An Investigation of Motivation to Learn Mandarin and Grit through Mcclelland's Theory

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ABSTRACT

Motivation is widely recognised as a key component in successful second language acquisition. However, research on motivation in Mandarin learning has rarely been examined through McClelland's theory in relation to learners' grit and self-regulated learning (SRL). This quantitative study investigates Mandarin learners' motivational profiles by linking (i) a power-related orientation with grit (consistency of interest and perseverance of effort), (ii) an affiliation-related orientation with motivational beliefs (self-efficacy, intrinsic value, and test anxiety), and (iii) an affective (achievement-related self-regulatory) factors with SRL strategies (cognitive strategy use and self-regulation). A total of 170 university students in Malaysia responded to a 5-point Likert-scale survey. The findings indicate a moderate level of consistency of interest and a generally high level of perseverance of effort. Learners reported positive motivational beliefs and strong intrinsic value toward learning Mandarin, while also experiencing noticeable test anxiety. They demonstrated frequent use of cognitive learning strategies and relatively strong self-regulation. Correlation analysis revealed significant positive associations among the motivational components, suggesting that these factors operate interactively rather than independently. Findings further indicate that no significant differences were found across students' disciplines or Mandarin proficiency levels.

Keywords: Mandarin as a Second Language; McClelland's Theory; Grit; Self-Regulated Learning; Motivational Beliefs; Test Anxiety

INTRODUCTION

Background of Study

Motivation is widely acknowledged as a key component of successful second language acquisition (SLA), as it influences learners' engagement, initiation, perseverance, and overall performance during the language learning process (Dörnyei & Ryan, 2015). In the particular context of Mandarin, a language that is both widely spoken and cognitively challenging, comprehending the motivations that drive learners to engage deeply with the language is essential for enhancing pedagogical strategies and learner outcomes. Despite extensive research on second-language motivation, particularly through frameworks such as Dörnyei's L2 Motivational Self System, comparatively fewer studies have examined language learning motivation through the lens of McClelland's Theory of Needs, especially in conjunction with psychological traits such as grit. McClelland's Theory of Needs, also known as the Acquired Needs Theory, posits that human motivation is shaped by three learned needs: the need for achievement, the need for affiliation, and the need for power (McClelland, 1961, 1987). These needs are not innate but developed through socialisation and personal experiences, which influence how individuals regulate effort, respond to challenges, and interact within achievement-oriented contexts. Individuals high in achievement strive for excellence and mastery; those high in affiliation prioritise interpersonal relationships and

social belonging, while those with strong power needs seek influence and impact over outcomes or others' behaviours (McClelland, 1987; Robbins & Judge, 2017).

Within educational settings, McClelland's motivational framework has been applied to explain variations in learner engagement, persistence, and academic performance. Empirical studies in higher education contexts demonstrate that the needs for achievement, affiliation, and power are positively associated with students' learning engagement and motivation, and that these needs may function interactively rather than independently (Teh et al., 2023). Research conducted in Malaysian university settings further suggests that all three motivational needs jointly influence learners' participation and sustained involvement in language learning, particularly in online and blended learning environments, underscoring the continued relevance of needs-based motivational theories in contemporary education (Teh et al., 2023).

While McClelland's theory helps explain what motivates learners, the construct of grit, defined as perseverance and sustained passion for long-term goals, offers clarity about how learners persist despite challenges and setbacks (Duckworth et al., 2007). Within SLA research, grit has emerged as a significant non-cognitive variable linked to learners' sustained effort, learning intensity, and academic achievement, including in the context of Chinese as a second or foreign language (Wang et al., 2022). Given the linguistic complexity of Mandarin, such as tonal distinctions and logographic writing, grit may play a particularly critical role in sustaining long-term learning engagement.

Investigating motivation through McClelland's needs alongside grit remains both relevant and necessary. Although motivational processes in language learning have been widely explored, McClelland's socially orientated framework offers a complementary perspective that highlights affective and interpersonal drivers of motivation, which are especially salient in culturally embedded language learning contexts, such as Mandarin. Moreover, grit aligns closely with contemporary developments in positive psychology in education, which emphasise resilience, sustained effort, and long-term goal commitment as essential components of successful learning (Teimouri et al., 2023). Despite this growing body of research, the interrelationships between motivational needs and grit remain underexplored, particularly in cross-cultural SLA contexts. Therefore, this study seeks to address these gaps by examining learners' perceptions of their needs for power, affiliation, and achievement in relation to their grit in learning Mandarin, as well as the interrelationships among these motivational factors. In doing so, the study contributes to the theoretical expansion of motivation research in SLA, extends the application of McClelland's Theory of Needs, and offers pedagogical implications regarding the motivational profiles that support sustained Mandarin language learning.

