Twice Exceptional Students – Learning Needs and Interventions

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Abstract

Twice exceptional students possess an outstanding gift or talent and are capable of high performance but they also have a learning disability that makes some aspect of academic achievement difficult. These students’ gifts and disabilities may mask each other and are found to have lower self-esteem regarding academic achievements and are likely to cause more disruptions in school. As such, twice exceptional students are often misunderstood, underserved and in need of interventions. The purpose of this paper is to identify the learning needs of the twice exceptional students who have been diagnosed with Attention Deficit-Hyperactivity Disorder (ADHD) and Asperger’s Syndrome (AS) in a Singapore secondary school as well as recommend appropriate interventions to help them succeed in school.

Drawing from interviews conducted with students, parents and educators, their responses are examined in light of relevant Literature. Case studies of twice-exceptional students who succeeded in schools are examined in order to recommend appropriate interventions such as compensation strategies and the application of Multiple Intelligence Theory so as to address their learning needs. Twice exceptional students encounter problems and conflicts which require special understanding and guidance by educators, school and parents. The application of Multiple Intelligence Theory and compensation strategies will help to address their
learning needs. This study will be useful for educators and administration personnel to review the school’s gifted and talented framework on the talent development of twice exceptional students in their schools.

Introduction

Twice exceptional students (2e) possess an outstanding gift or talent and are capable of high performance but they also have disabilities such as hearing, speech, vision, orthopedic, or emotional impairments, learning disabilities, or other health problems, either singly or in combination. Such disabilities make some aspect of academic learning and achievement difficult. Identifying 2e students is usually difficult because a major problem is that their gifts usually remain invisible to teachers and sometimes even parents (Davis & Rimm, 2004). Another problem is the disability itself may obscure the expression of the special gifts and talents, hence, they are found to have lower self-esteem regarding academic achievements and are likely to cause more disruptions in school. Baum (cited in Baum, 1988) found gifted students with learning difficulties (LD) to be the most disruptive in class. They felt less effective in school performance as compared to the other gifted schoolmates. As such, 2e students are often misunderstood, underserved and in need of interventions.

Attention Deficit-Hyperactivity Disorder (ADHD)

ADHD is characterized by difficulties with concentration, distractibility, impulsivity, disorganization, and hyperactivity. According to Barkley and Luk (cited in Baum, Olenchak & Owen, 1998) attention problems are often exacerbated by tasks which are dull, repetitive and boring. Impulsivity, academic difficulties and poor motor skills are other ADHD behaviours. These students are likely to frequently fail to complete assignments in school or at home and exhibit disruptive behaviour in the classroom. They are also likely to have
difficulties in relating to their classmates. A majority of these students have learning deficits in spelling, math, reading and handwriting (Barkley, cited in Baum et al., 1998).

**Asperger’s Syndrome (AS)**

Asperger’s Syndrome is characterised by serious impairment in social interaction skills and repetitive behaviours and is believed to be the result of a specific brain anomaly (Neihart, 2000). Clinical descriptions of AS students include being monotonous in speech patterns, pedantic in speech content, having highly idiosyncratic and intense interests, inflexible in thoughts and habits and ignorant of environmental demand leading to impairment of two-way interactions.

**Purpose of the study**

The purpose of this study was to identify the learning needs of 2e students who have either been diagnosed or possess the behavioural characteristics of ADHD, AS and other physical disabilities in an express stream secondary school in Singapore. Case studies of 2e students who succeeded in schools are also examined in order to recommend appropriate interventions such as compensation strategies and the application of Multiple Intelligence Theory so as to help 2e students reach their full potential academically as well as have meaningful learning experiences in school.

**Research Design**

Interviews, questionnaires and classroom observations were conducted with 2e students, parents, TDP Head (Talent Development Programme) and teachers. Their responses were examined in light of relevant Literature.

**Selection of site and participants**
To maintain the confidentiality of the school and students studied, the actual names of both have been replaced with pseudonyms. Confidentiality is ensured to protect the privacy of the participants and the school concerned. Permission was granted by the deputy principal of School X (an express stream secondary school) to conduct the study of four 2e students. A letter seeking the permission from the 2e students’ parents was also given before the study began.

