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The
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**A study of the awareness, identification, diagnosis and
management of Auditory Processing Disorder in
children and its impact within a Dubai based private
primary school**

دراسة للوعي، التعرف، التشخيص وإدارة اضطراب المعالجة السمعية لدى
الأطفال وتأثيره داخل مدرسة ابتدائية خاصة مقرها دبي.

by

AMANDA LESLEY HOUGHTON PANZER

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DECLARATION

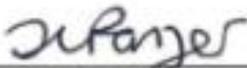
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Abstract

This investigation focuses on professionals' current awareness, knowledge, identification, diagnosis and management of Auditory Processing Disorder (APD) working with primary aged English speaking children in Dubai and explores the impact on one specific child with suspected APD.

It provides an overview of how the deficiency of a comprehensive definition has led to no general conformity in assessment, diagnosis and treatment. This is amplified in Dubai where there is no comprehensive 'care pathway' for non-local, expatriate children. Private schools, in the majority, are profit making ventures, as are clinics wherein the professionals do not work collectively and legislation to protect people with Special Education Needs is in its infancy.

It reviews the current practices within a school with regards identifying a child with suspected APD.

Recommendations are made concerning future professional development, collaboration between parties, and including the Ministry of Education.

يركز هذا البحث على الوعي لدى المهنيين الحاليين، التحديد، التشخيص وإدارة اضطراب المعالجة السمعية لدى الأطفال الذين يتحدثون الإنجليزية في دبي ويستكشف تأثيره على طفل واحد معين يشتبه بأنه يعاني من اضطراب المعالجة السمعية.

الدراسة تقدم لمحة عامة عن الكيفية التي أدى بها نقص التعريف الشامل إلى عدم وجود تطابق عام في التقييم والتشخيص والعلاج. وهذه مسألة متفاقمة في دبي نسبة لعدم وجود "مسار رعاية" شامل للأطفال غير الإماراتيين وأطفال المغتربين. فالمدارس الخاصة في أغلبها تعتبر مشاريع للربح، وكذلك العيادات حيث ان المهنيين لا يعملون بشكل جماعي كم أن التشريعات لحماية الأشخاص ذوي الاحتياجات التعليمية الخاصة تعتبر في مهدها. الدراسة ستعرض الممارسات الحالية داخل المدرسة فيما يتعلق بتحديد الطفل المشتبه بأن لديه اضطراب المعالجة السمعية.

كما تقدم الدراسة توصيات بشأن التطوير المهني في المستقبل والتعاون بين الأطراف المعنية بما في ذلك وزارة التربية والتعليم.

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ABBREVIATIONS.

AAA	American Academy Audiology
ADH	Assistant Deputy Head
ADHD	Attention Deficit Hyperactive Disorder
APD	Auditory Processing Disorder
ASHA	American Speech Language Hearing Association
CAPD	Central Auditory Processing Disorder
CDA	Community Development Agency
CT	Class Teacher
DSM –V	Diagnostic and Statistical Manual of Mental Disorder 5 Th edition
EP	Educational Psychologists
KHDA	Knowledge and Human Development Authority
LS	Learning support
OT	Occupational Therapists
SENCo	Special Educational Needs Coordinator
SLT	Speech and Language Therapists
SPI	Specific Language Impairment
TA	Teaching Assistant
UAE	United Arab Emirates
UK	United Kingdom
YGL	Year Group Leaders

CHAPTER ONE

Introduction

Auditory Processing Disorder (APD) initially deliberated by Katz during the 1960's, yet still today not recognised in the Diagnostic and Statistical Manual of Mental Disorder 5Th edition (DSM –V) produced by the American Psychiatric Association (2013). Controversy over its definition is endemic without clear definition, making diagnosis problematic with some dispute its existence, stating it is a subset of other specific learning difficulties. What is not disputed is the impact APD has on academic performance of children who have it; (Bamiou et al, 2001) today more children than ever are being diagnosed with APD.

APD is also known as central auditory processing disorder (CAPD). The American Academy Audiology (AAA)(2010) refers to it as '*difficulties in the perceptual processing of auditory information in the central nervous system and the neurobiological activity that underlines that processing*'. Although the terms are used interchangeably (the researcher will use APD), this is also not without argument (McFarland and Cacace, 1995, Jerger and Musiek, 2000). APD is a specific auditory dysfunction. The brain is not modular; different areas are responsible concurrently for the ability to process sound while APD relates to a disturbance in any one of these areas.

Kam Heymann (2010) provides a simpler definition: '*APD is an inability to listen, caused by the brain's incomplete or unsuccessful processing of auditory information*'. APD in children manifests itself as though they cannot hear, especially in noisy environments. Characteristically, studies show that 70% of our time is spent communicating, with 45% of that listening. If children are unable to listen correctly then it is feasible that APD could be the cause of academic learning problems.

In the late nineties, Chermak and Musiek (1997) stated prevalence of APD between five to seven percent of the child population. However, Kam Heymann (2010) believed every three in one hundred but actual figures are not conclusive due to problems in the identification. The challenge is to prove this disorder as auditory specific, and not just a subset of other learning disorders such as, attention deficit hyperactive disorder (ADHD), autism or specific language impairment (SLI), both presenting with similar characteristics. When a child has a hearing problem they are sent to an audiologist; when a child with normal hearing and no speech impediment has a listening problem, Moore (2011) believes issues occur. Poor listening is not regarded primarily as an auditory issue; more often it is linked with behavioural issues, such as distraction, inattention, or poor working memory. When such conduct is seen, the child is referred to more cognitive based clinicians whose diagnosis may differ according to the results of their individual analysis when assessing the child's behaviour.

APD affects the ability to perceive both speech and non-speech sounds and to act appropriately in response. It usually co-occurs with other neuro-developmental syndromes. Jerger (1992) implies that there is no consent on how to test for APD. He describes this as a '*very large terra incognita*' with inadequate examination techniques for studying such a vague concept. McFarland and Cacace (1998) agree because confusion exists in the definition, where testing has been built upon multi-modular mechanisms, no single specific test can be given to identify and isolate the primary auditory deficit from other sensory issues. Therefore these authors do not support the hypothesis that APD as a disorder exists.

In the UK, the EHC plan (Gov.UK, 2014) identifies educational, health and social needs, and the management thereof so as to provide additional support to meet the needs for a child with difficulties from the age of two to twenty-five. It promotes interdisciplinary, integrated, and highly specialised teams in providing

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diagnosis and treatment of children with disabilities throughout their school life. These services are mostly paid for through the local council and not by the child's parents.

In Dubai, similar government funding and coordination between government bodies exist but only available to Emirati children. The education and health systems are separate, and a double education system operates. In 2006-7, approximately 650,000 students were enrolled at 1,256 public and private schools (UAE, 2010) including half of Emirati students attending private schools. Private schools are governed by Knowledge and Health Development Authority (KHDA), which encourages inclusion and support of children with learning difficulties. However; no guidelines state what provision is required nor who should manage it, which results in very little enforcement for people with disabilities.

Equal opportunities in education are endorsed in the United Arab Emirates (School for All, 2010) in both public and private schools. Although it is referred to as 'a work in progress,' regulations and laws have been created to this effect. Which School Advisor (2017) states these laws progressed repositioning of the KHDA 2013/14 framework towards inclusion, more children with learning difficulties are attending mainstream schools. Government educational figures for children attending school with learning difficulties in the UAE are not available; however Tabari (2013), a founding partner in The Developing Children Centre which enables children to '*develop their skills socially, academically, emotionally, physically and/or behaviorally*' stated that figures for children in British and American private schools who need such support, are around 25-30%.

British curriculum schools surveyed indicated that very few had access to educational psychologists, audiologist, speech and language therapists or occupational therapists as part of their staff and that the majority of specialists

are external providers paid for by parents directly. When these professions are viewed solely for business purposes will this impact the diagnosis? Does culture and environment influence diagnose? Considering that there is a staggering 25% rate which is nearly double that of children with learning disabilities globally.

With over ten years of observation and experience within one particular mainstream school, the researcher identified an emerging pattern which indicates that children with learning difficulties often become disengaged from school if they are not assisted. Private schooling is selective and often 'labeling' a children impacts on their opportunities. If specialists who are running a business are employed and paid for by parents this creates a tough environment with the diagnosis and treatment of learning differences within the UAE. (Elhoweris and AlSheikh, 2010)

The survey results revealed they have SENCo's adequate awareness of APD and good lines of communication in order to gain further knowledge and assistance. However, not all children that have issues are reported or assessed for a variety of cultural and environmental reasons. (Gaad, 2004) Of the professionals screening suspected APD children had previously received formal training in APD. A minority of professional indicated they had adequate skills to assess APD in children. Yet a high percentage felt they were able to provide treatment programmes.

This study will provide an insight into awareness of APD and investigate how children are assessed and diagnosed. Forming links between professionals, schools and parents should emerge in order to support each child's academic journey.

1.1 Purpose of the study

The purpose of this study is to explore the awareness and knowledge of professionals working with English speaking; primary aged school children in Dubai, and more specifically in the identification, diagnosis and management of APD in children.

Similar studies conducted in the United Kingdom (UK), Ireland and America showed low levels of APD awareness, and issues with diagnosis as unique criteria has not been provided within the definition. The duality of education system in UAE impacts expatriate children with SEN. In private schools a SENCo can indicate an issue but, as all costs incurred by the parents, could enforce the child's needs are not met and schools have no way of enforcing identification nor management. Specialists that are identifying, diagnosing and treating SEN are private businesses and not part of a schools staff could therefore this impact the findings due to the lack of multi disciplinary cohesion.

The goals of the research investigation were to:

- 1) *Investigate the issue of knowledge and awareness of APD among SENCO's and specialists working with primary school aged children in Dubai.*
- 2) *Explore the clinical practices in the diagnoses and management of APD within primary aged school children in Dubai.*
- 3) *Determine how APD is currently identified, evaluated and managed in a primary school setting in Dubai.*

CHAPTER TWO

Literature Review

2.1 Introduction

This literature review will endeavour to outline the theoretical background of APD to show its wide-ranging complexities. A framework will be built to indicate how the different professionals involved have created an impossible conundrum which this study will not be able to resolve but, explain how it affects and influences the lives of children with learning difficulties such as APD. Examining past and present studies will help understand current views on identification, diagnosis and treatment of APD and highlight the controversies which may impact one child with suspected APD.

For the purpose of this study the examination of APD will be under the following headings:-

- Definition
- Awareness, knowledge and identification
- Co morbidity
- Diagnosis
- Intervention
- Education in the UAE

2.2 Definition

Katz (Katz n.d., cited in Bellis 2002 p27) explains APD in the simplest of terms it is 'what we do with what we hear.' Historically research into APD was undertaken using adults who had suffered brain lesions in the central auditory nervous system (Philips, 1995, Hinchcliffe, 1992). This was a clinical approach to review sensory pathways, including that of the central auditory system, therein creating

a framework where a breakdown could occur. It was then applied to children who had persistent listening difficulties even though their actual hearing identified as normal, herein presenting as a neurological disorder. Although these children did not have lesions, the knowledge was nevertheless applied as similar dysfunctional symptomology.

The health professionals that identify, diagnose and treat APD are audiologists and speech and language therapists (Jerger and Musiek, 2000) and as such, they should possess a clear definition of APD to complete this process correctly. In 2005 the American Speech Language Hearing Association (ASHA) provided further information to run concurrently with their previous definition (1996), asserting that :

‘APD refers to the perceptual processing of auditory information in the CNS and the neurobiologic activity that underlies that processing and gives rise to electrophysiologic auditory potentials. (C)AP includes the auditory mechanisms that underlie the following abilities or skills: sound localization and lateralization; auditory discrimination; auditory pattern recognition; temporal aspects of audition, including temporal integration, temporal discrimination (e.g., temporal gap detection), temporal ordering, and temporal masking; auditory performance in competing acoustic signals (including dichotic listening); and auditory performance with degraded acoustic signals.’

However, the British Society of Audiology (BSA) (2005) avoided the confusion regarding speech, and stated:

‘(C)APD is a hearing disorder resulting from impaired brain function: characterised by poor recognition, discrimination, separation, grouping, localization, or ordering of non- speech sounds.’

By applying non-speech, the BSA has tried to reduce the uncertainty in whether the investigation is testing cognitive ability in speech or phonological awareness. This is more indicative of a ‘bottom up’ reaction to hearing sounds (Moore, 2011), since two of the leading authorities that guide one professional body are unable

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to set an agreed definition. While both definitions do agree that there is an auditory deficit, neither pinpoints a specific aspect.

Chermak (2001) criticised these definitions rather as a 'collection of symptoms' that impact people with APD ultimately, they give no true direction as to what to look for in a diagnosis. As confirmed by Cacace and McFarland (2005) 'it is important to have a definition that is unambiguous...one that allows hypotheses to be tested and diagnosis to be made.' They define APD as a 'modality specific perceptual dysfunction that is not due to peripheral hearing loss' and believe APD to be an auditory dysfunction that can be specifically diagnosed using multi modal testing through the dissociation design.

Bellis (2002) has a collection of comments about APD and states that there is no 'one true definition' due its heterogeneous nature, and feels it impossible to define it as a spectrum which impacts people differently depending where the dysfunction occurs. APD is 'primarily an input disorder that affects specifically the way auditory information is processed at a variety of levels in the central auditory nervous system'.

Wallach (2011) indicates that, from a speech and language therapist's point of view, APD characterises behaviour that mirror the above definitions using phrases such as 'the student has problems with auditory discrimination', or an 'auditory processing weakness,' after which interventions would be created to target the relevant weakness. Rees, (cited by Wallace, 2011) concurs and doubts that a definition could help anyway due to the overlapping nature of language and learning stating "the search for a single auditory skill, or even a set of auditory abilities, that is essential to language, learning or impaired in all or most language disordered children, seems futile."

2.3 Awareness, knowledge and identification

ASHA (2005) does not explicitly define how to identify APD due to the heterogeneous nature and because of its high co morbidity with other disorders. Evaluations should be child specific and target explicit auditory areas which parents are identifying. DeBonis and Moncrieff (2008) describe this as a vagueness presented to speech and language therapists (SLT), 'because their professional responsibilities already include screening for APD, making appropriate referrals, and providing intervention services'.

In the United States, Chermak et al. (2007) established that there was a low rate of awareness regarding APD amongst audiologists, who are the qualified, recognised and expert professionals to provide a diagnosis. These figures were mirrored in the UK by Hind (2006), who showed that only 1.5% of speech and language and audiologist respondents accepted that they were 'very well informed' about APD. A similar conclusion reached in the Republic of Ireland, with Logue- Kennedy et al. (2011) found most of the respondents were not sufficiently informed about APD, and a mere 8% of the participants responded they were adequately informed.

As DeBonis and Moncrieff had earlier found, Logue –Kennedy et al. (2011) also noted frustration amongst professionals who felt insufficiently prepared to provide services to children with suspected or diagnosed APD, and endeavoured to re-address the discrepancy by self-addressed reading. Furthermore, Chermak (1998) pointed out that audiologists spent less than five clinical hours on CPD appraisal during their professional studies. Ryan and Logue-Kennedy (2013) conducted teacher APD awareness and stated that 84% of participants rated their knowledge of this disorder as poor or very poor.

APD has been in discussed since the 1960's, and though the definition has broadened slightly to reflect additional information gained from technological advancements, specifically neurology, clinicians and professionals working with

these students have not improved in their knowledge. The confusion and lack of understanding leads to unreliable expertise and has consequently hampered progress in this field. Though Wallace (2011) believes professionals who work closely in educational locations are certainly more attentive to this concept.

In a landmark book, 'When The Brain Can't Hear', Bellis (2002) illustrates a register of symptoms that primary-aged school children may exhibit when affected by APD. The difficulty in identifying and diagnosing the disorder is that children do not present the same way, nor is there a definitive action which would indicate its presence. APD might present:-

- 'Behave as if hearing loss is present, despite normal hearing, especially in a noisy background
- Demonstrate greater difficulty with verbal than non verbal task, with lower verbal intelligence quotient (IQ) than performance IQ
- Exhibit a delay in the content, use or form of language
- Be distractible
- Refuse to participate in classroom discussions or, conversely, offer inappropriate or off topic contributions
- Exhibit difficulty following multi-step directions
- Require a high degree of external organisation in the classroom to begin and complete required tasks
- Exhibit poor social communication skills or difficulty making and keeping friends
- Perform better when auditory information is augmented with visual or tactile cues '

Bellis considers that identification tests need to be conducted by a 'multidisciplinary team approach' to investigate the cluster of problems exhibited by children with APD. The Buffalo Test was one of the first tests to move away

from pure sound based assessments, still including dichotic listening but starting to include more phonological awareness and speech in sound.

As recommended by ASHA (2005), listening to parents and teachers of children with APD is more important in gaining insight into the individual occurrence.

Moore (2014) points out that parent' observations may include:

- 'If there is a noise (television, others talking) she is unaware when she is spoken to...'
- 'He often has a blank stare in response to questions or instructions... It is unclear whether he forgot or didn't hear or understand.'

These key indicators are not restricted to auditory proficiency; they could reflect underlying problems in areas such as comprehension or linguistics, memory or other cognitive disorders, therein creating a stumbling block in identification.

Hind et al (2011) found that because APD can present itself differently with each child and that they were frequently referred via different agencies:

- From their doctor or psychologist, as a result of parents' complaints about listening / hearing.
- Through their school, because of listening issues.
- Through SLT due to normal productive language, but issues with hearing.

The various reasons for the referrals assist the professional in forming a hypothesis depending upon their view they will direct the course of the investigation. During screening, 'a battery of tests' is recommended (ASHA, 2005) although these tests are not specified. Different behavioural and auditory assessments may be utilised by various professionals. It is evident that performing multiple testing could increase the risk of misdiagnosis due to the

performance of the child. (Binder, Iverson, and Brooks, 2009). Ultimately the divergent course of the inquiry may create different but valid diagnosis.

2.4 Comorbidity

The National Joint Committee on Learning Disabilities (2008) defined learning disabilities as:-

‘a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical skills. These disorders are intrinsic to individual, presumed to be due to central nervous system dysfunction, and may occur across the life span.’

Comorbidity is co-occurring disabilities comprising of comparable indicators that run concurrent with a primary disorder. Disabilities that are concomitant with APD found in: - cognitive impairment issues, neurocognitive problems, communication difficulties, language disorders and other sensory weaknesses. (ASHA, 2005; Bellis, 2006; Ferguson et al., 2011)

Chermak and Musiek (2007) argued APD is “a deficit in the neural processing of auditory stimuli that is not due to higher order language, cognitive, or related factors” and these could likely promote issues in these regions. There is a prolific amount of literature proving the connection between ‘language learning problems’ and auditory. Considering the symbiotic nature of sensory systems and how they integrate verbal information, it is nearly impossible to identify the exact relationship where a dysfunction occurs. Auditory processing is the cornerstone of communication; Rosen (2005) suggests that it is incorrect to assign a specific problem such as ‘poor auditory performance’ as APD, due the ‘supramodality’ involved in attention, cognitive and memory. It is not possible to conclude the ‘cause’ versus the ‘consequence’ is. Bellis (2002) a staunch

promoter of APD, agrees that without all information about the child's cognitive, communication and language it would be impossible to get a meaningful result.

Proliferate literature is available showcasing disorders that share symptom similarities to APD characteristics. (Chermak, Hall, and Musiek, 1999; Cameron and Dillon, 2005). Young (n.d) suggests children with APD are initially identified as having attention deficit hyperactivity disorder (ADHD) or other learning disabilities; especially specific language impairment (SLI) because their symptoms present correspondingly:

- Difficulty hearing in background noise
- Difficulty following directions
- Poor listening skills
- Academic difficulties
- Poor auditory association skills
- Distractibility
- Inattentiveness

Weinburg and Brumbeck (cited in Cacace et al. 1998) suggest it is difficult to make a distinction without being able to specify one strategic modality. The cause cannot clearly be quantified and may be a comorbidity. For example a child with APD may find it difficult to understand what is being said therefore they may not pay attention to it. Is this APD, language comprehension or an attention issue?

Within a school environment, children 'learn language and then use that language in order to learn.' (DeBonis and Moncrieff, 2008) Auditory processing is fundamental to communication, spelling and reading. Evidence shows if a child has auditory difficulties their academic success will be impacted. However, Dawes and Bishop (2009) do not believe the current testing shows an auditory performance related issue. It will reflect dysfunction in the memory or attention.

Martin and Brownell (2005) suggest the lack of ability to maintain concentration and focus listening to a speech, and a dysfunction in the auditory memory would indicate the possibility APD; however this would contradict ASHA's definition for the reason that includes high order / cognitive factors.

Chermak et al. (2002) determined APD and ADHA could be distinguished based upon behavioural traits. Their study, weighed audiologists' against pediatricians responses in questionnaires and found that none of the top four traits were the same. Using this information they decided that APD behaviour could be classified separately. McFarland and Cacace (2003) disputed these results after reexamining their study where they found a high correlation of behaviours between the disciplines.

Ferguson et al (2011) contended that children with SLI or APD had extremely comparable profiles based on parental and behavioural questionnaires and checklists, using CHAPPS, CCC-2 and CPRS- revised short form. This study displayed that 32% of children had co-occurring disorders of ADHA, Dyslexia or Autism Spectrum Disorder (ASD); the author summarised that 'the current labels of SLI and APD may for all practical purposes, be indistinguishable.' A point detected by Ferguson was that children with APD received less support in their academic setting via a statement of special educational needs than children diagnosed with SLI. Dawes and Bishop (2009) conducted a study by comparing students diagnosed with Dyslexia and APD against typically developing children while completing auditory processing tasks. They established that the APD /Dyslexia group results were substantially lower than the typical children, but despite this result both groups presented with deficits in language, reading and attention. Despite these results, the APD/ Dyslexia group did not present with an clinical differences.

