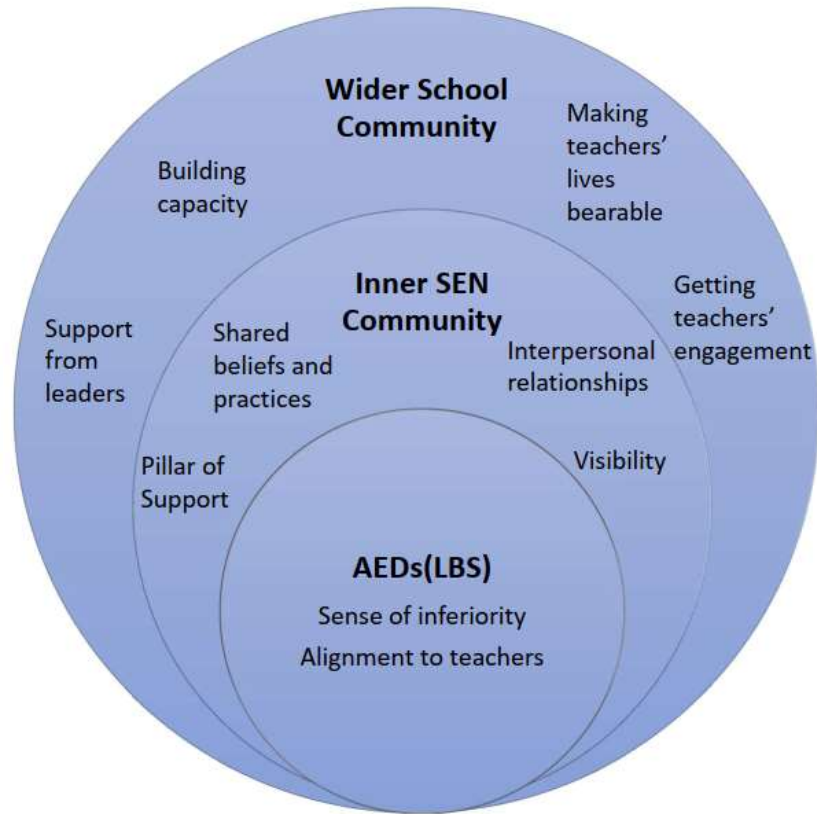
Examples of codes for the theme “AEDs’(LBS) Voice” [Source: AED(LBS)1C interview transcript]



Examples of codes for the theme “AEDs’(LBS) Visibility”, made up of sub-themes “Role Visibility” and “Impact Visibility” [Source: AED(LBS)1C interview transcript]



Appendix 8. Initial themes and their evolution



These themes were generated after the first case study (School B). Starting with the innermost circle “AEDs(LBS)”, the theme “sense of inferiority” eventually expanded to become “sense of place” in school, to capture the varying dimensions of experiences observed across the AEDs(LBS) in different schools. “Alignment to teachers” eventually became subsumed within “sense of place” and repositioned as an outcome of their “sense of place” in school. AEDs(LBS) who had a lower sense of place in school were more likely to align with teachers or submit to their views and interests.

To more closely reflect the theoretical lens that this study was viewed through, the middle circle “inner SEN community” was renamed as “working/learning community” to illustrate the role of Wenger’s community of practice (1998) in helping a group transit from a mostly functional and working team to a dynamic and learning community. “Interpersonal

relationships” and “pillar of support” did not remain as themes because in subsequent cases, they did not manage to acquire the depth and richness themes needed. Instead, it was used as background information to describe the unique context of the “inner SEN community” in each case. Furthermore, the theme “visibility” later on evolved to become “voice”. The realisation of the differences between “voice” and “visibility” was pivotal for this study. While it was initially hard to differentiate between these two constructs since any action on the part of the AED(LBS) would often be heard and seen, further engagement with these constructs through the subsequent cases reinforced the appropriateness of “voice” in capturing AEDs’(LBS) impact in the small and enclosed “inner SEN community”. Within this small group, their views and opinions could be heard, unlike the larger setting of the “wider school community” where it was not conducive for any typical voice to be heard because of its vastness (unless it was someone with authority or power). Moreover, within the “inner SEN community”, school leaders particularly valued the insights and advice AEDs(LBS) could provide regarding student cases. Their voices were constantly sought. Therefore, as the themes developed overtime across cases, AEDs’(LBS) impact in the “inner SEN community” became subsequently known as “voice”.