Statement of Problem

As mentioned above, motivation is acknowledged as a key determinant of successful second-language acquisition (SLA), influencing learners' engagement, persistence, and performance (Dörnyei & Ryan, 2015). However, existing SLA motivation research remains predominantly grounded in frameworks such as the L2 Motivational Self System, with comparatively limited attention to alternative psychological perspectives (Dörnyei, 2019). In particular, McClelland's Theory of Needs, which conceptualises human motivation through the need for achievement, affiliation, and power, has not been sufficiently examined in second- or foreign-language learning contexts, especially in relation to Mandarin as a target language (McClelland, 1987; Teh et al., 2023). Although prior studies indicate that these needs significantly shape learners' engagement, persistence, and academic behaviour, the evidence is fragmented, primarily in general educational or organisational contexts rather than language-specific learning environments (Teh et al., 2023; Robbins & Judge, 2017).

At the same time, grit has emerged as a salient psychological construct in SLA, associated with sustained effort, perseverance, and long-term commitment to language learning (Duckworth et al., 2007; Teimouri et al., 2023; Wang et al., 2022). Surprisingly, little empirical research has explored how grit interacts with needs-based motivational factors to influence learners' motivation and learning outcomes. This gap is particularly critical in the context of Mandarin, a linguistically demanding language that requires prolonged cognitive effort, resilience, and sustained engagement due to its tonal system and logographic writing (Wang et al., 2022).

Despite the theoretical relevance of both McClelland's motivational needs and grit, empirical investigations integrating these constructs remain scarce, particularly in Asian and cross-cultural higher education contexts such as Malaysia, where sociocultural factors may shape learners' motivational orientations (Teh et al., 2023). Therefore, there is a pressing need for empirical studies that examine the interrelationships between achievement, affiliation, and power needs and grit within Mandarin learning contexts. Addressing this gap will deepen theoretical understanding of SLA motivation, extend the application of needs-based motivational theory, and provide pedagogically meaningful insights into fostering sustained engagement, resilience, and long-term commitment among Mandarin learners (Dörnyei & Ryan, 2015; Teimouri et al., 2023).

Objective of the Study and Research Questions

This study aims to explore motivation to learn and grit through McClelland's theory. Specifically, this study aims to answer the following questions.

- How do learners perceive their need for power in learning?
- How do learners perceive their need for affiliation in learning?
- How do learners perceive their affective (achievement-related self-regulatory) needs in learning?
- Is there a relationship among all motivating factors in McClelland's theory?

(H1 – There is no relationship among all motivating factors in McClelland's theory.)

- Is there a significant difference for all motivations across disciplines?

(H2 – There is no significant difference for all motivations across disciplines.)

- Is there a significant difference for all motivations across Mandarin levels?

(H3 – There is no significant difference for all motivations across Mandarin levels.)

LITERATURE REVIEW

Theoretical Framework of the Study

According to McClelland's Human Motivation Theory (1961, 1965), individuals possess three types of needs: the need for achievement, the need for power, and the need for affiliation. These needs arise through social interactions with the individual's environment. The effectiveness of each need depends on the individual. McClelland highlighted that each need is a motivator, and these motivators vary in strength (McClelland, 1987). In this study, the need for achievement is represented as the affective (achievement-related self-regulatory) component, operationalised through cognitive strategy use and self-regulation.

An individual's desire to complete tasks or goals reflects their need for achievement. These learners typically prefer tasks that are moderately risky but challenging. They will acquire the knowledge required for the task, seek feedback, value clear performance indicators, and solve problems. From a learning perspective, learners will focus on mastering the learning content in order to achieve good grades and will show stronger perseverance when facing learning difficulties. The need for affiliation shows that individuals are fundamentally motivated to seek interpersonal validation and social integration within organisations. They prefer harmonious teamwork and a highly collaborative environment. In a learning context, learners study to gain recognition from teachers or classmates. Furthermore, they demonstrate greater perseverance if the learning environment is inclusive and supportive (Rahmat et al., 2018).

The need for power is manifested in influential people. They enjoy domination and competition, making them well-suited for leadership roles. In the context of learning, learners demonstrate persistent engagement to achieve a better ranking than others. McClelland's Human Motivation Theory suggests adapting to changes in the

learning environment and promoting and enhancing learners' participation and motivation (Sanusi et al., 2025). Therefore, integrating McClelland's perspective into Mandarin language learning provides more comprehensive support for the learning environment.

