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Relationship among Self-determination, Growth Mindset and EFL Students' Language Proficiency

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Abstract

The main aim of this study was to examine the relationship between self-determination and growth mindset with the English language proficiency of EFL tertiary students in the learning environment in China. The study involved 444 EFL students from one randomly selected faculty in a university located in Ningxia, China. The study utilized a quantitative research design. The findings revealed that the EFL students' overall self-determination was moderate, and there was a significant difference based on English language proficiency. Correspondingly, the EFL students displayed moderately positive perceptions of growth mindset. However, no significant differences were seen concerning English language proficiency.

Keywords: EFL students, self-determination, growth mindset, English language proficiency

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1.0 Introduction

The advent of economic globalization witnessed the rise of English fast becoming an international language of choice in almost all countries around the globe. The English language is of particular significance as effective communication in English opens doors to greater opportunities and strengthens China's overall international competitiveness (Li, 2020). Thus, in the learning environment of English as a Foreign language (EFL, hereafter) in China, English is fast becoming a language of choice. Mok (2018) indicated that university graduates are expected to have sufficient subject matter knowledge, generic skills, and adequate English proficiency, for instance, to meet their future needs. In addition, Knoch et al. (2020) highlight that the CET4 test is crucial to language. The immediate benefit would be achieving desirable test outcomes and reaching the expectation of test takers and their families in China. Thus, investigating the factors that may affect English as a foreign/second language (EFL/ESL) learning achievements is crucial for informing theory, practice and policy. Researchers have long attempted to identify factors contributing to English language learning achievements for students in EFL/ESL contexts (Bai & Wang, 2019), as effective communication in English is rapidly creeping into China's economic and social environment.

The Self-Determination theory put forward by Ryan, Domenico, & Deci (2019), argues explicitly that healthy development to unfold individuals require support for basic psychological needs. They add that people are often motivated to grow, learn and change based on

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three innate and universal psychological needs. The three needs that are seen as exceptionally fundamental for success in effective communication are autonomy, competence and relatedness. Furthermore, Alamer and Lee (2019) highlighted that self-determination theory is the most direct link of the motivational process to language achievement. This study focuses on self-determination theory which fundamentally views motivations in language learning.

Dweck (2006) introduced the idea of fixed mindset vs growth mindset in her book "New Psychology for Success", which supports the role of motivational over cognitive factors of learning. Growth mindset views intelligence as "an attribute that can be developed over time" (Keenan, 2018, p. 1). In contrast, fixed mindset focuses on the intellectual ability that is naturally acquired (Dweck, 2006). Students who use English more frequently are more likely to develop language proficiency and confidence. Therefore, it is critical to make teachers aware that individual students learn English differently and play an important role in English language learning. This study, therefore, aimed to study the relationship between self-determination, growth mindset and EFL students' language proficiency.

2.0 Literature Review

Effective English language communication in terms of comprehension and conversational skills has become integral to everyday life in many parts of the world. The English-speaking social environment is visible in almost every sector, especially in business, education and social networking (Pachina, 2020). English language skills also enable one to advance in life by broadening career paths and improving one's social status. Thus, being able to communicate in the language has become "the need of the hour" (Malik et al., 2020, p.104). According to Bolton and Graddol (2012), a China Daily article once reported that the number of English learners in China had reached over 400 million or about one-third of China's population when it was published in 2010. They quoted that "people who have a good command of English are more competitive than their peers". (ibid). In 2020, the number would have multiplied well, especially since China dominates the world in various businesses and industries. In China, to assess their English learning levels, the high-stake test known as the College English Tests (CET-4) for non-English majors is made compulsory by the ministry. However, according to Zhao (2018), the certificate does not accurately measure their proficiency and only serves to gauge their language knowledge. Therefore, research on how to increase the learning of EFL students' language proficiency in China is much needed.

This section looks at a few selected second language or EFL learning theories. One of them is behaviourist theory which deals with components of learning which can be observed objectively. The focus will be on Skinner's operant conditioning theory. Next, the communicative language teaching approach is focused on. This is followed by Krashen's second language acquisition theory with its five hypotheses. Next, Vygotsky's theory of social constructivism in building new concepts in learning is discussed.