Studies conducted by Sharma et al. (2009) matched Ferguson's parental and behavioural research with distinctive results. Sharma (2009) investigated the co-occurrence of reading disabilities (RD), language impairment (SLI) and suspected APD. Their work concluded that:-

- 94% of children with APD had either RD or SLI
- 80% of APD children had SLI
- 65% had all three disorders
- 58.6% of the children with APD had auditory attention problems

This study supports Ricco et al, (1994) who emphasised that APD and attention are co morbid with over half the children experiencing this co-occurrence. Supporting this finding, literature advocates that memory, attention and executive functions are associated with listening skills. Keller and Tillery (2002) argue the viability based co-occurrence of these disorders, and that they need not occur exclusively as co-dependent and can occur independently. This argument in turn confirms Rosen's point where he highlighted the fact that APD should be tested in its 'pure' form.

With no conclusive paradigm by professional as to how one can separate a language element from an auditory test, is where the problem stems from. Testing nonverbal or non-words is not conclusive as children require the ability to understand what is being asked of them. This is apparent as many auditory tests are multi-step and repeating back which therein uses various skills simultaneously. Wallach (2011) concurs that even if APD is comorbid with other dysfunctions, for children within a classroom setting 'it is still all about language' testing and strategies which are required to 'move well beyond 'auditory' skills.' (ASHA, 2005; Medwetsky, 2006)

2.5 Diagnosis

Diagnosis of APD is laden with tribulations; the main issue is the definition which is not specific, but a 'cluster of behaviours.' (Friel Patti, 1999) which leads to the next problem which is ambiguity. The definition does not provide exclusive actions that provide a clear pattern of symptoms to be identified. Furthermore, ASHA guidelines (2005) (Appendix 1) do not state the exact tests and combinations thereof to be utilized, although they do give a variety that could be used. (Appendix 2) These various assessments are conducted by a divergent group of professionals that analyse the results from different points of view. Jim Jerger (2009) "APD means different things to different people." Ferguson et al (2011) asserted that children's referral course, decided the diagnosis, not the actual specific underlying symptoms. (McFarland and Cacace (2003; DeBonis and Moncrieff, 2008; Dawes and Bishop, 2009; Martin and Brownell, 2005) Wallach (Appendix 3) concurs indicating the different assessments an Audiologist and SLT would take investigating the same grade 4 pupil, one would be an listening impairment, the other a language disorder diagnosis.

Indicators in APD are also found in co-occurring disabilities as diverse as :- cognitive impairment issues, neurocognitive problems, communication difficulties, language disorders and other sensory weaknesses (ASHA, 2005; Bellis, 2006; Ferguson et al. 2011.) This prompted McFarland and Cacace (1998) to evaluate whether modal specific elements which could be classified in identifying the exact nature of the disorder exist. However, after reviewing behavioural studies based upon school aged children with language, attention and reading disabilities they found it was impossible to 'characterise the true nature of the problem.' They concluded there was no reason to have this label and it could not be diagnosed using reliable empirical evidence. They all agree with the fact it is not included in the DSM-V because it not a 'unique entity.'

There is not one action exclusive to APD that can be identified as a reaction to auditory stimulus for this reason, more recent studies by McFarland and Cacace

(2005) believe that testing and diagnosis has been focusing on the wrong aspects of identification. Recent studies by these two authors stated that the tests are correct and can assist in diagnosis. They also confirm there is a possibility of identifying the auditory specific nature of APD, but the approach which should be taken is experimental. Tests need to be designed with dissociation and double dissociation in mind, to identify that the auditory aspect is the causative dysfunction and that any comparable test need to be conducted using 'multiple sensory modalities.' Herein one could identify deficits which are directly attributed to a specific modality and, the diagnosis of APD could carry more validity.

Dawes et Al. (2008) researched children with APD symptoms who were diagnosed with APD based upon the results of the standardised SCAN-C test, which is a screening test approved by ASHA. (2005) They found no differences with regards behaviour, learning difficulties or the cause of their dysfunction which was presented in specific groups of children diagnosed with or without APD. They concluded that the test lacked efficacy and reliability. Children with APD present differently due to the heterogeneous nature of the disorder, varying test results, and even Watson (2003) who conducted a three year longitudinal study, was unable to provide a definitive 'clinical' presentation.

Many of the other tests, Buffalo Model (1992), Bellis Ferre (1999) Model, Clinical Evaluation of Language Function Revised (CELF-R) have been criticised because they test language, comprehension and cognitive ability primarily and do not distinguish auditory aspects. DeBonis (2015) believes there is no verification that any auditory processing tests accurately determine listening ability. Children's Auditory Performance Scale (CHAPS), Fisher Auditory Checklist and the Screening Identification or Targeting Educational Risk (SIFTER) rating scales used in assessing APD. Dawes (2014) agrees with DeBonis that even though some have found Fishers checklist relevant the

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majority of behavioural ratings are not particular to APD and therefore may be truly testing other deficits such as low motivation, pragmatism and attention.

ASHA (1996) clarified in their positioning statement on APD that 'selecting the necessary tools to accurately perform evaluations' as a guideline for evaluation of APD is essential. (Appendix 2) In its 'preferred practice patterns,' (Appendix 1) it stated thirteen different points which would provide further guidance, such as a multi disciplinary teams. A battery of tests is required due to the spectrum of APD which can occur in different areas and forms. Therefore a variety of assessments are required so the right sensitivity is detected in the various areas. Dillon et al. (2012) is concerned that the more tests given increase the chance of performing badly, 'for reasons unrelated to the patients real life communication ability.'

Jerger and Musiek recommended at the Concensus Conference on the diagnosis of Auditory Processing Disorder that a battery of tests should include three aspects: behavioural, electroacoustic and neuroimaging and of these, only behavioural test is quick, inexpensive and easily accessible. Emanuel (2002) conducted a study in America to see if the recommendations by Jerger and Musiek (2000) were being used by Audiologists. SCAN and Auditory Continuous Performance Tests were predominantly used. Despite this, none of the 192 respondents were utilizing the minimum requirement in testing as suggested by these authorities. Similarly, Hind (2006) conducted a UK based study where she found the most commonly used test was SCAN alongside questionnaires and some, inclusive of electrophysiological assessments. The concerns raised included cost, limited availability of imaging, electroacoustic equipment and test reliability.

Studies confirm that there is no 'gold standard' in testing and diagnosing APD. Conversely, studies of brain lesions (Musiek, 2004; Bellis, 2003; Chermal et al.

1997) have successfully led to the identification of types as well as locations of brain lesions in the central auditory nervous system which is based upon behaviour-brain relationships. Nina Kraus at Northwestern University (n.d) recently researched as to how the brain processes sound which is starting to clarify where dysfunctions occur via auditory brainstem responses. This is very encouraging as it reduces the reliance on behavioural tests that are open to factors which can be manipulated. Concurrently they are also conducting research using functional MRI which is proving that there are abnormalities in the size and structure of areas in the brain in patients where APD does exist.

2.6 Intervention

An interdisciplinary team is required to diagnose APD due to its overlapping nature (Bellis, 2003; ASHA, 2005). Individually, speech and language, psychological, and other assessments cannot be used in isolation to diagnose APD. Each profession has a distinctive role in identifying the different aspects of the dysfunction. Although there is less harmony on which tests to conduct, only a cross discipline analysis will produce valid results for the diagnosis of APD, and show the area and sub type of dysfunction. (Friel-Patti, 1999)

Interventions will be individualised according to the deficiencies highlighted in the testing; they should be started immediately after diagnosis to reduce disruption APD causes across so many areas. Three component approaches (ASHA, 2005; Chermak et al., 2003; Bellis, 2002) are recommended:

- **Direct skills** – auditory training (bottom up training) to decrease APD. This includes phoneme awareness, IT programs such as Fast ForWord, temporal sequencing and patterning and presenting auditory information in background noise.

- **Compensatory strategies:** - these will help reduce the impact of APD by enhancing executive functioning (top down.) These will include schemas, building vocabulary and semantic ability and problem solving to enhance motivation and self-confidence.
- **Environmental modifications** which should be applied at school and home include: - Have the child sat so they can see the teacher when they speak and see the board, reduce classroom noise levels through behavioural management strategies, smaller classroom groupings, specialty noise reducing equipment such as acoustic ceiling tile and soft furnishings. Use visual cues to assist spoken instructions. Accommodations' such as: Assistive listening devices (ALD's) which amplify the speaker's voice and reduce noise should be used.

Each student should have an individual education plan which is shared with the parents, staff and professionals working with the child. It should include, specific, measurable, attainable, realistic and time related goals (SMART) (Doran, 1981) and run concurrently with who should use the strategies and how often.

Repeating the same tests should provide measurement of results via this method of intervention.

Wallach (2011) approaches APD intervention with trepidation as there are some dysfunction subsets of APD which are not able to be transformed with intervention. She feels that when applied to school aged children it is mainly about 'language' and the complexities involved in CANS and linguistic processes cannot be targeted directly but can be reduced through compensatory strategies. (Appendix 4) DeBonis and Montcrieff (2008) deem there is no data to support the efficacy of APD interventions and Cacace et al. (2006) agreed citing that even literature evaluated by experts no corroborated model of intervention was provided. Compensatory strategies used such as multi-sensory instruction tend

to have evidence to prove their efficacy with different learning difficulties but which are not specific to APD.

2.7 Education in the UAE

The UAE signed the Protocol to the UN Convention on the Rights of Persons with Disabilities and introducing rules and regulations, Federal Law 29/2006 (UAE Government, 2006) in order for it implemented with the UAE. Schools for All (2010) states schools

‘provide appropriate services to the students with disabilities and special gifts and talents in all educational institutions in the public and private schools that meet their needs and enhance their abilities.’

A duality of education exists in the UAE where public schools cater only for the local Emirati population. According to statistics, this populace represents twenty percent of the UAE population (UAE population statistics 2017) and they receive a free education which is funded by the government and inclusive of specialized centres for special needs. The expatriate population consists of a multitude of nationalities that require schools with diverse curricula in order to accommodate the variety of ‘religious, cultural and educational needs.’ (Bradshaw et al., 2004) and private schools fulfill this role. Most are run as businesses, although there is a minority of ‘not for profit schools.’ Within Dubai, the Ministry of Education governs both public and private schools. They direct Arabic, Islamic Studies and guiding principles such as allotted school days and holidays. However, private schools are governed and inspected by the Knowledge and Human Development Authority (KHDA) which ‘is responsible for the growth and quality of private education in Dubai.’

The KHDA have a school inspection framework (KHDA, 2015-16) in which it details ‘comprehensive performance standards’ that describe what principles and elements of ‘best practice’ which should be visible in a school. Schools are

graded during their inspection based on these principles; their score will determine the fees that a school can charge. School inspection reports are available for all to view on the KHDA website and herein provide information to prospective parents when choosing a private school in Dubai. As part of their Special Educational Needs (SEN) remit they require all schools provide a SEN register with the names, year groups and difficulties the children have. APD is not recognised under the SEN categories. (Appendix 5) However, these divisions underwent the addition of Dyslexia and Dysgraphia which are recognized as established disorders for many years.

Another element that must be noted is the Community Development Authority oversees the issuance of licenses to social service providers, including educational psychologists and SEN Teachers in Dubai. However, Dubai Health Authority issues licenses to Speech and Language Therapists, Occupational Therapists and Clinical Psychologists. Within the UK and America's best practice, the health care, social service and education professional come together in order share joint information with regards children with SEN. However this is not regulated or enforced in private schools within Dubai.

CHAPTER THREE

Methodology

3.1 Theoretical Approach and Design

Miles and Huber (1994) indicated to 'purposefully select participants or sites' when using qualitative methods of research ensure that the right aspect is being examined. In order to provide a valid insight in attempting to answer research question three, the researcher decided to use their own school as a setting so as to utilise the data stored in terms of school reports, records of concern and assessment scores. It would also allow access to classroom observations and interviews with teachers and parents.

Yin (1984) described case studies as supported by their outcomes; exploratory was one such method. It is described as 'observational inquiry' and this is how the researcher views qualitative research; observing how APD is identified in an educational setting, using the data that is already there, in terms of paperwork, supplementing this with observations and interviews. In later works, Yin (2003) further states that it is 'a contemporary phenomenon within its real-life context.'

Creswell and Miller (2000) discuss the validity of research using words such as 'authenticity', 'trustworthiness' and 'credibility', and ask how the researcher can be accurate in their research. As someone who has worked in a variety of roles at the same school for over ten years, the statement "If prolonged engagement provides scope, persistent observation provides depth" (Lincoln & Guba, 1985) affords a way for myself to provide some accuracy in this research area / topic / dissertation.

Therefore in order to gather the relevant information required a 'mixed method' approach was decided upon. The advantages of a multi method approach will allow the triangulation of the data, information gathered from case study

observations alone may be polluted as it involves behavioural complexities by using other methods and sources of data collection it would support the observations. In accordance with Cohen and Manion (2000) “Triangulation is an attempt to map out, or explain more fully, the richness and complexity of human behavior by studying it from more than one standpoint.’

The ‘mixed method’ used included:-

- observations
- interviews
- questionnaires

Qualitative Methods

Qualitative methods used were:-

- A case study
- Review of school policy
- Observation of school practice
- Informal meetings with previous teachers, current teacher and learning support teacher.
- Semi structured interview with SLT and parent
- Participant observations

Quantitative Methods

Quantitative methods selected were:-

- An online survey to EP’s, SLT’s, OT’s and Audiologists with short answer, multiple choice and slide scale questions to review their knowledge of APD and their working practices.
- An online survey to SENCo’s with short answer, multiple choice and slide scale questions to review their knowledge of APD and their working practices.

3.2 Rational for selection

Conducting a case study allowed an 'observational inquiry.' This study was not isolated to observing Child A in the classroom alone, but during break time as she moved within the school going to extra classes such as clarinet lesson, and speech and language therapy. The researcher was able to gather a large amount of non participant and participant observation. The extensive access enabled the researcher to gather and examine school documents, past scores and reports, as well as talk to past and present teachers.

Surveys were required administered as a requirement in that a group of professionals had time constraints and were not available for interviews. Also as an anonymous survey, respondents were more likely to give 'truthful' feedback. Ong and Weiss (2000) affirmed that the understanding of confidentiality may be an influential aspect in a participant's decision to endorse sensitive items on a survey. Which may not have happened if the survey was conducted face to face. The survey could also then encompass a variety of question types in this format.

Interviews were conducted to gain personal experiences and inspect more deeply issues that arose. It is easier to gain people opinions from an interview than from a questionnaire. Although the focus was APD and Child A, the questions were not structured to allow a flow of opinion from the interviewee. (McNamara, 1999)

Data collection within the school setting was required to gain background information with regards to the school and its SEN, communication and tracking practices; and also develop an understanding of Child A via tests scores, reports and parent consultations.

3.2 (a) Questionnaires

This tool was used to assist in answering questions 1 and 2.

- 1) *Investigate the issue of knowledge and awareness of APD among SENCO's and specialists working with primary school aged children in Dubai.*
- 2) *Explore the clinical practices in the diagnoses and management of APD within primary aged school children in Dubai.*

A questionnaire (Appendix 6) was created on Survey Monkey to investigate SENCO's school identification practice, their knowledge of APD and determine how APD is managed in the classroom. The researcher compiled the questions and asked her colleagues to review them. Although it was not pilot study, the researcher felt that the feedback had been positive with no negative comments received.

The researcher spoke to head of the KHDA and he personally advised her that there is no SENCo list available. The researcher used the KHDA website to obtain a list of British Curriculum primary schools within Dubai. A prolonged effort to create a personal email list of SENCo in these British Curriculum primary schools was conducted but excluded those which had only opened from September 2016.

A second questionnaire (Appendix 7) was created to investigate educational psychologist (EP), speech and language therapists (SLT), occupational therapist (OT) and Audiologist's awareness, knowledge and clinical practices toward APD. Similarly the same investigation and effort had to be utilized in the obtaining Professional group information due to no data available. Due to Professionals being licensed by two different Ministries and the Community Development Agency. Therefore the researcher went through number websites and through personal contacts to create a comprehensive list of reputable clinics in Dubai where primary aged children were referred for SEN identification, diagnosis or

intervention. Due to the lack of data the lists compiled may have omissions of professional. The researcher felt that one hundred and twelve participants was an acceptable cohort for a small scale investigation despite the lack of initial data.

To gather the two email address data collection was the most time consuming element of the research method, but it was crucial that it was correct in order to gain accurate feedback. The researcher decided that an email survey would be easier to organize. With this in mind, the email was to a personal email address and not a general school / clinic email address, unless this information was obtained by the researcher. If the school / clinic email data was available, the researcher spoke directly with the school or clinic secretary to ensure that no emails were deleted and forwarded directly to the relevant person. Both the questionnaires were sent via an email inviting each Professional to respond the survey. Hereafter each respondent was thanked for their time or for those who had not responded, they were requested to assist within a specified time frame. According Nesbary, (2000) electronic surveys 'the simplicity of administering them contributes to a greater overall reliability.'

The questionnaire (Appendix 7) to EP's, OT's, SLT's and Audiologist was the same as the one used in the Irish study and approval was obtained by Logue-Kennedy. (Appendix 8) The quantitative research questions were mostly multiple choice and lines were inserted when more detail was required. At the onset of the research a SLT and an Audiologist, both with extensive experience in their respective professions and in Dubai, were asked to review the questions. They advised on deletion of irrelevant questions as well as rewording certain questions to alleviate any comprehension issues. The feedback at the start of the data collection from both professionals, one Arabic and the other Indian in different clinics stated:

- The question on screening and diagnosing were asking the same thing; which is contrary to what the researcher has been led to believe based on her reading – screening is normally completed by EP's or SLT's and diagnosis by audiologists.
- Advised to include OT's in the survey because in Dubai they also manage treatment.

In view of this information, the researcher with regards this information she said to leave all the questions apart from one that were geared toward

An online questionnaire was beneficial:-

- it allowed anonymity
- cheap
- quick to gather large amount of data, which can be analysed easily
- accurate record
- time efficient

3.2 (b) Semi-structured Interviews

In the natural setting, semi structured interviews were conducted with the parent, (Appendix 9) class teacher, (Appendix 10) and SLT (Appendix 11) with the aim of answering question 3.

3).Determine how APD is currently identified evaluated and managed in a primary school setting in Dubai.

This tool was chosen because it allows the identical key questions to be asked, but with flexibility in how they are asked. It permits follow-up questions which can probe further personal views or experience, which is beneficial considering the sensitive nature of this topic. Also non verbal cues can aid truthfulness of responses and it allows for every question to be answered. The researcher prepared questions but found that it was easier to let the participants talk and

then probe when more information was required. The researcher felt this gained more insight into the participants 'true' feelings and brought forward ideas that maybe she had not identified.

The interview with class teacher (CT) was conducted in a LS colleagues office during a lunch time with a third party taking notes to allow the flow of the interview not to be distracted. The CT is new to the school and the researcher does not work in her year group therefore the start of the discussion it felt a little stilted but developed over themes such as: initial concerns, classroom management, specific strategies, social skills and interaction and parental feedback.

The parental meeting with Child A's mother the occurred an hour before the end of the school day so she could stress free knowing that she was able to collect her children. The interview was conducted in the researcher's office. The mum willingly shared the SLT and EP reports as well as her experience and feelings with regards to her child and the feedback she had received from the school with its identification policy.

The meeting with the SLT was carried out in the researcher's office after school when she had completed her therapy sessions for the day. This Professional was the one who advised the researcher that Child A may have APD and therefore was a candidate for my research. This interview started off relatively specifically about Child A, targeting the SLT's initial school observation, then her more in depth clinic evaluation and finally it switched to the EP report and how she was happy with the overall process of the school and testing completed by the external professionals. A general discussion regarding the questionnaire which she had completed online as well as to the SLT and Audiologist who reviewed the questionnaire at the onset of the investigation was discussed, and the mum's concerns.

3.2 (c) Informal Meetings

Relevant people, such as the SENCo, teachers and the senior leaders were questioned as the data collection brought up queries or needed explanations, to help advance background knowledge and gain a perspective rather than the researcher attach a meaning and to check if the practices occurred. These queries were not recorded, however; aspects maybe used within this case study.

The LS teacher was invited for an interview. Although she was comfortable discussing school policy and process for SEN identification, due to her limited interaction with Child A, she did not feel comfortable discussing her perspective and rather sent a short brief regarding Child A. (Appendix 12)

3.2 (d) Data collections

School paperwork and practice was evaluated to show the identification process within the school and to understand child monitoring. The data collection included:

- the school SEN Policy; which is not included, as it a very comprehensive thirty two paged document, which is regularly updated
- the Pebble Procedure (Appendix13) which charts the flow of the identification process of a child that a class teacher would initiate, if they felt there was an issue; it involves Senior Leaders, Year group Leaders and the Learning Support department. The Pebble Form (Appendix 14) which identifies the teachers concerns regarding the child, strategies (Appendix 15) in place that work or have been tried and how they have tracked (Appendices 16, 17), this file contains minutes of parent meetings, LS results and observations, interventions, teacher reports and is monitored throughout her school life Child A

- school reports from years 4, 5 and 6 were studied along with test results in the same time period; the appendix will show examples of teacher comments, not the entire report and scores. (Appendix 18)
- Examples of class work from the beginning of the school year, September 2016 (Appendix 19) with a notable improvement towards the end of the school year, June 2017.
- External reports written by Specialists and information compiled by tutors.

These multiple sources of data allowed the researcher to gain background knowledge in order to formulate questions to be asked in the semi structured interviews, to assess how the teachers felt about Child A through comments said directly and backed up by looking up old school reports and test scores. The researchers felt comfortable knowing that policies existed and were conformed to, so a positive school identification structure was in place, intervention occurred and improvements were gained.

3.2 (e) Case Study

When studying children with academic failure it is necessary to observe the performance of the child in situ in order to gain a better understanding, along with looking at their tests scores, teachers' comments and parental feedback. Non school tests conducted in clinics can provide answers to red flags that indicate an issue, however without taking into account the child's classroom interactions it is impossible to assign a diagnosis.

This inquiry is presented to recognise how a primary-aged, English speaking child in Dubai may be identified with APD in an educational setting. In order to do this, an insight into the procedures of the school used in identifying an issue that could be verified by documentation, tracing paperwork to validate and by

observing the practices of the staff and the communication processes between all concerned will be explored.