Past Studies

The study by Teh et al. (2023) was conducted to investigate how learners gain power through expectancy beliefs, achieve achievement through value realisation, and develop affiliation through social support. A total of 156 students from a public university in Malaysia participated in this quantitative research. A 5-point Likert-scale instrument was used in the survey. The survey consisted of 41 items, including demographic profiles. The items are categorised into 4 sections: section A, demographic profile (3 items); section B, power (12 items); section C, achievement (14 items); and section D, affiliation (12 items). The research results indicate that McClelland's theory of needs has a positive impact on students' motivation for online language learning. Students' learning goals and motivation are influenced by the interplay among power (expectancy), achievement (value), and affiliation (social support).

Next, Rahim et al. (2023) conducted a quantitative study to investigate learners' motivations toward learning. This quantitative research involved 110 respondents. The instrument used was a survey with a 5-point Likert scale, adapted from Aldefer (1969) and Pintrich & De Groot (1990). The survey consisted of 4 sections: section A collected demographic profiles, section B included 12 items on power, section C had 14 items on achievement, and section D had 12 items on affiliation. The study implies that analysing learners' perceptions of power, achievement, and affiliation can offer clues about their motivations in learning contexts, which may inform instructional strategies and support mechanisms for enhancing learner engagement. The study found that a strong positive relationship exists among power, achievement, and affiliation, supporting McClelland's theory of needs in explaining motivation for online learning. Learners with a high need for achievement tend to set challenging goals, value feedback, and perform better in results-oriented online learning environments.

The studies by Teh et al. (2023) and Rahim et al. (2023) investigated learners' motivation in online learning using McClelland's theory of needs. Both studies showed that power, achievement, and affiliation positively influence online learning motivation. However, neither study explored the significance of grit in maintaining motivation and accomplishing long-term learning objectives. This gap makes it necessary for the present study to investigate both motivation and grit through McClelland's theory, providing a more comprehensive understanding of factors influencing learners' learning outcomes.

In second language acquisition (SLA), grit has been developed into a language-specific concept called L2 grit, which refers to learners' passion and perseverance for long-term language learning goals. Teimouri, Plonsky, and Tabandeh (2022) developed and validated an L2 grit scale. They found that L2 grit is positively related to language learning motivation and achievement, even after controlling for general (non-language) grit.

At the review level, Zhao and Wang (2023) reviewed studies on grit in SLA from 2017 to 2022. They reported that grit is often studied together with motivation and emotional factors, but results are different across contexts and measurement models. They also suggested that future research should include more language learning contexts and use stronger validation for the factor structure of grit. This supports the importance of studying grit among Mandarin learners. In addition, emotional factors may interact with grit in language learning. Liu and Wang (2021) found that foreign language enjoyment and anxiety mediated the relationship between grit and language performance, and anxiety had a stronger mediating effect. This means learners' emotions, especially anxiety, may affect how grit leads to better learning outcomes.

Conceptual Framework of the Study

Motivation to learn a language is influenced by many factors. This motivation can enhance learners' cognitive engagement and focus on completing the learning task (Rahmat & Thasrabiab, 2024). Figure 1 below presents the conceptual framework of the study. The conceptual framework of this study is based on McClelland's (1987) theory. The theory states that to stay motivated in learning, learners need (i) power, (ii) affiliation, and (iii) an affective (achievement-related self-regulatory) component. This study combines variables from McClelland's

(1987) theory and constructs from Martin et al. (2022). To begin with, learners stay motivated in learning because of their (i) consistency of interest and (ii) perseverance. Next, in order to stay motivated, learners need to feel affiliated with the instructors, peers and also the course content. This need for affiliation is embedded in the learners' (i) self-efficacy, (ii) intrinsic value and also (iii) test anxiety. Lastly, motivated learners have the ability for (i) cognitive strategy use and (ii) self-regulation.

