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## SELF-EFFICACY AND MINDSET IN STUDENTS WITH AND WITHOUT LEARNING DIFFICULTY

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### ABSTRACT

Students with learning difficulty that have low self-efficacy and a fixed mindset which might further hinder their performance. This study aimed to investigate the unique characteristic of self-efficacy and mindset for a child with learning difficulty. The study consisted of two mini studies. Study 1 investigated self-efficacy and mindset in 30 primary school students without learning difficulty. Study 2 investigated self-efficacy and mindset in a student with learning difficulty. A research questionnaires and a score record were used in both studies.

**Keywords:** learning difficulty, self-efficacy, mindset, after-school program

### INTRODUCTION

The latest epidemiological survey of mental disorders in children and adolescents in China was published in October 2021 (Global Time 2021). This is the latest report since the launch of the first epidemiological survey of mental disorders in children and adolescents in China in December 2012, after nearly nine year of scientific research, involving more than 730,000 children aged 6-16 years in China. This latest report published has shown that the overall prevalence of mental disorder among children and adolescents in China is 17.5%, and many of them are found to have diagnosed and undiagnosed learning difficulty (Global Time, 2021). Among these children, attention deficit

hyperactivity disorder accounts for 6.4%, anxiety accounts for 3.6%, and major depression disorder accounts for 2.0%. With the increasing number of children with learning difficulty, the provision of targeted education for these children are warranted.

Students with learning difficulty often have low self-efficacy. They may have difficulty self-advocating for their needs and they may feel as though their past performance dictates their future performance. This is closely associated with the representation of a fixed mindset postulated by Dweck (2006). Fixed mindset is a thinking that people believe their basic qualities, like their intelligence or talent are simply fixed traits. They spend their time documenting their intelligence or talent instead of developing them. A fixed-minded person usually avoids challenges in life, gives up easily, and becomes intimidated or threatened by the success of other people. This is because a person with a fixed mindset does not see intelligence and talent as something you develop. In contrast, people with a growth mindset believe intelligence can be improved, effort leads to mastery, and failures are just temporary setbacks. They embrace lifelong learning and they view feedback as an opportunity to learn (Dweck, 2006).

Students with learning difficulty might think the study is boring and they think they do not have the ability to study. Therefore, they might have a fixed mindset and always have a negative attitude about learning. Students with learning difficulty who do not perform well academically are often referred for special education services (McCardlen et al., 2005). Considering the importance of self-efficacy and having the right mindset for academic learning in the context of China, this study aims to investigate the difference on self-efficacy and mindset between a student with learning difficulty and those without learning difficulty.

## **LITERATURE REVIEW**

### **Self-Efficacy in Students with Learning Difficulty**

For students with learning difficulty, low self-efficacy can be a barrier to academic success. Past performance is considered the most powerful element in fostering self-efficacy. Consequently, students with learning difficulty who experience repeated academic failures or difficulty are likely to have lower self-efficacy due to past performance (Hampton, 1996). In turn, special education students with low self-efficacy may be less willing to attempt a challenging task and unlikely to keep trying until they are successful (Hampton, 1996). This outcome may reinforce the poor perceptions that students with learning difficulty have about their academic abilities.

Students with learning difficulty dedicate significantly more time and effort to achieve the same results as their typical peers. As a result, when students with learning difficulty observe that they must put in extra effort, they may experience a lowered sense of self-efficacy (Bergen, 2013). Having both low self-efficacy and a disability is a “dangerous dynamic” because it is essential for students with learning difficulty to have increased perseverance in order to meet the same standards as their typical peers (Bergen, 2013).

### **Mindset in Students with Learning Difficulty**

Fixed mindset is a thinking that people believe their basic qualities, like their intelligence or talent are simply fixed traits. A fixed-minded person usually avoids challenges in life, gives up easily, and

becomes intimidated or threatened by the success of other people. This is because a person with a fixed mindset does not see intelligence and talent as something you develop. In contrast, people with a growth mindset believe intelligence can be improved, effort leads to mastery, and failures are just temporary setbacks. They embrace lifelong learning and they view feedback as an opportunity to learn (Dweck, 2006). Those that have a fixed mindset have been found to ignore constructive feedback and are threatened by the success of others (Saunders, 2013). Students that have a fixed mindset are less likely to develop in their learning as they feel that there is nothing they can do to change their academic abilities (Dweck, 2006). In contrast, a growth mindset differs from a fixed, in that students believe that intelligence can be developed and they embrace challenges, persevere when they face challenges and they utilize criticism from others to move forward in their learning (Dweck, 2006). Students with a growth mindset are often intrinsically motivated and there is a positive impact on academic achievement over time (Brougham & Kashubeck, 2017).