The four students identified for the study have learning disabilities such as ADHD, AS and visual disabilities. Student A (13 years old) has a visual disability as well as suspected attention deficit (as observed in his classroom behaviours by the teachers). Student B (13 years old) has a visual disability. Student C (15 years old) and Student D (16 years old) are diagnosed with AS. Table 1 in the Appendix provides a detailed description of each student and their learning disabilities.

The study took place in School X itself. There were behavioural observations of the four participants in their respective classrooms during a regular academic lesson. Students were observed based on the behavioural characteristics of 2e students.

**Data collection process**

The 2e students and parents were given a questionnaire to fill in. The questions covered the 3 main components of academic, social and emotional needs. The form teachers and subject teachers of 2e students were given a questionnaire addressing the cognitive, metacognitive and affective domains. The Head (TDP) was asked to comment on the programme planning/administration, teacher and counseling support. Classroom observations, examining of academic results and psychologist reports (if applicable) were also carried out.
Data analysis

Twice Exceptional Students

Based on the students’ responses, it was clearly evident that they felt that School X has not been able to meet their social and emotional needs and to challenge them academically in their area of strengths. Although all indicated they are happy studying in School X, Students C and D (both with AS) experience difficulties making friends. Student C said that it took him a whole year to “confirm” his friendship with only two friends. All students have no problems working with their teachers and feel that the teachers generally provide the support they need. They also feel that they are able to cope with the demands of school. However, the Term 1 formal assessment results showed that all of them were under-performing. Their overall percentage ranged from 50% to 60%, including in their area of strength. Although Student C’s talent is Mathematics, based on his secondary two streaming examination results, he was streamed into a double science class and therefore was not selected for the Math talent programme. This was due to the various subject combinations available for the students. Because of this, Student C totally disagreed that School X provided him with an opportunity to be in the talent development programme of his strength.

Parents

The parents of Students C and D (AS) felt that School X was able to meet the academic, social and emotional needs of their sons. However, parents of Students A and B disagreed in that area. They disagreed that School X has provided individualized curriculum to meet the unique educational needs of their sons. They also felt that the school administration could provide more support in the education of the gifted and talented with learning disabilities.
Teachers

Other than Student C, the teachers of the other three students indicated that they have untidy handwriting and trouble with basic grammar, punctuation and sentence structure. Student D’s teacher highlighted that he is extremely talented in the English Language. Teachers have also indicated that they have poor organizational skills, difficulty with memory and sequencing as well as trouble with auditory tasks. Based on the teachers’ responses, it was clearly evident that all the students display amazing productivity and motivation when their personal interests were involved. Impulsivity was observed in all four students while having difficulty in settling down, severe inattention and constantly daydreaming were observed in three of the students. Loud expressions of boredom were observed in Student C.

Head, Talent Development Programme, School X

Based on the feedback from the Head (TDP), no provisions have been made in terms of allowing 2e students to develop and express their talents and gifts while working with their disabilities. As there were no official disclosures of 2e students due to parents’ wish for confidentiality of their son’s learning disabilities, many teachers were unaware and hence no appropriate interventions were provided for these students. Teachers were only aware of 2e students’ disabilities when behavioural problems arose. Interventions were done in an ad hoc manner on a case by case basis. In the areas of enrichment for various talents, School X uses external resources and mentors to extend students’ learning in areas of special talents and interests. However these are for the general gifted and talented populations of the school and not specifically for the 2e students, who like Student C, would be excluded because he was not selected for the Math talent programme. Based on Head’s (TDP) response, he indicated that there were no provisions to help the 2e students in every aspect (academic, social, emotional and teacher and counseling support).
Inappropriate Curriculum and Pacing

