Guidebook for teachers in tertiary institutions

Working with students with special educational needs

QESS project team and external consultant team

Content

Preface

In 2013, Hong Kong Institute of Technology (HKIT) has admitted 6 students with special educational needs (SEN) in the Associate Degree and Bachelor Degree programmes. Academic staff felt pressured due to lack of experience in working with students with diverse learning needs.

This guidebook is written for teachers and school personnel who would like to work with students with SEN and create an inclusive campus for SEN students. It includes general characteristics of various types of SEN and classroom management strategies that derived from literature review, as well as the experience of HKIT in working with students with SEN.

Acknowledgment

Introduction

Established since 2003, HKIT has always been providing study opportunities to education seekers without discriminations. With a mission to provide educational opportunities to a diverse group of students including the socially and economically underprivileged as well as those with disabilities, HKIT always welcomesdisadvantaged with open arms. However, in recent years, the staff at HKIT experience increasing challenges in managing students with diverse learning abilities, in particular the students with special educational needs (SEN) such as, learning difficulties, communication disorders, emotional and behavioral disorders etc. The need to provide SEN students with the appropriate supports is arising and inevitable. .

Home-school collaboration, career counseling and guidance, supported employment, family support are certainly useful support for our students, we understand a comprehensive support is not limited to things we do on campus. However, this guidebook is written based on the experience QESS project team had with our SEN students at HKIT, and the supporting measures we prepared in the past two years. In this guidebook, we would briefly introduce different kind of SEN types that are commonly found in our institute, which again, we might not cover all SEN types. In addition, we would love to share things we have done to promote an inclusive campus and the support we delivered at classroom and individual level. We would also share two cases with the readers that we have been following over the last two years. Once again, the support we can give to SEN students in tertiary institute is not limited to what is seen in this guidebook, Yet, we hope to share work and campaigns we have done at HKIT to all the readers and to encourage staff from other tertiary settings that it is possible to take care of this population. This guidebook mainlyfocuses on strategies that can be utilized by teaching staffs in tertiary settings and feasible in initial stage of SEN supporting mechanism within the school.

Background

In the past two years, QESS team had conducted self-report survey that collected SEN cases from the associate degree/ degree (AD/D) sector of HKIT, students' perception on their understanding on SEN; and their expectations on the possible accommodations from school. The results of this initial survey provided information for the direction of teacher training workshop, campaign and individualized support services for SEN students to QESS team.

Additionally, the results of the survey indicated that there were ten suspected cases of SEN in HKIT. Therefore, QESS team is now developing a screening tool specialized for suspected SEN cases in tertiary level.

Types of special educational needs in HKIT AD/D population

323 students participated in the initial survey conducted by QESS team, it has been found that 5.6% of participants self-reported that they were once confirmed having SEN conditions by professional qualifications such as clinical psychologist or educational psychologist and 94.4% of participants are Non-SEN students.

Within 5.6% of participants that self-reported they were once confirmed having SEN conditions by professional qualifications. Specific Learning Disorder, emotional/ behavioral disturbance, attention deficit/ hyperactivity disorder, autism spectrum disorders, language impairment and hearing impairment were the most common SEN conditions in HKIT. **Chapter 1** of this guidebook introduces the basic characteristics of various type of special educational needs that existed in HKIT AD/D population. It focuses on the "hidden disabilities", such as specific learning disorder and autism spectrum disorders, which their characteristics were not visible to the teachers and school personnel.

Ten of the students reported as suspected cases, which means they are suspected by their parents or teachers as SEN cases while no formal diagnosis had been done. Regarding to this issue, **Chapter 2** of this guidebook introduces the developmentof screening tool, which aims to provide preliminary screening to any suspected case. Given the data from the screening tool, more information of the student can be collected for further action from SEN support group in HKIT, in terms of designing appropriate supportive measures for them or referring them to professional for detailed formal diagnosis if necessary.

Expectations from students

While 323 students were recorded in this survey, 61.3% of participants reported that teachers should pay more attention to the SEN students. 54% of participants reported that having special curriculum adaptations would help out students with SEN condition. 46% of the participants reported that students with SEN should be referred to professionals for further support.

Considering the expectations from the students, **Chapter 3 to 5** of this guidebook illustrate the corresponding support services for students with SEN. **Chapter 3** of this guidebook introduces the use of "Whole-school" approach in a TEI and the support to SEN students through school, teacher and individual levels. **Chapter 4** illustrates two SEN cases in HKIT, the process of assessment and intervention and implications of working with SEN students in individual level. **Chapter 5** introduces the role of various professional partners on supporting SEN students and suggestions to school personnel to work with professional partners as a team.

Authors' remark

We hope the content can serve as a reference for our colleagues and staffs from other tertiary institute on things we can do on our side in answering students' and colleagues' concerns regarding to issues related to SEN.

Chapter 1

Basic characteristics of various types of special educational needs

Specific Learning Disorder (with Impairment in Reading / written expression) (Previous term: Dyslexia)

According to Diagnostic and Statistical Manual of Mental Disorders – Fifth Edition (DSM-V) (American Psychiatric Association, 2013), learning disorders with impairment in reading includes difficulties on word reading accuracy, reading rate or fluency and reading comprehension. Learning disorders with written expression include difficulties on spelling accuracy, grammar and punctuation accuracy and clarity organization of written expression.This type of disorder is also known as dyslexia, referring to difficulties on word recognition decoding abilities and spelling despite having normal intelligence(Lyon, Shaywitz, &Shaywitz, 2003).For easier interpretation, "Specific Learning Disorder with Impairment in Reading / Specific Learning Disorder with Impairment in written expression" is inter-changeable with "dyslexia" inthe following parts of this book.

In the past few decades, dyslexia had been focus and studied by various researchers (C. W. Chan, 2008; Lam, 2009), studies suggested that dyslexia was identified as a genetic, biological, neurologic and bio-social problem which affects individual in the learning process and on social perspective throughout the development.

Cause

About the cause of dyslexia, studies showed that there is various cause on dyslexia. On neurological base, studies had compared fMRI and PET scans with both dyslexic and no-dyslexic children, results shown that there are correlation between functional and structural differences in dyslexic and non-dyslexic children(Whitaker, 2010). Also, Pammer(2014) had done an study on dyslexia, results from her study shown that dyslexic children had less brain activation on the left hemisphere of the brain while reading.

Other than neurological differences, researcher had looked in to the genetic causes of dyslexia(Marshall, 2012; Plomin & Kovas, 2005; Rosen, 2013). As mentioned by Marshall (2012) and Rosen (2013), there are some genes including KIAA0319 on Chromosome6 and DYX1C1 on Chromosome 15 are related with dyslexia. Study done by Paracchini, Scerri, and Monaco (2007) also mentioned that genetic factors are holds a large part of cause when it comes to dyslexia. Also, Pennington and Lefly (2001)had done a research on dyslexic children and found that there approximate 40% chance for a child to be dyslexic if they have a parent with dyslexia. Therefore, genetic factors may have their impact on the cause of dyslexia in our development.

Signs and Symptoms

According to local studies, dyslexic children may experience various cognitive deficits affecting their learning throughout their development. Scholars found that, among

various of cognitive deficits, rapid naming and orthographic awareness was the most common deficit whereas Hong Kong dyslexic children may encounter; also phonological awareness deficit, phonological memory deficit and visual perceptional deficit may also be seen in Hong Kong dyslexic children's development(D. W. Chan, Ho, Tsang, Lee, & Chung, 2004). With having these cognitive deficits, Dyslexic children may have lower performance in certain tasks such as; dyslexic children having rapid name deficit may lead to lower performance on their reading fluency(Chung, Ho, Chan, Tsang, & Lee, 2011), dyslexic children having orthographic awareness deficit may lead to difficulties on writing and copying Chinese characters(Chung et al., 2011), Dyslexic children may also have working memory deficit which may appear as having bad memory on remembering simple procedures or language related knowledge(Beneventi, Tonnessen, Ersland, & Hugdahl, 2010; Ghani & Gathercole, 2013).

As mentioned in Ho, Chan, Tsang, and Lee (2002)study, there is around 20 % of children found out with single cognitive deficit, around 23% of dyslexic children having double cognitive deficit and almost 50% of dyslexic children have multiple cognitive deficit throughout their development. Therefore,dyslexic children may have their difficulty on their all-round academic performance on compare to non-dyslexic children in Hong Kong.

Specific Learning Disorder with Impairment in Mathematics (Previous term: Dyscalculia)

According to DSM-V's diagnostic criteria,specific learning disorder with impairment in mathematics includes difficulties on number sense, memorization of arithmetic facts, accurate or fluent calculation and accurate math reasoning. Students with specific learning disorder with impairment in mathematicshave their mathematical skills significantly lower than students on compare with their chorological age.For easier interpretation, "Specific Learning Disorder with Impairment in Mathematics" is inter-changeable with "Dyscalculia" in the following parts of this book.

Cause

Dyscalculiahave been studied throughout recent years, according to a study done by Ruth S. Shalev (2004), evidence had indicated that dyscalculia is like other learning disabilities, is a brain-based disorder with genetic and neurobiological cause. Neuroimaging experiments had confirmed that learning new mathematical facts involves frontal lobes and the Intraparietal Sulci (ISP), while retrieving learned facts involves left angular gyrus(Ischebeck, Zamarian, Schocke, & Delazer, 2009). Participants with both mathematical and literacy disabilities have deficits in their left hemisphere of their brain, while those only with mathematics disabilities tends to have deficits in their right

hemisphere (Rourke, 1993). Also, structural abnormalities has been observed in participants with mathematical disabilities, studies had shown that participants with dyscalculia may not have their IPS well developed on compare to other typical learners (Isaacs, Edmonds, Lucas, & Gadian, 2001; Rotzer et al., 2008; Rykhlevskaia, Uddin, Kondos, & Menon, 2009).

Apart from neurobiological causes, dyscalculiamay potential be heritable. Shalev and her collages had done a study on familial patterns of mathematical disabilities, results found that families with parents or siblings diagnosed with dyscalculiamay also likely to be diagnosed with mathematical disabilities 10 times more than general population (2001).

Signs and Symptoms

Participants with dyscalculia perform poorly on simple tasks such as number comparison and counting numbers of dots(Butterworth, 2008). Scholars also found that participants with dyscalculiaappear to be implicated with poor working memory, reasoning and spatial cognition(Butterworth, Varma, & Laurillard, 2011). Geary (1993) also suggested that poor working memory may affect calculation procedures and learning mathematical facts. Also Koontz (1996)found that students with dyscalculia have difficulties on performing both forward digit span task and backward digit span tasks. Trott (2014) also suggested that students with dyscalculiain higher education may also experience difficulties such as problems with place values, problems remembering formulae or theorems, always forgetting names, dates, phone numbers etc.