In the “wider school community”, the initial themes went through a similar process of evolution. The theme “support from leaders” eventually moved from outer “wider school community” to the “inner SEN community”. Although “support from leaders” was evident in the wider community, this support originated from the leaders’ involvement in the “inner SEN community”. As such, it was more accurate for “support from leaders” to be represented in the “inner SEN community”. The theme “building capacity” later became subsumed under a new theme “visibility” which emerged. In the larger setting of the wider school community, the impact of AEDs(LBS) on colleagues was seen rather than heard. Finally, “getting teachers’ engagement” expanded into different themes “working together” and “getting teachers over to their side”.

Appendix 9. Brief Case Descriptions

School B. School B is a co-educational government-funded mainstream primary school in the heartlands. The school is attended by students from primary one to primary six, aged between 7 years to 12 years old. School B is a “warm and friendly place” where teachers are seen to “care for their kids, like their own”. While there are a “sizable number” of students with SEN, the number is modest compared to other schools.

The AEDs(LBS) belonged to a Case Management Team (CMT). The CMT met quarterly each term to discuss student cases with the MOE psychologist. These meetings involved the AEDs(LBS), MOE psychologist, school counsellor, SEN coordinator (also a senior teacher), various heads and school leader. On a daily basis, the working community consisted of the two AEDs(LBS) who worked closely with the SEN coordinator, a head of department [also reporting officer of AEDs(LBS)], the discipline master and the counsellor. This working CMT team had weekly meetings to discuss student cases comprising a mix of “discipline”, “counselling” and “special needs” issues.

The working community was a source of support for the AEDs(LBS), providing a platform for joint decision making. It also presented them with a sense of belonging, security and protection because they knew “who to go for help, who to go for advice”. It also offered relief for their caseload as they had the SEN coordinator to “come in to support”. Furthermore, the AEDs(LBS) also drew support from members of this community who provided the “stronger voice” to reinforce the AEDs’(LBS) message to teachers. While the school leader was not involved in the weekly meetings, she ensured the weekly meetings took place by keeping the time-table of the key personnel “free” for the meeting because the regularity and frequency of meetings was important for creating the “structure”. The school leader provided both the “big picture” and “hands-on” support for the AEDs(LBS). She provided the overall direction for the team, to uphold the “consistency in practices” for the good of the students. As such, this became the shared belief that the team held closely to their hearts and persistently practised. Being “hands-on” with SEN matters, the school leader was available for consultation for “severe” cases, met parents with AEDs(LBS) and stepped in to manage the students’ “melt

downs". The physical and virtual interactions in the working community provided a platform where other members learnt about the AEDs'(LBS) work, witnessed their proficiency, and listened to their suggestions and ideas. The AEDs'(LBS) voice was heard and valued in the working community.

Apart from their working community, the AEDs(LBS) were also supported by a group of Teachers trained in Special Needs (TSNs). TSNs were "full-fledged teachers" who had undergone their own "localized area of specialization" in SEN. They provided relief for AEDs'(LBS) because there were "now more people" for teachers to approach for SEN matters. The TSNs also conducted termly SEN professional development workshops during staff meetings for the rest of their teaching colleagues. Led by TSNs who were assisted by the AEDs(LBS), these sessions equipped teachers with knowledge and skills to manage student concerns such as attention span, impulsive behaviour, friendship issues and handwriting, issues that were generic and encountered by all teachers. These sessions equipped teachers with broad base first tier support for all students, reduced the number of students needing intensive help at second tier and helped AEDs(LBS) to maintain a manageable caseload. In return, the AEDs(LBS) supported the TSNs by providing pertinent advice and resources to support students.