In coordination with the learning support department and SLT, Child A was identified as experiencing difficulties within the academic setting and that were multifaceted needing further investigation. Child A was described as shy with no developmental delays in early childhood milestones. She had attended the school since FS2, and was now in Year 6 where successive teachers acknowledged she was not reaching her potential. Meetings between the class teachers, parents and learning support team established that they all felt the same but as she was moving into a new high school in the next school year her parents wanted answers. Class room strategies, interventions and internal assessments had been monitored over a number of years and the difficulties were not consistent although improvements had occurred.

Parental consent concerning Child A, and appropriate school permissions were obtained prior to the preparation of this study, and a full explanation provided to the parents. Furthermore, anonymity was assured and a decision to discontinue could be made by any party at any time.

3.2 (f) Non participant Observations

The researcher had permission from the CT and Child A to attend these sessions in a non participant capacity. The aim was to observe how Child A participates in the lesson, interacts with her CT /peers, if any symptoms were displayed classroom strategies utilised and coping mechanisms Child A exhibited.

The researcher observed Child A on numerous occasions. (Appendix 21) The researcher felt that although the children in class were familiar with her, it would be detrimental to be involved in their lessons, as Year 6 class lessons contain a great detail of information delivered succinctly in forty minutes (Ramadan

timings); and it would have been easy to miss any non verbal cues or assistance provided to Child A by the teacher if the researcher was not watching.

CHAPTER FOUR

Results

4.1 Introduction

These sections will summarise the findings of the qualitative and quantitative techniques of investigation obtained during this study. The answers to the first two research questions, regarding the identification, screening, diagnosis and management of APD within English-speaking, primary-aged school children in Dubai, were based upon two questionnaires that were distributed to relevant professionals. The third question required a more involved, detailed examination of how this is applied in an educational setting and, as such, was reviewed as a case study. Therefore, it will be presented in the following order:-

- SENCo's questionnaire related to Research Question 1.
- EP/ OT/SLT and Audiologists questionnaire related to Research Question 1.
- SENCo's questionnaire related to Research Question 2.
- EP/ OT/SLT and Audiologists questionnaire related to Research Question 2.
- Case Study and Participant Observation.

4.2 Review of the questionnaires

The response rate results are demonstrated in Figure 1. The table shows that in Questionnaire 1, the rate of replies from SENCo's was 44% and in questionnaire

2 the rate was less at 29%. In Questionnaire 2, the majority of the respondents were EP 39% (n=7), followed by SLT 38% (n=18), followed by OT 21% (n=6) and finally Audiologists 3% (n=1). (The increased S< rate is the result of receiving more questionnaires).

Figure 1 Response rate for the two questionnaires separated into professions.

Professionals	Questionnaires distributed	Questionnaires returned	Response Rate
SENCoS	50	22	44%
Occupational Therapists	29	6	21%
Educational Psychologists	18	7	39%
Speech and Language Therapists	48	18	38%
Audiologists	17	1	6%
<i>Questionnaire 1</i>	50	22	44%
<i>Questionnaire 2</i>	112	32	29%
<i>Overall</i>	162	54	33%

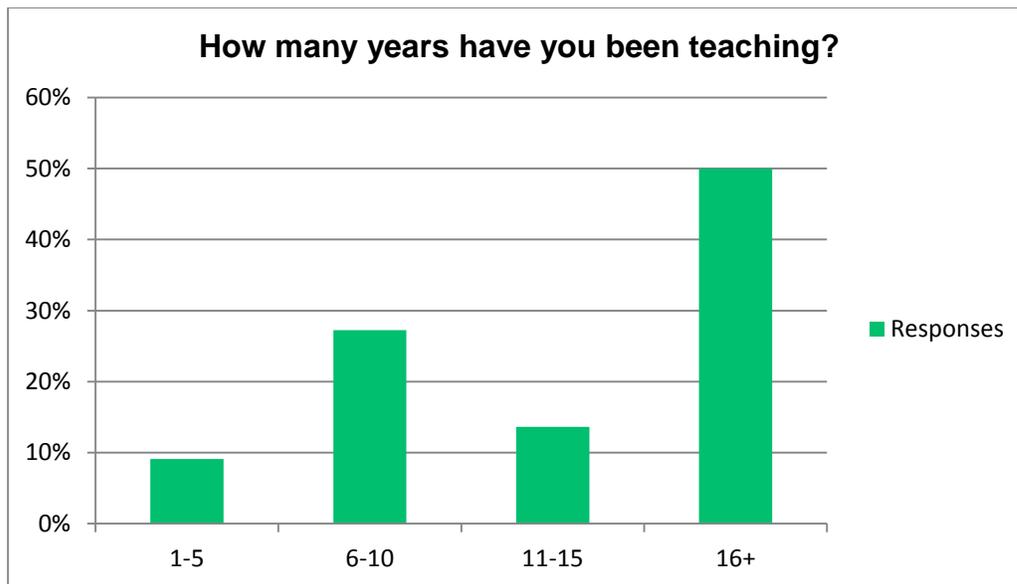
4.3 Results linked to research Question 1

The overall aim of Question 1 was to examine the awareness and knowledge of EP, OT, S<, and SENCo's concerning APD in English-speaking, primary-aged school children in Dubai. In order to achieve this, the results will be evaluated

separately as the first questionnaires research population was SENCo's that work within British Curriculum primary schools in Dubai, who come from multicultural backgrounds and are not all native English speakers. More personal and experience related questions were asked of SENCo's in order to provide a little more background information as, until recently, this position was not strictly regulated by the authorities and it should be shown here that care has been taken to obtain results from SENCo's possessing the relevant level of experience and qualifications.

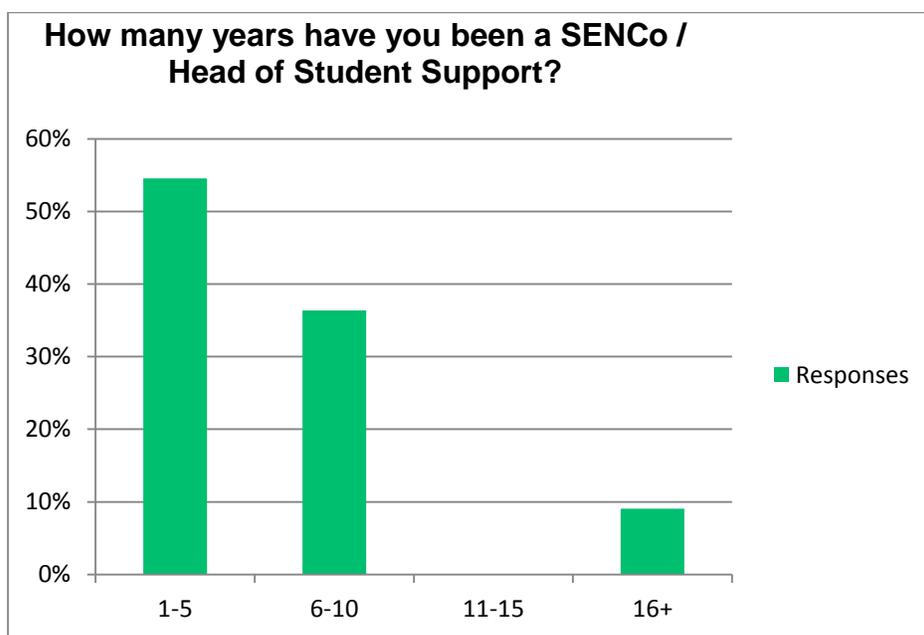
4.3 (a) SENCo's responses

Figure 2 Response to Question 1 on the SENCo questionnaire.



Questionnaire 1 was emailed to SENCo's initially and asked the number of years they had been teaching in a SENCo position, their level of qualifications and the countries in which they had taught. The results showed that the majority of the respondents were teachers prior to their SENCo role, with 50 % teaching more than 16 years, 1-5 years (9%), 6-10 (27%) and 11-15 years (14%).

Figure 3 Response to Question 2 on the SENCo questionnaire.



This data demonstrated the majority of SENCos (55%) were within 1- 5 years in their position, 6-10 years (36%) and 9% had been SENCo's for 16+ years.

In answer to Question 3 72% held Masters as their highest qualification.

Question 4 posed where countries, and how many, the respondents had worked in, and showed 36% having lived in three countries or more.

Figure 4 Response to Question 4 on the SENCo questionnaire.

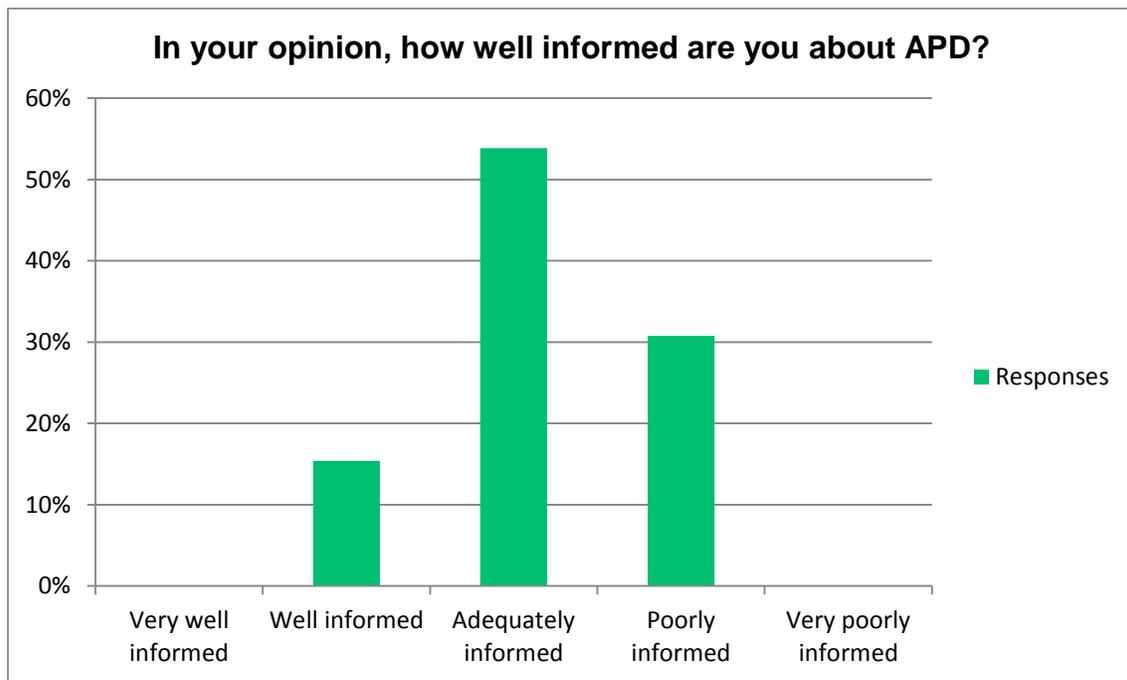
Please indicate which countries you have worked in the Education System				
Countries	Percentage		How many different countries the respondents have worked in the education system?	%
UK	41%			
Europe and Central Asia	14%			
America / Canada	18%			
South Asia	23%			
East Asia and Pacific	23%		1	14%
Sub Saharan Africa	5%		2	50%
Middle East and North Africa	100%		3	27%

Australia / New Zealand	5%	4	9%
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Questions 5 and 6 were related to the number of children on their Learning Support register and how many Learning Support staff they managed. The data received here may be less reliable because the question was not mandatory, and did not request the number of children in their schools.

Response to Question 7 and 8, 100 % of the SENCo's were aware of APD, but when it came to rating their knowledge there was a big variation in confidence, as shown in Figure 5 only 15 % of SENCo's thought they were very well-informed about APD.

Figure 5 Response to Question 8 on the SENCo questionnaire.



Question 9 requested what and where was the formal training that they had received in APD. It was left as an opened question, designed to assess the

teacher's definition of 'formal training' as well as to provide the evidence of education in APD they had received:

- 38% had attended an event hosted by Dubai SENCo Network, at which an SLT and Audiologist from a well respected Dubai based Clinic presented a morning clinic on APD.
- 25% advised they were taught it within their further education classes.

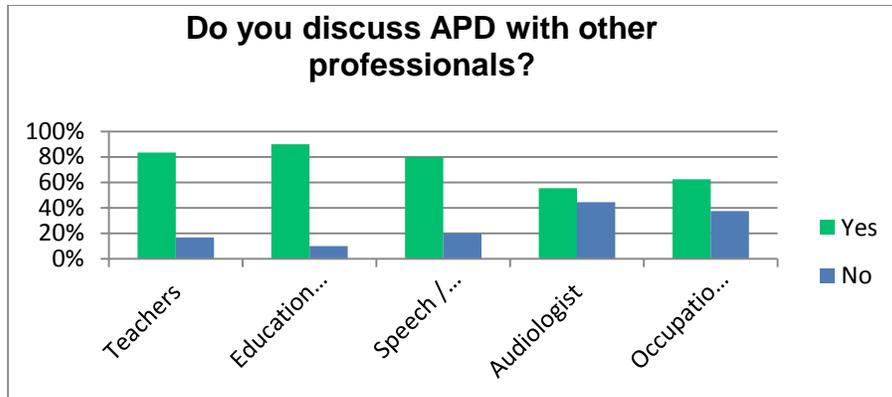
Other responses indicated that they were aware of APD through training on other disorders such ADHD, Autism and dyslexia or interventions such as The Listening Program.

Question 10 asked for information on any informal training they had received in APD. The large majority (73%) of SENCos skipped this question, but those that answered advised of:-

- General reading
- Discussion with colleagues, SLT and/ or parents concerning certain pupils.
- Workshops attended for other disorders that share co morbidity.

Communication between teachers, educational and health professionals, and parents is extremely important, so who could the SENCo turn to for advice? If this is a colleague or an external professional, who is funding their expertise? Accordingly, 83% of SENCo's approached other teachers; a more significant portion of SENCo's discussed APD with EP (90%) and S< (80%), Audiologists (56%) and OT's (63%) were least likely to be involved in discussions.

Figure 6 Response to Question 11 on the SENCo questionnaire.



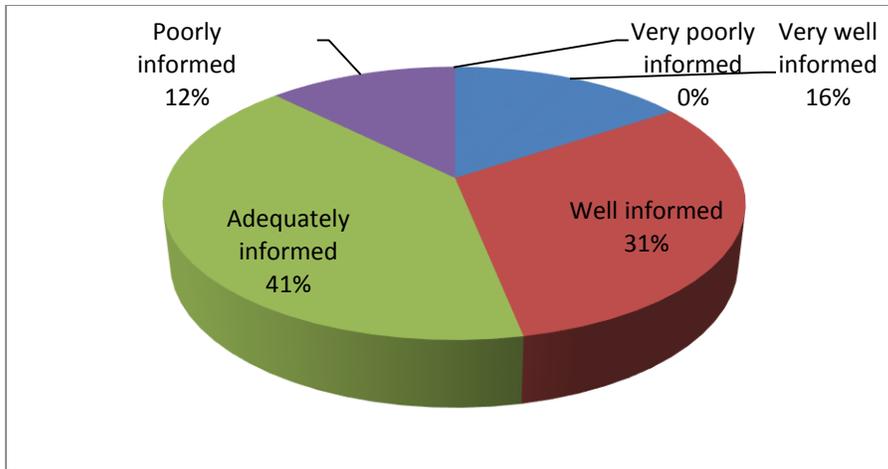
A variety of the professionals are required to assess, diagnose and manage APD, SENCo's indicated that: only one school had an EP as a member of staff paid for by the school, one school had all four professionals - labeled 'staff' but paid for by the parents. All the other respondents indicated that the professionals were external providers who were paid directly by the parents.

- 50% of schools had access to an EP.
- 58% of schools had access to a SLT.
- 18% of schools had access to an Audiologist.
- 55% of schools had access to an OT.

4.3 (b) EP/ OT/ SLT/ Audiologist's responses

These professions require a license from the Department of Health or the Ministry of Education to operate within Dubai; fewer questions were directed towards their expertise or professional qualifications.

Figure 7 Response to Question 1 on the EP/ S</ OT / Audiologist questionnaire.



In your opinion, how well informed are you about Auditory Processing Disorder?

Thirty two participants answered this question. This chart indicates that 47% of the respondents are well to very well-informed about APD, only Audiologists were 100% confident.

This equates to

	Audiologist 100%,
<i>very well informed</i>	OT 29% SLT 11%.
<i>well informed</i>	EP 71% SLT 28%
<i>adequately informed</i>	EP 14% OT 43% SLT 50%
<i>poorly informed</i>	EP 14% OT 29% SLT 6%

90% of the respondents to Question 2 discussed APD with others and this is shown in Figure 8 which displays that the majority of discussions were held with S< (74%), OT's (70%) and teachers (57%), the least amount of dialogue with ED (48%) and Audiologists(17%). Answers will exceed 100% as multi- coding was allowed.

Figure 8 Response to Question 3 on the EP/ S</ OT / Audiologist questionnaire.

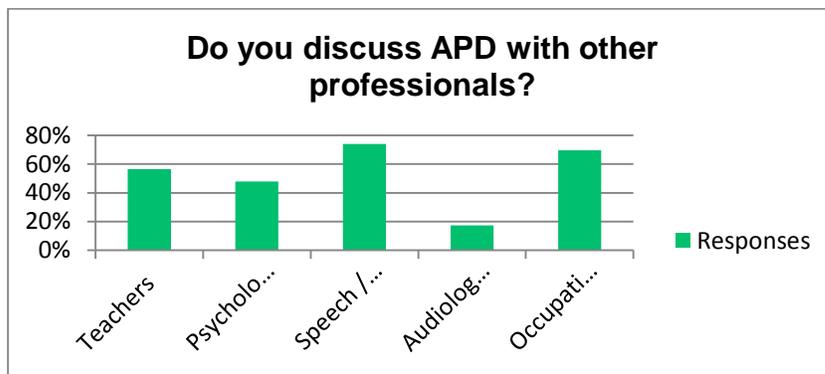


Figure 9 Further evaluations of responses to Question 3 on the EP/ S</ OT / Audiologist questionnaire.

Which professional was included in the discussion?	The profession of the respondents			
	Audiologist	OT	SLT	EP
Teachers	100%	60%	42%	80%
EP	100%	40%	33%	80%
OT	100%	100%	58%	60%
S<	100%	100%	50%	100%
Audiologist	100%	0%	0%	60%

This evaluation indicates only audiologists include all parties when discussing APD. The EP's were identified as the only professionals to be in contact with Audiologists.

Question 4 all participants indicated they had received formal training on APD, 45% of instruction was acquired during Masters Qualifications.

Question 5 gathered data with regards informal training in APD; answers included courses (3%), discussion (35%) and reading (62%) similar to the SENCo response.

4.4 Results linked to research Question 2

This research question investigated the identification, screening, diagnosis and management processes of APD. The majority of the data will be from the Questionnaire 2 aimed at the EP/ OT/ S< and Audiologist's; however a few questions from the SENCo questionnaire targeted identification and management of children with suspected or diagnosed APD and this will be included.

4.4 (a) Responses from EP/ OT/ S</ Audiologist's responses

Question 6 of Questionnaire 2 (designed for the EP/ OT/ S< and Audiologist's) asked the ability of respondents to assess children with APD. 37% responded that their knowledge was good to very good in assessing APD. However, that implies that the majority of respondents felt they have poor knowledge or chose not to disclose their view.

Figure 10 Response to Question 6 on the EP/ S</ OT / Audiologist questionnaire.

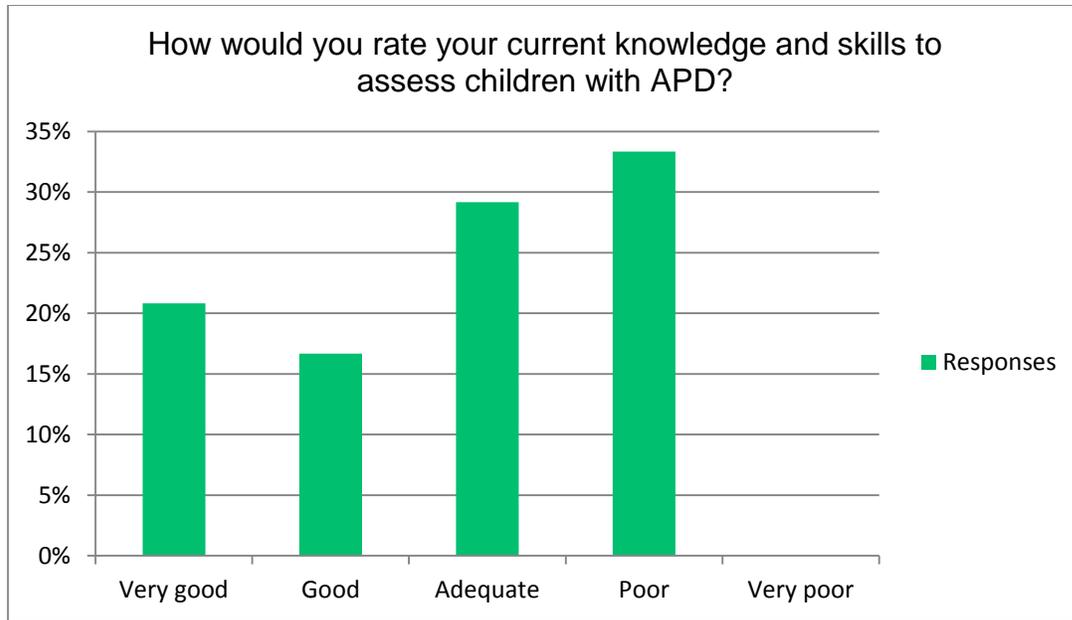


Figure 11 Response to Question 6, broken down by profession. How would you rate your current knowledge and skills to assess children with APD?