Developmental coordination disorder

(Alternative term: Dyspraxia)

According to the Diagnostic and Statistical Manual of Mental Disorders – Fifth Edition (DSM-V) (American Psychiatric Association, 2013), Developmental coordination disorders(DCD) is classified as a Motor Disorder with the criteria of having difficulties on acquiring and executing coordinated motor skill on compare with their chronological age. Also according to interpretation of International Classification of Diseases (ICD – 10), DCD is diagnosed if the student's fine or gross motor skills is significantly poorer on compare with students with the same age and general intelligence.

Cause

While the exact cause of DCD is still yet to be determined, Gubby had suggested that DCD may be heterogeneous (1975; 1978). Various studies had looked in the etiology of DCD, researchers suggested that DCD may be cause by brain damage or dysfunction (Dewey & Wilson, 2001; Waterston, 1999). While Gubbay stated that perinatal abnormalities may also be an cause of DCD (1975), but still the etiology of DCD is still unclear (Touwen, 1990).

Signs and symptoms

According to Kirby, Edwards, Sugden, and Rosenblum (2010), DCD persists throughout the lifespan and which has no cure. While DCD is classified as a motor disorder which leads to difficulties on learning and carrying out Fine or Gross motor movements, it was found that student with DCD may experience some motor skill deficits which leads to difficulties on handling daily live situations, such has having difficulties on acquiring handwriting skill , difficulties on dressing and having poor personal hygiene(Summers, Larkin, & Dewey, 2008).Furthermore, Zwicker, Harris, and Klassen (2013) suggested that having poor motor coordination skills may also lead to poor self esteem and emotional or behavioral problems, while Hill and Brown (2013) found that DCD adults have significantly more depressive symptoms than comparing with control group. Other than motor coordination deficits, it was found that students with DCD may experience difficulties in other non-motor domains such as poorer working memory(Alloway, Rajendran, & Archibald, 2009; Kirby, Sugden, Beveridge, & Edwards, 2008), executive functioning deficits(Wilson, Ruddock, Smits-Engelsman, Polatajko, & Blank, 2013), poor timing and balance(Ont, Missiuna, Gaines, & Soucie, 2006).

Attention-deficit /Hyperactivity disorder

Attention-deficit / Hyperactivity disorder(ADHD) is classified as a neurodevelopmental disorder in the DSM-V (American Psychiatric Association, 2013).

Cause

Studies suggested that ADHD is associated with brain structure and brains neurotransmitter systems. According to Konrad and Eickhoff's study(2010) ADHD may have less connectivity between two brain regions. Malenka, Nestler, Hyman, Sydor, and Brown (2009) had also suggested that individuals with ADHD may have thinner posterior parietal cortex on compare with control groups. Researchers had suggested that ADHD is mainly related to neurotransmitter systems such as systems involving dopamine and norepinephrine (Malenka et al., 2009).

While knowing that ADHD is associated to abnormalities in brain structures and neurotransmitter systems, it was suggested that ADHD is also heritable. Gizer, Ficks, and Waldman (2009) had done a meta-analytic review on gene studies on ADHD, they suggested that genes such as dopamine transporter gene (DAT1) and (SLC6A3) are associated with ADHD. Also, ADHD behaviors were found having genetic influences and having high co-morbidity with Autism(Ronald, Simonoff, Kuntsi, Asherson, & Plomin, 2008).

Signs and Symptoms

According to DSM V's diagnostic criteria, students with ADHD may present persistent patterns of inattention, hyperactivity and impulsiveness that interferes individuals functioning and learning development(American Psychiatric Association, 2013).

Individual's with ADHD may found more inattentive and may have a higher chance to exhibit emotional instability status in school or working environments when compared with control group (Avisar & Shalev, 2011). While ADHD is characterized by hyperactivity and impulsivity behaviors, Individuals with ADHD may found having verbally hyperactive / impulsive and motoric hyperactive / impulsive (Gibbins, Toplak, Flora, Weiss, & Tannock, 2011).

Autism Spectrum Disorder

Autism Spectrum Disorder (ASD) is term characterized by people having abnormalities on social interaction and social communication; and also with restricted

and repetitive behavior. According to the diagnostic criteria from DSM-V(2013), symptoms above must be presented in the early age of development.

According to author's observation, only studentson the higher functioning end of the autism spectrum (Previous term: Asperger syndrome) are admitted in TEIs, students with severe ASD are rarely seen to pursuit higher education after HKDSE.

Cause

Studies found that ASD is associated both by genetic and neurobiological causes. Amaral, Schumann, and Nordahl (2008) suggested that is affected by different parts of the brain structure. Scholars had found that brain regions such as limbic system and particularly hippocampus, amygdala and cerebellum are related to ASD (Damasio& Maurer, 1978; Haznedar et al., 2014; Pierce, Müller, Ambrose, Allen, & Courchesne, 2001). Also it was found that individuals with ASD may have increased cerebral volume or brain weight(Aylward et al., 1999) . Twin studies had also found evidence on proving that ASD may be genetic heritable (Hallmayer et al., 2011; Ronald et al., 2006).

Signs and Symptoms

ASD is characterized by persistent deficits in social communicationand social interaction in various contexts. It includes deficits in social reciprocity,nonverbal communicative behaviors used for social interaction, and skills in developing andmaintaining relationships (i.e. relationship with family, friends and colleagues). Apart from social communicationdeficits, individuals with ASDdisplay restricted, repetitivepatterns of behavior, interests, or activities.

Emotional and Behavioral Disturbance

Emotional and behavioral disturbance (EBD) is an umbrella term under which several distinct diagnoses such as anxiety disorder, depression, manic-depressive disorder and more (American Psychiatric Association, 2013). "Individuals with Disabilities Education Act" (1997) further elaborated that EBD is a term describing individuals with range of problems that affects their academic performance which is cannot explained by intellectual, sensory, or health factors.

Although, some disorders such as ADHD and ASD which are mentioned above also falls under category of the umbrella term of Emotional and Behavioral disturbance,

but we would like to specify EBD, ASD and ADHD separately as they all affect learning in different aspects.

Cause

The etiology of EBD is with various causes on different aspects. While EBD is an umbrella term of different disorders, EBD are mainly categorized into "Internalizers" and "Externalizers".

Internalizers include individuals with depression, anxiety disorders and other disorders which have common characteristics such as low self-esteem, withdrawal and internalize their problems (Smith, 2007). Studies had also found that depressions and anxiety disorders are Genetic heritable(Hettema, Neale, & Kendler, 2001; Sullivan, Neale, & Kendler, 2014). Scholars had also found evidence on abnormities in brain structure in individuals with internalizing disorders such as depression and anxiety disorders(Drevets, Price, & Furey, 2008; Martin, Ressler, Binder, & Nemeroff, 2009).

Externalizers include individuals with externalizing behaviors such as ADHD, oppositional defiant disorders (ODD), Conduct Disorders (CD) and Antisocial personality disorders (ASPD). Externalizing disorders often have common characteristics such as aggressive, having maladaptive social behaviors and having impulsive behaviors(Ollendick& King, 1994). Evidence had been found on proving that externalizing disorders are heritable (Hallmayer et al., 2011; Ronald et al., 2006; Thapar, Harrington, & McGiffin, 2001).

Signs and Symptoms

Individuals with EBD may demonstrate both internal and external behavioral manifestation; internalizing behavior may include social withdrawal or depression, externalizing behaviors may include maladaptive social behavioral responses such as performing aggression and non-compliance(Goran & Gage, 2011). Also, it was found that there was a high co-morbidity on learning disabilities and/or communication disorders(Benner, Nelson, & Epstein, 2002; McCabe &Meller, 2004). Also, Benner and his collages had summed up that around 71 % of Students with EBD have co-morbid with language impairments and over 64% and 56% of students with EBD have expressive language deficit and receptive skill deficit respectively(Benner et al., 2002). It was suggested that low language skills may lead to poor academic performance and poor behavioral performance (Tomblin, Zhang, Buckwalter, & Catts, 2000). Studies had also looked into students with EBD, results found that they experience academic failure, high unemployment and have high dropout rates(Bradley, Doolittle, &Bartolotta, 2008; Maag&Katsiyannis, 1998).

Chapter 2

Process of screening tool development

Rationale

Despite there is well-established screening and diagnostic system from Education Bureau in pre-school, primary and secondary settings (Poon-McBrayer & Lian, 2002), there is no unified system or guidelines issued by Education Bureau in tertiary setting, TEIs have their own policies to identify students with SpLD. Most of the TEIs in Hong Kong rely heavily on self-disclosure of the students, such as distributing questionnaires to newly admitted students (Hong Kong Association for Specific Learning Disabilities, 2013). Self-disclosure can be hindered by students' unwillingness to disclosure their SpLD status and lack of confirmation on their own status. Social worker from HKIT (personal communication, August 20, 2015) reflected that some of the students in HKIT suspected that they had SpLD, as their secondary school teachers told them about it, but they had not referred to clinical or educational psychologists to confirm it.

In the current system, pre-school, primary and secondary school teachers can take an active role in screening suspected cases of SEN: they can utilize various screening tools distributed by Education Bureau, for example, The Hong Kong Behavior Checklist of Specific Learning Difficulties in Reading and Writing for Junior Secondary School Students (BCL-JS) (Ho et al., 2009) in screening suspected cases with dyslexia. On the other hand, teachers who work in TEIs are forced to take a relatively passive role in identifying students with SEN; they have to wait for self-disclosure of the students. Regarding the great discrepancy in the screening system in tertiary level and the others, it is essential to develop a screening tool for students in tertiary level.

Additionally, some of the students in HKIT suspected themselves to have SEN condition, but they did not have formal diagnosis from recognized professionals. Since formal diagnosis is costly, initial screening is needed to provide preliminary information prior to referring the students to diagnostic services, as well as providing information to raise teachers' awareness on the potential learning difficulty of the students.

There is no known, specific screening tool for identifying tertiary students in Hong Kong. Although Hong Kong Association for Specific Learning Disabilities (2013) suggested the use of Hong Kong Chinese Language Abilities for Secondary School Students on screening tertiary students with dyslexia, it cannot serve as a meaningful reference: the norm was based on the reading levels in Form 1, 3 and 5 secondary school students, which are below that in tertiary students and may over-estimate reading levels in tertiary students.

There is one existing tool for screening adults with dyslexia, The Hong Kong Reading and Writing Behavior Checklist for Adults, which is applicable to detect reading and writing problems in adults aged 21 to 60 and matches with the

age group in tertiary setting (Hong Kong Association for Specific Learning Disabilities, 2013).However, as it intended to apply in general public, the examples used in the items of The Hong Kong Reading and Writing Behavior Checklist for Adults are related to daily life of adults, such as "cannot handle financial issues efficiently" (Ho, Leung, Cheung, Leung, & Chou, 2007), rather than learning tasks and life of college students.