According to Baum, Olenchak and Owen (1998), inappropriate curriculum and pacing can heighten school-related problems for the 2e students. Problems with hyperactivity, attention and impulsivity increase when the curriculum is perceived as routine and dull. This is because the 2e students’ specific level of academic ability may be above their actual grade placement. These 2e students have the intrinsic need to discover, understand and master the curriculum and be actively engaged in learning. However, when school tasks are not meaningful to them or the environment is unfriendly toward them, these students will respond by being off-task or by disrupting class routine in any way possible which is often interpreted as exhibiting extreme impulsivity. Such behaviours are paradoxical with the expectations schools have for students to be docile, quiet for extended periods and be interested in what the teacher is teaching. Thus, modifications in curriculum, pacing and instructional strategies can have positive effects on increasing student attention and improving self-regulatory behaviour and achievement. Research projects such as those conducted by Baum (1988) have successfully used talent development or attention to giftedness as an intervention for promoting academic success for 2e students.

Appropriate interventions

Winebrenner (1998) wrote that children with learning disabilities, behaviour disorders, or other types of school problems who are also gifted in one or more areas must be allowed to be gifted in their areas of strength while they receive assistance in their areas of need. The discrepancy between their superior abilities and their learning disabilities results in feelings of inadequacy, frustration and hopelessness. These students are at a high risk of becoming school dropouts and schools should offer an appropriate intervention programme to prevent this from happening.
Application of Multiple Intelligence (MI) Theory

Gardner’s Theory of MI (Baum et al., 1998) describes students’ potential strengths in one or more of eight intellectual domains: verbal, logical-mathematical, spatial, kinesthetic, musical, naturalistic, interpersonal and intrapersonal. Because school is mostly about verbal and logical-mathematical abilities (as represented in IQ scores), educators tend to undervalue or ignore students with strengths in Gardner’s other forms of intelligence (Davis & Rimm, 2004). Baum, Owen and Dixon; Olenchak as well as Silverman (cited in Baum et al., 1998) have described many gifted students who are not achieving in school as having exceptional spatial abilities. Often, these students are described by their teachers as disruptive, off-task and deviously adept at avoiding unpleasant tasks. However, these same students can be remarkably calm, focused and persistent when they are engaged in tasks which harnessed on their strengths. Thus, the application of MI Theory can alter how 2e students are perceived and taught. An approach is to look for the strengths of the students and plan activities to develop those abilities (Davis & Rimm, 2004). It appears that when some hyperactive students are encouraged to learn and communicate in an area of strength (usually a non-verbal intelligence), even boring tasks are accomplished without the accompanying behavioural problems (Baum et al., 1998). For example, in a case study of some upper elementary students with severe attention disorders that were found to have potential talent in dance or music, their talents in those areas were recognized and nurtured. Subsequently, their classroom teachers were amazed at the ability of these students to attend to tasks during the dance or music classes. Baum et al. (1998) posed the question whether it could be that students with attention-related disorders are best served in an environment that incorporates and values alternate modes of thinking and communicating? Using Gardner’s MI theory, educators should draw attention to the students’ area of strengths (other than the traditional verbal and logical-mathematical abilities) rather than their learning disabilities and strive to develop their strengths. Instructional styles for the students should be reviewed – from
instructional styles not suited to the 2e students to their preferred learning styles. Classroom teachers can consciously make adaptations to curricular presentations (e.g. visual or kinesthetic instead of verbal, depending on the method students respond to best) to capture the student’s attention and build on their strengths. In doing so, self-concepts are likely to improve – they will like school better, feel that they are good at school, and more likely to attend school regularly. Academic success may also improve. Davis & Rimm (2004) suggested some examples for “MI classrooms” which can be adapted to help 2e students achieve greater success in school:

- Teaching skills and information aimed at different intelligences and using multiple symbol systems
- Flexibly teaching subject matter in several different ways, including working with students’ individual MI strengths
- Helping students develop projects based on interests and different intelligences
- Using a variety of content that is abstract and broad to stimulate students’ intelligences
- Allowing students to express their learning with creative and personal products

Using the MI Theory approach, the needs of the 2e students can be met in the classroom through appropriate strategies and an individualized approach. Thus, the primary emphasis should be the recognition and facilitation of the students’ strengths (Baum, 1988; Davis & Rimm, 2004). For the 2e students to succeed in schools, it is important to focus on their talents/strengths while developing compensatory strategies for them to cope with the demands of school. In developing an individualized approach, the resources available in the school should also be considered. Brody and Mills (1997) recommended that to nurture gifted potential in 2e students, programming components should include enrichment programmes (content extension), differentiated instruction and teaching the students compensation strategies.
Enrichment programmes