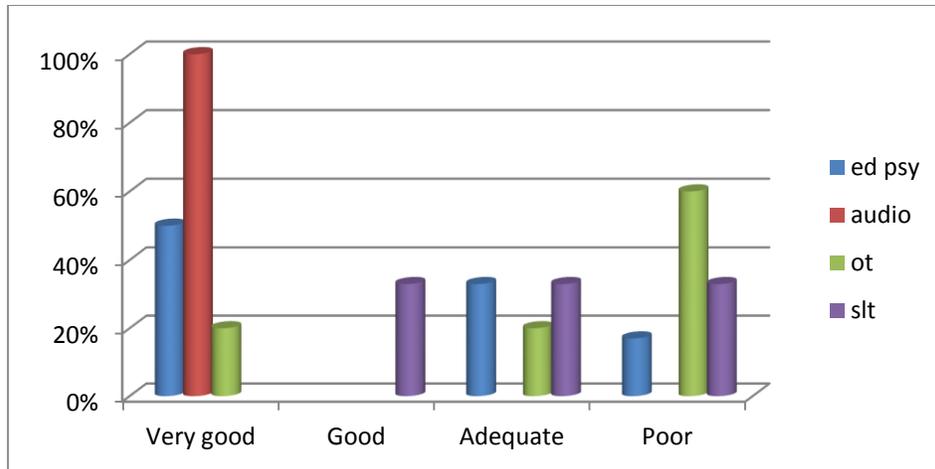
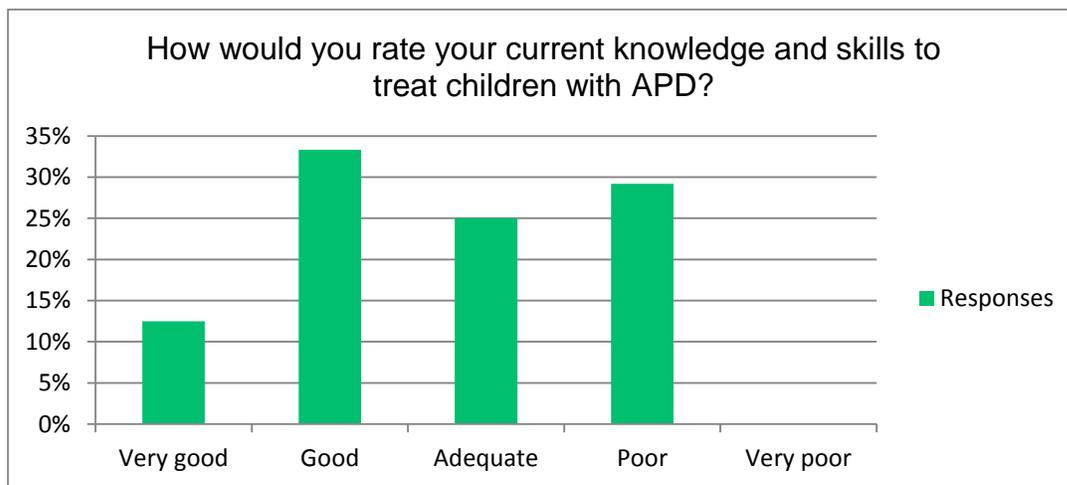


Figure 11 demonstrates 100% of Audiologists indicated a high level of skill in assessing children with APD. Furthermore 50% of EP's, 20 % of OT's rated their knowledge in assessment was very good. Interestingly 50% of SLT's indicated a poor rating in assessing APD.

Figure 12 Response to Question 7 on the EP/ S</ OT / Audiologist questionnaire.



Question 7 of the questionnaire asked professionals to rate their knowledge in treating children with APD. Only 13% of participants rated their ability to treat

APD as very good. There was a 4% increase in the rating adequate to very good from assessing to treating APD.

A deeper analysis shown in Figure 13 denotes Audiologists were 100 % confident at being able to treat APD. OT's evaluated themselves higher with 20% staying in the very good label, 20% moving up into the good category, 20% indicating adequate and 40% choosing poor knowledge. SLT had a very even mix at good (42%), adequate (25%) and poor (33%). EP's evaluation to treat children with APD went down with only 17% rating the knowledge as very good, 33% as good, 33% as adequate and 17% as poor.

Figure 13 Response to Question 7 broken down by profession. How would you rate your current knowledge and skills to treat children with APD?

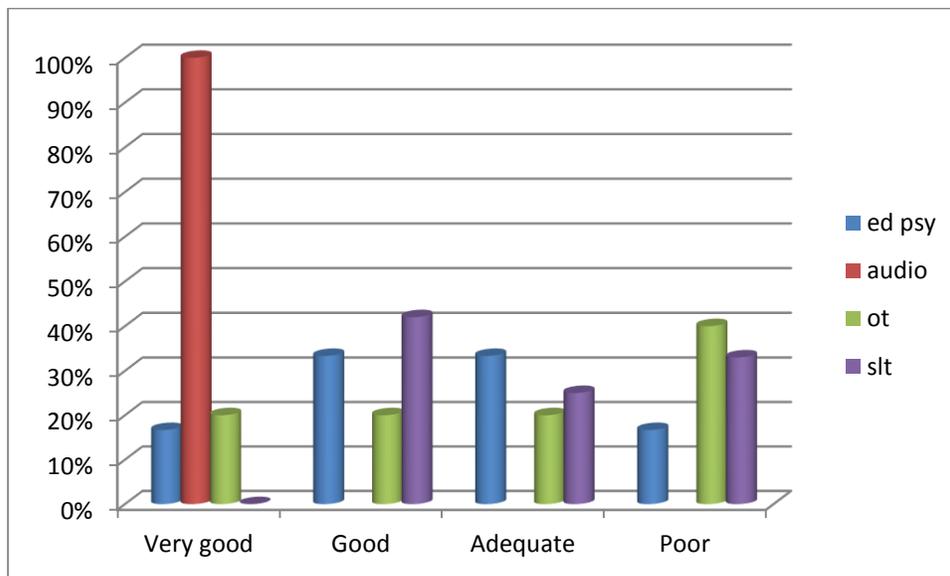


Figure 14 Response to Question 8 broken down by profession. Do you screen for APD?

Profession	Yes	No
Audiologist	100%	
Ed psych	33%	67%
OT	60%	40%
SLT	50%	50%

Screening is used when a test or a battery of tests is completed due to a concern that has been raised whether an issue is present. These assessments are not too in depth and would indicate a possible need for further investigation. Asked whether they screened for APD, there was a 50% split between Yes and No. Figure 14 shows that 100% of Audiologists were confident at screening. Interestingly 60% of OTs also screened for APD.

The standards in tests used to screen for APD in children was left as an open-ended question, given the variety of possible answers involved due to multicultural backgrounds and education of the respondents. The tests detailed are identified below, although some indicated they used a battery of tests and not one specific test. A notable trend showed 73% of respondents as acknowledging TAPS as their main standardized test.

- *Auditory Skills Assessment (ASA.)*
- *Clinical Evaluation of Language Fundamentals - Fourth Edition CELF – 4.*
- *Test of auditory processing 3 (TAPS).*
- *Expressive Vocabulary Test (no version mentioned).*
- *Peabody Picture Vocabulary Test (no version mentioned).*
- *Auditory Processing Abilities Test (APAT) (no version mentioned).*
- *Comprehensive Tool of phonological processing (CTOPP) version 2.*
- *Phonological Assessment Battery(phab) version 2.*

- *Wechsler Adult Intelligence Scale (WAIS).*
- *Test of Narrative Language (TNL).*

No single informal screening technique was identified as being predominantly used by the respondents. Amongst the variety of informal procedures stated were:-

- *Fisher's Auditory checklist.*
- *Test of Narrative Language (TNL).*
- *Repeating sentences.*
- *Clinical impressions.*
- *Discussion with parents.*
- *General conversation.*
- *General observation.*
- *Medical history.*
- *Simple language and listening tests.*
- *Following instructions.*

Where screening indicated a concern, the next stage would be to identify the disorder. 30% of respondents confirmed that they diagnosed APD in children. 100% of the Audiologists, 33% of the EP's and 36% of the SLT confirmed they diagnosed APD. No OT's diagnosed APD.

Of the standard diagnostic tests used by these professionals varied, only one reported using an amalgamation of tests:-

- 57% used TAPS
- 14% used CTOPP
- 14% SCAN 3

- 14% used Wisc v
- 14% used PHAB
- 29% did not state

Informal tests/ information included:-

- Patient history.
- Asking the children to repeat a sentence.
- Interviews.
- Observations.

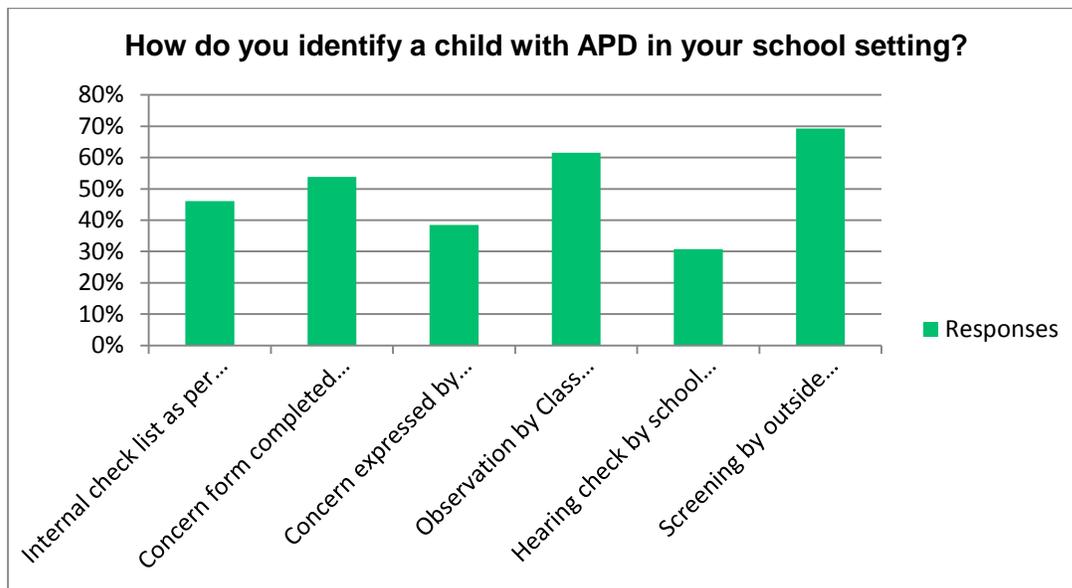
In Question 16, 60% of the respondents claimed to provide management of children with suspected APD. In answering Question 17, 55% advised they provided management for children diagnosed with APD. The intervention produced many varied and quite a few non-committal answers.

- After conducting the TAPS, it will highlight the weak areas of auditory processing.
- Auditory modulation.
- Environmental adaptations / Modifications.
- Following instructions strengthening auditory memory and narrative therapy.
- Psycho education and advice to schools regarding modifications, accommodations and remediation.
- Recommended programmes for teachers and speech and language therapy interventions.

4.4 (b) Responses from SENCo's

When answering question 15, SENCo's indicated how they identified a child with APD in the school setting. Multiple answers were allowed, the majority of SENCo's had screening conducted by external providers, while the SENCo's conducted observations of the children. In a noticeable fact, only 23% of SENCo's used all 6 methods.

Figure 15 Response to Question 15 on the SENCo questionnaire.

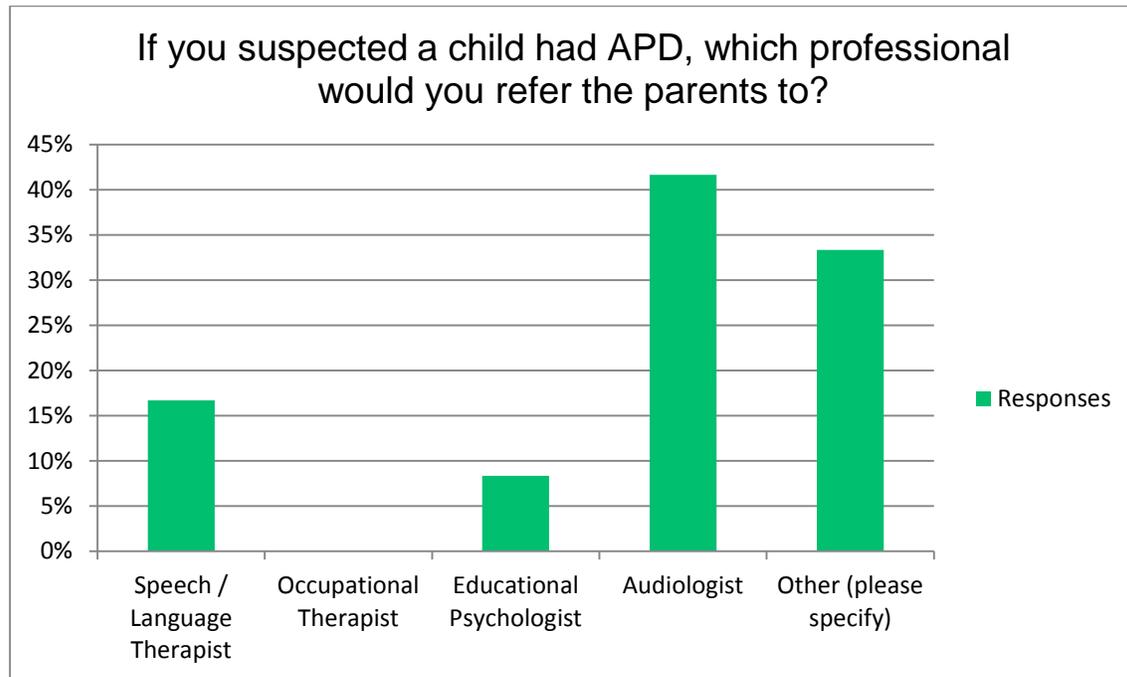


Question 16 indicated if they had children diagnosed with APD in their school, the answer showed 54% Yes and 46% No. When questioned if they had children they suspected of having APD, the positive response rate increased to 62%.

Question 19 was more subjective, based upon their experience. It included multiple choice answers and included an extra category marked 'Others', where replies could be entered which had not been suggested in the question. When asked why the suspected children had not been diagnosed, 27% of the SENCo's replied that parents could not afford it; while 18% said that the parents did not believe there was an issue. The 'Others' category also included responses that

the school did not go down the formal route of diagnosis, or that the issue was unidentified by teachers.

Figure 16 Response to Question 20 on the SENCo questionnaire.



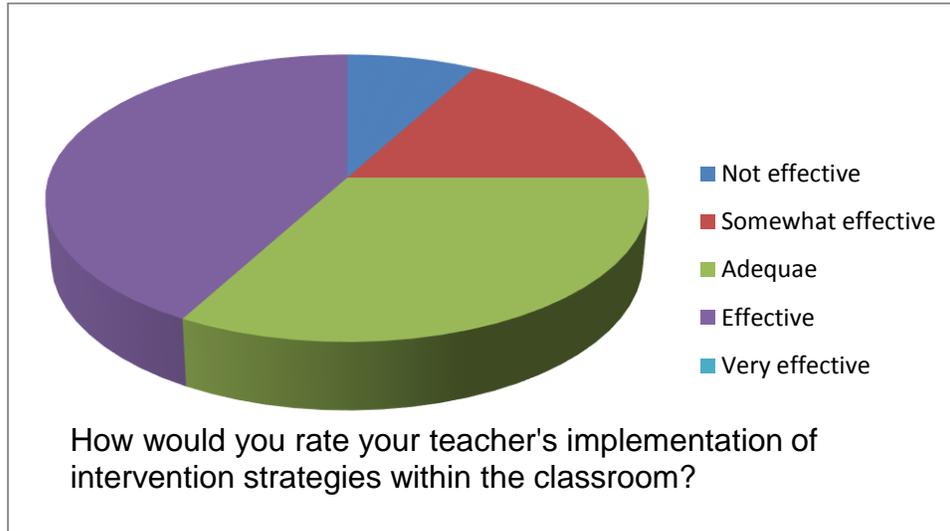
The majority of SENCo's would advise making an appointment with the Audiologist. Other responses from the 'Other' category included:

- 'All know what to do - give the right guidance'.
- Internal specialist assessor followed by educational psychologist if there is evidence.

Question 21 asked whether the respondents would request advice for classroom intervention strategies, with a majority (83%) accepting that they would. A similar 83% indicated they would follow the classroom strategies given according to Question 22. However, when Question 23 asked them to rate the implementation of the strategies given 25% indicated that the teacher would not be effective

using the strategy. 42% had confidence that their teachers would effectively apply the guidelines given.

Figure 17 Response to Question 23 on the SENCo questionnaire.



4.5 Semi structured interview results

4.5 (a) Class teacher (Appendix 10)

Having previously worked in an LS department the CT was more at ease speaking with the parent regarding her concern about Child A's first month of Year 6. The parent was also insistent that there was probably an underlying cause for the academic underperformance experienced by Child A. Despite this, effectual classroom strategies had proved to increase Child A's work output and was currently academically on par with her peers.

The initial concerns were Child A 'zoned out', appeared to be in 'her own world', she needed prompting to participate in class, answer questions and complete her work. She felt all these behaviours were entrenched. Child A is a quiet member of the class that lacks interaction with her peers due to her lack of confidence. She enjoys her own company and will often read in the library alone at break times. She experienced anxiety and got upset when she did not want to engage in a task.

She gave Child A preferential seating and prompted her when she was going to direct a specific question at her. This allowed her 'thinking time' and the ability to focus. She provided scaffolding and differentiated work, moving her into a middle ability group with an academically more gifted partner. Hereafter she moved her to a mixed ability table but with the same partner whom she had established a bond. When possible, Child A would be placed in a booster group, to be taken out of the classroom with a small number of peers to work in a quieter room with LS or TA assistance. She gave her explicit and prompt feedback on all work with specific individual goals to reach each time. These interventions worked, she improved in quality and quantity of work. (Appendices 19, 20) The CT feels that the one to one work with the SLT allowed Child A to gain confidence in her written ability, although verbal classroom participation did not improve and

neither had her 'zoning out.' It must be stated that all these classroom interventions have occurred since Year 2 and all the teachers were happy they worked.

4.5 (b) Parent (Appendix 9)

Child A's parent claims that she expressed concern with regards her daughter in Year One, although the LS records confirm the Year Two CT created a Pebble Form (Appendix 14) and discussed 'the lack of pace of work, inability to listen and follow instructions, not reaching potential' with Child A's parents. Classroom strategies were implemented. Child A attended The Listening Program in Term One, but this was not continued. Every year the parent had extra meetings with CT's to discuss their concerns and strategies which could be implemented. Each year the same concerns: disengaged, lacks motivation especially in writing and was unwilling to participate with peers were noted. Improvements were seen through the booster sessions and working with a more able partner or TA and Child A performed as an average student. The parent feels although the schools identification procedure worked, not enough was done by the LS department with regards intervention and that more could have been done. The mother was aware at all times of her daughter's progress and results. She understood that as the daughter was not academically failing, she therefore did not warrant being on the LS register. However, she acknowledges that child motivation is a factor and that Child A had shown similar anxiety at home when asked to complete homework.

4.5 (c) SLT (Appendix 11)

The SLT acknowledges that the initial screener within class prompted the need for further investigation (in a clinical setting) due to the possibility of APD, ADHD, or a language deficit. During the screening, she was concerned by of lack of

focus, eye contact, the need for repetition and rephrasing of instructions as well as constant guidance from the CT or paired peer for her to complete the class work set. It was not obvious initially as to whether it was a hearing, listening or language issue. Another issue pointed out by the SLT is that Child A is very quiet and does not interact with anyone.

However, the Speech and Language Report did not reveal any significant discrepancies between receptive and expressive language. There was a 'difference in her expressive ability when required to reason, infer and share her own opinions'. The 'critical thinking required when providing explanations was not there and could be impacting her written tasks'. It was also noted that Child A required short 'brain breaks' and was aware when she was not focusing and required information repeating. Speech and Language sessions were recommended (and attended) to 'support the development of verbal reasoning, problem solving, inference, use of connectives and comprehension monitoring skills.'

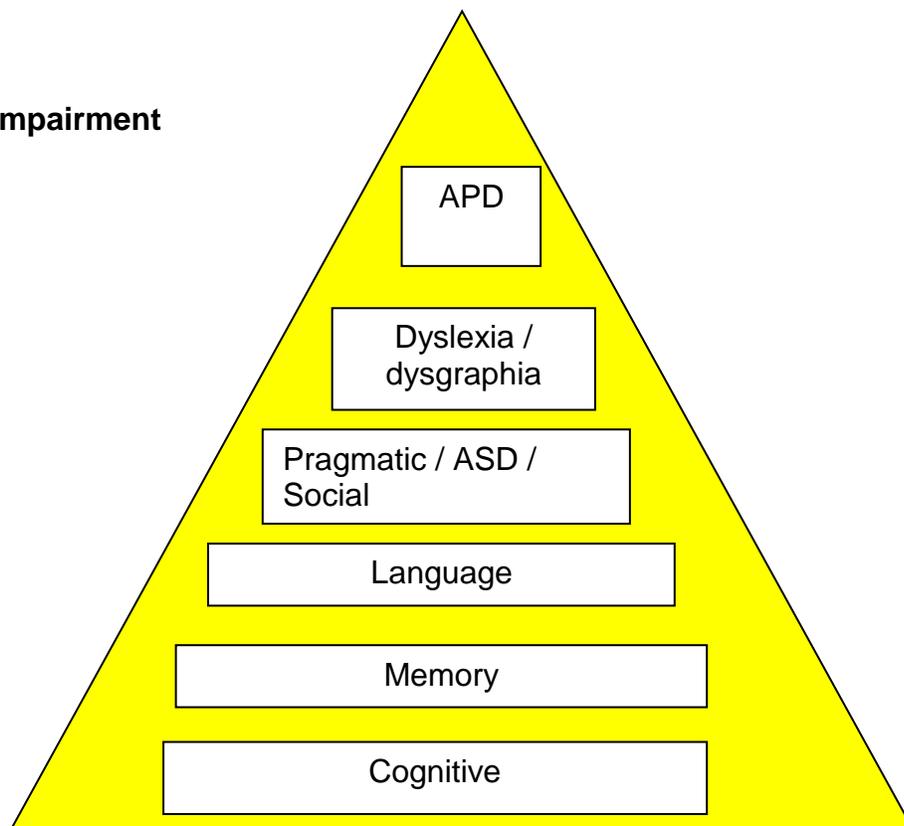
A further investigation was asked for by the parents and the psycho-educational assessment documented Child A's strengths and needs for learning, including learning accommodations. The results revealed Child A had a 'complex profile, she has strong cognitive skills and a General Ability Index that falls within the Very High range of ability.' It also revealed she presented with significant markers that are common among children that have specific difficulties including:-

- Person leaning weakness for processing speed (WISC –V).
- Executive function difficulties (WISC –V).
- Difficulty applying splinter skills for high order demands (WIAT-III).