Additionally, Hong Kong Reading and Writing Behavior Checklist for Adult (Hong Kong Association for Specific Learning Disabilities, 2013) mainly covers reading and writing aspects. Other aspects like attention and mathematical skills, were not emphasized in the screening tool. Since HKIT has diagnosed cases of disorders other than specific learning disorder with impairment in reading / written expression (also known as dyslexia), such as ASD and ADHD, a tool that is able to distinguish or screen out other SEN students from population is needed.

Since existing screening tools for screening students with SpLD are either not applicable for tertiary students, or not directly related to learning tasks, it is essential to develop a screening tool that(1) covers items related to learning tasks and life of college students; (2) covers multiple areas, other than reading and writing; and (3) have screening and identifying power.

The format of our current screening tool

Existing screening tools appeared in various format, including performance-based, teacher rated checklist and self-reported inventory.

The screening test developed by Ho, Leung, and Au (2008) is one of the examples of performance-based test. The performance of students on nine tasks, including essay writing, morphology, error correction, segmentation of text, reading comprehension, fluency in reading text, copying, dictation and reading aloud, reflects their morphological awareness, orthographic skills and syntactic skills. The scores of students in the nine tasks are converted into z-scores and compared to the norm (Ho et al., 2008). Although performance-based screening tests are able to provide in-depth assessment on students' ability in various aspects, they are not cost-effective as school personnel need to spend a lot of time in implementing and scoring the test.

Teacher rated checklists, for example, The Hong Kong Behavior Checklist of Specific Learning Difficulties in Reading and Writing for Junior Secondary School Students (BCL-JS), are common in primary and secondary school settings, however, the usage of teacher rated checklists is limited in tertiary setting, as pupil-teacher ratio is relatively high in TEIs and it is difficult for teachers to notice students' reading levels in tertiary classrooms.

Self-reported inventory, for instance, Autism Spectrum Quotient (AQ), can be a cost-effective and possible alternative in tertiary level. Self-report has

been identified as a valid measure of SpLD. Researchers found that self-reported reading ability predicted spelling ability in psychometric test (Schulte-Korne, Deimel, & Remschmidt, 1997). When compared with performance-based test and teacher rated checklists, it is relatively cost-effective and possible in high pupil-teacher ratio, as time spent on implementing can be reduced as students complete the inventory individually and it is unnecessary to have third parties as observers.

Regarding to the strengths and weaknesses of various formats of screening tool, self-reported inventory has been selected as the format of screening tool, as it is the most cost-effective and applicable in institutions that with high pupil-teacher ratio, such as HKIT.

<u>Process of development</u>

Initial item pool was generated by reviewing relevant literatures on the cognitive and behavioral profile of SpLD and published criteria of SpLD. Nine constructs, which were considered as important indicators to distinguish students with and without SEN, were selected: "Weaker verbal working memory", "Deficit in inhibition of distractors", "Deficit in rapid naming", "Difficulty in retrieval of arithmetic facts", "Slower processing speed", "Deficit in set shifting", "Weaker vigilance", "Deficit in response inhibition" and "Weaker visual-spatial working memory". 60 items were generated in accordance to the selected constructs. After reviewing the items with external consultant team (i.e. experienced specialists with years of experience of working with individuals with SEN), items revised and trimmed into 57 items. The following table shows the constructs and the corresponding examples of the items:

Construct	Examples of the items
Verbal working memory	「記不起剛剛才閱讀過的文章或資訊內容」
Deficit in Rapid Naming	「不能快速並準確地讀出在紙張上或螢幕上的一連串數字」
Difficulty in retrieval of arithmetic facts	「在找續時，計算有困難」
Deficit in set shifting	「在日常對話中，若對方轉換話題，我會有一種跟不上的感覺」
Poorer visual-spatial working memory	「即使要去一個曾經去過的地方的時候，我需要用地圖或 GPS 幫助我認路」
Deficit in response inhibition	「當輪侯時，我會催促別人、插隊或離開」
Weaker vigilance	「在進行一項活動期間，即使它出現一些變化（如老師講課時由一個論點跳到另一個論點），我都察覺不到」
Deficit in inhibition of distractors	「不能長時間專心做一件事，例如做作業不久就會停筆，離開座位跟別人談話或看電視」
Slower Processing speed	「面對同一類工作，自己需要比其他人用更多時間才可完成」

QESS team members had distributed questionnaire to students studying AD/D programs in HKIT. QESS team also invited students studying Diploma of Yi Jin (DYJ) to complete the questionnaire, after considering the proximity in age in students in AD/D and DYJ.

Teachers in HKIT were invited to distribute the questionnaire and approximately 800 pieces of questionnaire had been collected. Data entry was conducted by two student helpers studying degree program in HKIT and counter-checked by project assistant. QESS team will proceed to data analysis for validating the questionnaire in the coming months.

Statistical analysis for validating the current screening tool

1. Construct validity: Exploratory factor analysis and Confirmatory factor analysis

According to Harrington (2008), construct validity refers to an examination of a measure of construct that is not measured directly. According to Fabrigar and Wegener (2011), factor analysis is statistical procedure that can examine the construct validity of a measure.

Exploratory factor analysis (EFA) is a data-driven approach that used to identify the number of underlying factors for a set of variables and the relationship among the items (Fabrigar & Wegener, 2011). By applying EFA on the data, QESS team can know the number of constructs assessed in the newly developing screening tool and which items are under the same construct.

Confirmatory factor analysis (CFA) is considered as a second step to examine whether the structure found in EFA applicable in new sample (Harrington, 2008). By applying CFA, QESS team can confirm the findings from exploratory factor analysis.

2. Receiver operating characteristic analysis

Receiver operating characteristic analysis (ROC analysis) is a measure that evaluates the accuracy of a screening tool that classifies participants into two classes (Zou, 2012). QESS team had obtained the data from students with prior diagnosis of SEN condition and those without any medical record of SEN condition.

A cut-off value that balanced specificity and sensitivity will be determined after applying ROC analysis, which can distinguish students with higher chance of living with SEN and students with lower chance of living with SEN in the future.

3. Concurrent validity: Teachers' rating questionnaire

    According to Domino and his colleagues (2006), concurrent validity is defined as the extent of the result of a measure, adhere to another test that is measuring the same construct.

    With the assistance of external consultant team, a teaching rating questionnaire had been developed. The followings are the sample items from the teacher rating questionnaire:

	低	稍遜	中等	中上	高
1. 學生的語文閱讀能力	☐	☐	☐	☐	☐
2. 學生的說話及表達能力	☐	☐	☐	☐	☐

    Informants of the teacher rating questionnaire should be teachers that have deep understanding on the background and abilities of the students in various aspects. Therefore, QESS team is currently inviting class teachers in DYJ to rate their students in terms of abilities in various aspects, as DYJ class in HKIT is class-based and class teachers were encouraged to develop close relationship with their students in the class through social gathering and social media.

    After collecting the data from DYJ teachers, QESS team will conduct correlation analysis on the summation of the score in teacher rating questionnaire and the summation of the score in self-report inventory of same group of the students. If the correlation coefficient between the two measures is on or over 0.7, the concurrent validity of the self-report inventory is considered as high.

Authors' remarks

    It is estimated that data analysis procedure of the current screening tool will be completed in the year of 2017. We hope this chapter will provide information for teachers working in TEIs develop a screening tool in their institutions if it is considered as necessary.

Chapter 3

Whole school approach to support students with SEN

School level: Creating inclusive atmosphere in campus

It is important to foster loving, non-discriminative atmosphere in the school to ensure the well-being of its students.

In-class sessions have been held in HKIT in fostering an inclusive atmosphere at campus. The sessions included introduction on characteristics of dyslexia and ASD (i.e. two common SEN types according to a survey conducted earlier in HKIT), games that help experiencing the life of SEN students, strengths of SEN students and ways that can support peers with these two disorders. The in-class sessions had received positive comments from the students: most of the students agreed that the sessions can enhance their understanding on SEN and they have more positive attitude towards peers with SEN.The following has shown some sample educational activities that can facilitate students' understanding and appreciation on SEN students:

Sample activity (1)

情景一

你平日坐巴士回學校，今天交通擠塞，同行的同學說要改坐地鐵回學校

情景二

余Sir本身說今次的測驗只考第一至三課，但在考試前十分鐘，余Sir突然說改考第四至六課

Good Luck!

Objective: Enhance students' empathy on students with ASD by emphasizing the similarity among them

1. Students were invited to comment on the level of disturbance on Scene 1 and 2. Scene 1 involved a situation that the students have to change their route to school because of car accident; while Scene 2 involved a situation that the teacher change the scope for examination on the day of examination. Possible answers from students for Scene 1 includes "It did not really matter" and "It was nothing for me";and Scene 2 includes "It was totally the responsibility of the lecturer!" and "I will draft complaint letter to school personnel".

2. Teacher can emphasize that everyone hasdifficulty in tolerating changes in schedule in certain extent. Students with ASD may be angry when they has to change the classroom or the route to the school, as the other students do when the test content changed suddenly.

Sample activity (2)

Objective: Enhance students' understanding on the characteristics of students
        with ASD

1. QESS team members presented a picture, which illustrated that a woman waiting for ATM and getting angry when she saw a man who was enjoying air-conditioning in the ATM centre.Students were invited to tell why the lady in orange dress was so angry.Possible answers from students includes "because she was waiting ATM", "because the guy in the ATM center was selfish" and "because it was sunny and she has to wait so long".

2. Teacher can tell the possible answer from students with ASD (i.e. "She was waiting bus") and explained in terms of the characteristics of students with ASD (i.e. lack of central coherence that they are focus on details instead of the whole picture).

Sample activity (3)

Objective: Enhance students' appreciation on the strengths of students with
        ASD

1. QESS team members showed a picture of baby carriage, which is a famous embedded figure test, to the students. Students were invited to find out the figure (e.g. triangle) in the picture (i.e. baby carriage) and record the time needed.

2. Teacher can tell the students that individuals with ASD can finish the task in more fast and accurate manner, as they are detail-minded.

Sample activity (4)
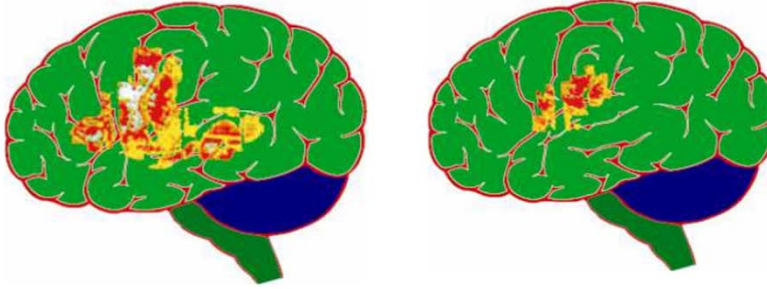
Objective: Enhance students' understanding on the etiology of dyslexia

1. QESS team members showed two pictures of human brain. Students were invited to identify the brain of individuals with dyslexia

2. Teacher can announce the answer and further explain that the brains of individuals with dyslexia had less brain activation on the left hemisphere of the brain while reading. Teacher can also point out the neurological cause of dyslexia and emphasize that the cause of dyslexia was not laziness, it has its neurological cause behind the disorder.