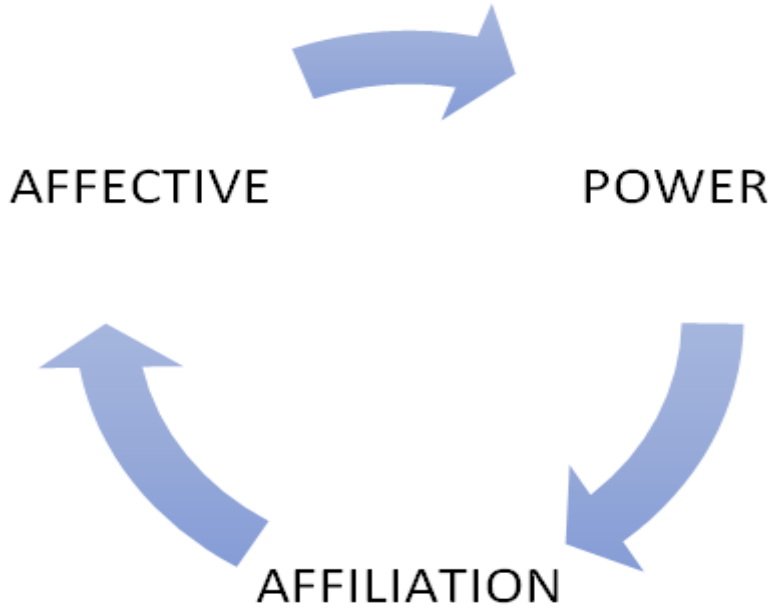

Figure 1 – Conceptual Framework of the Study

Motivation to learn and grit through McClelland's theory

METHODOLOGY

This quantitative study is done to explore motivation to learn and grit through McClelland's theory. A convenience sample of 170 participants responded to the survey. The instrument used is a 5-point Likert-scale survey and is rooted in Martin et al. (2022) to reveal the variables in Table 1 below. For the Likert scale used, 1 is for Strongly Disagree, 2 is for Disagree, 3 is for Undecided, 4 is for Agree, and 5 is for Strongly Agree.

Table 1 – Distribution of Items in the Survey

Part	Category	Variable	Construct	No Of Items	Total Items
Two	Power	Grit	Consistency Of Interest	6	12
			Perseverance	6	
Three	Affiliation	Motivational Beliefs	Self-Efficacy	6	17
			Intrinsic Value	7	
			Test Anxiety	4	
Four	Affective	Self-Regulated Learning Strategies	Cognitive Strategy Use	7	14
			Self-Regulation	7	43

Table 1 shows the distribution of items in the survey. The survey comprises four parts. Section one contains items about the demographic analysis. Section two has 12 items on finding power, including 6 items for consistency of interest and 6 items for perseverance. Section three has 17 items on finding for affiliation, including 6 items for self-efficacy, 7 items for intrinsic value and 4 items for test anxiety. Section four has 14 items on affective (achievement-related self-regulatory) needs, which are 7 items for cognitive strategy use and 7 items for self-regulation. The total number of items for this survey is 43. Table 1 also reveals the good reliability of the instrument chosen (Jackson, 2015).

Table 2 – Reliability Levels, Cronbach's Alpha Ranges, and Their Interpretations

Reliability Level	Cronbach's Alpha range	Interpretation
Excellent	0.9 and above	Indicates very high internal consistency
Good	0.80-0.89	Reflects strong internal consistency
Acceptable	0.70-0.79	Indicates acceptable internal consistency
Questionable	0.60-0.69	Reflects questionable internal consistency
Poor	Below 0.6	Indicates poor internal consistency

Table 3 – Cronbach's Alpha for the Instrument

Reliability Statistics

Cronbach's Alpha	N of Items
.922	43

To determine the internal reliability of the instrument, a reliability analysis was conducted. Table 2 above shows the distribution and interpretation of the Cronbach's Alpha range. According to Ahmad et al. (2024), Cronbach Alpha scores between 0.7 and 0.9 are considered acceptable to excellent. Table 3 shows the reliability of the survey. The analysis shows a Cronbach's alpha of .922, thus revealing a good reliability of the instrument chosen/used. Further analysis using SPSS is done to present findings to answer the research questions for this study.

FINDINGS

Demographic Analysis

According to Zienefuss et al. (2021), research reports demographic data in percentages to establish sample representatives and allow for generalisability to a larger population. The reporting also provides an overview of participants' characteristics. Percentages offer a clear and understandable picture of the sample makeup.

Table 4 – Percentage for Demographic Profile

Question	Demographic Profile	Categories	Percentage (%)
1	Gender	Male	17%
		Female	83%

2	Discipline	Science & Technology	36%
		Business	44%
		Social Sciences & Humanities	20%
3	Mandarin Level	TMC 401	41%
		TMC 402	18%
		TMC 451	16%
		TMC 452	3%
		TMC 501	22%

Table 4 demonstrates the gender distribution, academic background, and Mandarin level of the 170 respondents who participated in this study. There were 17% male and 83% female respondents, indicating that the respondent group consists of a greater proportion of females compared to males. The respondents are distributed across various disciplines. Among 170 respondents, 36% are students engaged in science and technology, 44% in business, and 20% in social sciences and humanities. Out of a total of 170 respondents, 41% are enrolled in Mandarin Level 1 (TMC401), 18% are enrolled in Mandarin for Business Communication Level 1 (TMC402), 16% are registered in Mandarin Level 2 (TMC451), 3% are registered in Mandarin for Business Communication Level 2 (TMC452), and 22% are registered in Mandarin Level 3 (TMC501).