Enrichment programmes provide greater depth or breadth to the educational experiences through enhanced curriculum or academic programmes and competitions (e.g. Math Olympiad and the Australian Science Competition). Baum (1988) conducted a study with seven 2e students using the Renzulli’s Enrichment Triad Model (1997) to develop the students’ strengths and interests through challenging enrichment activities. The Enrichment Triad Model has three levels of enrichment which incorporate skill development into the production of new knowledge through the pursuit of independent or small group investigations. The seven students met 2½ hours a week over a nine-month period and were allowed to select their own interest area. Harnessing on their strengths, the students became personally involved with their product and were directed toward a goal. Significant improvements in self-esteem, learning behaviours, time on task and motivation were reported for six of the seven students.

The findings of the study conducted by Baum (1988) offer three guidelines for educators. Firstly, attention should be given to the development of a gift or talent in its own right. The students’ special abilities rather than their disabilities should be the focus and programmes should seek to enrich rather than remediate. Another guideline is to provide a supportive environment which values and appreciates individual abilities. Bearing in mind the 2e students’ strengths and weaknesses, guest speakers, demonstrations, active inquiry and field trips may be used to help students gain information in lieu of reading and listening to “teacher talk”. The students’ products, in turn, could take the form of slides, models, speeches, computer programmes, drama etc, rather than written reports. Thus, their disability was minimized while their strengths were highlighted. The third guideline is 2e students should be taught compensation strategies such as time management, organization and ways to communicate that aligned with their strengths.
Differentiated instruction

The purpose of differentiated instruction is to provide access to more challenging subject matter than is normally available in the regular curriculum (Brody & Mills, 1997). According to Tomlinson (1999), differentiated instruction engages the students through different learning modalities, by appealing to different interests and by using varied rates of instruction. Teachers practising differentiated instruction provide specific ways for each student to learn as deeply as possible and as quickly as possible without assuming that one student’s road map for learning is identical to another student’s. Differentiated instruction in the regular classroom through small-group or independent instruction is thus a viable option to catering to the needs of the 2e students. Table 2 in the Appendix shows some examples of differentiated instructional strategies.

Teaching compensation strategies

Compensation strategies as defined by Crux (1991), include study strategies, cognitive strategies (also called learning strategies), compensatory supports (e.g. tape recorders and computer word processing programmes) and environmental accommodations such as test-taking accommodations (e.g. extended test time). These are skills taught to students and when implemented by the students, will allow them to complete tasks independently. The aim is to teach a student compensatory learning strategies so they will learn to initiate the strategies independently in order to be successful in the learning environment. Reis, McGuire & Neu (2000) in a study of 12 high-ability students with learning disabilities showed how these students succeeded in post-secondary academic environments by using compensation strategies. Using various compensation strategies, the students in the study were able to resolve the conflict between their abilities and their disabilities. Some learned the compensation strategies which directly addressed their learning disabilities and became successful in an area that were initially appeared difficult, if not impossible. Table 3 in the
Appendix shows a summary of the compensation strategies used by the high-ability students who were successful in college.

**Interventions for Student A – Visual disability & Attention deficit**

1. Student A has poor vision with 800° for both eyes. His eyes constantly twitch with suspected eye condition -tics. Moving Student A to the front of the classroom will help him to see better and hence focus better. Exam papers with bigger fonts can be specially created for him so as to facilitate smooth reading.

2. Besides allowing Student A to see better, moving him to the front of the classroom also addresses the issue of his short attention span. By sitting near to the teacher, he can be closely monitored to ensure he stays on task and completes his work properly.

3. A reward system will reinforce positive behaviour from Student A. Since he appears stressed most of the time, a reward system will develop a more positive self concept and hopefully motivate him to study better.

4. Student A should be encouraged to keep a schedule of tasks for each day that he can physically check off as he has difficulty coping with daily work.