Self-determination theory (SDT) is a well-established theory in language education. Beginning with Noels' work in the 1990s and 2000s, SDT has enjoyed continued success and explanatory power for understanding motivation in learning languages in formal settings (Parker, & Ryan, 2017). SDT specifically argues that for healthy development to unfold, individuals require support for basic psychological needs (Ryan, Domenico, & Deci, 2019). Autonomy has many definitions, such as "learner independence, self-direction, autonomous learning, independent learning" (Ivanovska, 2015, p. 353). Competence was defined as the need to be responsible and efficient when interacting with people and the environment. Expressing one's capacities and extending their skills are essential for students to succeed. (Ryan, Kim, Reeve, & Jang, 2009). Relatedness describes that students need to be connected with other people in the sense that they need to form a caring, warm, and emotional bond with people in their life (Ryan et al., 2009). In foreign language learning, autonomy has many definitions, such as "learner independence, self-direction, autonomous learning, independent learning" (Ivanovska, 2015, p. 353). Autonomous students must show that they made their own choices and pursued options that were personally relevant to them. "Self-determination is undermined when the teachers act in a controlling manner, forcing students to comply with their demands and priority" (McEown, Noels, & Saumure, 2014, p. 4). Competence can be developed through positive feedback and encouragement. In foreign language learning, various forms of corrective feedback help enhance students' competence. The role that relatedness plays in language learning is significant, as it helps to facilitate cultural acquisition. (Reeve 2002, Ryan & Deci, 2000). However, there is little knowledge about how self-determination relates to English learning performance, especially in the CET-4 scores of tertiary students in China.

Dweck (2006) believed that people have implicit theories (fixed and growth mindsets) about different characteristics such as ability, intelligence, personality, and leadership. The implicit theories framework has recently been applied to the study of beliefs about language ability and language learning (Lou & Noels, 2019). Dweck's (2006) research proved students' behaviours to be connected to their mindsets, and she pioneered the implicit theories of intelligence or "mindset". She devised an innovative approach to look at success, basing it on the concepts she termed as "growth mindset" and "fixed mindset" and calls it the "New Psychology for Success" (Dweck, 2006). Research has shown that learners have both fixed and growth mindsets about language ability. These mindsets stem from factors such as language learning experiences and social comparisons (Mercer & Ryan, 2010). Several studies have examined the relationship between language mindsets and other psychological and motivational variables in the past few years. Lou and Noels (2019) reported that growth mindsets positively predicted learning goals and responses while fixed mindset negatively correlates with learning goals. In addition, Bai et al. (2019) reported that growth mindset positively predicted self-efficacy, interest in writing, and self-monitoring. Previous research shows that fixed and growth mindsets play an important role in learners' approaches toward language learning and other domains (Dweck, 2006; Lou & Noels, 2019). However, there is little knowledge about how language learners' fixed and growth mindsets are related to the CET-4 scores of tertiary students in China.

3.0 Methodology

A research design is a plan that outlines a logical sequence comprising specific steps wherein data collection, analysis and interpretation are discussed. The study was conducted in one randomly selected faculty in a university in the Ningxia Hui region in northwest China. The sample population comprised 444 Year Two EFL students from the chosen faculty. The study utilized a quantitative research design where data were collected from an established CET-4 English language test and a questionnaire which comprised two main inventories. The researcher chose a quantitative research design involving the utilization of a survey questionnaire as it involved a larger sample, thus would contribute to the representativeness and accuracy in generalizing results across the total population. The first inventory was the revised Ryan & Deci (2000) self-determination inventory with 16 items, and the second was the Growth Mindset Inventory developed and validated by Dweck (2006) with 20 validated items. Respondents were required to respond to all items based on a 5-point Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree). The validity of the questionnaire was established through a panel of experts, whilst reliability was established via a pilot study where the overall Cronbach's Alpha score of 0.78 was achieved. The quantitative data analysis employed both descriptive and inferential statistics. The data for the actual study was collected after the validity and reliability of the questionnaire were established. The questionnaire was administered to the students physically by the researcher. After the data were collected, statistical measures such as ANOVA and the Pearson correlation coefficient were employed to analyze the relationship between the single dependent variable (English language performance) and independent variables (self-determination and growth mindset) to predict the value of the single dependent value. Finally, ethical considerations such as anonymity, integrity and transparency were maintained throughout the data collection and data analysis process.

4.0 Findings

The section below provides a brief description of the main findings of the study.

4.1 EFL Tertiary Students' English Language Proficiency (CET-4 Scores)

This section provides the study's findings which aimed to explore the relationship between self-determination, growth mindset and English language proficiency (CET-4 exam) of tertiary education students in China.