Descriptive Statistics

Why is there a need to report the mean and standard deviation? According to Vetter (2017), the mean (M) represents the average, or center, of a data set. Standard deviation (SD) indicates the typical distance of individual observations from the mean, which shows the data's variability or spread. A low SD means the data points are clustered close to the mean, whereas a high SD indicates greater variability in responses. In survey research, SD helps describe how consistent or diverse participants' responses are across items.

Findings for Power

This section presents data to answer research question 1: How do learners perceive their need for power in learning? In the context of this study, this is measured by (i) consistency of interest and (ii) perseverance of effort.

Table 5 – Mean For Consistency Of Interest (6 Items)

ITEM	Mean	SD
GCIQ1 I often set a goal but later choose to pursue a different one.	3.15	0.82
GCIQ2 New ideas and new projects sometimes distract me from previous ones.	3.36	0.93
GCIQ3 I become interested in new pursuits every few months.	3.45	0.97
GCIQ4 My interests change from year to year.	3.54	1.00
GCIQ5 I have been obsessed with a certain idea or project for a short time but later lost interest.	3.13	1.00
GCIQ6 I have difficulty maintaining my focus on projects that take more than a few months to complete.	2.94	1.10

Table 5 presents the descriptive statistics for learners' perceived consistency of interest. Overall, the mean scores ranged from 2.94 to 3.54, suggesting a moderate tendency toward changing interests across items. The highest mean scores were recorded for "My interests change from year to year" (M = 3.54, SD = 1.00) and "I become interested in new pursuits every few months" (M = 3.45, SD = 0.97), indicating that learners somewhat agreed that their interests shift over time. Learners also reported being distracted by new ideas and projects (M = 3.36, SD = 0.93). On the other hand, slightly lower means were observed for "I often set a goal but later choose to pursue a different one" (M = 3.15, SD = 0.82) and "I have been obsessed with a certain idea or project for a short time but later lost interest" (M = 3.13, SD = 1.00), suggesting responses closer to neutral regarding goal switching and short-term obsession followed by loss of interest. The lowest mean was observed for Item 6 (M = 2.94, SD = 1.10), indicating that learners were close to undecided, with a slight tendency to disagree that they have difficulty maintaining focus on longer-term projects. Overall, the results indicate moderate fluctuations in interest among learners, with noticeable individual differences reflected in the relatively large standard deviations.

Table 6 - Mean For Perseverance Of Effort (6 items)

ITEM	Mean	SD
GCPQ1 I have achieved a goal that took years of work.	3.40	0.84
GCPQ2 I have overcome setbacks to conquer an important challenge.	3.56	0.75
GCPQ3 Setbacks don't discourage me.	3.28	0.88
GCPQ4 I finish whatever I begin.	4.00	0.84
GCPQ5 I am a hard worker.	4.01	0.7
GCPQ6 I am diligent.	3.86	0.76

Table 6 illustrates learners' perceptions of perseverance of effort. The mean scores ranged from 3.28 to 4.01, reflecting a moderate to high level of perseverance. The highest mean scores were recorded for "I am a hard worker" (M = 4.01, SD = 0.70) and "I finish whatever I begin" (M = 4.00, SD = 0.84), indicating strong perceived industriousness and task completion among learners. Learners also tended to agree that they are diligent (M = 3.86, SD = 0.76) and able to overcome setbacks to conquer important challenges (M = 3.56, SD = 0.75). Although comparatively lower, "Setbacks don't discourage me" (M = 3.28, SD = 0.88) and "I have achieved a goal that took years of work" (M = 3.40, SD = 0.84) suggest responses closer to neutral, indicating some variation in learners' perceptions of long-term persistence. Overall, the findings suggest that learners generally demonstrate perseverance in their efforts, particularly in sustaining hard work and completing tasks, even when faced with challenges.

Findings for Affiliation

This section presents data to answer research question 2: How do learners perceive their need for affiliation in learning? In the context of this study, this is measured by (i) self-efficacy, (ii) intrinsic value and (iii) test anxiety.

Table 7 - Mean For Self-Efficacy (6 items)

ITEM	Mean	SD
MBSEQ1 Compared with other students in this class, I expect to do well.	3.42	0.87
MBSEQ2 I'm certain I can understand the ideas taught in this course.	3.83	0.75

MBSEQ3 I expect to do very well in this class.	3.99	0.80
MBSEQ4 Compared with others in this class, I think I'm a good student.	3.22	0.97
MBSEQ5 I am sure I can do an excellent job on the problems and tasks assigned for this class.	3.79	0.79
MBSEQ6 I know that I will be able to learn the material for this class.	3.96	0.74

Table 7 presents the descriptive statistics for self-efficacy. As shown in the table, the highest mean score was recorded for Item 3 (M = 3.99, SD = 0.80), indicating that learners tended to expect to do very well in this class. This was followed by Item 6 (M = 3.96, SD = 0.74), suggesting that learners were generally confident that they would be able to learn the material for the course. Item 2 (M = 3.83, SD = 0.75) also showed a relatively high mean, indicating that learners felt confident in understanding the ideas taught in this course. In contrast, the lowest mean score was observed for Item 4 (M = 3.22, SD = 0.97), suggesting that learners were closer to undecided when evaluating whether they are good students compared with others in the class.