Hartmann (2013) suggested that students with learning difficulty tend to have a more fixed mindset compared to their typical peers. Students requiring special education assistance for a specific learning difficulty do not achieve with the same propensity as their typical peers. These students are accustomed to receiving failing or otherwise unacceptable grades (Hartmann, 2013). When educators or parents instill in students the idea that they are measured by their accomplishments, the students may also surmise that they are measured by their failures and tend to focus on their performance rather than on knowledge (Hartmann, 2013). Therefore, this study aimed to investigate the unique characteristic of self-efficacy and mindset for a child with learning difficulty. The study consisted of two mini studies. Study 1 investigated self-efficacy and mindset in 30 primary school students without learning difficulty. Study 2 investigated self-efficacy and mindset in a student with learning difficulty. The research questions sought to be addressed are:

1. What is the self-efficacy manifestation of students without learning difficulty?
2. What is the mindset manifestation of students without learning difficulty?
3. What is the self-efficacy manifestation of students with learning difficulty?
4. What's the mindset manifestation of students with learning difficulty?
5. What is the difference on self-efficacy and mindset between the student with learning difficulty and those without learning difficulty.

## **METHODOLOGY**

### **Method**

The study consisted of two mini studies. Study 1 investigated self-efficacy and mindset in 30 primary school students without learning difficulty. Study 2 investigated self-efficacy and mindset in a student with learning difficulty. Quantitative survey method was applied in both mini studies. First, the research was conducted in an after-school academic enrichment center. Research information sheets were sent out to the parents and the research consents were obtained from the parents prior to the mini studies. Two measures were presented from a computer web server called Wenjuanxin in China, along with several items requesting some basic demographic information.

For Study 1, 30 students without learning difficulty in the center answered the scales by *wenqunxin* in the separate room of center during the recess one by one. The teacher will give a simple explanation if the student felt confused about the questions. It took approximately 3 minutes for one student answering all the question. For Study 2, a student with learning difficulty answered the scales by *wenqunxin* in the separate room of center during the recess. Similarly, the teacher will give a simple explanation if the student felt confused about the questions. The completed survey is on-line at <https://www.wjx.cn/vm/Pi5yVoy.aspx>, and it follows all the general protocols for research participation, such as being anonymous and voluntary. The data are stored in a digital file, to be fed into SPSS.

### **Participants**

The participants in Study 1 are 30 students without learning difficulty, aged 8 to 12 years old, including 16 boys and 14 girls. They all have good performance during the class and scored more than 90 points out of 100 in the last English exam. The participant in Study 2 is a 10-year-old student with learning difficulty, anonymously named as Mike. Mike is observed to have learning difficulty, characterized as (1) having behavioral issues such as sitting and paying attention problems in the classroom, and (2) having learning issues such as avoidance and rejection of learning activities and working memory problems.

### **Instruments: Self-Efficacy Scale and Mindset Scal**

The Self-Efficacy Scale was adapted from Schwarzer & Jerusalem (1995). This Scale has been adopted by many researchers and proved to be effective worldwide. We adjusted some items and questions to make it more suitable for children to understand and answer. It has 7 questions, such as SE1. if the environment is noisy to learn something, I will try to find a quiet place to learn, SE2. I know why I need to learn, and SE3. I like to learn all subjects in the school. The Likert scale is a 4-point scale: 1 = Not at all true; 2 = Hardly true; 3 = Moderately true; 4 = Exactly true. The scale has been used in numerous research projects, where it typically yielded Cronbach's alphas between .76 and .90 (Schwarzer & Jerusalem, 1995). The result of Cronbach's alphas for this study is 7.14 which is lower than the normal statistics.