Sample activity (5)

(Link: https://www.youtube.com/watch?v=rHb5IkCBFr4)
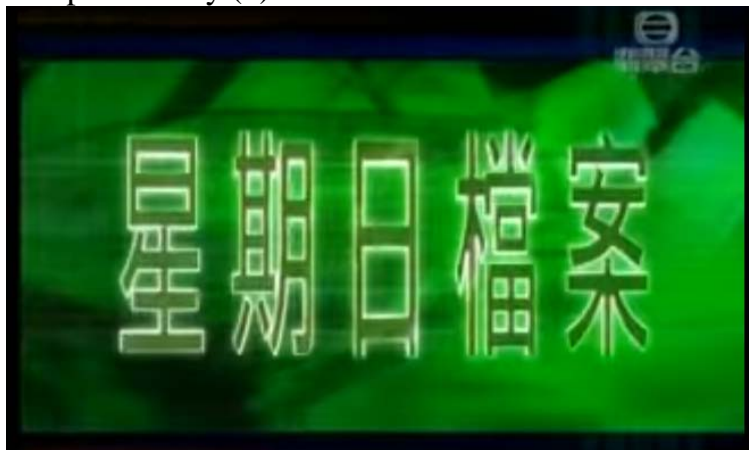
Objective: Enhance students' understanding on the difficulty encountered by individuals with dyslexia and raise discussion among students on the potential strategies to support peer with dyslexia

1. A video (i.e. the story of Tin Yan, a student with dyslexia) was shown to the students

2. Students were invited to discuss the peer support plan on the following scenarios:
   - Assuming that you are working with Tin Yan in a group project. Each of you is

responsible for one part. What would you do if you find that the part that written by Tin Yan has more grammatical and typos?

- Assuming that you are working with Tin Yan in a group project.Each of you is responsible for one part. Tin Yan said that he is willing to do the project, but he needs more time to work on it as that part requires intensive literature review. What would you do?

3. Teacher can collect the comments from the students. For comments that shown empathy to Tin Yan, teacher may praise the students. For comments that potentially insult Tin Yan, such as "Giving him up" or "Blaming him", teacher can ask the student what would they think if they are treated like Tin Yan; and emphasize that Tin Yan's difficulty in reading and writing is affected by genetic and neurological factors, rather than personal efforts and attitude.

Sample activity (6)

人際交往能力
Q: 9-12

讀寫能力
Q: 1-4

注意細節能力
Q: 5-8
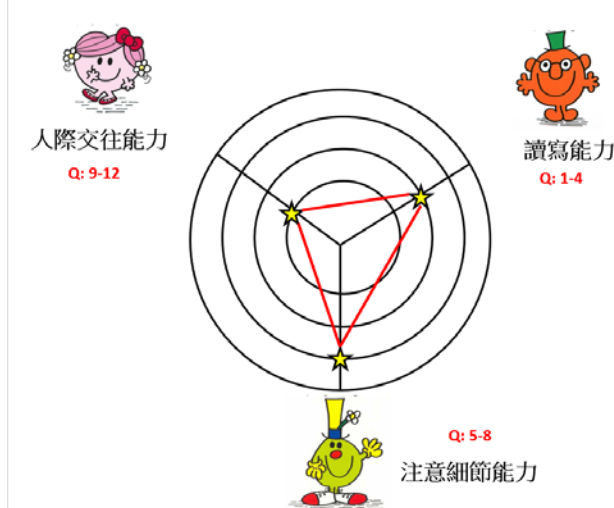
Objective:Enhance students' appreciation on the difference among them

1. Students were invited to answer the following questions, which represent different aspects of capacity. Students were asked to put a tick in the corresponding blanks of the questions when they think it suits them:
   (1) 我喜歡閱讀（如小說和報章）
   (2) 我喜歡寫日記
   (3) 作文對我來說是一件容易的事
   (4) 我的閱讀速度比其他人快
   (5) 我能留意到別人注意不到的細節
   (6) 我擅長記起一些較少人注意的細節（例如地名和學生編號）
   (7) 我在一些需要觀察力的遊戲中表現突出
   (8) 我能察覺一些細微的變化

(9) 我擅長從同學的表情和動作，猜到他們內心的感受
(10) 我能明白不同人的需要
(11) 我容易認識朋友
(12) 我容易跟同學混熟

2. Students were asked to count the number of ticks in Question 1 to 4 (reading and writing ability), 5 to 8 (interpersonal skills) and 9 to 12 (ability in focusing on the details). Students were asked to plot a graph in accordance to their scores in each aspect (the diagram above).

3. Students were asked to compare their results with their classmates. Teacher can point out that everyone is unique. Some of the classmates may have exceptionally talent in language while some of them are good at communicating with the others. Teacher can also point out that some of the students with SEN (e.g. students with ASD) may have weaker ability in one aspect (i.e. interpersonal skills) while having talent in another aspect (i.e. ability in focusing on the details).

Note: Please noted that it is not a formal psychometrically sound scale, it is simply an exercise for raising the awareness of the students on the differences among the others.

Teacher level: Teacher training workshop

Equipping teaching staffs with knowledge and skills of working with students with SEN is essential, as they are the frontline workers that interact frequently with the students and one of the most important informants of learning difficulties that the students encountered.

Before designing the teacher training materials, QESS team conducted literature review for the framework of the workshop. Scholars (e.g. Dart, 2006; Golder, Jones, & Quinn, 2009) pointed out that "skills", "attitude" and "knowledge" were the essential elements for teacher training. QESS team also conducted in-depth interview on teaching staffs in HKIT, for challenges that they encountered when teaching students with SEN and their expectations on the workshop. Additionally, QESS team interviewed six AD/D students with SEN, for their learning difficulties and expectations towards the teachers. QESS then worked jointly with local educational specialists for the content of teacher training workshop and preparing corresponding materials, based on the interview results.

Teacher training workshop had been conducted in HKIT in January 2016, the feedback from the teachers was generally positive, some of the teachers regarded the workshop as satisfactory to them. QESS team also published a teacher training manual for teachers to review the skills that learnt in the workshop, which had been distributed in April 2016.

Diagram 1. Cover of teacher training manual

Individual level (1) : Fostering resilience

Wilson and Savery (2013) identified the role of resilience on the well-being of adults with SEN. Students with resilience have strengths and characteristics that helped them to overcome their learning difficulties (National Education Agency, 2011) . Resilience is not an individual attribute, but a product of collective efforts of family, friends, professionals and teachers (Goodley, 2005). Werner (2005) identified three factors contributing to resiliency in adolescents with SEN: (1) individual (i.e. self-help skills, self-efficacy); (2) family (i.e. family support network); and (3) community (i.e. relationship with teachers).

Teachers may develop close relationship with the students and encourage them by putting emphasis on what they can do, rather than their limitations. Assistive technology is also considered as a tool of empowerment and fostering resilience, which students can utilize them to solve their own problems. Useful resources included:

Resources	Description
Kurzweil3000 (Link:https://www.fireflybykurzweil.com/KLogin.php)	It supports Universal Design for Learning, and allows struggling readers to learn the same content as their peers in different ways with this reading, writing and learning software solution It facilitate students to develop on the following areas: • Reading Fluency • Vocabulary • Comprehension • Writing • Study skills • Test-taking support
GrammarCheck (Link:http://www.grammarcheck.net/)	This online grammar checker will show (and suggest corrections for) grammar errors in your essay or other written document
DRAFT: Builder (Link: http://donjohnston.com/draftbuilder/)	It helps struggling writers by breaking down the writing process into smaller steps: • Brainstorming ideas • Jotting down notes • Creating a first draft • Providing templates of different genres

Word Q (Link:http://www.goqsoftware.com/index.php)	• It predicts and suggests words while the user writes, creating easy word-flow • It also gives spoken feedback, which makes it easier for students to detect their mistakes and correct them
NaturalReader (Link: http://www.naturalreaders.com/index.html)	• It can convert text on web pages, in e-mails, PDF files, and in many popular applications to words spoken in a natural voice. • It can also convert text into MP3 and WAV files

Individual level (2) : Behavioral management strategies in classroom

Similar to their counterparts, students with SEN are affected by behavioral and emotional issues occasionally. Effective behavioral management strategies are needed to maintain the classroom discipline; and cope with the behavioral and emotional challenges of the students. Behavioral management strategies can be divided into two categories: proactive and reactive approaches.

Proactive approach

Proactive approach refers to the strategies that aim at reducing behavioral issues from happening (Department of Education, 2009).

The first step is to build rapport, which refers to building harmonious connection with the students (Fleming, 2003). As Granitz, Koernig and Harich (2009) mentioned, rapport serves a good foundation for enhancing students' motivation in the class and facilitating classroom management. By the authors' observation, rapport can help in engaging the students to appropriate behavior in the classroom. For instance, one of the authors found that students are willing to express their view and put the answers on the whiteboard after rapport was established in the class. According to Fleming (2003), useful rapport building techniques include remembering students' name and addressing them with their names during the class; and encouraging students to visit during office hours.
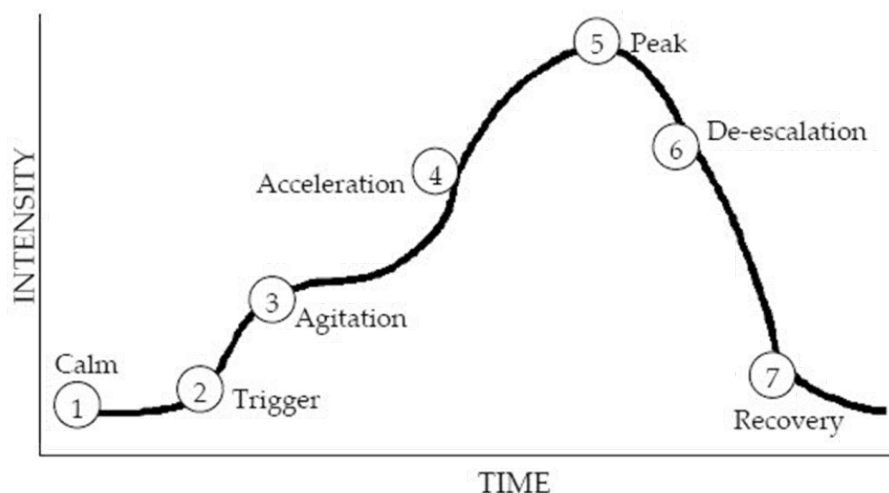
Another step can be establishing mutually agreed terms or "classroom rules" (Department of Education, 2009). In a college classroom, school rules are not as strict as those in secondary schools. Some behaviors, such as eating and drinking during lecture,

are acceptable for some college teachers. Teachers may discuss with the students for the "classroom rules" and the reasonable consequence of violating the rules, so that the students can know which kind of behaviors are acceptable in the classroom. Teachers can also implement the consequence accordingly.