Table 1. EFL tertiary students' English proficiency level (CET-4 Scores) (n=444)

English Proficiency Level	CET-4 Scores	Number	Percentage
Advanced	(550-710)	38	6.6
Upper-Intermediate	(501-549)	84	18.9
Lower Intermediate	(425-500)	127	28.6
Limited	< 425(below)	195	43.9
Total		444	100

As shown in Table 1, it can be seen that the CET-4 test is divided into four levels, namely advanced, upper intermediate, lower intermediate and limited English proficiency level. All the EFL respondents sat for the CET-4 exam. The findings, with regard to the English proficiency level, revealed that among the 444 respondents, approximately 127 (28.6%) students were in the lower intermediate level, whilst another 195 (43.9%) respondents displayed limited English proficiency. The findings further showed that only 38 (6.6%) of the respondents were at the advanced EFL level, and the rest, 84 (18.9%), were at the upper intermediate level in English.

4.2 Self-Determination in Language Learning

The findings revealed that the EFL students' overall self-determination was moderate ($m=3.25$, $SD=1.066$), and there was a significant difference based on gender and English language proficiency. The overall mean for self-determination is indicated in Table 2 below

Table 2. Overall Mean of Self-Determination (n=444)

Items	Mean	Standard Deviation
Relatedness	3.45	1.038
Competence	3.19	1.074
Autonomy	3.08	1.087
Overall	3.25	1.066

Scale: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strong Agree

As a whole, students had the highest mean for relatedness ($M=3.45$, $SD=1.038$), and the mean for autonomy ($M=3.08$, $SD=1.087$) was the lowest compared with the other variables. Overall, the positive scores implied that most of the respondents agree that self-determination is vital in learning English.

4.3 Differences in Self-Determination Based on Language Proficiency

Further in-depth analysis was conducted to investigate the students' self-determination with regard to their language proficiency. A one-way ANOVA test was conducted, and the findings obtained are shown in Table 3.

Table 3. Self-Determination based on English Language Proficiency

	Mean	SD	F	p
Advanced	3.422	.665	12.558	0.000**
Upper intermediate	3.443	.704		
Lower intermediate	3.361	.551		
Limited	3.023	.674		

Exploring further into the three aspects that have been investigated, the findings showed that the students' perceptions of self-determination based on English language proficiency showed significant differences between groups at $p < 0.05$ level as determined by one-way ANOVA ($F = 12.558$, $p = 0.000^{**}$). A Tukey post hoc test revealed that the mean score for students with limited English language proficiency ($M = 3.023$, $SD = .674$) was significantly different to the mean scores for students with lower intermediate English language proficiency ($M = 3.361$, $SD = .551$), and students with upper-intermediate English language proficiency ($M = 3.443$, $SD = .704$), as well as students with advanced English language proficiency ($M = 3.422$, $SD = .665$).

4.4 Growth Mindset in Language Learning

Findings in Table 4 exhibit that the EFL students have moderately positive perceptions of growth mindsets in language learning ($M = 3.17$, $SD = 1.031$).

Table 4. Overall Mean of Growth Mindset

Items	Mean	Standard Deviation
Growth mindsets	3.39	.988
Fixed mindsets	2.94	1.073
Overall	3.17	1.031

Scale: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strong Agree

Overall, students had the highest mean for growth mindsets aspects ($M = 3.39$, $SD = .988$.) and the lowest mean for Fixed Mindsets ($M = 2.94$, $SD = 1.073$). The mean scores show that most respondents agree that a growth mindset is essential in learning English.

4.5 Differences in Growth Mindset Based on Language Proficiency

Further in-depth analysis was conducted to investigate the students' growth mindset in regard to their language proficiency. A one-way ANOVA test was conducted, and the findings obtained are shown in Table 5.

Table 5. Growth Mindset based on English Language Proficiency

	Mean	SD	F	p
Advanced	3.184	.621	2.278	0.079
Upper intermediate	3.241	.565		
Lower intermediate	3.221	.410		
Limited	3.091	.6437		

Significance ** $p < 0.05$

Exploring further into the two aspects that have been investigated, the findings showed no significant differences between groups at the ($F = 2.278$, $p = 0.079 > 0.05$) level as determined by one-way ANOVA. The overall mean scores indicated that the students with upper intermediate language proficiency ($M = 3.241$, $SD = 0.565$) held more positive perceptions of growth mindset compared to students with advanced ($M = 3.184$, $SD = .621$), lower intermediate ($M = 3.221$, $SD = .410$) and limited language proficiency ($M = 3.091$, $SD = .437$).