The Growth Mindset Scale was adopted/adapted from A Growth Mindset Scale for Young Children (Muradoglu et al., 2022). The students was told some things about some kids with the vignettes about math, spelling, and drawing. Two vignettes concerned characters that were skilled in a domain (high-ability vignettes; e.g., "This is Alex. And here's something about Alex: Alex is really good at math. Alex gets all of the math problems right on her schoolwork"); the other two vignettes concerned characters that were unskilled in a domain (low-ability vignettes; e.g., "This is Chris. And here's something about Chris: Chris isn't very good at spelling. He gets a lot of spelling problems wrong on his schoolwork"). Two of the characters were girls, and two of the characters were boys. For each of the four vignettes, children were asked two questions (always administered in the order presented below), for a total of 8 items. Responses to all items were scored on a scale from 0 to 1, with higher numbers reflecting a stronger growth mindset. The researcher followed up with a three-point scale, accompanied by three smiley or frowny faces of increasing intensity ("Was (s)he sort of good/not good, good/not good, or really good/not good?"). This yielded six possible responses (really not good = 0, not good = 0.2, sort of not good = 0.4, sort of good = 0.6, good = 0.8, really good = 1.0). Responses to this

item were reverse-scored for the high-ability vignettes, which concerned characters who started out skilled in a domain (really good = 0, good = 0.2, sort of good = 0.4, sort of not good = 0.6, not good = 0.8, really not good = 1.0).

The scale has been used in numerous adult research projects, where it typically yielded Cronbach's alphas between .71 and .90 (Muradoglu et al., 2022). Using the samples, we evaluated the reliability of each of the four subscales (instability of high ability, malleability of high ability, instability of low ability, and malleability of low ability). we assessed internal consistency by calculating a Cronbach's alpha for all the items. The result of Cronbach's alphas for this study is 0.809.

## **RESULTS**

### ***Study 1: What is the self-efficacy manifestation of students without learning difficulty?***

Table 1 shows the results of self-efficacy of students without learning difficulty. The findings showed that the mean range for the 7 items is 2.97 to 3.70 (Likert Scale of 4). The students reported high self-efficacy in learning objective and solving the problem of study environment. In comparison, the students reported lower self-efficacy in the motivation of learning.

**Table 1:** Item Statistics of self-efficacy (n = 30)

Questions	Mean	Standard Deviation	n
SE1. If the environment is noisy for me to learn something, I will try to find a quiet place to learn it.	3.40	0.894	30
SE2. I know why I need to learn.	3.10	0.662	30
SE3. I like to learn all subjects in the school.	3.17	0.874	30
SE4. When it is difficult for me to learn something, I will find ways to help myself learn.	3.13	0.900	30
SE5. I can learn what my parents and teachers asked me to learn.	3.70	0.466	30
SE6. I like to learn.	2.97	0.809	30
SE7. I can tell others about what I am learning.	3.60	0.621	30

### ***Study 2: What is the mindset manifestation of students without learning difficulty?***

Table 2 shows the results of mindset of students without learning difficulty. The findings showed that the mean range for the 8 items is 0.45 to 0.81. The students reported growth mindset in the belief that they could improve their ability through putting in efforts even with a poor beginning. In comparison, the students reported fixed mindset in that someone could keep good performance if they have been reached certain achievement before. Overall, the students showed that they have growth mindset as they all reported improved scores in all scenarios that reflected having had put in efforts.

**Table 2:** Item Statistics of growth mindset (n = 30)

Questions	Mean	Standard Deviation	n
M1a. Alex is really good at math. He gets all of the math problems right on her school work. Will it always be this way? Will Alex always be really good at math?	0.54	0.242	30
M1b. When Alex was a little older, he moved to a school far away. He didn't get to practice math very much. Alex was at this school for a long time. When he left this school, was he good at math?	0.71	0.227	30
M2a. Betty is really good at math. She gets all of the spelling questions right on his school work. Will Betty always be really good at spelling?	0.45	0.271	30
M2b. When Betty was a little older, she moved to a school far away. She didn't get to practice spelling very much. Betty was at this school for a long time. When she left this school, was she good at spelling?	0.69	0.239	30
M3a. Chris isn't very good at spelling. He gets a lot of spelling questions wrong on his schoolwork. Will Chris always be not very good at spelling?	0.76	0.230	30
M3b. When Chris was a little older, he moved to a school far away. He got to practice spelling a lot. Chris was at this school for a long time. When he left this school, was he good at spelling or not	0.81	0.181	30
M4a. Dora isn't very good at drawing. She can not draw anything her teacher asks her to. Will Dora always be not very good at drawing?	0.75	0.227	30
M4b. When Dora was a little older, she moved to a school far away. She got to practice drawing a lot. Dora was at this school for a long time. When she left this school, was she good at drawing?	0.80	0.166	30

**Study 3: What is the self-efficacy manifestation of student with learning difficulty?**

Table 3 shows the result of self-efficacy of a student with learning difficulty called Mike, the case-study student in Study 2. The self-efficacy scores of Mike is 1 - 2 ((Likert Scale of 4) which is obviously lower than the average score of students without learning difficulty (Mean range: 2.97 - 3.70).