5. Student A’s talent is in English and he is currently in the English talent class. It gives him an opportunity to use his talent and challenges him to strive for better grades. Compacting, independent projects and problem based learning can be used in his English class to eliminate boredom, satisfy his desire to read and write more and also encourage independence.

**Interventions for Student B – visual-spatial disability**

1. Student B’s poor visual-spatial skills appears to affect the quality of his daily work. He is messy and disorganized in his written work. His high ability level is not reflected in his academic grades, especially with his handwriting difficulties. An extra
15 minutes per hour of the examination paper (as recommended by his psychologist) for all written papers will help Student B to complete his work in a more presentable manner.

2. Compensation supports like the use of word processing or the use of computers will be useful for Student’s B type of disabilities. Student B can then focus more on the content of writing then forming the letters. The finished product in its fine appearance will be a booster for Student B’s self concept and motivation.

3. To develop Student B’s areas of interest and strength (English and Science) so as to improve his level of self-confidence and make strength-based accommodations. It would be beneficial for him to experience success in Science and English. He is currently in the English talent class which is an ideal starting point for him to develop his talent. Curriculum compacting, independent projects and portfolios are appropriate differentiated instructional strategies to use in this case. Student B can also participate in the Australian Science Competition as a form of enrichment to challenge his cognitive ability in Science.

4. His form tutor and subject tutors should all be informed about his disability in order to help Student B to excel academically despite his disability. Areas teachers can help in are his poor organizational skills, poor sense of body awareness and his tardiness. Teachers can try flexible skills grouping and RAFT (role, Audience, Format, Topic) to allow Student B to work around his disability and lack of motivation.

**Interventions for Student C – Asperger’s Syndrome**

1. Student C faces difficulties in social interaction, social communication, management of emotions and anxiety, flexibility in thinking, as well as sensory issues. Without the intervention from School X, Student C runs the risk of depression and low self concept especially with the negative social interactions in a secondary school where
peers are important part of growing up. Flexible Skills Grouping allows Student C to learn to work with others and it also matches Student C’s readiness with the task.

2. Student C’s Full Scale IQ was within the Very Superior ability classification. His significantly higher scores on the Perceptual Reasoning subtests, revealed strengths in activities that contained a visual and/or memory component, which suggested that he would benefit from the use of visuals to facilitate his learning. The use of structure and visual strategies, such as, the use of schedules, visual cues and social stories to can help with self-management, organization and the management of stress. Visuals, such as, social stories, can be used to facilitate the development of appropriate social skills and help him to understand the perspectives of others. Study and performance strategies such as note-taking, time management and using weekly and monthly organizers to maximize the use of time can be introduced to Student C.

3. With Student C’s high cognitive skills, he fits into the profile of being gifted with learning disabilities. As such, strategies such as enrichment, differentiated instruction and the use of mentors should be adopted by School X in its intervention strategies for him. Enrichment for Mathematical skills can be taught to Student C. e.g. Math Olympiad and Australian Math Competition. Strength-based accommodations, explicit instruction (accommodations to access learning and compensatory strategies) and remediation may address the issue of his high ability in Math and AS disabilities.

4. Since he is good in mechanical and computing skills, perhaps he should join an enrichment programme that allows him to use that talent and promote his areas of strength as well as facilitate the development of self-esteem. e.g Computer games programming in IEP (Individualised Enrichment Programme in School X).

5. A mentor is also recommended for Student C as a mentor can assist him in areas such as social interaction, to guide him with areas that he has difficulty navigating on his own.
6. Intervention, such as, Personal and Social Education in School X may facilitate his social and emotional development. Student C should be encouraged to engage in activities that would promote social referencing, where he learns to use emotional feedback from others. He can also be taught to observe and regulate his behaviour to collaborate with others and exchange emotions.

**Interventions for Student D – Asperger’s Syndrome**

1. Student D’s good memory has likely helped him cope with his subjects in primary school. However, memorizing information alone is no longer sufficient to cope academically in secondary school. Student D will benefit from developing other study skills to cope with the academic demands of secondary school. To help him cope academically, he receives help from his private tutors (who are special needs teachers). These teachers coach him in Math and Chinese. He will benefit from continuing remedial lessons and tuition from special teachers and teachers from School X. Study and Performance Strategies can be used to teach Student D in test-taking preparation, note-taking and monitoring daily, weekly and monthly assignments and activities.