Another example is to create opportunities to engage in the lesson and provide positive feedback to good behaviors (Department of Education, 2009). As mentioned by the Department of Education (2009), it can prevent the students from losing interest to the class and engage in inappropriate behaviors. It can also allow students to take an active role in the class and foster appropriate behaviors (Department of Education, 2009). For instance, divide the class into groups for in-class discussion and praise those who perform well in the group discussion.One of the authors has an experience of creating opportunities for students to engage in the lesson: she first presented a video to introduce the concept of "child-centered play" in the psychology class, and then asked the students to complete an exercise, which was to use the toys to play with their group mates (i.e. who were pretended to be an infant). The students were engaged and found it interesting; and did not engage in inappropriate behavior like playing with their cell phones or sleeping in the class.

Reactive approach

Reactive approach refers to strategies which are used when there is anincidence of inappropriate behavior in the classroom (Department of Education, 2009). There are seven phases occurring in temporal order, including calm, trigger, agitation, acceleration, peak, de-escalation and recovery (Colvin, 2004). Students tend to engage in certain behaviors at each stage. The intensity of the behavior varies among stages. Teachers can select the appropriate responses in accordance to the status of the student. The following table summarizes the description of the stage and appropriate response of the teachers:

Stage	Description of the stage	Appropriate response
Calm	• The students are able to function appropriately with other students in many occasions, such as engaging in group work and sharing in the class • The student can follow the instructions of the teachers in general	No intervention is needed as the students are cooperative and their behavior is acceptable in this stage
Trigger	Something occurs that upsets the student, for example, includes several unresolved conflicts, such as repeated failures, frequent corrections, interpersonal conflicts	• Understand and meet the needs of the student when it is appropriate. For example, some students may yell out in the class that they need a break. Teachers may give the whole class a 10-min break when they think it does not affect the lesson • Giving attention and acknowledgment to the student
Agitation	The student's behavior becomes unfocused. The student is off-task, perhaps withdrawing socially, talking with others, and/or out of his or her seat	• Provide options and alternatives to them. For instances, teachers can ask them if the student would like to wash his/ her face in washroom or concentrate on the lecture. Both of the options are appropriate to the situation while students feel being respected
Acceleration	The student's behavior becomes more focused, provocative, and may be threatening, such as pointing at the teacher and speak in foul language	• Stay calm andavoid challenging the students • Do not enforce body contact • Do not use "why" question
Peak	The student is unable to think rationally or to exhibit self-control	• Isolate the student and evacuate others • Contact corresponding parties (i.e. student counselor) for help
De-escalation	Student displays confusion, with less severe behavioral issues, such as blaming others and denial	• Avoid blaming the student • Emphasizing starting anew
Recovery	Student is willing to resume routine, especiallytasksthat do not require interaction	• Teachers can focus on the normal routine • Praise appropriate behavior

(Colvin, 2004)

Chapter 4

Case sharing and implications of working with individual students

Case of Student A

(I)   Case analysis

The client is a 22 years old boy, a Year 3 student studying TUBM (Business Management) in Hong Kong Institute of Technology (HKIT). He reported that he was diagnosed to have dyslexia by professionals (i.e. registered doctors, clinical or educational psychologists) in the self-reported questionnaire distributed by QESS project team. He remembered that he has gone through some assessment, but he has forgotten the details of assessment.

He has received special examination arrangement by HKEAA during HKCEE, including increasing the font size and providing additional examination time. The student reflected that additional examination time was helpful for him, as he sometimes need more time to recall the correct word. However, he said additional examination time does not help when he did not know how to write the word. Additionally, he reflected that increase the font size was not very helpful for him. The student also remembered that he has received services in secondary school, but he has forgotten the details.

Student's present levels of academic performance and functional performance

(1) Involvement and progress in the general curriculum

To gain thorough understanding on the student's present level on academic performance, information was collected through reviewing academic record and conducting face-to-face interview with the student.

As indicated by the student's academic record, he was failed in two of the subjects (i.e. General Principle of Law and Employability) when he was studying associate degree. However, there is insufficient information on the extent that dyslexia affected his learning in these two subjects, as it could be either language problems (e.g. inability to communicate the idea to the lecturer in the essays or difficulty in comprehending the assigned readings) or problems in studying knowledge related to legal sector or career aspect. Additionally, he got a pass in Basic English and Communication, it reflected that his language problems may not be so significant that affected his performance in English required in associate degree level. His language problems appeared to have insufficient effect on his learning in degree level as he passed in all of the subjects in degree level.

In-depth face-to-face interview was conducted to understand the student's perceived difficulties in encountering external academic demands, which cannot be reflected in academic record.

According to the interview record, the student reflected that he had difficulties on reading and writing. Sometimes, he wants to find the English vocabularies on the internet, however, he found that he had difficulties in recalling the correct Chinese characters. The student also reflected that he was "on the boundary of pass/ fail" in all of his subjects.

To further investigate the student's presenting academic level in degree level, curriculum-based assessment focusing on reading and writing tasks were conducted, as reading and writing are the major tasks of learning across various programs in HKIT. Five aspects of language competency were assess, including reading fluency, accuracy, reading comprehension, writing and spelling. The assessment materials were selected from the assigned readings of the subjects that the student was currently studying (i.e. strategy management and digital marketing).

According to the results of curriculum-based assessment, the student encountered significant difficulty in spelling (i.e. he could spell 0% of the selected vocabularies), which affected his performance on reading comprehension and writing. When given the correct meaning and spelling of the vocabularies, he was able to correct the writing task and reading comprehension.

(2) Social interactions

According to the interview record, the students mentioned that he has a good relationship with the teachers in HKIT. When he asked questions via email, the teachers answered his questions. Additionally, he has friends in school. Although two of them were withdrawn from the program and one of them were graduated; and he was the only one who stayed in the program at the moment, it did showhis ability to build up and maintain friendship.

(3) Behavioral and emotional issues

There was neither observable nor self-reported behavioral and emotional issues on the student.

(4) Strengths

Although the student said that he did not have any strength, the interviewer did observe his strength during interview: listening to the others carefully, polite and punctual. He was punctual that he arrived the interview room 5 minutes prior to the interview.

(5) Interest

The student said he likes reading comics.

(6) Self-expectations

The student expected that he can get pass in all of the subjects.

(7) Grit

Grit is one of the aspects affecting students' willingness to stay in student support plan, as it was defined as students' capacity to achieve long-term goal (Farrington et al., 2012). A questionnaire on grit was conducted, and the raw score of the student was compared to the norm of HKIT students.

The student scored 2.67 in grit questionnaire, which is lower than the mean of degree students. Therefore, self-regulatory training (e.g. time management skills) is needed.

(8) Thinking style

Thinking style of the student was assessed by Thinking Style questionnaire. Individualized sessions can be designed with the consideration of thinking style of the students, by designing the Individualized educational plan in accordance to students' thinking style at the beginning and develop other types of thinking style in later stage of sessions.

The results of the thinking style questionnaire were analyzed by Dr. Yu Tak Ming (personal communication, 24 November 2015), an expert on the thinking style, the student was suitable to study business as he scored high in legislative, executive and judicial. He also scored high in global, which means he was suitable to study strategy management as it requires analysis for the whole market. The student may have relatively poorer time management as he scored low in Hierarchical. As advised by Dr. Yu (personal communication, 24 November 2015), both training in time management and explicit instruction on self-learning are needed (i.e. "Please spend 10 minutes per day to spell the vocabulary).

(9) Short term and long term goals

Due to limited time of the training session, vocabulary was selected to be one of the focusing components to be improved, as the student could successfully complete his writing and reading accurately after knowing the meaning and spelling of certain words. The finding was consistent to previous studies (Lee,

2013; İnal&Cakir, 2014) that vocabulary is the foundation for reading comprehension and written expression. It is believed that the student's performance in reading and writing can be improved by increasing his mastery on vocabularies.

Another component is time management training. As the student has shown to have relatively poor time management skills and lower grit than the others, self-regulatory strategies, such as time management, are needed to be included in the intervention plan.

Category	Long term goal	Short term goal
Vocabulary	The student will be able to comprehend and spell correctly the common words in the program that she is currently studying, without assistance	After six sessions, the student will be able to comprehend and spell correctly 70% of the selected words in the program that he is currently studying, without assistance
Time management	The student will be able to apply time management skills to daily setting	After six sessions, the student will be able to demonstrate time management skills during the session

(II) **Intervention plan**
A. Vocabulary
1. The use of flashcard strategy

Vocabulary knowledge was a major factor affecting reading ability. Schoalrs (e.g. Beck, Perfetti, & McKeown, 1982; McKeown, Beck, Omanson, &Perfetti, 1983) had found that comprehension skills can be increased by increasing number of vocabularies in vocabulary pool. With improved ability to use or understand a word, the quality of writing of the learner can be improved at the same time (Webb, 2008).

Flashcards are considered as a funny and fast method to build up vocabulary pool of the student (Stutz, 1992). Stutz (1992) also suggested to include visual prompt in the flashcards and enrich students' learning by asking the students to draw pictures to represent the text. Rich and Blake (1994) further elaborated the advantage of using visual prompt, they found that students felt drawing pictures provided a visual summary of the text and were able to recall the learnt materials after prolong period of time without re-reading.

Referring to the current case, trainers taught the student to write the vocabularies on flashcards, break the words down to separate units for pronunciation, then draw pictures to illustrate the words. As the student would also have to engage in physical movements and attention required for drawing, it is expected that the student can have a

better memory and understanding on the vocabularies by using the multisensory approach. Besides, two boxes for learnt and unlearnt vocabularies were given to the student, he was also encouraged to revise the flashcards as daily activities.

Flashcards strategy was introduced as a self-learning strategy for the student in her future learning. Besides learning vocabularies, there are various ways to use flashcards, such as writing, or speaking. It is hoped that the student would enjoy using flashcards as a learning strategy and would use flashcards in writing passages or telling stories.

2. Over-learning strategy

The student needed over-learning to master to remember new words. Therefore, the use of various ways (i.e. word games and recap of taught vocabulary at the beginning of each session) to consolidate and reinforce the learning is important in the current case.

Half of the time in the sessions was used to recap on the taught vocabularies by using games, such as hangman or word puzzle, to consolidate the student's memory on the vocabularies.