**Table 3: Item Statistics of self-efficacy (Mike)**

Questions	Score	n
SE1. If the environment is noisy for me to learn something, I will try to find a quiet place to learn it.	1	1
SE2. I know why I need to learn.	2	1
SE3. I like to learn all subjects in the school.	2	1
SE4. When it is difficult for me to learn something, I will find ways to help myself learn.	2	1
SE5. I can learn what my parents and teachers asked me to learn.	1	1
SE6. I like to learn.	2	1
SE7. I can tell others about what I am learning.	2	1

**Study 4: What is the mindset manifestation of student with learning difficulty?**

Table 4 shows the result of mindset scores for Milk. The result shows that Mike does not have the strong concept about the change for the fictional kid in the vignettes and he believe that the students with good performance will not be easy to lose their ability, which are contribute the low points for his mindset scale. Nevertheless, for the spelling, which he has been learning these days, he thinks the spelling ability of students who has poor beginning could be improved by hardworking. It decreases slightly to the drawing ability which he is not familiar with.

**Table 4: Item Statistics of growth mindset (Mike)**

Questions	Score
M1a. Alex is really good at math. He gets all of the math problems right on her school work. Will it always be this way? Will Alex always be really good at math?	0.33
M1b. When Alex was a little older, he moved to a school far away. He didn't get to practice math very much. Alex was at this school for a long time. When he left this school, was he good at math?	0.20
M2a. Betty is really good at spelling. She gets all of the spelling questions right on his school work. Will Betty always be really good at spelling?	0.33
M2b. When Betty was a little older, she moved to a school far away. She didn't get to practice spelling very much. Betty was at this school for a long time. When she left this school, was she good at spelling?	0.40

*continued*

M3a. Chris isn't very good at spelling. He gets a lot of spelling questions wrong on his school work. Will Chris always be not very good at spelling?	0.33
M3b. When Chris was a little older, he moved to a school far away. He got to practice spelling a lot. Chris was at this school for a long time. When he left this school, was he good at spelling or not	0.60
M4a. Dora isn't very good at drawing. She can not draw anything her teacher asks her to. Will Dora always be not very good at drawing?	0.33
M4b. When Dora was a little older, she moved to a school far away. She got to practice drawing a lot. Dora was at this school for a long time. When she left this school, was she good at drawing?	0.40

The validity of the scale by assessing how it relates to theoretically relevant cognitions, attitudes, and behaviors, including children's goals, tendency to engage in upward comparisons, persistence in the face of failure, and affective response to failure. Children who were more growth-oriented, as measured by the scale, would be more likely to orient toward learning (rather than performance) goals, engage in upward (rather than downward) comparisons, and show more persistence and less negative affect after failure.

## DISCUSSION, RECOMMENDATION AND CONCLUSION

This study is focus on finding the difference on self-efficacy and mindset between the student with learning difficulty and those without learning difficulty. For Study 1, we measure the self-efficacy of 30 students without learning difficulty and the result shows their average self-efficacy level is closed to the normal according to the research before. They are willing to find a solution when they encounter the problem. In Study 1, we also explored the mindset of same students by a vignette and found that most of students believe that characters that were unskilled in a domain will become better after doing more practice. On the contrary, they do not believe the characters with high-ability will become worse if they did not do any practice. For Study 2, the same self-efficacy scale and growth mindset scale were used for a student with learning difficulty. The findings indicated that the case-study student with learning difficulty, Mike scores lower in self-efficacy and growth mindset as compared to his peers.

The student with learning difficulty was found to experience reduced self-efficacy and a tendency to have a fixed mindset is notable. The findings pointed to the possibility to help the student with improve these those psychological states as a way to improve his motivation to learn. For this, firstly, teachers can consider adopting a student-oriented teaching strategy to the students with learning difficulty such as setting up a suitable goal for them which may be lower than their peers and design some simple questions for them to help them build up their confidence. Secondly, teachers are encouraged to patiently to communicate with them even though they behave badly in the class sometimes. Knowing that the students with learning difficulty could improve is very important to the teacher. Thirdly, the use of effective feedbacks such as the effort praise could play an important role to

help the students with learning difficulty increase their self-efficacy and build up a growth mindset. Those effort praise should be focus on their efforts and express instantly after they made a progress.

## **CONCLUSION**

This study has proven that the students with learning difficulties could have lower self-efficacy and a fixed mindset. Therefore, we can use effective feedback such as effort appraise to encourage the students with learning difficulty to boost their performance through working hard step by step.

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