Meeting the criteria for Attention Deficit Hyperactive Disorder (ADHD) – Inattentive Presentation.

The SLT concurred with this result and felt the executive functioning issues and inattentiveness were impacting the academic success. Although both the researcher and the SLT view the process for investigating APD as a pyramid, with the researcher feeling APD was at the zenith and the SLT preferring

Triad of impairment



dyslexia and dygraphia at the pinnacle. They both agreed that APD is only diagnosed after every other avenue has been investigated because of the co morbidity of symptoms.

When asked about the difference between screening and identifying she definitely thought the comment that 'they are the same' was incorrect and she was aware of some practices that occur in clinics in the UAE that would not be

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clinical governance used back in the UK. She would also not recommend a child with APD attend sessions with an OT as they do not have the same language skills sets as SLT's.

4.6 Informal meetings

None of these were recorded.

The LS Teacher advised although Child A was not on the LS register she had received assistance regularly throughout the week with:- in class support, comprehension booster, SPAG sessions and when required one to one sessions to help structure her written work.

Previous Teachers' comments on Child A mention in the School Reports General Comment's compilation (4.7 Data collection Results) and Pebble Register collection (Appendix 17) were verified and confirmed as a 'good representation'. As a quiet, well behaved child with very little interaction with friends or class peers, teachers were reluctant to push her as she showed signs of anxiety, even when not put under pressure. They were all certain in their belief that the classroom strategies encouraged and assisted her in writing, but lack of motivation and focus were more the issue as to why she did not excel. However, they did feel she was a typical student who obtained age appropriate grades and not that she was an exceptional student who was failing nor warrants a formalised LS label which could impact her chances of moving to her brother's school. Also the Year 3 teacher was criticized by the parent for not intervening, however, the CT had requested that the child be included in the netball team and swim squad, something that most other teachers would not as the PE department is very results driven, they did this to accommodate Child A's self esteem the child was extremely anxious and needed to see she could participate. (Dweck, 2007)

The current Teaching Assistants (TA) working with Child A described her as not always completing her homework. She seems nervous to answer questions even

when she is right. It is as though she does not want to get things wrong. Never puts her hand up. She is independent and slow paced but does not ask for help and does not always want help. She is confident with a very small group of girls. She prefers to be in booster groups.

The SENCO and Assistant Deputy Head's (ADH) consider that the school has a strong SEN policy that is adhered to and it is updated regularly. School allows external agencies access to the school free of cost, in order to facilitate LS interventions and easier communication between specialists and CT's. The Pebble procedure (Appendix 13) can be initiated by any staff member interacting with a child and each case is individually investigated by CT/ Year Group Leaders (YGL) /ADH and SENCo fortnightly. The school management judge the class work as sufficiently differentiated within classes and that individuals are provided with assistance with or without an LS label depending on their need at that time. For example (Appendix 22) before a new topic is started an initial assessment is held so the teachers are aware of what the children's starting point is, children are grouped on this basis. This supports children's ability to 'master' topics that they are knowledgeable about, develop children that need teaching and provide additional support for the children that will struggle. The planning shows the children are grouped into three sets; work is set in each group aimed at the children being able to complete it independently but support will be provided by the CT/ TA where appropriate. Planning is revised weekly and discussed what worked and what could be improved. DHT check books and planning on a termly basis; along with observing lessons.

The tracking and monitoring of individuals by assessment scores and teacher awareness is exceptional and are checked termly. The communications process already established at the school between children, parents, school staff and specialists (internal and external) is exceptional as seen by the list below which is not inclusive of all events:

- Weekly staff meeting
- Weekly planning meetings
- Parents information evenings
- Parent conference meeting
- Parent coffee mornings / in class non-participant observations
- Learning reviews / target setting
- School reports
- Pebble meetings
- LS reviews
- Best practice presentations
- School communicator

All of the above has been verified by the inspection process of the KHDA and external agencies agree that the extents to which suggestions/ interventions are utilised in the classrooms is 'second to none.'

4.7 Data collection Results

The Pebble process works because she had been red flagged every year. However, as she is not exceptionally weak academically, and with a lot of support in the class, she made progress year on year. She remains on their 'track and monitor' Pebble Register and CT is aware of all the strategies that work, and uses them. Child A's standardised test scores show she is consistently at stanine 5, 6 or 7 across the science, math or English subjects, therefore not showing she is not underachieving. Her school reports show she is 'working within' in literacy and maths from Year 4 -6 and she has excellent school attendance. Individualised termly targets set in maths and literacy were achieved in the majority of cases.

Some comments written in the General comments of the School Reports from Years 4-6 are:

- *Although she is a bright girl, she often lacks the pace to show this in her written work.*
- *This term she appears to be more comfortable with herself.*
- *She needs to take a more independent role in checking and editing her written work.*
- *She has set a very good example with her superb behaviour.*
- *She does needs encouragement to participate in class discussions.*
- *She should be encouraged to strive to consistently produce work to the best of her ability.*
- *Making particularly impressive progress in her reading comprehension.*
- Child A's compassionate personality was especially evident when she gave up countless break times to organise playground games for other children in her role as Sports Ambassador.

LS assessments showed initial issues of auditory processing, but the parents did not follow up with an external assessment, contrary to the LS departments' advice. Further LS assessments showed below average on comprehension and vocabulary, therefore she was assigned to booster groups with smaller class sizes and extra reading, which occurred across Years 3-6. She also attended The Listening Program (TLP), although the CT did not feel this transferred into the classroom, her focus was still lacking and further invitations to re attend were declined. She performed better on computerised tests than CT assessments of classroom performance; particularly non verbal reasoning.

All parent meetings are minuted, shared with all the relevant staff and filed.

Every term teachers are requested to complete a learning review (Appendix 23) which they need to discuss with their year group leader and ADH. This contains information such as:

- Who has done well? Who do you have concerns about?
- How do you know? Evidence.
- What are the next steps?

If a child is placed in any of the either of these categories they are also tracked and monitored by the ADH to ensure the 'steps' are created and the child's needs are catered to.

All the documentation indicates that Child A is well supported in her academic and social endeavours. Where there was an indication of a weakness, strategies assisted her to improve or access the curriculum.

4.8 Case Study Results

Child A was identified by class teachers in most years as a pupil who was not reaching their potential. Their observations were very similar; most felt she 'lacked concentration,' especially when 'working independently'. Often she did not complete the written task in the time allocated. She was 'unable to follow instructions', or frequently needed them repeated, and that she was 'more capable' verbally than she was at achieving in her written class work and test results. She needed prompting to participate in class discussions; some felt that at times it was as though she was not hearing what was taking place in the classroom. She was a quiet member of the class with a select few friends, she was happy to read at break time. No single specific issue could be pinpointed as the cause, and thus it presented a complex profile that displays the dilemmas facing teachers and parents when educating a child who is verbally 'bright', but does not produce the same level in written work.

Classroom strategies (Appendix 15) were utilised by teachers successfully and she made progress year on year. However, her written ability was not as good as her verbal ability and she did not participate in class discussions.

Her parents agreed that she had minor issues in underperformance. Her older brother had excelled at the school (he now attended a high school), and although Child A had a much quieter personality, they felt she was as verbally capable. Her younger brother attends the same school with a shadow teacher. The school nurse performed a hearing test that indicated 'normal' hearing and parents took her for an eye test after which she received glasses.

Child A was never registered to receive learning support (LS) because her results were never below grade. LS conducted various assessments in Key Stage 1 and 2 which highlighted an issue with auditory processing which was not explored further by parents with comprehension and reading levels which were on the lower average. However the inclusion of booster sessions improved her performance in these areas. The Year 5 teacher made a comment that her reading had 'improved significantly.' Her anxiety and lack of motivation were often cited as reasons for 'not pushing her' or 'making her feel different.'

A dyslexic screener indicated that there were no signs of dyslexia. Standardised tests such as CAT, Pirl and Timm were used in the school to track progress via YGL's, CT and ADH indicated she was an average student. GL verbal reasoning and non-verbal assessments were conducted by the LS department and found disparity between verbal reasoning which was at 5 and non-verbal reasoning score of 8. A SLT screener was conducted in school for free, the SLT recommended to provide more information a more thorough report should be conducted (Appendix 24). It stated she had 'no clinically significant core language difficulty/disorder'. The assessment did not reveal any substantial discrepancies between receptive and expressive skills.' This was followed up with an Educational Psychological Report (Appendix 25) as her parents wanted further guidance on her strengths and learning needs.

4.9 Non participant observations

The school is academic and inclusive with mixed nationalities. Classes have an even distribution between girls and boys. The children are placed in six sets for maths and move into different classrooms. In literacy, the children are in three groups which stay in their form class with the CT. Depending on the type of lesson; they remain at a mixed ability table or are placed in ability groups which have been set from their assessment results and teacher assessment. The classes may have a TA or a LS staff member scheduled to assist.

Child A is allocated her form teacher for both math and literacy and they had a good relationship. She has a more able peer assigned male buddy, he is kind, patient and humorous and is in both classes. The classroom is well-equipped, with educational aids or pupils work on the walls. The weekly timetable is on the door and the daily lessons are written on the board. As this is a new school site the equipment is up-to-the-minute, the classrooms are bright and spacious with a large breakout space outside where children can go in smaller groups accompanied by other school staff. Child A is always sat in the same seat on the table directly in front of the teacher's desk, at an angle so that she can see both the teacher and the whiteboard.

The first observation was in a math lesson (Appendix 21) it was the first lesson of the day and was the only independent task observed. Child A's teacher is actively searching for answers in how to improve her concentration and work output quantity and is therefore very aware of Child A. The math's class is all similar ability, the class work is differentiated into three groups and differentiated instruction is provided along with individual goals, where required. Whilst the children are sat on the carpet the CT explained they will be working independently on laptops at their own pace, answering questions about a function taught the day previous. Child A is focused and listening to the CT. Once sat down at their desks the CT asks Child A to rephrase the instructions so that

she can ensure she focused and understood what she has to do. Throughout the session, Child A answers the CT affirmatively in spite of her behaviour later proving that she was slightly unsure of what she needed to do. Although she is confident to ask her peer buddy, and listens to his response intently, she does not start immediately and thereafter loses focus. The researcher does not think this is a reflection on the CT, but on an indication of Child A's confidence, understanding of the task and the need for reassurance. Child A showed her lack of focus and inability to complete work on several occasions:-

- by logging on incorrectly, even though she had been shown twice
- twiddling her pencil and day dreaming
- excessive rubbing out and correcting her paper before inputting the answer
- wandering around to collect paper on two occasions
- reluctance to complete class work

Strategies the CT used to assist Child A:-

- preferential seating
- asked the task to be repeated
- inquiring if she had all the equipment she needed
- questioning whether she needed help on question when she was day dreaming
- sitting on her table seeming to assist a peer

The second observation was towards the end of the day and was in a small specialist room, which had nothing on the walls and no distractions. The SLT sat on one side of the desk and Child A directly opposite her. The SLT had the props she required to complete the lesson in groups behind her on a separate desk and only moved things onto the table when she required them. Child A was more aware of the researcher's presence in this setting and seemed shy, although the

SLT later claimed Child A seemed more tired than usual. They have an exceptionally good relationship and Child A seemed to smile more and be more relaxed during this session than in class. The pace of this lesson was very fast and had a lot of variety: repeating work completed the previous week and applying it to new words or situations, story writing, rapid naming exercises, comprehension tasks, idioms, mindmapping, synonyms and antonyms.

Child A was provided with visual and verbal prompts such as:-

- a sand timer
- a planning board already divided into eight labeled boxes
- a conjunction board
- “That’s nearly right, what if the character had this face?” (pulling an angry face)
- “Think about the order and the actions that may take place.”
- “It’s okay we can complete this together. How shall we start it? What about...”
- providing repetition and reinforcement using last week’s examples
- the output of work varied: verbal, written, typed and recorded onto an Ipad

The SLT combined a visual and auditory approach to redirect and focus Child A, even when Child A gave up /not completed work. She had a very positive approach, she prompted and reinforced verbally on a continual basis. Child A did very little writing in this session. She did utilise the planner and the mindmap which she had been shown previously to develop her story and expand her sentences. Child A was slow, quiet and reluctant, especially when she thought the task was hard; but the SLT pushed her continuously with positive affirmations and verbal assistance. This could only have taken place in a one to one setting.

The last observation was a literacy session. Whilst the CT described the task Child A was focused and listened and watching the CT, after Child A was helpful and got the equipment that was to be used. They had to work together to mark the SAT papers completed the lesson before using a teaching marking scheme. This is a creative way of the children investigating marking, and help reinforce how to answer questions correctly, they had to highlight the evidence on their papers. Child A found this session very difficult, although most children enjoyed it and there was a great deal of engagement and discussion in the class room. She exhibited many symptoms of being unable to process information efficiently:-

- she required a long period to respond to questions posed by her partner
- she would 'zone out' when her partner was speaking, even though he was only talking to her
- when she realised she had fallen behind she required repetition of the previous answers and seemed unable / unwilling to work out the answers for herself
- she was distracted by the discussions going on with others at her table even though they not talking about the same question she was working on
- when the extension question was written on the whiteboard her focus went to that even though she had not finished her task

All the same classroom strategies as previously stated in the math observation were engaged but with less success. The CT had to physically touch her at one point keep her engaged in the work. She was capable of completing this task which was evident through her responses to her partner and her independence when highlighting her answers.

The main motivator for Child A to refocus was when her peer:-

- a) made her read the text, forcing her to engage and discuss

b) moved on ahead of her when she 'zoned out', she did not want to be left behind him and asked for him to repeat previous answers and listened intensely, she wants to please

CHAPTER FIVE

Discussion and Recommendations

5.1 Evaluation of the research questions

The spotlight of this research was APD in children disseminated into three areas:-

- Awareness and knowledge
- Diagnosis and management
- Identification

The outcome of the findings are evaluated and connected to the questions highlighting any significant results.

Research Question One:

Investigate the issue of knowledge and awareness of APD among SENCO's and specialists working with children in Dubai.

The findings from both questionnaires and informal dialogues prove there is 100% awareness of APD amongst specialists and SENCo's. Although SENCo's have a greater awareness than knowledge demonstrates they have a superficial familiarity of the topic, but not a deeper understanding. Specialists have considerable more confidence in their knowledge compared to international studies. A quarter of SENCo respondents and 45% of specialists advised their knowledge was gained during further education, double international studies indicating that changes to courses may have occurred in recent years. Informal discussion between educators, specialists and colleagues advocating communication and networks played a significant role in learning about APD. This demonstrates an understanding that APD is complex and required a multi-disciplined team. However informal interviews indicated networks were more for personal knowledge rather than working as a team in a diagnosis.

Research Question Two:

Explore the identification, diagnosis and management of APD within primary aged school children in Dubai.

One of the first queries identified a language issue, the words 'screening' and 'diagnosis' meant the same to some specialists, which is not international best practice. Screening indicates an issue may be present but the tests are not sufficient in order to provide a diagnosis; highlighting the lack of multinational cohesion of definitions. Therefore the screening and diagnosis questions, although separate had comparable results.

50% of all respondents screened for ADP with over a third indicating a high level of confidence in their ability, including OT's which shows a disparity with ASHA's best practice.

The same tool, 'TAP's' was used in screening and identification, which already stated should not be the case. Identification should include a 'battery of tests'

which recognize the different areas APD impacts. 30 % of the participants stated they would diagnose APD; no OT's were included, which reflects international standards and is higher than other international studies. However the majority of assessments identified were listening evaluations only; and none stated the recommended ASHA three categories. (Kam Heymann, 2011) Although informal assessments were comprehensive and included: interviews, observations and checklists.

Where screening did not occur, international studies stated reasons such as: - inadequate training and lack of resources. Suspected APD cases were not diagnosed in Dubai due to 'parents being unable to afford, the school did not go down the formal route of diagnosis and parents did not believe there was an issue.' This indicated several areas of cultural and educational differences which may be related to the infancy of inclusion in the UAE.

Management of APD was an open question; however this produced varied and non-committal answers with half of the respondents skipping the question. The main interventions included: - Speech and language therapy, environmental modifications and adaptations and a program using the weaknesses highlighted from the TAP's. Interestingly the majority of the SENCo's would welcome strategies and advice on managing APD, although a quarter felt that the teachers would not be effective in using the strategy, highlighting another educational and cultural difference.

Research Question Three:

Determine how APD is identified, evaluated and managed in a primary school setting in Dubai.

The school provided thorough evidence of a SEN procedure and practice that occurred throughout the school to help identify and manage a child with

suspected SEN. There was continuous support, in class strategies monitored and reported either verbally or in writing each term based upon assessments and observational data with Child A progressing. The LS department conducted assessments for extra data and results were conveyed to parents and teachers, they issued advice and advised of interventions to the parents, which were not always acted upon, and provided access to a free screening by external providers and open communication was obvious.

The Mother felt although Child A was identified as having a need early in her school life, she was always the one pushing to get more information. She agreed that the school provided classroom strategies and she had access to meetings with any of the concerned staff whenever she wanted. She states more beneficial one to one lessons could have benefitted Child A had she been accepted on to the LS register. This thought was due to the speech and language therapy session which the mother felt had aided her tremendously. This showed what needs to be managed is the level of expectation, the parent thought diagnosis was a school domain but in private schools in Dubai it is not. Also what she views as intervention, as shown by the Year 3 experience, where she felt she was not being listened to, the teacher had gone above and beyond to secure a place for Child A on sports teams as she felt confidence and self esteem where impacting Child A's academics.

The SLT believes APD is one of the most difficult disorders to diagnose as it is what is left after everything else has been discarded. (see Triad of impairment) The screener she conducted produced a suspicion that there may be an APD/ SLI/ language disability, however the Speech and Language Report concluded Child A had 'no clinically significant core language difficulty, although her expressive ability when she is required to reason was weak. Child A attended one to one speech and language sessions and has improved in the quantity and quality in her written work. (Appendices 19, 20) The SLT believes this is for two reasons:-

- Self esteem
- Utilizing specific language strategies

The Psycho Educational Report conducted by an EP found that Child A's 'Cognitive Proficiency Index (30th percentile) was considerably lower than her General Ability Index. (96th percentile) A similar profile would be shared by 0.6% of the population, therefore she was diagnosed with Inattentive ADD.

The SLT agreed with this clinical diagnosis due to the issues with executive functioning.

The researcher would like to state that Child A had not been assessed by an Audiologist nor were any audiological tests conducted.

5.2 Recommendations

The following recommendations are themed:-

- School
- Specialists
- Dubai Ministry of Education / KHDA

5.2 (a) School

The school should not track and monitor continuously but set a time limit of one school year (January to January to allow for settling in a new class.) During this time interventions should provide improvement if not a screener should be conducted automatically.

The school should report to parents all the classroom strategies being implemented plus all the data collated and monitoring to manage expectations.

Organise awareness and knowledge talks to staff and parents with regards APD.

Comprehensive enrolment screener if any 'red flags' are raised and investigate immediately.

Teacher and teaching assistant training on all classroom management techniques and red flag issues to ensure the pebble procedure is strictly adhered to.

Use of adaptive technology for children suspected / diagnosed with APD

5.2(b) Specialists

The different disciplines need to decide what the definition and exact assessments should be; this interdisciplinary approach must be utilised if the initial screening indicates a possibility of APD.

Audiologists should have at least one test in each of the three categories recommended by ASHA (2005).

Clinics must have a complimentary team including an audiologist, EP, SLT and OT.

Organise awareness and knowledge presentations, create a professional network similar to SENCO network where all professional can gain CPD and a support network. These could be multi-lingual to avoid any confusion over terminology.

Evidence based intervention needs to be provided and programme developed.

APD modules must be included in Higher education programmes and interdisciplinary classes held which should include teachers.

5.2 (c) Dubai Ministry of Education / KHDA

More legislation and coordination needs to occur between who is able to identify, diagnose and manage APD.

KHDA needs legislation so it can enforce schools to comply with international SEN best practice for two reasons:

- i) A high percentage of Emirati students attending private schools therefore SEN provision is required
- ii) In order to meet vision 2021 support

The Ministry of Education / KHDA should provide a central SEN service for the expatriate families that are unable to afford private clinics costs.

Use of adaptive technology for children suspected / diagnosed with APD free of cost.

Collaboration between the Ministry of Education, Ministry of Health and KHDA on best practice for APD identification, diagnosis and management.

Collate accurate SEN records and make them available.

5.3 Limitation of the study

- Lack of local SEN data, especially APD
- Lack professional body data therefore collating a limited list of professionals was very time consuming and not entire
- Time constraints – due to working full time and being a mother
- Small scale survey, whose results may have been influenced by the number of each specialists responding
- The researcher did not make the questions mandatory, therefore some data was not provided by the participants

CHAPTER SIX

6.1 Conclusion

Children learn by listening, and this study highlighted the issues surrounding APD in Children. It was motivated by the researchers' awareness that children with SEN issues fall behind academically even though they may be cognitively able. The researcher wanted to investigate this disorder to understand its complexities.

The literature review provided a platform to show the breadth of this issue, the lack of definition provides no path for its clinical diagnosis and has created a disjointed system in which some specialists prefer to say it does not exist. In

Dubai with each referral means an additional cost to the parents, so is it easier and cheaper to see one specialist than three that are recommended. Books such as 'The sound of hope' and 'When the brain can't hear' paint a very torrid picture of APD's impact on children, parents and teachers and how easy it is to misdiagnose due to characteristics of the symptoms and comorbidities with other learning disabilities. But if untreated it can cause social and emotional issues for the child.

Young (n.d) specifies APD is 'not a specific problem; rather it is a set of problems that occur in different listening tasks. However this definition is too broad; the complexity involved in APD identification in a child is exacerbated by a range of professionals who use a variety of testing tools to assess from different perspectives as to why a child may be academically failing due to a listening disorder. In Dubai this maybe intensified by trilingual learners, accents', nationality and cultural bias.