B. Time management skills

According to Covey (1989), time management skills can be enhanced by identifying things that are "important and urgent", "important but not urgent", "unimportant but urgent" and "unimportant and not urgent".

Referring to the current case, trainers taught the student to categorize things into the four categories; and ask him to "put first thing first". After teaching the general principle of time management, he was asked to apply it in arrange a simulated timetable.

(III)   Program outline

Session	Vocabularies	Time management	Materials
1	Technological, Political (words end with–ical), Digital	Importance of time management	Flashcards; Time management powerpoint
2	A) Recap of taught vocabularies B) Benefit, Brand, Analysis	Categorization of the events ; Deciding "To-Do list"	Flashcards; word game; Time management powerpoint; Time management booklet
3	A) Recap of taught vocabularies B) Competitor, Reputation, Investment	Application of time management skills in a simulated timetable	Flashcards; word game; Time management powerpoint; Time management booklet
4	A) Recap of taught vocabularies B) Strategy, Tangible, Purchase	Application of time management skills in a real world situation	Flashcards; word game; Time management powerpoint; Time management booklet
5	A) Recap of taught vocabularies B) Feasibility, Audit, Stakeholder	Assessment on time management skills	Flashcards; word game; five questions extracting from thinking style questionnaire
6	A) Recap of taught vocabularies B) Final assessment C) Distribution of cue card		Assessment papers; cue card

(IV)   <u>Implementation of the plan</u>

The trainers conducted the six-session program according to the intervention plan. There was continuous evaluation on the effectiveness of teaching strategies.

Changes were made in the progress of implementing the program. For example,in the original plan, the student would integrate the time management skills taught in previous sessions (i.e. constructing own timetable) into real life setting. However, the student reflected that he seldom follow the timetable if it was in hourly basis. He estimated the time required to finish the task in daily basis. In the following session, the trainers integrated the time management principles (i.e. leaving buffer time in

timetable) into his current practice (i.e. leaving a few days before the deadline of the project for contingency).

(V) **Evaluation of the program on Student A**
- Mastery on vocabularies

	Correct words	Pre-intervention	Post-intervention		Correct words	Pre-intervention	Post-intervention
1	Strategy	St	Setrligl	9	Feasibility	Free	F
2	Benefit	Ban	Benletfil	10	Audit	O	Aldit
3	Tangible	tan	Teng b	11	Competitor	Com Competer	
4	Purchase	Patray	P gack	12	Reputation	W	Repiltacs
5	Political	pol	politikol	13	Brand	B	Brend
6	Technological	t	Talolaw col	14	Investment	Inf	Infltman
7	Analysis	An	Anlanysis	15	stakeholder	Sta	stakholder
8	Digital	Daction	Digitol				

The table above has shown the assessment results of Student A before and after the student support plan. Although the student could not spell the vocabularies correctly after the plan, he has demonstrated the ability to utilize phonetics taught during the sessions in a certain extent. Student A was referred to speech therapists for further improvement in phonetic skills and other language skills.

- Time management
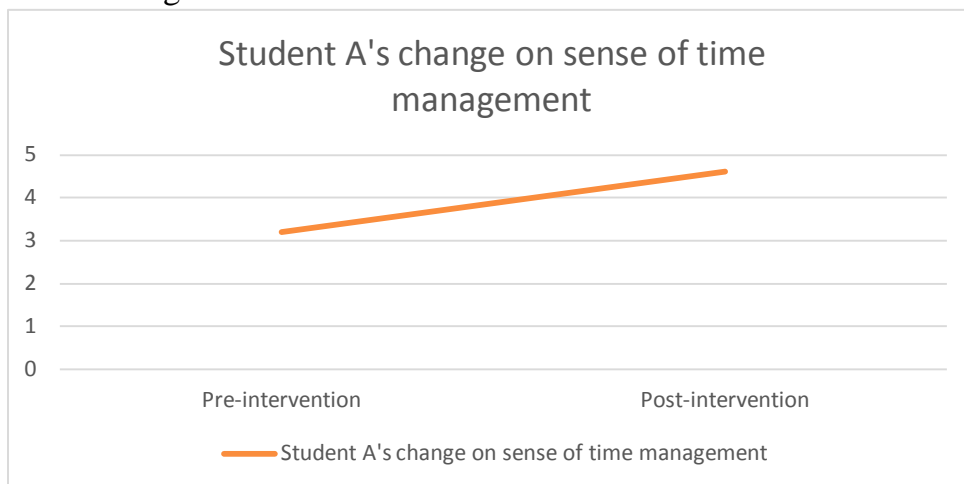
The rating in the factor "Hierarchical", which related to time management, was used to assess student's change in the sense of time management. It was found that the rating in "Hierarchical" had increased from 3.2 to 4.6 (out of 7.0 scale), reflecting that the student had the sense of time management to a certain extent.

Case of Student B

(I)   Case analysis

The client is a 19 year-old girl, a Year 1 student studying AHS (Applied Health Studies) in associate degree level in Hong Kong Institute of Technology (HKIT). She reported that she was diagnosed to have dyslexia by professionals (i.e. registered doctors, clinical or educational psychologists) in the self-reported questionnaire distributed by QESS project team. The student remembered that she has gone through some assessment during childhood, but she has forgotten the details. She has a copy of assessment results while have forgotten to bring the assessment report. She promised to take it back when she joins individualized educational sessions by QESS project team.

She had received services from various organizations. When she was a secondary school student, there was a specialist employed by her school. And conducted pull-out program on reading comprehension strategies (i.e. drawing mind map after reading a passage) once a week. She thought it was efficient for her. She applied the skills of drawing mind map in organizing speech and writing task when she was studying Yi Jin Diploma (YJD) program in HKIT. She thinks that her composition can be more organized and comprehensive, after drawing mind map prior to writing. When the original specialist left, one of the teachers from her school was responsible to conduct the pull-out program once a week, which was described as "re-cap on the lessons" by the student. She regarded it as "not that efficient". She hates the teacher, as the teacher "thought knowing her well". For example, teasing her after she lost in the running competition.

She also received special examination arrangement during examinations (i.e. providing additional time, special design of the paper and increase font size of the paper). She thought that changing the color of the examination paper to yellow is more comfortable for her, when compared with white paper. The use of white paper is okay during lectures and self-study, however, it is described as "too shining" for her during examinations. Blue paper is not preferable for her, as she always use blue pens. She thinks increase the font size is useful and easier for her to read if the subject is English. For the other subjects, increase the font size did not have additional effect on her.

Student's present levels of academic performance and functional performance

(1) Involvement and progress in the general curriculum

As indicated by the student's academic record, she was failed in English, Liberal studies and Mathematics in YJD level. She got pass in all of the above subjects after re-

take. English appeared to be the major concern for her, as she failed in English in both 2014 Term C and 2015 Term A.

To have further investigation on the student's difficulty in English, a face-to-face interview was conducted. According to the interview record, the student said that it is hard to understand the course content in AD level, as it was delivered in English. She had difficulty in listening to English. However, her listening comprehension level is better when compared with her reading level in English, as she reported that she does not know majority of vocabularies when reading course materials in English. Her peers did not encounter the same problem as her. She encounters her problem by checking the dictionary, but lost motivation when reading a long passage. She also expressed her concerns on presentation, as it would be conducted in English.

When being asked for her difficulty in other subjects, she replied that it is not that hard if she could understand the English in the lecture. She found liberal studies particularly difficult for her, as it requires thinking from multiple perspectives and the content in examination may not be the same as that in books. When being asked if she found examinations and projects in AD level difficult (which also requires thinking from multiple perspectives), she replied that it is less difficult for her, as the project is related to health studies, the scope is predictable; also, she said she can ask her parents when she encountered questions that require her to think from patients' perspectives. She said she can also think from patients' perspectives by herself during examinations.

To further investigate the student's presenting academic level, curriculum-based assessment focusing on reading and writing tasks were conducted. Five aspects of language competency were assess, including reading fluency, accuracy, reading comprehension, writing and spelling. The assessment materials were selected from the assigned readings of the subjects that the student was currently studying (i.e. health studies).

According to the results of curriculum-based assessment, the student encountered significant difficulty in spelling (i.e. she could spell 0% of the selected vocabularies). Additionally, she was anxious because of the assessment. Therefore, assessment session was terminated after completion of the parts of reading accuracy, fluency and spelling.

(2) Social interactions

For the relationship with teachers, she described it as "nothing special", as teachers present the information in the lecture and there is little interaction between them. The student has friends in the class, including two friends from

YJD. It reflected the student have at least averaged social skills that enable her for building up or maintaining relationship in the school.

During the first intake interview and first assessment session, the student interacted very well with the examiners that she appeared enjoy talking with the examiners.

(3) Behavioral and emotional issues

There was neither observable nor self-reported behavioral and emotional issue during first intake interview. However, it has been found that the student was stressful when encountering assessment on reading and writing ability in English during first assessment session.

(4) Strengths

Although the student said she did not know her strengths, the interviewer observed that she was patient that she waited for the interviewer in the interview room for 5 minutes and did not blame the interviewer after knowing that the interviewer went to the wrong place. Additionally, she had very good attitude towards her disorder. When she heard some information about dyslexia, she regarded it as a chance to know herself better. She did not feel frustrated about it.

According to the report of the student that prepared by an educational psychologist (Note: The report does not attached to the current individualized educational plan as the name of the student appeared several times in the report, which arise privacy concerns), the student was good at deducing relationships and patterns in non-verbal stimulus, as she scored high marks in the part of perceptual reasoning in intelligence test.

(5) Interest

The student likes playing baseball; however, she feels pity that she had to quit it, as she had to prepare HKDSE.

(6) Self-expectations
She hoped that she can get pass in all of the subjects.

(7) Grit

Grit is one of the aspects affecting students' willingness to stay in student support plan, as it was defined as students' capacity to achieve long-term goal (Farrington et al., 2012). A questionnaire on grit was conducted, and the raw score of the student was compared to the norm of HKIT students.

The student scored 3.25 in grit questionnaire, which is higher than the mean of HKIT students. Therefore, trainers maintained the grit of the student by provide good explanation of the task and encouraging self-exploration on the task.

(8) Thinking style

Thinking style of the student was assessed by Thinking Style questionnaire. As analyzed by Dr. Yu Tak Ming (personal communication, 16 February 2016), an expert on the thinking style, the student's score shows that she tends on using Type II thinking styles, which is suggested a norm-favoring tendency and denote lower levels of cognitive complexity and respect for authority. She scores high in Liberal, which may reflect that, she likes new challenges and wants to change. She scores high in oligarchic and low in hierarchic, this may reflect the student having a relatively poor time managing skills. The students also scores high in Executive, which may indicate that she likes to follow guide lines and procedures.

According to the results of the thinking style questionnaire, explicit instructions on self-learning are needed (i.e. "Please spend 10 minutes per day to spell the vocabulary) as the student likes to follow guidelines .