In the wider community of teachers, AEDs(LBS) made lives easier for teachers by supporting them within the classrooms and outside the classrooms. AEDs(LBS) offered teachers support in the classrooms by responding to their request for help with students who were "acting up" or "too disruptive". Outside the classrooms, AEDs(LBS) supported them by being a listening ear for teachers, being available to provide SEN advice to teachers and recommending tools that were relevant and "less stressful" for teachers to use in class. At the same time, teachers responded by adopting the strategies that AEDs(LBS) recommended and taking on more ownership of students with SEN. Unavoidably, moments of unity between AEDs(LBS) and teachers were also met with moments of differences. Some teachers found it difficult to disengage themselves from their role as mainstream teachers and therefore could not put aside their curriculum responsibilities to meet up with AEDs(LBS) or slow down for the "one per cent" who were not following. Because teachers were overwhelmed with curriculum responsibilities,

it became hard for them to see beyond their immediate practices. As a result, some of them were hesitant about adopting strategies to help the students and took little ownership of the students and the situation. To get teachers more acquainted with SEN, AEDs(LBS), supported by the SEN coordinator, built the capacity of teachers when they met them for case discussions, providing ideas and strategies of what could be done with students. These responsibilities, coupled with their dedication towards maintaining “consistency of practices” across teachers, allowed the AEDs’(LBS) influence to go beyond their working community, creating visibility of their role and impact even in the wider school community.

School C. School C is a Singapore co-educational government-funded mainstream primary school in the heartlands. The school is attended by students from primary one to primary six, aged between 7 years to 12 years old. These are mostly children in the neighbourhood, with more than half of them with parents in the “working class”. The school is well known in “market talks” for taking good care of their students and for the quality experience and education that they provide. This is facilitated by the strong, positive and collaborative culture of care among staff, who have been with the school for a long time and shared close working relationships.

The AEDs(LBS) belonged to an active working community (Case Management Team) which included the school leader and the various heads. The CMT met monthly to discuss student cases and SEN processes. The CMT was a pillar of support for the AEDs(LBS). The school leader played an important role in the CMT. Other than the “hands-on” leadership that the school leader provided for SEN matters, he also influenced the AEDs(LBS) with his value-led leadership. He advocated the message that “every student matters”, placed emphasis on the qualities of “empathy and humanity” as the core of “why we do what we do”, and through this, hoped to “inspire others in the fraternity”. Even outside the meeting platform, the AEDs(LBS) continued their close partnership with the school leader and the heads; it was a common sight to discuss cases “along the corridor”, holding “informal meetings every other day”. The AEDs(LBS) had the opportunities to make their voice heard in the working community because of the deliberate decision to “set aside meaning time, dedicated time” during the monthly CMT

meeting to discuss student cases. In the CMT, the AEDs'(LBS) voice was demonstrated through their depth of understanding of cases, their opinions on matters and their ability to put forth suggestions that would "seed down systemic gaps".

Beyond their working community, the AEDs(LBS) also had the support of the Teachers trained in Special Needs (TSNs), about "five to six" of them who would "help" them. They "eased" the AEDs'(LBS) "work" by taking on some in-class observations of "students suspected to have some learning needs". TSNs provided relief for the AEDs(LBS) unlike previously where it was "kind of difficult" because they were alone in supporting the students. These TSNs became the additional advocates for students with SEN in the wider community.

In the wider community of teachers, AEDs(LBS) made lives easier for teachers by supporting them within the classrooms and outside the classrooms. Other than responding to teachers' request for help in the classrooms, AEDs(LBS) also supported them outside the classrooms by being a listening ear for teachers, being available to provide SEN advice to teachers and simplifying the student referral process for teachers. At the same time, teachers also responded by taking on more ownership of students with SEN and aligning themselves with the AEDs(LBS) in the support of these students. Unavoidably, the AEDs(LBS) also encountered teachers who were not willing to change their approach for students with SEN because they were not able to step out of their current practice and did not take enough ownership of the students. To get teachers acquainted with SEN practices, AEDs(LBS) encouraged teachers to participate in the support of students by providing concrete actions to take and built teachers' capacity through training and demonstrations. They also tapped on year heads to "work with teachers" because being teachers who also "teach a class of forty", year heads were in a better position to "understand" the "struggle" of teachers. As such, the AEDs(LBS) were highly visible in school, both in terms of their role as well as their impact. They were "seldom doing desk work" and were well known for their roles in school. They made their roles visible to colleagues as they trained and advised teachers in SEN support matters, ran programmes such as the "futsal programme" that "everyone knows" and provided in-class support as a way of "modelling" to teachers the type of support that could be given.