4.6 Relationship Between Self-Determination, Growth Mindset and English Language Proficiency

Next, the study looks into the relationship between self-determination, growth mindset and EFL students' English language proficiency based on the CET-4 scores. A Pearson Correlation analysis was conducted, and the results are indicated in Table 6.

Table 6. Relationship Between Self-Determination, Growth Mindset and English Language Proficiency

		SD	GM	CET-4
SD	Pearson Correlation	1	.680**	.249**
	Sig. (2-tailed)		.000	.000
	N	444	444	444
GM	Pearson Correlation	.680**	1	-.095*
	Sig. (2-tailed)	.000		.045
	N	444	444	444
ELP	Pearson Correlation	.249**	-.095*	1
	Sig. (2-tailed)	.000	.045	
	N	444	444	444

SD=Self-Determination; GM=Growth Mindset; ELP=English Language Proficiency

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Based on the findings in Table 6, the result showed a strong and significant relationship between self-determination and growth mindsets ($r=.680^{**}$, $p=0.000$). Meanwhile, the relationship between self-determination with English Language proficiency was weak, but it was still positive and significant ($r=.249^{**}$, $p=0.000$). As for the relationship between growth mindset and students' English language proficiency, the relationship was negative and weak but significant ($r=-.095^{*}$, $p=0.045$).

5.0 Discussion

Findings revealed that self-determination is the only variable directly related to language proficiency. The Pearson correlation analysis results showed a positive and significant relationship between self-determination and students' English language proficiency. Yu et al. (2018) indicated that self-determination theory (SDT) is a useful framework for anatomizing Chinese educational ecology, especially for understanding the fundamental developmental costs behind Chinese students' high-test scores. Similarly, Howard et al., (2021) found that the types of motivation described in self-determination theory co-occur to different degrees and should lead to different consequences. The findings highlight that intrinsic motivation is related to student success.

Next, the Pearson Correlation analysis results showed a negative and weak relationship between growth mindsets and students' English language proficiency. Similarly, Brooke et al., (2018) found that most students cannot benefit academically from being taught growth mindset. On the other hand, Bahník and Vranka (2017) argued that mindsets might not directly relate to academic achievement. Although there is evidence supporting the benefit of holding growth mindsets, it is essential to note that growth mindsets may not have an effect on students' achievement in language learning (Paunesku et al., 2015).

6.0 Conclusion & Recommendations

This study also had several limitations which can be further explored in future research endeavours. One of the main limitations of this study lies in the sample size. Due to time constraints and access to only a few universities, the sample cases only covered a small number of students in one university in mainland China, and the findings were collected from only one university. Hence, the small sample size is not fully representative of EFL learners in universities in China. Hence, future studies could perhaps involve EFL tertiary students from different types of universities and cities so that the sample could be more representative of EFL students in China. Other than that, this study only employed quantitative instruments to collect the data in which only three factors were explored: language learning beliefs, self-determination and growth mindsets. It might be interesting for future studies to adopt quantitative and qualitative methods to explore more factors affecting language proficiency and identify the causal links between the investigated variables.

It is important to note that without communication, learning cannot take place. This is because communicating effectively requires an effective exchange of ideas and information. Thus, fostering students' English proficiency is vital as language is the building block of all communication. This study showed that self-determination has a direct relationship with students' English language proficiency. Goldman and Brann (2016) investigated self-determination through the communicative perspective and reported that teachers fostered students' feeling of autonomy by encouraging diverse assignment topics, debates and discussions.

Similarly, the findings in this study implied that some steps need to be taken to improve student's English language proficiency. To improve their English proficiency in all four language skills, students should be encouraged and given more support from educators. Their motivation can also be boosted by incorporating fun learning strategies such as online language games, listening to and singing English songs, watching English movies and encouraging them to make friends with native speakers. Besides that, students should be encouraged to actively participate in pair work and group work activities. Hence, they should try to grasp every opportunity to practice English as much as possible.

Paper Contribution to Related Field of Study

The findings of this study provide theoretical contributions to other researchers. This research investigated the implementation of the two variables, self-determination and growth mindsets, to English proficiency in China and provided more research findings for the EFL tertiary students learning field in China. Other researchers who investigate the same topic and variables may be able to use the findings of this study as a springboard to not only compare and contrast the findings of this study with their future studies but also examine the implementation of EFL learning for generating better recommendations and conclusions.

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