Specialists need to agree on an appropriate definition and only when this is decided will a diagnosis be confirmed via standardised tests. These should be based on the deficits which have been identified, who should be conducting them and which interventions should be utilised. International standards need to be agreed, practitioners should not be able to flout these. Multi-disciplinary teams need to be trained in APD and their part in its identification and management; these teams need to develop strong collaborative.

The American Psychiatric Association (2013) does not recognise the disorder not necessarily indicating it does not exist; it is just not yet clinically classified and diagnosable. The KHDA have added dysgraphia and dyscalculia only last year on their SEN categories; the researcher does not believe APD will be included in the near future unless advances in modern technology, specifically neuroimaging provide clinical answers to this condition and more accurate identification that is

not dependent upon language; this could allow for younger identification and earlier intervention.

Educators need to be aware that all children learn differently, provide differentiated instruction and personal classroom interventions whenever they identify a deficit and to manage expectations of CT's and parents.

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Appendix 1 (C)AP Test Principle

The ASHA 2005 technical paper lists 13 (C)AP test principles:

1. Audiologists should have the knowledge, training, and skills necessary to perform the testing
2. The test battery should be driven by referring complaint
3. Audiologists should use “good test” (i.e., established validity, reliability and efficiency)
4. Audiologists should use test that tax different auditory processes
5. Audiologists should use tests with verbal and nonverbal stimuli
6. Testing should be sensitive to attributes of the individual
7. Normative data should be available
8. The audiologists should be aware of influences of age, especially on electrophysiologic tests
9. Test methods should be like those in the manual/literature
10. The patient should be monitored and an appropriate duration of test session should be selected
11. Other professionals should collaborate with the audiologist
12. If another deficit is suspected, the audiologist should refer on

Appendix 2 – Description of Auditory Temporal Processing and Patterning Tests including ASHA (2005)

TABLE 1 Auditory Temporal Processing and Patterning Tests		
Test	Reference	Description
Pitch Pattern Sequence Test (PPS)	<u>Pinheiro (1976); Pinheiro & Musiek (1985), (1987)</u>	A high frequency and a lower frequency are presented in a set of 3 tones. The listener must describe the patten they hear (e.g. "high, low, high or low, low high"). They may also imitate (e.g. hum) the pattern.
Duration Pattern Sequence (DPS)	<u>Musiek, Baran & Pinheiro (1990)</u>	A long tone and a short tone are presented in a set of 3 tones. The listener must describe the pattern the hear (e.g. "Long, long, short, or short, long, short") They may also imitate it.
Gaps in Noise (GIN)	<u>Musiek, Shinn, Jirsa, Bamiou, Baran & Zaidan (2005)</u>	Embedded in a 6 second segment of white noise are 0-3 silent intervals, ranging from 2-20 ms. The listener pushes a button when they hear silence or a gap.
Random Gap Detection Test (RGDT)	Keith (2000)	Tone pairs with varying interstimulus intervals of 0-40 hz. Listener must say if they heard one or two tones.
TABLE 2 Dichotic Speech Tests		
Test	Reference	Description
Staggered Spondaic Word Test (SSW)	Katz (1986), Katz (1962)	Two spondees are presented (one in each ear at the same time), with an overlapping of the 2 ^{no} syllable of the 1 st spondee, and the 1 st syllable of the 2 nd spondee. The listener is to repeat both spondees.
Competing Sentences (CS) Test	<u>Willeford (1977)</u>	One sentence is presented into one ear at a softer intensity level than a difference sentence presented in the other ear. The listener is to repeat the target sentence (lower dB) and ignore the competing message (higher dB) first for the right ear and then for the left.

Appendix 2 – Description of Auditory Temporal Processing and Patterning Tests including ASHA (2005) continued.

Dichotic Digits (DD) Test	Museik (1983); Guenette (2006)	Two different numbers are presented to each ear at the same time. The listener is to repeat all the numbers heard.
Dichotic Rhyme Test (DRT)	Museik et al (1989); Wexier & Halwes (1983)	Pairs of nearly perfectly fused CVC's, rhyming words that differ in only 1 consonant are presented to each ear at the same time. The listener typically hears only 1 word and repeats it.
Dichotic Consonant Vowel (CV) Test	Berlin et al (1972)	2 syllables, differing in initial consonants, are presented to each ear at the same time (e.g. ta & da). Can be run with equal and/or lagging onset. Listener repeats what's heard.

TABLE 3
Monaural Low Redundancy Test

Test	Reference	Description
Low-Pass Filtered Speech (LPFS)	Bocca et al (1954); Rintelmann (1985)	Monosyllabic words are low-pass filtered (various cut-offs & slopes) & presented to one ear at a time. Listener repeats
Time Compressed Speech (TCS) Test	Fairbanks et al (1954); Baran et al (1985)	Temporal characteristics of speech (e.g. monosyllabic words) are altered to reduce duration. Listener repeats
Time Compressed Speech Test with Reverberation (TCS with Reverb)	Wilson et al (1994)	The time compressed word with 0.3 second reverberation added
Speech Noise Testing	None	"Lack of standardization and high degree of variability" (Bellis, 2003)

Appendix 3. Possible perspective taken by a speech-language therapist (SLT) and audiologist in their case management of a Grade 4 student. (Wallach, 2011)

<i>Step</i>	<i>SLT</i>	<i>Audiologist</i>
Hypotheses formed & focus assessment might take	Look at selected areas of content-form-use of language within/outside of classroom	Information suggests auditory problem. Clues include problems with listening, following instructions, and having issues with background noise; stares when teacher asks something. Temporal issues may be involved. Check auditory functioning in all levels. Look to underlying skills that may be casual or co-occurring with other language problems (check with the (SLP)). Assess aspects of sound localization and lateralization, auditory discrimination, temporal aspects of audition, and figure-ground
	Will use selected standardized measures (e.g., Test of Language Development-Intermediate [TOLD-I:4; Hammill & Newcomer, 2008]; Lindamood Auditory Conceptualization Test Third Edition [LAC-3; Lindamood & Lindamood, 2004]) plus Hadley's (1998) conversation-narrative-expository discourse sampling guidelines and curriculum-based and in-class assessment	Will use selected measures of auditory processing (e.g., Test for Auditory Processing Disorders in Children- Revised [SCAN-C; Keith, 1999]; May supplement with Test of Auditory Processing Skills [TAPS; Martin & Brownell, 2005]); Will evaluate both peripheral and "central" aspects of auditory functioning
Results	Difficulty processing and using complex syntax, poor phonemic and morphophonemic segmentation skills, weak language awareness in general; poor background knowledge in social studies; difficulty understanding expository text from class lessons; slow decoder; poor inferential processing; better comprehending in high-context situations with prior knowledge	Difficulty with many aspects of auditory processing, including problems with sound localization and lateralization, auditory discrimination, temporal resolution, temporal ordering; showed weak performance in tasks involving competing signals; auditory figure-ground problems (confused speech) when presented in noise
Interpretation of core issues may lead SLP and audiologist in different directions	Language weakness (below age) in content and form predominantly. Intervention should be focused on language initiatives directed toward content-area subjects (see Wallach et al., 2009 for details). Help Kyle develop comprehension and self-monitoring strategies. Work on spoken and written aspects of literate syntactic forms (e.g., Passives, relatives), morphophonemic segmentation, and word and text knowledge strategies (focus on expository text for social studies and science).	Auditory skills and systems must be strengthened and may be the cause of some of Kyle's classroom problems. Intervention should be directed toward sharpening his skills as they relate to localizing sounds. We will recommend specific programs for sound sequencing and discrimination. He also needs to practice discriminating speech from noise. These foundational skills will help Kyle develop "crisp" and more precise processing sounds within the speech stream.

Appendix 4 Overview of four types of behavioral auditory processing disorder tests, associated deficits, and suggestions for management

Test type	Purpose of test	Possible deficit associated with reduced performance	Management suggestions
Auditory discrimination tests	Assess ability to discriminate nonspeech stimuli that differ in frequency, intensity, and/or temporal characteristics; assess ability to discriminate speech stimuli that differ as in minimal pairs	Difficulty perceiving subtle differences in similar sounds, similar sounding words or tone of voice	Improve acoustic access to auditory information through flexible seating, use of FM, reduction in classroom noise; preteach new concepts and vocabulary; implement auditory phoneme discrimination training; teach compensatory strategies to strengthen top-down mechanisms, including vocabulary building, use of context to increase understanding, and teaching principles of active listening
Auditory pattern recognition tests	Assess ability to discriminate among and sequence auditory information over time	Reduced speech perception, including content of the message and intent of the speaker	Higher level language therapy to improve understanding, combined with prosody training
Dichotic speech tests	Assess the ability to separate (binaural separation) or integrate (binaural integration) differing auditory stimuli (e.g., words sentences) presented to each ear simultaneously	Difficulty attending to one piece of information while ignoring another; difficulty attending in group or noisy settings	Improve acoustic access to information in the environment as noted above; teach compensatory strategies regarding directing attention; interhemispheric exercises, dichotic training
Monaural low-redundancy speech tests	Assess recognition of degraded speech stimuli presented to one ear at a time (e.g., filtered speech, time-altered speech) or speech presented in the background of noise or speech competition	Problems "filling in" the missing piece of information when it is presented in poor acoustic conditions or degraded in some way	Improve acoustic access to auditory information; preteach new concepts and vocabulary; implement auditory phoneme discrimination training; teach compensatory strategies to strengthen top-down mechanisms, including vocabulary building, use of context to increase understanding, and teach principles of active listening

Note. Information in table is from ASHA (2005) and Bellis (2003, 2006)

Appendix 5 KHDA SEN classification

KHDA SEN Categories							General Learning Difficulties			Specific Learning Difficulties			
Behavioral, Social, Emotional	Sensory	Physical Disability	Medical Conditions or Health Related Disability	Speech and Language Disorders	Communication and Interaction	Assessed Syndrome	Learning difficulties 1	Learning difficulties 2	Profound Learning Difficulty (PMLD)	Dyspraxia - Fine or gross motor skills	Dyslexia -Reading	Dysgraphia - writing/spelling	Dyscalculia - Using number

Appendix 6 questionnaire SENCo's

Awareness and knowledge of Auditory Processing Disorder

1. How many years have you been teaching?

1-5

6-10

11-15

16+

2. How many years have you been a SENCo / Head of Student Support

1-5

6-10

11-15

16+

3. What is your highest qualification?

Bachelors Degree

Higher Diploma in Education

Master Degree Doctorate

4. Please indicate the countries in the which you have worked in the Education System

UK

Europe and Central Asia

America / Canada

South Asia

East Asia and Pacific

Sub Saharan Africa

Middle East and North Africa

Australia / New Zealand

5. How many children do you have on your learning support register?

0-20

21-40

41-60

61-80

81+

Appendix 6 questionnaire SENCo's continued

6. How many staff do you have on your Learning Support team?

1-3

4-6

7-10

11+

7. Are you aware of Auditory Processing Disorder (APD)?

Yes

No

8. In your opinion, how well informed are you about Auditory Processing Disorder (APD)?

Very well informed

Well informed

Adequately informed

Poorly informed

Very poorly informed

9. Please indicate all Continuing Professional Development [(CPD) formal training] you have received in APD. (e.g. attendance at courses, workshops etc.) Please specify i) what the training course was; ii) where and when it took place; and iii) who provided it.

i)

ii)

iii)

10. Please indicate all informal training you have received in APD (e.g. reading literature, discussion with colleagues etc.) Please specify what:

i)

ii)

iii)

Appendix 6 questionnaire SENCo's continued

11. Do you discuss APD with other professionals

Yes

No

Teachers

Educational
Psychologists

Speech / Language
Therapists

Audiologist

Occupational Therapists

12. Do you have the following professionals who work within your school?

Yes

No

Education Psychologists

Speech / Language
Therapists

Audiologists

Occupational Therapist

13. Are these professionals part of your staff or paid external providers?

Staff

Paid external providers

Not applicable

14. If they are paid external providers, who pays for them?

School

Parents

Other, if other, please specify.

15. How do you identify a child with APD in your school setting?

Internal check list as per the school Learning Support Policy

Concern form completed by Class Teachers

Concern expressed by Parents

Observation by Class Teacher / SENCo

~~Medical check by school nurse~~

Screening by outside agency

Appendix 6 questionnaire SENCo's continued

16. Do you have any children diagnosed with APD in your school?

Yes

No

17. Please indicate how many children

0-5

6-10

11-15

16-20

21+

18. Do you have any children you suspect have APD in your school?

Yes

No

19. What are the reasons they have not been diagnosed?

Parents do not believe there is an issue.

Parents ~~can't~~ afford a diagnosis

Waiting time for a diagnostic appointment

Parents could not afford intervention sessions, therefore ~~can't~~ point getting a diagnosis

I am unsure of how and where to refer them

Other (please specify)

20. If you suspected a children had APD, which professional would you refer the parents to?

Speech / Language Therapist

Occupational Therapist

Educational Psychologist

Audiologist

Other (please specify)

21. Would you request advice from the above experts on classroom interventions to help the child?

Yes

No

Appendix 7 questionnaire for Educational Psychologists, Audiologists, Speech and Language Therapists and Occupational Therapists

1. In your opinion, how well informed are you about Auditory Processing Disorder (APD)?

Very well informed

Well informed

Adequately informed

Poorly informed

Very poorly informed

2. Do you discuss APD with colleagues in your profession?

Yes

No

3. Do you discuss APD with other professionals? If Yes, please select which ones. You may choose more than one option.

Teachers

Psychologists

Speech / Language Therapists

Audiological Scientists

Occupational Therapists

Other. If other, please specify.

4. Please indicate all formal training you have received in APD (e.g.attendance at courses, workshops, etc) Please specify the following.

- 1) What the training course was
- 2) Where and when it took place
- 3) Who provided it

Appendix 7 questionnaire for Educational Psychologists, Audiologists, Speech and Language Therapists and Occupational Therapists continued

5. Please indicate all **informal** training you have received in APD (e.g. reading literature, discussion with colleagues etc) Please specify the following.

reading literature

discussion with colleagues

internet searches

Other (please specify)

6. How would you rate your current knowledge and skills to **assess** children with APD?

Very good

Good

Adequate

Poor

Very poor

7. How would you rate your current knowledge and skills to treat children with APD?

Very good

Good

Adequate

Poor

Very poor

8. Do you **screen** for APD?

Yes

No

Appendix 7 questionnaire for Educational Psychologists, Audiologists, Speech and Language Therapists and Occupational Therapists continued

9. What standardised screening tests do you use?

10. What informal screening techniques do you use?

11. How many children do you screen for APD per month?

0-5

6-10

11-20

20+

12. Do you **diagnose** APD?

Yes

No

13. What standardised diagnostic tests do you use?

14. What informal diagnostic techniques to you use?

15. Do you provide management for children **suspected** of APD?

Yes

No

16. Do you provide management for children diagnosed with APD?

Yes

No

Appendix 7 questionnaire for Educational Psychologists, Audiologists, Speech and Language Therapists and Occupational Therapists continued

17. Do you have children that you presently provide intervention for with APD?

Yes

No

18. What intervention do you provide?

19. In your opinion, what would be the first / next steps in developing an effective service for children with APD in your current setting?

20. In your opinion, what would be the first steps to developing an effective service for children with APD on a national level?

Appendix 8 Logue Kennedy approval

Re: Current and future service provision for children with auditory processing disorder in Ireland

1 message

Loguekennedy, Maria <maria.loguekennedy@nuigalway.ie>
To: Lesley Houghton-Panzer <lhoughtonpanzer@jebelalishool.org>

7 November 2016 at 22:26

Dear Lesley,

I give my permission for you to base the questionnaire for your study on my questionnaire. I would be delighted if you would please send me a copy of your results, in due course. I think it is important that those of us who have an interest in APD share each other's results so that we might liaise on an international basis to address APD. If I can be of any further assistance feel free to contact me.

With my best wishes.
Maria Logue Kennedy.

Appendix 9 Semi structured interview - mother

Parent: Dr Ramon Patel is his name and but he works in Bristol he works in the NHS and he in fact is actually an Autism specialist in the UK and I just thought well what better to get to support, if I'm going to find anyone, I'm gonna, I'm waiting to see him.

Researcher: yeah

Parent: Rather than just taking anyone because EP gave me the feedback to say all the attentive is medicate, medicate, medicate here, you know it

Researcher: yeah, and it's also

Parent: they're, they're, and it's like handing out Smarties

Researcher: So what do you think? I mean like the businesses

Parent: Yeah, of course

Researcher: Do you feel like that

Parent: Of course, I feel it's a little bit to and I kind of take I take a lot of EP's lead to be honest because of her experience

Researcher: and she seems very good

Parent: and you know and she'll sort of say what her recommendation is and she said the great thing is about School J is that the learning support department there for Child A will be great because for example she'll have cognitive behavioural therapy and one of the SEN teachers is now trained in that, in the school. So they'll be able to deliver that to her, I mean obviously I'm willing to do it outside if need be as well but the fact that they're being able to offer that in school and have somebody trained cognitive I think will help immensely, just the pastoral care

Researcher: Have you been and spoken to them?

Parent: Not yet, I've got a meeting

Researcher: with the SENCo?

Parent: Yes, so she's setting up a meeting, should be next week, with the SENCo

Appendix 9 Semi structured interview – mother continued

Interviewee: So I've done that. So you know what, you know so my expectations are I've already been to Assistant Head and I've already said look she's an extremely nervous child, only knows one or two girls here, doesn't really know anyone, didn't go into any of the diagnosis or anything yet, but I, but it's going to have to be kid gloves for a couple of weeks with her

Researcher: Yeah

Parent: I'm expecting tears, I'm expecting you know I will engage EP we'll have the meeting and it will be next week the learning support to you know, see what they're going to do, how they're going to be able to help her when she ?. Let me share with you her results which because none of the screening was done here, I didn't know if you had a copy of the screening but

Researcher: Yeah

Parent: Basically I'll just go to the um so if you look here in terms of personal scores from the

Researcher: verbal comprehension 116 excellent, visual -spacial and fluid reasoning non verbal is gifted level

Mum: But had you said that to me in Year 2 when I was saying there is an issue we have to put her under your nose I think she needs support, every year I've been told no she's fine Shes average

Researcher: Every time she was pebbled, you felt nothing was done.

Parent: In year 3 she was with Mrs W, I told her she needs support extra help, she's failing in year 4 I started getting help for her externally – maths. External assessment from tutoring club behind in English and maths, hindsight I should have done both, knowing what we know now and not just maths, so the English didn't come till Year 5. But she's getting there and with the tutoring that's helped immensely to get her up to the level but it took more than a year to move up a set with tutoring twice per week where she's lower it her working memory so this is the ADD part and the processing

Appendix 9 Semi structured interview - mother continued

speed which is the getting down on paper which again was said from year 1 Child A would write 3 sentences in the same time another child would write 2 pages.

Researcher: This is what has always been highlighted the speed of getting something down, all the teachers have said she has ideas and detail.

Parent: but I don't understand why it wasn't assessed earlier. But that its her general ability is high. As EP has said she's an extremely bright child in terms of but it is just the attention deficit part – these two elements

Researcher: What do you see with the tutoring that improved Child A work

Parent: The tutoring has helped because of the 1:1 work. She's a very shy child and will not put her hand up for help and unless you have a teacher that is very switched on and knows that about her and the current CT has been excellent about that she's been amazing she's the first teacher that I can honestly say I have had where she's got my concerns and the first meeting I had with her in October when I told her she was being tutored in maths and English – the CT was shocked because her ability is so low. When I moved older brother in year 6 Child A was assessed at the same time at JESS jumeriah and she failed English and they said immediately to assess her, one assessment with them and they say assess her and this school is saying she's ok she's ok.

Researcher: Why do you think this happened?

Parent: I don't think the teachers are trained enough, unless there is a very specific learning support teacher knowing what I know now – I don't believe the teachers here are trained enough to spot is potential ADD or dyslexia or? And I don't thinks there is any screening done her for the children. And that's just being completely honest. This has been since Year 1 when I knew she was extremely slow at getting the work done and her reading, I knew she was behind because of her brother who was two years older and I know you can't compare children

Appendix 9 Semi structured interview - mother continued

but you can see the milestones. Every year she came out as average, average the school weren't overly concerned.

Researcher: As a class

Parent: One thing that has worked for Child A and I would recommend it for other children is buddy system putting her with an extremely bright child to do the task so a high ability learner because Child A is used to excelling in that sort of tutoring and mentoring so to even have that from another child to help her I think well. Well that's the feedback I'm getting and I can see how it would work for child like Child A.

Researcher: That class in particular there is just a group of girls that have just plodded along and the boys are exceptionally able, it is an unusual class, it hasn't changed apart from a few children leaving in year 5.

Parent: What is worrying for me as a parent, I think children are slipping through the net, had I not had the issues with younger brother and not done the assessments and knew what kind of things to look for I would be none the wiser and Child A would not have been diagnosed. Because left to the school to screen her nothing would have been done. I do feel, after coming from another school with younger brother that. Constructive feedback younger brother came from a different school and they are a very academically pushy school and I this school has a more laid back approach to its FS 2 more learning through play when you know there are speech issue, fine motor issues, sensory issues are there you know I had to fight with the SENCo, he needs to have one to one, I know he has a shadow, but he also needs one to one intervention and he was 3x 20 minutes at the previous school but here I had to intervene before they organised something for him, and I know there is another child in the class that this child has issues and as far I can see the school is doing nothing to address the issues and if I can see it as a parent, but I don't think the screening is done here early

Appendix 9 Semi structured interview - mother continued

enough, it is all very well on one hand saying let them learn through play and not put the pressure on them but surely its better the earlier you identify someone then the intervention you put in place to support that child. Its better and if a child is struggling with fine motor skills and you are giving them help it just means it's not such a hard slog in year 1 and 2 when they are expected to write properly, doing all of those things you know. Or do external workshops for parents to do show them how to do it or whatever the case may be but parents don't mind doing it if there's a recommendation to do it but if you don't know what's not been told you, you can't do anything. I wish I had had this diagnosis for Child A in year 1 when I suspected something was wrong I didn't suspect ADD because I didn't know anything about it, but I knew she wasn't at her learning ability and attention wasn't there, I always told the teacher to put her at the front of the classroom at the beginning of every school term.