Furthermore, the AEDs'(LBS) impact was evident through the schools' "success stories", where students have "overcome the odds" and achieved "the kind of success that their so-called normal peers can't reach" and were "ready to face the next stage". Ultimately, through the AEDs'(LBS) role of "walking the talk" and "showing" teachers how to work with children, they hoped to inspire teachers to have "that willingness to work with children".

School D. School D is a Singapore co-educational government-funded mainstream primary school attended by primary one to primary six students, aged between 7 years to 12 years old. Situated in a private housing enclave, School D is a school attended by a good proportion of students from well-resourced families. As a school known for its academic excellence, students come in with high standards having gone for tuition since their kindergarten years. The high ability of the student cohort perpetuates the strong academic emphasis in the school. Learning is highly valued in the school and the strong objective for students with SEN, like those in mainstream, is to be able to learn. In School D, it is important for AEDs(LBS) to help teachers "create a safe and conducive environment in the classroom" to enable learning. Within the school, SEN is managed mostly by mitigating its behavioural impact on students.

The two AEDs(LBS) were part of a formal working community (CMT) which put them on a common monthly SDT meeting platform with "school leaders" and "middle management". During these meetings, the AEDs(LBS) "chip(ped) in" to the discussions. While school leaders provided the space for AEDs(LBS) to own their work and did not dictate the details of what the AEDs(LBS) would do, they had "oversight" of "extreme" cases and provided help to AEDs(LBS) when needed. However, on a daily basis, AEDs(LBS) worked most closely with the other two school counsellors and were a "bunch" of colleagues "close" to one another.

Other than their working community, AEDs(LBS) were also supported by the Teachers trained in Special Needs (TSNs) who were additional advocates for SEN. These teachers provided additional connections between AEDs'(LBS) working community and the wider school community. The school allocated students with SEN to the classes of the TSNs whenever possible. During the whole-school SEN sharing sessions, the TSNs worked with AEDs(LBS) to

share their SEN knowledge with teachers in the wider community. While the AEDs(LBS) and the TSNs mostly worked independently, there was one TSN who worked closely with the AEDs(LBS). A “unique” arrangement that was not too common in other schools, she supported the AEDs(LBS) by spending “a lot of time discussing (and) planning” with them and assuming hands-on support of students. Apart from that, she also supported them substantially by being the “middleman” between them and teachers. She lobbied for students, negotiated with teachers to adopt the strategies and created SEN resources that they could use in class.

In the wider school community of teachers, the AEDs(LBS) availed themselves to make teachers’ lives easier. Well connected with teachers through the WhatsApp messaging app, AEDs(LBS) were responsive to teachers’ requests for help with students’ challenging behaviour and were “on standby” for students’ melt-downs or temper tantrums. In the support of students, the AEDs(LBS) and teachers showed much synchrony such that “everybody got involved”, resulting “in so much support from different places”. However, inevitably, the AEDs(LBS) also met teachers who had difficulties seeing beyond their own immediate practice and were resistant to adopting certain strategies suggested by AEDs(LBS). To get teachers over to their side, AEDs(LBS) negotiated with them, increased their SEN knowledge through yearly training or relied on external pressure (parents or psychologists) to convince them. To a large extent, the AEDs(LBS) relied on virtual platforms to connect with their teaching colleagues because it was “very difficult to meet up in person”. WhatsApp group chats and emails were their most common means of communication to share information about students and resources and to communicate strategies to adopt. Additionally, AEDs(LBS) also made their presence felt in the wider school community by attending periodic formal meetings with teachers, the “once or twice a year” training of teachers and their involvement in classroom support and observations.