Table 8 - Mean For Intrinsic Value (7 items)

ITEM	Mean	SD
MBIVQ1 I prefer classwork that is challenging so I can learn new things.	3.59	0.81
MBIVQ2 It is important for me to learn what is being taught in this class.	4.12	0.74
MBIVQ3 I like what I am learning in this class.	4.25	0.73
MBIVQ4 I think I will be able to use what I learn in this class in other classes.	4.02	0.75
MBIVQ5 Even when I do poorly on a test, I try to learn from my mistakes.	4.22	0.66
MBIVQ6 I think that what I am learning in this class is useful for me to know.	4.20	0.72
MBIVQ7 I think that what we are learning in this class is interesting.	4.29	0.76

Table 8 presents the descriptive statistics for intrinsic value. As shown in the table, the highest mean score was recorded for Item 7 (M = 4.29, SD = 0.76), indicating that learners generally agreed that what they are learning in this class is interesting. This was followed by Item 3 (M = 4.25, SD = 0.73), suggesting that learners like what they are learning in the class. Item 5 (M = 4.22, SD = 0.66) also showed a high mean, indicating that learners tend to learn from their mistakes even when they perform poorly on a test. In contrast, the lowest mean was observed for Item 1 (M = 3.59, SD = 0.81), showing that learners were comparatively less inclined to prefer challenging classwork, although responses still leaned slightly toward agreement. Overall, the results indicate a generally high level of intrinsic value among learners.

Table 9- Mean For Test Anxiety (4 items)

ITEM	Mean	SD
MBTAQ1 I am so nervous during a test that I cannot remember facts I have learned.	3.51	0.92
MBTAQ2 I have an uneasy, upset feeling when I take a test.	3.29	0.92
MBTAQ3 I worry a great deal about tests.	3.57	0.86
MBTAQ4 When I take a test, I think about how poorly I am doing.	3.39	0.96

Table 9 presents the descriptive statistics for test anxiety. According to the table, the highest mean score was recorded for Item 3 (M = 3.57, SD = 0.86), suggesting that learners tended to worry about tests. This was followed by Item 1 (M = 3.51, SD = 0.92), indicating that learners reported feeling nervous during tests, which may affect their ability to recall what they have learned. Item 4 (M = 3.39, SD = 0.96) also showed a relatively higher mean, suggesting that learners tended to think about how poorly they were doing while taking a test. The mean score for Item 2 (M = 3.29, SD = 0.92) was the lowest, which means that learners were more likely to be undecided but slightly leaning toward agreeing that they felt uneasy or upset during tests. Overall, the results indicate a moderate level of test anxiety among learners.

Findings for Affective Need

This section presents data to answer research question 3: How do learners perceive their affective (achievement-related self-regulatory) needs in learning? In the context of this study, this is measured by (i) cognitive strategy use and (ii) self-regulation.

Table 10 – Mean For Cognitive Strategy Use (7 items)

ITEM	Mean	SD
SRLSCSUQ1 When I study, I put important ideas into my own words.	3.98	0.70
SRLSCSUQ2 I always try to understand what the teacher is saying, even if I think it doesn't make sense.	3.92	0.74
SRLSCSUQ3 When I study for a test, I try to remember as many facts as I can.	4.22	0.71
SRLSCSUQ4 When studying, I copy my notes over to help me remember material.	3.98	0.84
SRLSCSUQ5 When I study for a test, I practise saying the important facts over and over to myself.	4.21	0.71
SRLSCSUQ6 When I am studying a topic, I try to make everything fit together.	4.13	0.76
SRLSCSUQ7 When reading, I try to connect the things I am reading about with what I already know.	4.11	0.73

Table 10 presents the descriptive statistics for cognitive strategy use. As shown in the table, the highest mean score was recorded for Item 3 (M = 4.22, SD = 0.71), indicating that learners tend to memorise as many facts as possible when preparing for a test. This was followed closely by Item 5 (M = 4.21, SD = 0.71), suggesting that learners practice repeating important facts for themselves during exam preparation. Item 6 (M = 4.13, SD = 0.76) also showed a relatively high mean, indicating that learners try to make different ideas fit together when studying a topic. In contrast, the lowest mean score was observed for Item 2 (M = 3.92, SD = 0.74). However, the mean is still close to "Agree", suggesting that learners generally try to understand what the teacher is saying even when it does not make sense.