2. His class teacher has been informed of Student D’s condition and has communicated with his classmates about the difficulties Student D faces because of Asperger’s Syndrome. His teachers are recommended to help Student D learn to problem solve his difficulties and to coach him in study skills appropriate to his subjects.

3. Student D has difficulties organizing his daily activities. It is therefore necessary for Student D to develop a daily schedule so that he is able to attend all his lessons and to complete all his daily activities. However, due to Student D’s difficulties in coping with unexpected events in a day, a more flexible schedule is recommended to accommodate these unexpected events.
4. Self awareness should be taught to Student D. Student D is aware that some of his problems he has been experiencing were due to his Asperger’s Syndrome. Hence, he has been making changes to his behaviours to help overcome his problems recently. Flexible Skills Grouping allows Student D to work with others as well as having assignments that are based on his readiness.

5. His lack of awareness about the impression he makes on others with his facial expressions and with his own non-verbal behaviours continues to cause misunderstanding with people around him. Student D will benefit from training in communication skills, such as increasing conversational topics, speaking in context and understanding non-verbal communication. Although communication is a problem for Student D, he should also be given Independent projects to allow him to work on his interest and talent instead of having to worry about communication with others all the time.

6. As tasks demands at secondary levels become increasingly multifaceted and complex, teachers are encouraged to monitor Student D’s ability to complete his work on time. It may be necessary for Student D to have a longer time to complete his written work and exams in order to fully maximize his potential.

**Interpretations and implications**

2e students encounter problems and conflicts which require special understanding and guidance by educators, counselors, school and parents. The application of MI Theory and compensation strategies will help to address their learning needs. The emphasis should be the recognition and development of the 2e students’ strengths. Enrichment programmes using Renzulli’s Enrichment Triad Model, differentiated instruction and teaching compensation strategies will ensure that 2e students’ enjoy greater success in school. In general, all schools offering gifted and talented programmes should consider using an educational planning tool
for a continuum of abilities (as found in Table 4 in the Appendix) in order to address the learning needs of the 2e students.

In the case of School X, the lack of a clear and proper set of guidelines that recognizes the unique characteristics and needs of 2e students and of a protocol for identification has resulted in no specific programmes or accommodations being developed for 2e students. It is recommended that early interventions for 2e students is crucial in helping them achieve greater success in school as reported in the study conducted by Reis, McGuire and Neu (2000). In that study, the 2e students learnt compensation strategies only when they entered university and had indicated that had they been taught those skills when they were in elementary and high schools, they would not have struggled so much.

As our study focused mainly on the identification of the learning needs and interventions for the 2e students, future research can be centred on developing a more systematic framework in helping them address their social and emotional needs. It is particularly important for 2e students whose cognitive profiles are likely to be more variable than other students to have the school’s support for their unique social, emotional as well as academic needs.
## Table 1