Researcher: There was not concerns earlier on academic ability, what did you notice at home?

Parent: She's not competitive even though she is good at sport, never sporty the least competitive child to the point of can't be bothered, lazy but when she does it she is able to do it. There's not drive to do it. She's not a driven child. Now you can put that down to was that because of the way she was or the personality

Researcher: or opting out because it is hard.

Parent: things like the reading, it is such a chore and it didn't matter what I did I could offer to buy magazines from the shop, she could choose, but it would be just left there, I can't tell you how many books she has in her bedroom, it is a fight. But then as the EP said it's like put yourself in her shoes where something is so difficult not enjoyable and quite tiring, you are not going to do it. The reputation of this schools learning support dept is that it's not very pro in terms of taking on children with learning support and I think they inherit the children who have learning support and they only get identified later. If I was to make any

Appendix 9 Semi structured interview - mother continued

criticism of the school, and its not the people or anything personal , there could be a lot more screening done much earlier much sooner and even if it comes out the parents doing it externally at least, and training the teacher.

Researcher: Can we go back to home. At home not she's not sporty, doesn't read what things does she do? What did you do with her, is she organised or do you get things ready for her.

Parent: I can tell her she sees the SLT during school every Wednesday and every Wednesday morning I have to remind her or else she would forget. What I insisted is that she is brownies and going on to be a girl guide she does her tutoring twice a week and she does one or two after school activities and she's on the netball team and she does her coaching at netball, but if I didn't push her she would be quite happy to sit at home.

Researcher: Confidence? Does she have any? Can she see that is good at art? Does she recognise her strengths?

Parent: yes she is good at art; she was pleased this week to gain feedback this week from her CT and she told me at home. When she is good, she is good. At sports day she walked away with 6 medals she's happy she's done it but because she is not competitive. The same netball she's good but she doesn't get stuck in, she's funny.

Researcher: It doesn't mean anything

Parent: That's where I think the intervention will help. The more 1:1, the support the more help, she thrives.

Researcher: I show her last piece of class written work before her end of year exams, it was free piece of work with the topic river, that I could see she had utilised the strategies taught by the SLT.

Researcher: What time do you feel she finds it harder? A/c light or you notice.

Parent: She's not good with noise, she doesn't like loud noise, or balloons she doesn't like parties. When she went to the school disco in year 2 she stood with

Appendix 9 Semi structured interview - mother continued

her hands over her ears even though her hearing is fine, she has super sensitivity to noise. She loves music and listens to music but definitely lots of children lots of noise. Comments are at break time she is quite often by herself as she will just be reading a book, or pretending to read a book but she says she just wants to chill out time. At home she is like that at home, she's no great interest in television, but she on her ipad or listening to music.

Researcher: Does she wear ear phones?

Parent: If no one is there she will just listen from her ipad or if others she will use ear phones. When she was younger she did not like noise or crowds.

Researcher: Does she have a preference of company? Adults or peers?

Parent: It's more of girl than boy thing.

Researcher: You don't feel it is a listening issue?

Parent: Friendships are quite important to her, this year she has a best friend, and she works at her friendships. She's such a lovely, soft nature that adults tend to gravitate towards her anyway, she's not aggressive, loves animals, loves art is quite immature for her age, loves her teddies. Sometimes I have to encourage her to have more play dates but sometimes I think its social media. She doesn't tend to go out on the street and play with friends. But that is why I like the summer holidays she gets chance to experience her grandparents farm. If you gave her the choice she wouldn't be at the park with her friends she would be in the house.

Researcher: So she prefers a more 1:1 relationship?

Parent: one best friend she sees her every weekend

Researcher: groups are difficult you can get left out.

Parent: Child A is not that mature. And sometimes she surprises us with coming out with something way beyond her years. This year she more than ever we have seen her change.

Researcher: Confidence and

Appendix 9 Semi structured interview - mother continued

Parent: She's hit puberty, the same time as her older brother whose 2 year older than her.

Researcher: Ok so the EP Report has given specific details, before with the SLT screener there was a mention of APD

Parent: So the SLT never came to the conclusion of ADD from what she did. But SLT definitely felt the short term memory was an issue and Child A speed in terms how she did her work and her ability basically elaborate on a story wasn't there. Comprehension wasn't there.

Researcher: Do you feel like you're happy with the diagnosis?

Parent: I was pleased someone had listened to me and who in the 5 year window it cost me 5000 dhms but this is the right support from SLT.

Researcher: Child has always received booster sessions whether in class or running parallel to the class all throughout her school time. This extra support.

Parent: stopped the tutoring in English, slt 10 hours. Or do I get an English tutors. IT she is very good,

Researcher: Would you do online courses?

Parent: The maths tutoring was half on pc based and she enjoyed it. But I feel the leaning much slower on computers but she never complained.

Researcher: You're happy with these intervention techniques

Parent: The only gap is the English, whether I get a teacher or carry on with strategies. I'm worried about the all the different teachers, make her interact with the topic and the teachers – as a parents

Appendix 10 Semi structured interview – class teacher

Q.1 Initial Concerns

- Class Teacher (CT) was not overly concerned as Child A was similar to peers in cohort so did not stand out
- CT observed that Child A was inattentive, zoned out and appeared startled when questioned
- did not seem to listen
- had poor eye contact
- not forthcoming when probed
- did not participate verbally or ask questions
- was not distractible but rather 'in her own world'
- was habitual/entrenched in the above behaviours

Q2 Classroom Management

- CT moved Child A from back of classroom to close to her
- Proximity to teacher appeared to help Child A focus more and participate more so
- CT gave notice in advance to Child A that she would ask a question
- After prompting, CT would clarify or reframe/rephrase a question for Child A
- As above for tasks and clear expectations were given as to what should be achieved (scaffolding)

Q3 Specific/ significant strategies

- CT moved Child A from a LA group to MA group then mixed ability group
- CT noticed improvement in quality and quantity of work produced (examples shown in books to researcher as evidence)
- CT allowed Child A additional time to process information and answer questions
- CT used visual cues and prompts more frequently e.g. word mats, word packs provided on table
- Explicit praise was given and detailed verbal and written feedback in books as well as specific targets
- Speech and Language therapy began in T2 which had a significant impact on Child A 's performance, achievement and attitude with strategies used enhancing and consolidating techniques being used in the classroom
- SLT used planning and structured writing support which Child A applied in her writing (as witnessed by researcher in class)

Appendix 10 Semi structured interview – class teacher continued

Social Skills and Interaction

- CT commented that Child A's interaction with peers was poor due to her lack of confidence not necessarily a lack of skills
- CT believed Child A preferred her own company and was more comfortable with this than socialising with others
- CT queried if interaction within class was too challenging for Child A but may be due to dynamics within the class rather than Child A 's personality or innate skills.....behaviours may have been learned and shaped by her classmates rather than being due to inherent difficulties

Parental feedback to CT from Mum (as noted on contact form from Feb 2017)

- Child A is quiet and gentle at home and has always presented as this since early childhood
- Mum believed Child A should be more independent and self sufficient
- Mum frustrated by her lack of motivation and intrinsic motivation

Appendix 11 Semi structured interview – speech and language therapist

SLT: Mum approached me and when I asked primary concern, mums response was her ability to focus and tune into everything going on around her, what she's hearing and her performance is it the same as for someone her age and her cognitive ability. Mum felt there was so much cognitive ability but she could show or demonstrate it because of this attention, opting out and her confidence. Mum was keen to know what the language profile was, is there an actual core language issue or a bigger issue of confidence and her self esteem that prevents her from showing her answers in a classroom environment, rather than just keeping quiet and not looking to participate as actively as she could. My primary roles was to give a formal standardized language assessments which she came out with average range for all of the sub tests, so her core formal level she has a very good language ability she has no concepts she is not aware of, there's no difficulty with her processing and manipulation of information that she's heard but there was a real mismatch of how she presents functionally day to day.

Researcher: What testing did you do?

SLT: Clinical Evaluation of Language Fundamentals CELF 4. Standardised up to the age of 16 years and she performed very well on it.

Lesley: In school she tested well on computerized tests and not in class written tests, especially on the non verbal reasoning.

SLT: So we wanted to develop Child A's confidence in putting her across her answers or explanations, if there were any words that she did not understand, rather than ignoring, I will listen to so much and if I hear one thing that I'm not as confident with, actually at that point she was just tuning out. And there was this massive element of her attention and sometimes appearing quite fatigued and disengaged with things.

Researcher: Disengaged is how most teachers would describe her

SLT: That doesn't surprise me.

Researcher: It is not as though her class has changed, her friends in that class have been with her since year 3.

SLT: On a one to one she is very different than in a class. It was interesting the first time you came to observe our lesson that day she didn't perform and particularly was opting out, she wasn't engaged with me, wouldn't look at me, wouldn't give /make an rapport, she wasn't interested. But because on a 1:1 outside of school the first time in the clinic we had a good rapport it was very relaxed and she saw me on a friend level rather than a teacher level which was nice as it gave me a way into to see her personality and get a bond with her. So that day was particularly unusual, she normally chats about her lessons, extra curricula activity, things her parents have bought her.

Researcher: I have noticed because I've obviously been going into the classroom more and more and then if see her in the corridor I will make a point of speaking to her and the first couple of times she wouldn't look at me make a one word

Appendix 11 Semi structured interview – speech and language therapist continued

answer, if she answered at all and then just carry on. Now she actually will have a little bit more of conversation.

SLT: That's very much how she is. How she perceives the relationship and how comfortable she is, is another big factor. Getting the EP on board really trying and work out where is this particular breakdown happening. She's a girl with a lot of motivation and desire but it doesn't present that way functionally and obviously is we are looking at her having an attention deficit that's the thing that is impacting her processing. So it was very important to get those diagnostics and get everybody on board. To get more a diagnostic and clinical understanding but functionally, the next big thing for Child A is her core abilities are actually very strong and we can't necessarily change her intrinsic motivation, she is who she is, her personality is what it is and her focus is what it is, as and when.

Researcher: So it's how to be able to transfer what you see into a classroom setting.

SLT: Yes.

Researcher: Which is? Very, very difficult.

SLT: I think a lot of it has to be scaffolded for her in a quite easy step by step methods, for examples if I'm getting Child A to complete things independently I will sometimes get use the notepad right the 3 steps and she checks them off as she doing it and I will give her a time scale to do it in. If she gets distracted and the timer goes off and it isn't complete, she knows for the next activity she, because she does want to beat the timer, she does want to actually please you, although it may not appear that way all the time, deep down, I think she does because she is a good kid and she's got lovely manners and I think her desire is there deep down to want o get things right and prove to herself that she can do it. So that is a kind of motivator for her. So the next activity she's going to be more focused get it done a little bit faster and be a bit happier. Then to try and transfer that into something like a small group, her and a partner managing to talk together to complete a simple challenge

Researcher: I've sat in a few classroom observations now and even with a paired experience, the partner is doing all the work, the partner is trying to drag Child A along. Ive seen where they had to read one another's work and give one positive and one constructive comment, and the partner was talking and really engaged and when it came to her she was really limited.

SLT: And that's where we need to simplify it. Yes she has the capacity and ability to do the activity that was presented there, but she doesn't, the expectation if there's an expectation that that partner will take the load and draw the answers from her, she's going to allow that to happen, because attention-wise that is easier. So an easy out actually to rely on the adult to scaffold you or your peer to scaffold you, so it can even be simplified to a more basic level were actually the task is just turn taking. Or it could be read the question, you're the person who is

Appendix 11 Semi structured interview – speech and language therapist continued

going to read the answer and discuss if it's true or false, something were the expectation is..

Researcher: Turn taking, the reading?

SLT: So her role is very, very clear to her and that is where I am getting the most out of her. If her role is clear to her and I'm not doing the work and I give her some guidelines, she will do it. So when I used to say there was a word, piece of language or concept that we were talking about, it could even be abstract language because that is what I wasn't her to get stronger with, because, I would give her something, I would like you to write that in a sentence or a mini story and in the beginning it was very laboured, it would take a long time, I would scaffold her the whole way through but give her time in between because she would wait for me to step in and wait for me to help and give her the answers.

Researcher: And I think this for me, this is what I feel has probably happened. The teachers pebbled we've put strategies in place she's started using the strategies improved and then the teachers think this is the level she can work at. Because she's not willing to give any more of herself. I think this is how she's moved through the school until she's reached this teacher who comes from a LS background so she's gone there's more to this child, the class is an usual mix of very high ability boys, who are quite loud and a little bit brash and very weak girls there is no middle ability. The boys can sometimes be mean and are a little bit more street wise than the girls and I can see how she may have reverted back into herself and think it's easier to be with these girls, than push myself and be with these boys.

SLT: yes just because of the personality dynamic.

Researcher: Maybe we haven't pushed enough.

SLT: But that's where we know Child A's profile and know where the challenges lie there is that element that even at this stage in her career she is relying on a bit of adult support in terms of being able to get / put whatever strategies she needs to get it further. What is my next expectation for Child A, okay then we will need to break that bit down as an adult, I will break it down for you but I expect you to then step up to the plate and deliver, because I've given you the next little stepping stone.

Researcher: So is this were you can see, where you can see how you can end up with different diagnosis, you can end up with APD, ADD, .. because symptoms are overlapping and she has got a traits that tick a lot of boxes.

SLT: Absolutely, there is dual diagnosis. It exits, you can have one or the other or you can have both. I think in Child A's case we have been able to rule out the language bit, she doesn't have poor language or a language disorder, so that was one thing taken off the table and the way her profiles presents, I think they've been looking for where she meets the criteria and I'm sure at one point

Appendix 11 Semi structured interview – speech and language therapist continued

they must have looked at and ruled out high functioning autism, because of her social interaction.

Researcher: Yes it isn't there in the class room.

SLT: Yes her relationships and friendships aren't there.

Researcher: I've looked back and checked how many children have left that class, how many are the original from when they were mixed up for Year 3, there have only been two girls have left in the last two years.

SLT: The profile is quite complicated, she's not a straight forward girl, I think the way she might present when you go and do a classroom observation you would think, oh low level ability, opting out, not engaged, but we know that's not the case. So you're drawing it out, drawing it out, a bit prompt dependent or reliant on time on those level of scaffold to get her through to the best of her ability but there's that whole social element/ pragmatic bit that is still missing. But I think that does still tie with the clinical diagnosis she has been given, because actually her attention is that she can just sort of drift and be quite content in that level of drift. She has enough secure relationships with her parents, her brother, some core people in her life, I think it meets her attachment needs as well, so having a massive extended social life isn't important to her.

Researcher: She doesn't at home. The mum was saying she is quite happy to stay at home and read a book, play on her ipad, she's not even watching television. She's not even that zoned out she's actively doing something, but on her own. She's very happy in her own company.

SLT: But it does overlap. I mean because functionally the way she presents it does fit a lot of different profiles and diagnosis.

Researcher: What traits of APD do you feel she presents if you had to do the overlap?

SLT: It's hard because we know that her attention is more of an issue. In general, she's hear something, she hears part of it, but she's not always processing all of the information, there's a little bit that's been missed, needs repetition, needs prompting.

Researcher: She doesn't follow instructions in the class at all. Unless you are speaking directly to her. And then depending who she is paired with depends if she involves herself or not

SLT: And that's the kind of thing, she is able to do, but there needs to be an expectation put on her now that she's going to do it with a bit more independence because it's not beyond her capacity, certainly working with her on a one to one and knowing how she can understand how I can just give her little jobs to do and I will sometimes through in random things in there that she just has to listen to actively, process, understand and then go and do it. So I might ask her in the middle of her jobs, for example, 'after job number two I want you to go and get me that blue pencil.' Just so that she is keeping herself switched on, normally

Appendix 11 Semi structured interview – speech and language therapist continued

she forgets and I will remind her with a prompt 'there was a job to do after number two was complete.' There is still a dependency but it is there. And that is the thing if it was a pure auditory processing issue, the chances are 1) it wouldn't be retained, 2) it wouldn't have been understood and it would be all mixed up for of errors. But that is not how she presents.

Researcher: But her writing previously was very mixed and straight forward.

SLT: With the evidence out there with say APD or a high functioning or pragmatic difficulty that girls are generally better at masking.

Researcher: That's what I think; she's blended herself into a weak girl group so she's not stood out. If she was in another class where the girls are stronger would she have blended so easily?

SLT: We know the earlier we can get in there to create a profile the earlier intervention.

Researcher: She was flagged in Year 2

SLT: The expectation is so high at secondary and how quickly they get into formal exams there's a huge shift for her now.

Researcher: Moving schools is going to be the biggest problem.

SLT: That's going to be an added element that will create a time delay, the dynamics with her interaction, her confidence versus all the other things she's faced with. It's going to be a big shift for her. But I think hopefully now in having some of the external people involved, all the intervention and help she will cope better.

Researcher: She uses your scaffolding, the last piece of writing I saw was, normally we provide lot scaffolding at school, we talk about what we are going to be doing, we give the story mountain, planning time and we tell them what's needed in this and that so there is a lot of discussion about what we expect where, and vcop and smoag and everything else. Have you thought about this have you put that in, lots of prompting. But I noticed how on the last piece where they just got given a theme, rivers and she mindmapped it the way Ive seen you teach her rather than the planning strategies we would use.

SLT: We tried quite a few different methods. The mindmap and the story planner we use, which is literally the six or eight boxes and the way she will go through the information they were the two techniques that got the most out of her.

Researcher: So who, what why, that one?

SLT: Yes it just made it very, very simple for her. But then what she was giving me was way more sophisticated, the vocabulary was beautiful.

Researcher: Honestly it's four pages. She's never written that amount. But I could see it was your technique.

SLT: Brilliant. What I would say is Child A's flow in writing, over the block of sessions that we have had, when I have given her her homework task, her flow in

Appendix 11 Semi structured interview – speech and language therapist continued

writing is a lot better than her flow verbally. I think because she gets the time to think and put in all fancy words that she wants to show off with.

Researcher: She read a lot.

SLT: Yes you can tell she's a reader. She has an extensive narrative flow, she knows how to piece words together and I think that comes from her background in being interested in books. You know she likes to do speech.

Researcher: And she likes her drawings. She quite often does pictures to go with it.

SLT: She is very creative and I have said that to mum, I find her very creative. Given the fact that she presents herself a girl that quite..

Researcher: She gives nothing away.

SLT: There's so much in there and she is creative and I think if drawing and planning and if different stationary brings that out facilitate it.

Researcher: We have that on all tables, coloured pencils and pens etc. and nothing it used.

SLT: It's just such a miss match between what she is capable of and when she's engaged, I like learning this way, quiet and small steps.

The recording finished. However other points made were:-

Motivation is a very important aspect in a child's learning and Child A is more motivated at present because she is moving into a very academic High School. There could be other issues – the lack of quantity and reluctance to write could be dysgraphia. Child A is one of the only children in the year not to write in cursive.

Screen and identification are not the same words or have the same meaning and OT's would not provide intervention for APD in practices the SLT had worked at in the UK.

Appendix 12 Learning Support teacher interventions

Although Child A is not officially on the LS register, she has received support throughout the year.

Every Monday I was helping either in class or taking her with small groups
Child A was also part of my comprehension booster sessions in term 2 every Sunday.

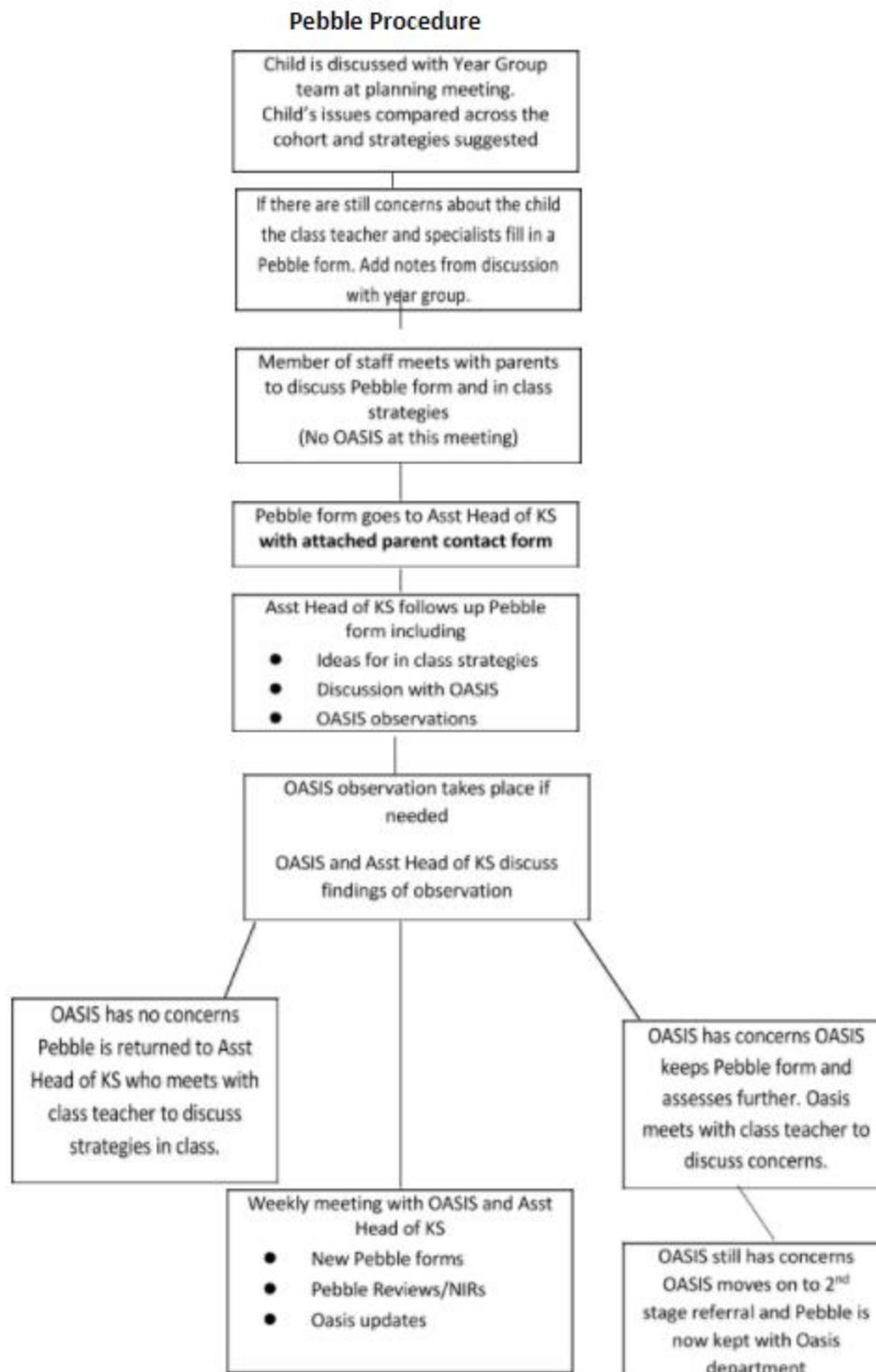
She was part of extra SPAG sessions.