(10)   Other concerns

The student expressed her concerns on being labeled by the others. She recalled her experience in taking examination in summer supplementary class: She was given additional time during examination, the other students look at her as she has to stay in the classroom while the others were leaving. She dislikes the experience and describes it as "being weird". She also complained that the enlarged font of the examination papers made her became "even more weird". Therefore, privacy was especially important in handling this case.

(11)   Short term and long term goals

Due to limited time of the training session, vocabulary was selected to be one of the focusing components to be improved, as she failed to spell the common

words in the program that she is studying. Scholars (e.g. İnal&Cakir, 2014) agreed that vocabulary is the foundation for reading comprehension. It is important to help the student to develop vocabulary pool, in order to have better development in reading comprehension in the future.Another component is anxiety towards English. As Levine (2008) pointed out, academic anxiety can be a barrier for learners by preventing them from approaching and mastering new materials.

Category	Long term goal	Short term goal
Vocabulary	The student will be able to comprehend and spell correctly the common words in the program that she is currently studying, without assistance	After six sessions, the student will be able to comprehend and spell correctly 50% of the selected words in the program that she is currently studying, without assistance
Anxiety towards English	The student will be confident while reading and writing English	After six sessions, the student will be less anxious towards English

(II)   Intervention plan
A. Vocabulary
1. The use of flashcard strategy

Studies stated vocabulary knowledge as a major factor influencing reading ability, which gains in vocabulary would increase comprehension skills (Beck, Perfetti, & McKeown, 1982; McKeown, Beck, Omanson, &Perfetti, 1983).) With improved ability to use or understand a word, the quality of writing of the learner is improved (Webb, 2008).

Flashcards are a convenient, simple, and popular format for learning vocabularies (Stutz, 1992). Picture prompts drawn by students can also be integrated into the flashcards to facilitate the learning of the vocabularies (Solo, 1999; Stutz, 1992). Rich and Blake (1994) reported that students felt drawing pictures provided a visual summary of the text. The study also found that these students remembered the learnt materials for longer periods of time without re-reading.

Referring to the current case, trainers taughtthe student to write the vocabularies on flashcards; break the words down into syllables; and draw pictorial representations of the words. Besides, two boxes for learnt and unlearnt vocabularies were given to the student, she was also encouraged to revise the flashcards as daily activities.

Flashcards strategy was introduced as a self-learning strategy for the student in her future learning; she was encouraged to use the flashcards to conduct self-study.

2. Over-learning strategy

According to the report of the student that prepared by an educational psychologist, the student needed over-learning to master to remember new words. Therefore, the use of various ways to consolidate and reinforce the learning is important in the current case.Half of the time in the sessions was used to recap on the taught vocabularies by using games, such as hangman or word puzzle, to consolidate the student's memory on the vocabularies.

3. Visual representation of syllables

As mentioned by the report of the student that prepared by an educational psychologist, visualization of the taught vocabularies is important for vocabulary acquisition. Referring to the above table, vocabularies were grouped according to common syllables (i.e. "-tion" and "en") in three sessions.

Therefore, syllables were represented by shapes, in order to reinforce the student's memory on the syllables of the vocabularies.

B. Anxiety towards English

Studies have found that the larger gap between the ability and grade level of the students, the more anxious are the students (Levine, 2008). It is believed that the anxiety of the student can be reduced by improving the student's mastery on the English vocabulary required by the program that she is currently studying and teaching the use of flashcard as self-learning strategy.

(III) Program outline

| Session	Words	Materials
1	Prevention, Promotion, Assumption (words end with "-tion")	Flashcards
2	A) Recap on the taught vocabularies B) Intervention, Remediation, Compensation (words end with "-tion")	Flashcards; word game
3	A) Recap on the taught vocabularies B) Enhance, Enrich (words start by "en-")	Flashcards; word game
4	A) Recap on the taught vocabularies B) Impaired, Barrier, Occupational	Flashcards; word game
5	A) Recap on the taught vocabularies B) Performance, Capabilities, Client	Flashcards; word game
6	A) Recap on the taught vocabularies B) Final assessment	Assessment paper

(IV) Implementation of the plan

The trainers conducted the six-session program according to the intervention plan. There was continuous evaluation on the effectiveness of teaching strategies.

Changes were made in the progress of implementing the program. For example, in the original plan, the student would draw the pictorial representation for the words by herself. However, she reflected that she was not good at drawing pictures. Therefore, pictorial representations for the words were searched by the trainers and the student can select the one that she thought the most suitable for the words. For instance, for the word "impaired", three hamster pictures related to the word were given to the students.Hamster pictures were selected as the student likes hamster a lot that she actively shared about things related to hamsters to the trainers.

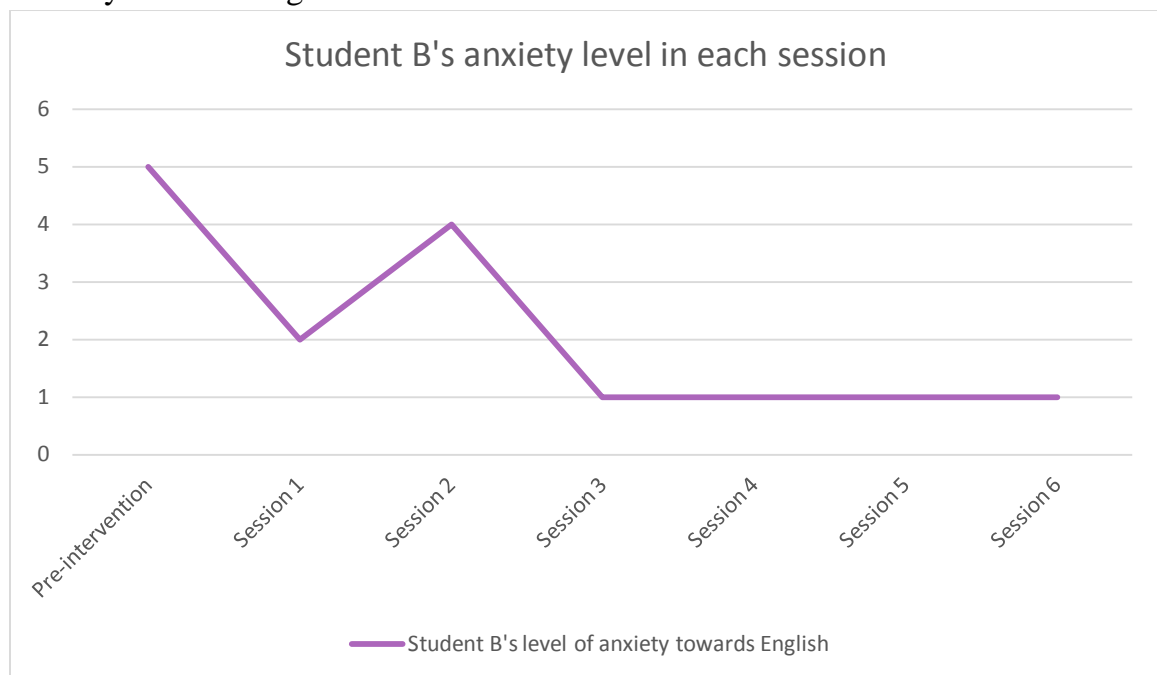**(V)   Evaluation of the program**
- Mastery on vocabularies
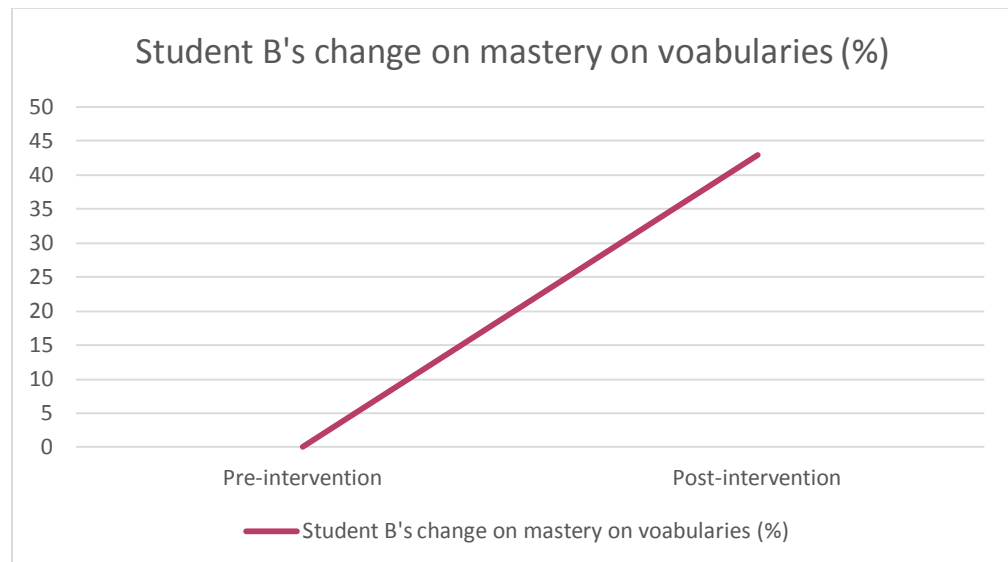
The diagram above has shown the students' change on mastery on vocabularies. Before the intervention, the student could spell 0% of the selected vocabularies. After the intervention, the student could spell over 40% of the selected vocabularies with any

assistance from the trainers, given that the format of pre- and post-intervention assessment was the same (i.e. dictation).

It has shown that the student has improved greatly in her mastery on vocabularies. It was approximately reach the goal set in individualized educational plan (i.e. 50%), reflecting the effectiveness of flashcard strategy on Student B.

Additionally, it has been observed that Student B also applied the flashcard strategy in daily self-study, reflecting that flashcard strategy has been integrated in her practice of self-study.

- Anxiety towards English

Student B's anxiety level in each session

[Line chart showing Student B's level of anxiety towards English: Pre-intervention = 5, Session 1 = 2, Session 2 = 4, Session 3 = 1, Session 4 = 1, Session 5 = 1, Session 6 = 1. Y-axis ranges from 0 to 6.]

Student B's level of anxiety towards English

To authors' own knowledge, there is no existing Chinese version of psychological scale on academic anxiety available in internet, student's anxiety towards English was rated by the trainers in a 6-point scale.

Point	Description
6	Very tensed, extremely anxious towards task that completely fail to complete the task
5	Tensed, able to complete 30% of the task
4	Tensed, but still be able to complete half (i.e. 50%) of the task
3	Slightly anxious towards task, the student was able to complete 70% of the task
2	Slightly anxious towards task, able to complete all of the task
1	Did not anxious towards task, the student was confident and completed all of the task successfully

The diagram above has shown the student B's level on anxiety towards English. It has shown that the student became less anxious towards English after the student support plan, reflecting the effectiveness of word games and verbal encouragement on reduction of students' anxiety towards English.