<table>
<thead>
<tr>
<th>Student A</th>
<th>Student B</th>
<th>Student C</th>
<th>Student D</th>
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<tbody>
<tr>
<td><strong>Age:</strong> 13</td>
<td><strong>Age:</strong> 13</td>
<td><strong>Age:</strong> 14</td>
<td><strong>Age:</strong> 16</td>
</tr>
</tbody>
</table>
| **Background:**  
- Former GEP student | **Background:**  
- Former GEP student  
- **Strength** - Science and English but weak in Mathematics  
- Exempted from Chinese because of disabilities  
- Highly developed verbal ability  
- High cognitive ability is not reflected in his school performance probably due to the way he is assessed in examinations | **Background:**  
- **Strength** – Mathematics (superior) and English  
- **IQ** – 134 (Very superior) | **Background:**  
- **Strength** – English  
- **IQ** – General Ability Index (GAI) of 134 (very superior)  
- Very bright boy in both verbal and non-verbal reasoning  
- Pool of general knowledge is very broad and his range of vocabulary is very wide compared to most children his age  
- Loves reading Shakespeare and has attempted to read the Oxford Dictionary  
- Natural flair for writing poems  
- Enjoys listening to classical music |
| **Disabilities:**  
- Eyes twitches constantly (suspected tics)  
- 800˚ for both eyes  
- Poor vision | **Disabilities:**  
- Poor visual-spatial skills  
- Very poor visual motor integration  
- Very poor-visual-closure skill (incomplete letter formation) | **Disabilities:**  
- Autistic spectrum disorder – Asperger’s Syndrome  
- Impairments in communication, socialization and social imagination | **Disabilities:**  
- Autistic spectrum disorder – Asperger’s Syndrome  
- Impairments in social communication, social interaction and imagination - Triad of impairments |
| **Family background:**  
- parents divorced | **Family background:**  
- lives with both parents and has 2 siblings | **Family background:**  
- lives with both parents and has 2 siblings | **Family background:**  
- lives with his mother and 3 siblings  
- his father passed away due to an illness |
| **Behavioural observations:**  
- Easily distracted  
- Difficulty coping daily work  
- Appears stressed most of the time  
- Requires close monitoring | **Behavioural observations:**  
- Poor handwriting  
- Poor organizational skills  
- Poor sense of body awareness  
- Needs to be monitored closely or else he will continue to not hand in his | **Behavioural observations:**  
- Fidgety in his seat  
- Engaging in social conversation is too stressful for him  
- He has little understanding in the perspective of others and whether they were interested in all | **Behavioural observations:**  
- Did not hand in his school work regularly and frequently daydreamed in class  
- Loses interest in his lessons whenever he encounters difficulties |
| work or be able to meet deadlines | the details that he was giving.  
  - Repetitive and flat intonation in his speech  
  - Dislikes changes to routine  
  - Has a habit of lying on the floor  
  - Awareness of social norms is weak | Does not like eye contact and has a blank look on his face most of the time  
  - Speech is clear but has flat intonation  
  - Has problems understanding other people’s emotions and reaction in a dialogue. He dominates the conversation by talking incessantly of what interest him only  
  - Rocks back and forth when he is under stress |
<table>
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<tr>
<th>Strategy</th>
<th>Description of Strategy</th>
<th>Why Appropriate for 2e Students</th>
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</table>
| Flexible Skills          | Students are matched to skills work based on their readiness, not based on the assumption that all need the same spelling task, computation drill, writing assignment etc. Movement among groups is common, based on readiness on a given skill and growth in that skill. | ▪ Exempts students from basic skills work in areas where they demonstrate a high level of performance (100% not required)  
▪ Can allow a chance for independent work at the student’s own pace |
| Grouping                 | A 3-step process that (1) assesses what a student knows about material to be studied and what the student still needs to master, (2) plans for learning what is not known and excuses student from what is known, and (3) plans for freed-up time to spend in enriched or accelerated study  | ▪ Eliminates boredom from unnecessary drill and practice  
▪ Satisfies student’s desire to learn more about a topic than school often allows  
▪ Encourages independence |
| Compacting               | Students can demonstrate mastery of a concept by completing the five most difficult problems with 85% accuracy. Students who can demonstrate mastery do not need to practice anymore. | ▪ Honours student’s mastery of a concept  
▪ Eliminates unnecessary drill and practice  
▪ Reduces homework load of students who can demonstrate mastery |
| Most Difficult First     | Process through which student and teacher identify problems or topics of interest to the student. Both student and teacher plan a method of investigating the problem or topic and identifying the type of product the student will develop. The product should address the problem and demonstrate the student’s ability to apply skills and knowledge to the problem or topic. | ▪ Builds on student interest and encourages independence  
▪ Teacher provides guidance and structure to supplement student capacity to plan  
▪ Uses preset timelines to overcome procrastination and logs to document the process involved  
▪ Student and teacher establish criteria for success |
| Independent Projects     | The student is placed in the active role of solving problems as a professional would.    | ▪ Utilizes varied learning strengths, allows uses of a range of resources and provides a good opportunity for balancing student choice with teacher coaching |
| Problem-based Learning   | Teacher can target work toward student needs while giving students choice               | ▪ Well suited to dealing with readiness, interests and learning style of the student |
| RAFT                    | A collection of student work that can be a powerful way of reflecting on the student’s growth over time | ▪ Portfolios are motivating because of emphasis on student choice and focus on readiness, interests and learning profile |