Table 11 – Mean For Self-Regulation (7 items)

ITEM	Mean	SD
SRLSSRQ1 I ask myself questions to make sure I know the material I have been studying.	3.97	0.76
SRLSSRQ2 When work is hard, I either give up or study only the easy parts.	3.13	1.01
SRLSSRQ3 Even when study materials are dull and uninteresting, I keep working until I finish.	3.84	0.79

SRLSSRQ4 Before I begin studying, I think about the things I will need to do to learn.	3.99	0.75
SRLSSRQ5 I often find that I have been reading for class but don't know what it is all about.	3.30	0.93
SRLSSRQ6 When I'm reading, I stop once in a while and go over what I have read.	3.82	0.81
SRLSSRQ7 I work hard to get a good grade even when I don't like a class.	4.00	0.81

Table 11 presents the mean scores for self-regulation. The highest mean score is Item 7 (M = 4.00, SD = 0.81), indicating that learners generally agree that they work hard to obtain good grades even when they do not like a class. This was followed closely by Item 4 (M = 3.99, SD = 0.75), suggesting that learners tend to think about what they need to do before they begin studying. Item 1 (M = 3.97, SD = 0.76) also showed a relatively high mean, indicating that learners often assess their understanding by asking themselves questions. In contrast, Item 2 recorded the lowest mean (M = 3.13, SD = 1.01), indicating that learners were generally undecided about giving up or studying only the easy parts when work is difficult.

Exploratory Statistics

According to He (2024), correlation is a statistical technique that measures how strongly two variables are related, or the degree of association between them. It's a common tool for describing simple relationships without making a statement about cause and effect. This section presents data to answer research questions on correlation.

Findings for Relationships among all motivating factors in McClelland's theory

This subsection presents the correlation results to answer research question 4: Is there a relationship among all motivating factors in McClelland's theory?

(H1 – There is no relationship among all motivating factors in McClelland's theory.)

To determine whether there is a significant association among the mean scores across all motivating factors in McClelland's theory, the data were analysed using SPSS to compute correlations. Results are presented in Table 12 and discussed below.

Table 12- Correlation among Power, Affiliation, and Affective Components

		POWER	AFFILIATION	AFFECTIVE
POWER	Pearson Correlation (r)	1	.532**	.483**
	Sig (2-tailed)		<.001	<.001
	N	170	170	170
AFFILIATION	Pearson Correlation (r)	.532**	1	.738**
	Sig (2-tailed)	<.001		<.001
	N	170	170	170
AFFECTIVE	Pearson Correlation (r)	.483**	.738**	1
	Sig (2-tailed)	<.001	<.001	
	N	170	170	170

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

Table 12 shows that the three motivational components, power, affiliation, and affective, are positively associated with one another. Specifically, power is positively correlated with affiliation ($r = .532$, $p < .001$) and with affective ($r = .483$, $p < .001$). In addition, affiliation is strongly correlated with affective ($r = .738$, $p < .001$). According to He (2024), the coefficient is significant at the .05 level, and a positive correlation is measured on a 0.1 to 1.0 scale. Weak positive correlation would be in the range of 0.1 to 0.3, moderate positive correlation from 0.3 to 0.5, and strong positive correlation from 0.5 to 1.0. Therefore, these findings suggest moderate-to-strong relationships among the three components. Hence, H1 is rejected, as there is a significant relationship among all motivating factors in McClelland's theory in this study.

Inferential Statistics

According to He (2024), there are three main functions of a T-test and ANOVA. Firstly, both are used to compare means. This test is also done to determine if the average scores (mean) or values of two groups, or one group against a known value, are different enough to be considered statistically meaningful and are not just due to random chance. Secondly, the t-test and ANOVA are used to test hypotheses. Researchers use t-tests and ANOVA to test hypotheses about means, such as whether a new treatment significantly impacts a variable or if there's a difference in performance between two distinct groups. Lastly, the T-test and ANOVA are done to identify significant differences. The output of a t-test provides a p-value (significance value). If this p-value is below a predetermined threshold (often 0.05), it indicates a statistically significant difference, allowing researchers to conclude the populations from which their samples were drawn.

Findings for Significant Difference across Disciplines

This section presents data to answer research question 5: Is there a significant difference for all motivations across disciplines?

(H2 – There is no significant difference for all motivations across disciplines.)