Implications from cases in HKIT
1. The importance of identifying individual learning needs

Teachers and school personnel in tertiary institutions often fall into the trap that they treat students under the same category (e.g. "dyslexia") in the same way, such as providing additional examination time and printing the questions on ivory papers. However, the two cases in HKIT have shown that students can have specific learning needs even under the same label of "dyslexia". For example, Student B found the white paper "too shiny" during examination while Student A did not have such issue. Additionally, Student A encountered difficulty in writing some of the Chinese characters while Student B did not have difficulty in Chinese characters. It shows that even students under the same category (i.e. dyslexia) have difficulty in different aspects.It is important for teachers to identify the individual needs of the students, so that appropriate resources can be allocated to the students and their needs can be addressed fully. With better understanding to the students, more comprehensive support can be arranged accordingly. For example, one of the students with dyslexia in HKIT has found to have difficulty in articulation was referred to speech therapists while the other who did not have difficulty in articulation and communication were referred to 1 on 1 SEN intervention sessions.

2. Specific teaching strategies applicable in working with individual students

When planning for the intervention, it is important to break the target into smaller targets. For instance, the target of Student B was to learn and recall correctly for the 15 vocabularies that related to medical field (as she is currently studying health studies). For students with dyslexia, their learning of vocabularies may be hindered by the learning disorders and learning of 15 vocabularies within one to two sessions was not possible. Therefore, the authors break it down into smaller target: two to four vocabularies for each session. During the 1 on 1 session, the authors integrated visual aids into the tasks, for example, using four hamsters to represent the four syllables in the vocabulary. Additionally, the authors used visual prompts to remind the students the meaning the vocabularies. For instance, in one of the sessions, the student chose among the hamster pictures that can represent "Enhance" (提升). The picture chosen by the student was a hamster that

was being escalated by a pair of human hands. In the following session, the authors put the picture of the hamster selected by the student to remind her the meaning of "Enhance".

3. The needs of modification

Teachers may be frustrated by repeatedly modifying the teaching strategies for the learners; however, it is essential to improve the delivery of the program to students with SEN.For instance, Student A mentioned thathe rarely followed hourly planners and said that he usually estimates the time needed for a task in daily basis (i.e. 15 days are needed to finish the essay). It provided important information to the authors that it is meaningless to force him to use the hourly planners. Therefore, the authors changed the teaching strategy: integrating the time management principles (e.g. leaving buffer time in the planner)into his current practice.

4. Appreciation onpersonal qualityof SEN students

SEN students were always linked to negative words like "deficit" and "weakness", few peoplenotice their personal quality. According to the authors' observation, SEN students have certain personal qualities that may facilitate their learning progress. For instance, Student B had applied the flashcard strategy in her self-learning and actively revises the taught vocabularies.She was further motivated when the authors shown recognition on her efforts.By appreciating and facilitating the development of the personal quality of SEN students, it can be beneficialto learning andenhancing students' self-esteem.

5. Fostering resilience during 1 on 1 session

As mentioned in Chapter 3, resilience is a key factor to students' well-being that can be fostered by professionals who are working with students   with SEN. During the 1 on 1 session, members from QESS team developed close relationship with the students and guided them to think of the solution by themselves. For example, Student A reflected that he had difficulty in meeting the deadline of his research project and he worried about the grammar of his work. QESS team equipped him with self help skills (i.e. time management skills). Additionally, QESS team introduced a software called "Grammarly"to him, which helped him to identify the grammatical errors in the paper. Te self-help skills and the assistive technology can facilitate self-study at home.

Chapter 5

Working collaboratively with other professional partners

As noted by Frederickson and Cline (2002), SEN are complex that require collaboration of professionals from various fields. Teachers may work with the following professionals to provide comprehensive services to students with SEN:

Professional	Function
Educational psychologists	1. Provide psycho-educational assessment and diagnosis for students 2. Provide counseling services to students with learning or emotionaldifficulties 3. Provide consultation services to schools in helping students with SEN
Psychiatrists	1. Provide diagnosis for students with neuro-developmental disorders (e.g. ADHD and ASD) 2. Provide medical treatment for students if it is necessary
Occupational therapists	1. Provide assessment on the occupational functioning of the students 2. Conduct intervention sessions to improve students' hand-eye coordination, fine motor skills, daily living skills, sensory integration, spatial awareness and visual discrimination
Speech therapists	1. Provide assessment and diagnosis for students with problem in speech sound, spoken language and social communication 2. Provide intervention service for improving students' language use
Social workers	1. Working with issues (i.e. family issues) that affecting SEN studentstheir adjustment in school 2. Provide counseling services to students with emotional and behavioral issues 3. Mobilizing family, school, and community resources for students with SEN (e.g. career guidance services offered by non-profit making organizations)

HKIT's experience of partnership in QESS project

Speech therapy sessions

       This year, HKIT has partnered with The Lok Sin Tong Benevolent Society and provided speech therapy services. Two speech therapists from The Lok Sin Tong Benevolent Society delivered services to five students with SEN in HKIT.

       Before intervention sessions, speech therapists conducted comprehensive assessment on various aspects of language use of the students, including comprehension, description, and use of sentences, social communication, articulation, voice and fluency. Diagnosis was made in accordance to the results of the assessment (i.e. including the type of disorders and severity).

       During the intervention sessions, speech therapists use various methods, such as teaching on sound-letter mapping and providing corrective feedback, to improve students' skills on language use.

       As reported by the speech therapists, the students have steady progress on language use, for example, their ability on sound-letter mapping and awareness on the errors in articulation had been improved.

Feedback from the students

Speech therapy sessions can help improving my "lazy tone". It would be even better if it can be delivered through online platform.

- Participating student A

Speech therapy sessions helped me to overcome my weakness in articulation. The speech therapist reminded me the correct posture of articulation.

- Participating student B

<u>1 on 1 intervention sessions</u>

Apart from speech therapy sessions, HKIT has also partnered with Hong Kong Child Integrative Development Centre (HKCIDC) and provided 1 on 1 intervention sessions. 1 on 1 intervention sessions aim at enhancing students' academic performance through teaching study skills. Three specialists from Hong Kong Child Integrative Development Centre delivered services to four students with SEN in HKIT.

Before intervention sessions, specialists conducted face-to-face interview and psychological test on the students, to understand the background of the students, their special needs and learning styles.

During the intervention sessions, specialists reviewed the lecture notes and the study skills of the students; and provide corrective feedback, to improve the study skills of the students. For example, one of the specialists used mind map to illustrate the relationship among the core components of the lecture to the student, who was a visual learner.

Observable improvement by specialists

Every one of us has limitations, especially for those with special educational needs. Teachers have to tailor teaching strategies to fit students' learning styles. Therefore, visualization strategies include but not limited to Mind Map, stories, flow charts, tables, were taught and the client is now able to do revision with such techniques. Moreover, self-confidence and motivation are also observably improved.

- Victor Ching, Therapist from HKCIDC

Feedback from the students

In general, the program really made a difference in my assignment, examination and projects. If there was no tutorial session, I would not be able to finish the project on "Computing". I feel satisfied with the program and I hope that I can join the program in the coming future.

- Participating student C

The specialist is experienced in academic researches. She had provided a lot of valuable information for me, which enables me to finish my assignment and facilitates my decision-making process.

- Participating student D

<u>Tips to work collaboratively with other professional partners</u>

1. Understanding the potential contribution of professions

Before referring the students to various professional partners, it is important to understand the specific functions of each kind of profession. For example, speech therapists can provide training on organization and expression of speech. Students with significant difficulty in language use, such as having "lazy tone" and deficit in articulation, will be benefited from the services offered by speech therapists.

2. Providing relevant information of the students before starting the sessions

Teachers may provide relevant background information, such as first intake interview form, report cards and school documents, to the specialists after getting consent from the students. The background information can guide the direction of the assessment conducted by specialists. For example, after knowing the students had difficulty in reading fluency, the specialists can conduct reading fluency test (e.g. The Hong Kong Graded Character Naming Test) in the first session.

3. Ensuring quality of the services

Teachers may have continuous meetings with the specialists and get the detailed progress report from them, so that teachers can review the learning progress of each student.

4. Communicatingwith professional partners regularly

Teachers can know more about the student through communicating with theprofessional partners. For example, one of the specialists found that a student with dyslexia is weak at spelling vocabularies, which hindered her performance in the examinations. She suggested that the institution may provide special examination accommodation to the student. Teachers from HKIT then allow the student to bring a paper-based dictionary with her in the examination.

Conclusion

The current QESS projectservesas a foundation forSEN supporting mechanism at tertiary level. Collective effort is needed to further develop SEN supporting system among tertiary educational institutions (TEI). Further directions of development can be:

1. Establishment of committee reviewing special examination arrangement

Among tertiary educational institutions in Hong Kong, there is no unified guideline for special examination arrangement. Many institutions consider the application of special examination arrangement by following the practice of Education Bureau in public examination, such ashaving the same special examination arrangement in the public examination and in the examination in college.

It will be even better if special examination arrangement can be tailored made in accordance to the specific learning difficulty of the students and the demands from the subjects that he or she is taking.

One of the cases in HKIT is noteworthy: The student is living with dyslexia and she had difficulty in remembering vocabularies and their meanings. Since she is studying health sciences, which requires students to spell and comprehend difficult, health-related terms, she had difficulty in comprehending the questions in the examination. As she had applied for extending examination time in public examination, HKIT arranged extended examination time for her as a measure of special examination arrangement. However, it does not help much, as the environmental demands (i.e. demands from her major) differed from that in secondary school. HKIT then allowed her to bring paper-based dicatationary for the examination. Her performance had been improved as she could at least comprehend the question and demonstrate her knowledge on the subject better.

Regarding to this issue, it is proposed that TEIs can form a committee that include corresponding professionals (e.g. educational psychologists and occupational therapists) for reviewing special examination arrangement. They can also providing suggestions on the special examination arrangement which can balance both the requirement of accreditation (i.e. consider the medium of delivery of the course and the expected learning outcomes) and the right of students with SEN.

2. Further development of screening tool developed by QESS team and external consultant team

In the current QESS project, QESS team worked jointly with local specialists to develop a screening tool for screening suspected cases of SEN. It takes time to collect data to further develop the tool. The working group would like to invite the participation from members of other educational institutions, to help in collecting data from students.

Remarks

We hope that our experience facilitates the development of SEN support mechanism in TEIs. School personnel may take part of our experience and develop a system that matches with the specific needs of the institution. We hope this guidebook will be a start of a better learning environment and support mechanism for students with special needs. If any inquiry on the project and QESS team, you may contact Ms. Phoebe Chan (Project Manager) or Mr. Kaki Cheong (Project Assistant) via email (qess@hkit.edu.hk).

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