The Differentiated Classroom: Responding to the Needs of All Learners by Carol Ann Tomlinson (adapted from the Colorado Department of Education)
### Table 3
Summary of Compensation Strategies Used By High-ability Students Who Succeed in College (Reis, McGuire & Neu, 2000)

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Components</th>
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<tbody>
<tr>
<td>Study and Performance Strategies</td>
<td>• Note taking</td>
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<td>• Test-taking preparation</td>
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<td></td>
<td>• Time management</td>
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<td></td>
<td>• Monitoring daily, weekly and monthly assignments and activities</td>
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<td>• Using weekly and monthly organizers to maximize use of time; chinking</td>
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<td></td>
<td>assignments into workable parts</td>
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<td></td>
<td>• Library skills</td>
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<td>• Written expression</td>
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<td>• Reading</td>
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<td></td>
<td>• Mathematical processing</td>
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<tr>
<td>Cognitive/Learning Strategies</td>
<td>• Memory strategies such as mnemonics and rehearsal using flash cards</td>
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<tr>
<td></td>
<td>• Chunking information into smaller units for mastery</td>
</tr>
<tr>
<td>Compensation Supports</td>
<td>• Word processing</td>
</tr>
<tr>
<td></td>
<td>• Use of computers</td>
</tr>
<tr>
<td></td>
<td>• Books on tape</td>
</tr>
</tbody>
</table>

### Table 4
Educational Planning Tool for a Continuum of Abilities: Example

<table>
<thead>
<tr>
<th>Cognitive Processing/General Intellectual Ability</th>
<th>Strength-based Accommodations</th>
<th>Explicit Instruction: Accommodations to Access Learning</th>
<th>Explicit Instruction: Compensatory Learning Strategies</th>
<th>Explicit Instruction: Intervention/Remediation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use “most difficult first” strategy and “pre-testing” to allow student to demonstrate mastery of concepts and reduce work load</td>
<td>• Give student a conceptual framework or overview of new material</td>
<td>• Use colour-coding &amp; highlighting for visual focus</td>
<td>• Teach verbal mnemonics, rhyme for automaticity</td>
<td>• Teach students in creating a “To Do List” and help him prioritize homework</td>
</tr>
<tr>
<td>Extended time</td>
<td>• Preferential seating</td>
<td>• Coach students in the use of mnemonics to enhance memory</td>
<td>• Assist students in creating a “To Do List” and help him prioritize homework</td>
<td>• Ask students to talk through the steps he will use when completing assignment</td>
</tr>
<tr>
<td>Nonverbal cues</td>
<td>• Copies of overheads/Powerpoint slides</td>
<td>• Teach strategies to maintain attention like sitting up straight and leaning upper body toward speaker</td>
<td>• Use overheads/Powerpoint slides for teaching</td>
<td>• Ask students to prioritize homework</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specific Academic</th>
<th>Opportunities for developing oral and written communication</th>
<th>Copies of text for highlighting</th>
<th>Master keyboarding</th>
<th>Choral reading to increase fluency</th>
</tr>
</thead>
<tbody>
<tr>
<td>High level, open-ended problem solving like Math Olympiad</td>
<td>• Master keyboarding</td>
<td>• Use computer software programmes to increase productivity</td>
<td>• Provide instruction in organization for written language, computation, problem solving</td>
<td>• Teach students to prioritize homework</td>
</tr>
</tbody>
</table>

| Creativity                                         | Opportunities for brain-storming & creative thinking       | Create a safe environment where risk taking is encouraged | Coach students in SCAMPER technique to substitute, combine, adapt, modify, put to other use, eliminate and rearrange | Coach students in how to break down and chunk projects into multiple steps with realistic short-term goals |

Adapted from the Colorado Department of Education
References


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