She had extra time and quiet room for her SATS

She received a one to one sessions to help structure her written work.

She was tested on the Non-verbal reasoning test and the verbal reasoning test.

Appendix 13 Pebble Procedure



Appendix 14 Completed Pebble Form- Year 2

[Redacted]
**Record of Concern
 Pebble Level**

Review Dates:
 April 2013.

Action to be Taken		
TLP - January ✓ Yeark Test - LS Hearing & Eyes		
Oasis Action	Yes/No	Date
Refer to Oasis	Yes	18/3.
Observation completed		
Placed on Oasis		
2 nd Stage completed		

This form is to be completed by the class teacher stating any concerns (however slight) he/she may have about a particular child – behaviour social or academic.

Name of Child: [Redacted] Date of Pebble: 09/12/12
 Class: [Redacted]
 Date of Birth: [Redacted] Name of Teacher: [Redacted]

Concerns

- Lack of concentration when working independently.
- Ability to follow instructions ↓.
- Pace of work
- * Much more capable than is reflected in class/written work.

MARCH/APRIL

- [Redacted] has almost completed TLP and it has not had an significant impact.
- [Redacted] pace/ concentration is still a huge issue and I feel she is not achieving as much as she could.
- Can we investigate further?
 ([Redacted] in agreement after discussion at parent/teacher consultation)

Appendix 15 Teaching Strategies used within the classroom to support Child A

Teaching Strategies used to support SEN children

Please tick the appropriate boxes below to indicate the strategies you have trialled

Strategies used with pupil	Worked	Didn't work	Haven't used
Level appropriate texts	*		
Simplified vocabulary	*		
Word lists	*		
Use of diagrams/pictures/visual aids	*		
Audio recorded texts		*	
Homework recorded in organiser for child	*	*	
Differentiated class work	*		
Clear lesson objectives given/written on board		*	
Oral instruction repeated/further explanation	*		
Rewards for achievement		*	
Multi-sensory activities	*		
Text/questions read to whole class/individual	*		
Amanuensis - answers written down for pupil			*
Scribe - answers re-written from pupil's work			*
Use of ICT: Ipad/laptop etc		*	
Teacher's notes photocopied for pupil		*	
Appropriate seating - able peer/study buddy	*		
Peer study/reading Support	*		
Parental Reading Support			*
Additional Teacher support	*		
Teaching Assistant in class support	*		
Oral presentation instead of written work			*
Group work/Change in grouping arrangements		*	
Activities amended to individual learning style		*	
Choice of tasks given		*	
Subject specific vocabulary lists in book/on wall	*		
Summary cards/information for revision	*		
Extra time for tests	*		
Differentiated activities/worksheets	*		
Use of writing frames	*		
Use of sentence starters	*		
Change in lesson pace	*		
Use of phonic check lists/Progression in Phonics			
Individualised programmes of work			
Use of Touch Typing		*	*
Use of The Listening Programme		<input type="checkbox"/>	<input type="checkbox"/>
Involvement of outside agency.(Please state)			
Other. (Please State)			

Appendix 16 Pebble Tracking Information reviewed fortnightly.

August 2016 Ongoing Pebbles							
Family Name	First Name	Area of Concern	Class	Date of Pebbles	Review Dates	Monitored by	Comments
*	*	Motivation, engagement and anxiety	6C	Nov 16	Apr 17	OC / CK	Review samples of work, assess with NVR, review CAT4 and look at possible language screening or alternative home support. SENCo met with mum 4/12. Ed Psych assessment at parents request. Cancelled Jan 17 in lieu of internal school assessments (VR, Yarc and Schonell) and Speech and Language Assess with Inspire 15/2/2017. Report received 19/2/2017. SENCo met with mum 20/2/2017. Ed Psych assess 17/4/2017. Awaiting feedback 15/5 - moving to new school Sept. 17

Appendix 17 Compilation of Pebble comments

- Sep 16- June 17 **Year 6** Motivation, engagement and anxiety =Review samples of work, assess with NVR, review CAT4 and look at possible language screening or alternative home support. OC met with mum 4/12. Ed Psych assessment at parents request. Cancelled Jan 17 in lieu of internal school assessments (VR, Yarc and Schonell) and Speech and Language Assess with Inspire 15/2/2017. Report received 19/2/2017. OC met with mum 20/2/2017. Ed Psych assess 17/4/2017. Awaiting feedback 15/5 - moving to JESS Sept. 17
- Sep 15 – June 16 **Year 5** No Pebble
- Sep 14- June 15 **Year 4** - New glasses. Lacks focus and independence. Paired with fast paced peer and pace has improved. Middle Ability in set 4. Reviewed: Made progress in writing and comprehension (3a). Attends comprehension and reading booster sessions
- Sep 13 – June 14 **Year 3** Concentration and focus – does not provide detail in writing – very basic – underachieving. Spelling and punctuation poor. Does not participate in class. Reviewed: Classroom inventions sat on LA table to allow for pace and extra scaffolding, improving situation. Is she just shy? Attends reading / spelling booster sessions.
- Sep 12 –June 13 **Year 2** Concentration and focus – TAPS assessment – deficits highlighted. Reviewed: LS requested external assessment to identify issues. No action taken by parents.

Appendix 18 School Report compilation

Year 4

Subject	Teacher assessed NC level	Effort
Reading	3a	2
Writing	3b	2

English	<ul style="list-style-type: none"> • Creative writing shows good imagination. • Uses adjectives and adverbs to add detail with increasing precision. • When prompted, contributes well to class discussions, often offering valuable information. 	<ul style="list-style-type: none"> • To use a wider range of connectives, sometimes using them to start sentences. • To ensure written work is punctuated correctly by checking carefully. • To increase pace when answering longer comprehension questions.
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...came into Year 4 as a very quiet, shy member of the class but over the year, she has gained both confidence and self-belief. She is now happy to offer her thoughts and opinions during whole class discussions and is a lot more open about her ideas.

...is obviously a bright girl, she often lacks the pace to show this in her written work. She is often slow to begin a task and in assessments, she sometimes does not finish the paper, particularly in written comprehension tasks. This can result in Alana scoring results below her ability level. She should continue to focus on increasing her pace of work as she moves to Year 5.

Year 5

Subject	Teacher assessed NC level	Effort
Reading	Working Within	1
Writing	Working Within	2

Appendix 18 School Report compilation continued

Subject	Strengths	Next steps/targets
English	<ul style="list-style-type: none"> • Uses evidence from the text in supporting answers to comprehension questions. • Listens attentively and speaks confidently during discussions. • Role play skills are strong and can deliver lines with great understanding of character. • Uses paragraphs to structure writing. 	<ul style="list-style-type: none"> <input type="checkbox"/> Use more adventurous punctuation eg :, ; ... to develop structure of writing. <input type="checkbox"/> Read through work to edit and ensure it makes sense to the reader. <input type="checkbox"/> Use a wider range of conjunctions to link ideas and join two short sentences together. <input type="checkbox"/> Continue to read a variety of genres.

Her enthusiastic approach to learning has been central in the successes she has experienced in her academic assessments this year, making particularly impressive progress in her reading comprehension

English Writing		Approach to Learning
Year Group Attainment	WW	

Her ability to discuss author's intent has improved over a period of time; however, her inferential understanding is inconsistent. .., she struggles to organise her ideas and commit them to paper. She can plan a piece of writing using a checklist, but does not always push herself to use figurative language, advanced vocabulary, connectives and punctuation. .. is an able student, I feel she is often distracted and unmotivated.

Appendix Child A's written output Sept 2016

MY Autobiography

Thursday 8th Sep 20

We arrived in the American airport, I smell different
 sp c. From other countries. I by one we get one bag. Then
 sp c. We all went to a rent a car and bought a Super
 c. Fancy car and I was like "oh my gah" then we all drove
 sp c. I took us about an hour to get to the hotel but we
 were entertained. The next morning, the best mom and dad
 in the world took us to - DISNEYLAND! But we
 c. had to wait a while. After that with the 'C' with was
 c. eating lunch) We got in our BIG and Fancy
 car and headed to Disneyland.

I Thought to myself and I was Puzzled...
 c. "mummy? Baba? Are where are we going first?"
 c. I asked kindly. And then ~~she~~ ^{she} answered ~~she~~
 "Animal Kingdom then tomorrow we are going
 sp c. to Magic Kingdom!" I Wasn't puzzled anymore
 and then we arrived at the magical place! But we
 sp c. weren't there just yet. We had to go in a long Long
 c. Stretchy Van. It only took a minute to get there and we
 sp c. had to check our luggage in the vicinity but everything
 was fine so we were allowed in.

sp c. We looked at the map and thought our first ride should
 be a water ride. We had a special pass so we could
 sp c. go on quicker. We crashed and bashed and of course
 sp c. we got soaked. We did a couple more rides but

sp c. Personally my Favorite was all the rollercoasters
 there because I loved to feel all the wind
 in my hair and it felt like it was pulling
 Me out of my chair!

• Great use of conjunctives
 • Great use of adjectives
 • I would like to see you check your spelling
 and attempt to use figurative language

Appendix 20 Child A's written output May 2017

Sunday 28th May 2017

VCOP:

P@: !, ,, :: -- () ...

O: First, finally, Negatively.

V: Odd, thoughtless, helpful, intimidating, eager, annoyed, gigantic, swift, gracily.

C: Nevertheless, And, but, However.

IDEAS:

- A girl called Queeva.
- Looking for the pot of gold at the end.
- Trying to save family from sickness.
- A sea dragon lives in the lake river.
- Sea dragon needs ~~power~~ ^{confidence} from Queeva.
- River looks like a polo shirt.
- Queeva ~~is~~ is very sensitive to lots of things.

My Story about Rivers

Already have in

ISPACED:

Sprinting, warring, war

Ing: Rapidly, ~~stoutly~~, timidly

Spring, crashing, thw

Prepositions: Above, Below

inside, outside, on top, down

below, on the left, on the

After: Adjectives: Adverbs: Rapidly

Slowly, timidly, calmly, fo

ly.

SMOAP:

Similes: like a fox at its prey, like lightning, hot like fire, drunk like

As scared dog

as a cat.

Metaphores: A wave of a rabbit being poached

Horror, A flickered light hicked, she was a sco cat.

Onomatopoeia: wust, l

Sunday 28th May 2017

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Appendix 21 Researcher non- participant observations.

Math session 5: 40 minutes duration

The class was working on individual laptops solving problems that had been set according to differentiation of the same function. The CT was assisting were required, circulating around the class room. Child A was sat on the table closest to the CT's desk and also where she could see the whiteboard without having to turn. The CT advised the class how to log on, writing on the board the correct website and which section each group should open. The CT asked Child A if she knew what she had to do and Child A repeated back the explanation. CT asked Child A if she knew where to log on and Child A responded she could do it. A couple of minutes later she asked her peer assigned buddy the how to log on question. She had logged on incorrectly. CT asked if she was ok, Child A said she was. Next the buddy asked the CT if Child A was on the correct page as they were working at their own pace on differentiated work. After ten minutes she finally settled down to work on the computer, working out answers. Then she got up to get some paper. She was very reluctant to work. After a couple of minutes she asked the buddy help on a question, she seemed relaxed about asking for help from her buddy. CT asked again if she needed help, she repeated she was fine. She got up for more paper and started working out an answer but regularly rubbed it out.

She has a good sitting posture and pincer pencil grip, uses the other hand to hold the paper steady, she is right handed, wears glasses always and sometimes sticks her tongue out when concentrating. A lot of her time was looking up as though she was thinking but I did not see any follow up with typing in answers or writing answers, so more like 'zoning out', when others spoke to her she looked and listened but did not join in the 'chat'.

She fidgeted constantly either with hand to mouth, or moving papers, or twiddling a pencil. She was easily distracted from doing her work by any chatting or movement. She settled down again after twenty minutes and stopped listening /

Appendix 21 Researcher non- participant observations continued

chatting with the other five children at her table. Maybe this was due to the CT sitting and helping another child at the opposite side of the table. She completed approximately 4 questions compared to 8 finished by peers.

Speech and Language Therapy session. Session 5: 45 minutes duration

Started by discussion the home work set. She had not completed all the homework; therefore the warm up was its completion with the aid of a two minute timer. Corrections and comments were feedback immediately, Child A listened carefully although she did not respond. She had made one mistake and the SLT gave her another chance to correct her mistake, which she did with a lot of guidance.

During the session they used story cubes to make up a story, scaffolding was provided in the form of an A4 piece of paper with eight boxes labeled :-

- Who
- What
- When
- Where
- Problem
- Solution
- Ending

The SLT ticked the boxes whist Child A verbally created her story. This game was familiar and she responded ensuring all boxes where ticked. She has a nice story that had a beginning, middle and end, which did not have a lot of descriptive phrases however, she used adverbs well.

Next they worked on a mind map for a word that Child A did not know the meaning of. This is a harder concept, as it is more abstract. She showed me a previous one that she had completed independently about Pugs (her dog breed)

Appendix 21 Researcher non- participant observations continued

and had drawn pictures – she has a talent for drawing. She was very proud of it, she did not verbalise anything about it but just smiled, she appeared very shy, although she has known me her entire school life.

The SLT asked to the details of last week's word which was 'siren'. Child A was meant to recreate the mind map. The SLT was required to provide prompts throughout this process. For example: Can you describe it? Does it have a use? Does it have a motion /sound? Child A appeared to tire very easily when trying to complete, it was a slow process considering she had done this only one week ago. She made great use of the coloured pencils and drew pictures where applicable, e.g. a fire engine. Again this could have been seen as a distraction technique to do something she favoured as the timer was on. Child A for homework should have completed the process with a new word she had encountered this week, she had not done this. The SLT gave her the word 'artificial' to mind map, and wrote the word in the middle of the paper to avoid not starting promptly. This is a word from Child A's spelling words. She did not know the meaning but could examples when pushed / prompted; eventually she said "Bright orange hair is artificial." From there the SLT, without delay, helped her to create a definition through mind mapping its descriptions / functions etc with guiding words assisting when Child A had run out of any ideas. Child A was very quietly spoken when responding to questions; she did not really ask for help and had to be pushed to say she could not do something.

Another task involved quick word retrieval and definitions –this was to assist her expressive language. She was very competent at this. E.G. Question: What is a zoo? Child A answer: place where animals live. The words were not difficult and she was given as much time as she wanted to answer.

Another task involved idioms – she enjoyed this and her voice was louder and she smiled when she got the answers correct. She remember what she had done the week previous

Appendix 21 Researcher non- participant observations continued

The SLT provided constant feedback and encouragement throughout. She gave positive verbal and non verbal gestures and maintained eye contact. Child A dipped and troughed throughout the session where she enjoyed something she was more enthusiastic, but she tired easily and was uneasy with the researcher's presence.

Appendix 22 School weekly planning 1 page out of a 3 page document

<u>Outcomes</u>		<ul style="list-style-type: none"> To identify suffixes and root words To convey feelings, reflections or moods in a poem through the careful choice of words and phrases To evaluate their work 				
	TEXT FOCUS/ RESOURCES/ WEB LINK	WHOLE CLASS WORK	PUPIL TASKS (T) Teacher support (TA) Classroom Assistant (I) Independent			
			SUPPORT	MIDDLE	CHALLENGE	PLENARY
Session 3	<p>Planning in draft books from previous lesson</p> <p>Writing Framework for less able if working in ability groups</p>	<p><u>LI: Can I write a free verse poem in the same style as one I have read?</u></p> <p>Explain that today children are going to write their poem about the UAE. Review some of their ideas from previous lesson and reread 'Colours of Mexico' poem</p> <p><u>BLP: Collaborating/Imagining/Revising</u></p> <p><u>ADVANCING/DEEP:</u> modify, justify, organise</p>	<p>Children to be provided with writing frame to start them off using the colours:</p> <p>Black (Oil?) Blue (Sea?) Yellow (Sand?) Green (Parks?) Palm trees) Red (Sunburn?!) Orange (Sunssets?) (One line for each colour)</p>	<p>Children to work in pairs (optional) to write a poem with 4-6 verses – encourage them to have two lines to each verse as the model 'Colours of Mexico'</p>	<p>Children to work individually to write their own poem in the style of their choice.</p>	<p>Read some of the completed poems. Discuss and evaluate</p>
Session 4	<p><u>Spelling- fer</u> https://www.spellzone.com/word_lists/list_cf_m?wordlist=4660</p>	<p><u>LI: Can I use and identify the suffix – fer?</u></p> <p>Teacher explains to class that we are looking at suffixes this week. What is a suffix? <u>Can you think of words ending in –fer?</u> Take examples from class. Display spelling list to class and discuss how word is formed and meaning. Can you identify the root word? <u>BLP NOTICING</u></p> <p>Children stick list into books.</p>	<p><u>Rubies:</u> Teacher/TA work with group on sentence work using adverbs.</p> <p><u>Emeralds:</u> Choose 5 words from spelling list and write sentences including 1 adverb and an ISPACE starter.</p> <p><u>Sapphires:</u> Choose 7 words from spelling list and write sentences including 1 adverb, 1 connective and an ISPACE starter.</p>		<p>Spell-check with partner</p>	

Appendix 23 Learning review

Master Learning Review

Subject: English

Class:

Teacher:

Who has done well?
Evidence - How do you know?
What next?
Who do you have concerns about?
Evidence - How do you know?
What next?
Are there any specific areas of concern?
Evidence - How do you know?
What next?

Appendix 24 Child A's Speech and Language Therapy Assessment

Speech and Language Therapy Assessment Report

Name: [REDACTED]
 Date of Birth: [REDACTED]
 Date of Report: 15.02.17

[REDACTED] Therapy for full language assessment on 15th February 2017. She attended with [REDACTED] but accessed the assessment independently.

Background

[REDACTED] is a lovely polite girl who is described as shy and a little reserved in group situations. Mum explained no developmental delay in early childhood milestones but concern raised in year 1 relating to literacy and processing/execution speed. [REDACTED] is currently accessing maths tuition and is responding well to this additional practice/learning opportunity. Mum was keen to arrange the formal language assessment to rule in/rule out any core language or processing difficulties that may impact on [REDACTED] access and success within her ever growing curricular expectations.

Attention and Listening

[REDACTED] is a hard working girl who participated in formal testing for 90 minutes with no need for prompting. She was listening and attending to the best of her ability in optimum 1:1 clinic environment. This being said [REDACTED] was aware when she was 'not listening' and required help and/or repetition. It is important for adults to encourage [REDACTED] to share when she has not heard the information. [REDACTED] is capable of active listening but requires a short 'brain break'/'breather' at least once every 20-30 minutes.

Formal Assessment

- The Clinical Evaluation of Language Fundamentals 4 (CELF 4) was administered by [REDACTED] (Speech and Language Therapist) during the assessment session.

Average scaled score between 7 and 13.

Subtest	Scaled Score	What this means
Concepts and Following Directions (Understanding spoken instructions that include linguistic concepts of increasing length and complexity)	8 Average	[REDACTED] can listen to verbal instructions and process the linguistic concepts that are included. She may benefit from additional teaching of temporal concepts (before/after) to ensure this is consistent and left and right when it is incorporated into a longer spoken instruction.
Recalling sentences (Repeating what has been said verbatim) No repetitions allowed in this subtest.	11 High average	When [REDACTED] is actively listening she can recall what she has heard very well but if she is distracted she will not hear significant chunks of spoken information. It is important she has regular breaks and confidence to request repetition when she has not heard. Across the session in clinic [REDACTED] accuracy improved and reflected the benefit of repetition.
Word Classes Total (Relating two words by function/semantic link and explaining why they 'go together')	8 Average	[REDACTED] understands what goes together and why they do but requires practice giving reasons verbally (associated with verbal reasoning).
Formulated Sentences (Building complete, semantically and grammatically correct)	6 One scaled score below low average	[REDACTED] can give basic information to describe what she sees in a picture or tell a story but requires targeted support to develop further narrative in spoken and written English.

Appendix 25 Child A's Psycho Educational Report

Case log	
Date	Actions
05/04/2017	WISC-V (Wechsler Intelligence Scale for Children, Fifth Edition)
06/04/2017	WIAT-III (Wechsler Individual Achievement Test, Third Edition, UK)
09/04/2017	Parent Interview; Conners 3-P
26/04/2017	Teacher Consult; Conners 3-T Classroom Observation
17/05/2017	Parent Feedback
TBC	Collaborative Team Meeting

WISC V Results

Area Tested	Standard Score (Average 90-109)	Percentile* Rank	Ability Range
Verbal Comprehension <i>the ability to use language to reason, think and learn</i>	116	86	High Average
Visual Spatial <i>the ability to reason about objects, shapes and pictures</i>	119	90	High Average
Fluid Reasoning <i>the ability to think logically and solve problems in novel situations</i>	137	99	Extremely High
Working Memory <i>the ability to remember what is heard in the correct order</i>	100	50	Average
Processing Speed <i>the ability to perform paper and pencil tasks within time limits</i>	89	23	Low Average
General Ability Index <i>an estimate of general intelligence that is less reliant on working memory and processing speed ability</i>	127	96	Very High
Cognitive Proficiency Index <i>a summary of [REDACTED] working memory and processing speed performance</i>	92	30	Average