Table 13 – ANOVA for Factors across Disciplines

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Power	Between Groups	.676	2	.338	1.899	.153
	Within Groups	29.719	167	.178		
	Total	30.395	169			
Affiliation	Between Groups	.086	2	.043	.190	.827
	Within Groups	37.544	167	.225		
	Total	37.630	169			
Affective	Between Groups	.629	2	.315	1.262	.286
	Within Groups	41.660	167	.249		
	Total	42.290	169			

With reference to Table 13, a one-way ANOVA was conducted to examine the effects of power, affiliation and affective factors across disciplines. The analysis shows there is no significant difference between power ($F=1.899$, $p=0.153$), affiliation ($F=0.190$, $p=0.827$) and affective ($F=1.262$, $p=0.286$) factors across disciplines. This means the null hypothesis is accepted.

Findings for Significant Difference across Mandarin Levels

This section presents data to answer research question 6: Is there a significant difference for all motivations across Mandarin levels?

(H3 – There is no significant difference for all motivations across Mandarin levels.)

Table 14- ANOVA for factors across Mandarin levels

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Power	Between Groups	.736	4	.184	1.024	.397
	Within Groups	29.659	165	.180		
	Total	30.395	169			
Affiliation	Between Groups	.666	4	.167	.744	.564
	Within Groups	36.964	165	.224		
	Total	37.630	169			
Affective	Between Groups	1.543	4	.386	1.562	.187
	Within Groups	40.747	165	.247		
	Total	42.290	169			

With reference to Table 14, a one-way ANOVA was conducted to examine the effects of power, affiliation and affective factors across Mandarin levels. The analysis indicates that there is no significant difference between power ($F = 1.024$, $p = 0.397$), affiliation ($F = 0.744$, $p = 0.564$), and affective ($F = 1.562$, $p = 0.187$) factors across Mandarin levels. This means the null hypothesis is accepted.

CONCLUSION

Summary of Findings and Discussions

Overall, learners demonstrated moderate stability in their interest, alongside high perseverance in their efforts. The findings are in accordance with past studies that highlight the interplay of motivational needs in sustaining learning motivation, and they extend Teh et al. (2023) and Rahim et al. (2023) by explicitly incorporating grit, a factor not examined in those studies.

Learners also reported high intrinsic value and fairly strong self-efficacy, together with moderate test anxiety. The presence of noticeable test anxiety is consistent with Liu & Wang (2021), which highlights that emotional factors, especially anxiety, may influence how motivational strengths translate into language performance.

While in the context of affective needs, learners demonstrated frequent cognitive strategy use and relatively strong self-regulation; they were comparatively less inclined toward highly challenging tasks. In accordance with Rahim et al. (2023), these findings support the view that motivation is observable through learners' strategic learning behaviours and persistence during learning tasks.

Correlation analysis further indicated that motivational components were generally positively associated. This is consistent with Teh et al. (2023) and Rahim et al. (2023), who emphasise that motivation is influenced by the interaction among McClelland's needs, including power, achievement, and affiliation, rather than by a single factor in isolation.

Finally, there were no significant differences across disciplines or Mandarin levels based on power, affiliation, and affective factors. This suggests a broad shared motivational pattern across different academic disciplines in the present sample, as captured by this framework. Similarly, there were no significant differences across Mandarin levels in terms of power, affiliation, and affective factors. This indicates that McClelland-based motivational components appear consistently relevant across learner groups. Supported by the grit perspective highlighted by Teimouri et al. (2022) and Zhao and Wang (2023), these findings also reinforce the value of examining motivation and grit together across diverse learner profiles.

Implications and Suggestions for Future Research

Theoretical and Conceptual Implications

This study supports the application of McClelland's theory to explain motivation among Mandarin learners by examining how core motivational needs (particularly power and affiliation-related orientations) relate to key learning variables, together with affective factors and self-regulated learning behaviours. This study analysed

power-related orientation via grit (the consistency of interest and perseverance in effort), while learners' motivational beliefs and affective responses were represented by self-efficacy, intrinsic value, and test anxiety. Learners' strategic and regulatory engagement was examined through self-regulated learning (cognitive strategy use and self-regulation). Overall, the findings indicate strong perseverance but less stable interest, generally positive self-beliefs and perceived value toward learning, and a noticeable level of test anxiety. Learners also reported frequent use of learning strategies and relatively strong self-regulation, although some may struggle with highly challenging tasks. The significant associations among these variables suggest that motivational needs, beliefs, affective responses, and learning behaviours interact to shape learners' motivations rather than operate in isolation. Furthermore, the absence of significant differences across disciplines and Mandarin levels suggests that the proposed framework is relatively stable within the present sample.

Pedagogical Implications

Lecturers can support learners by strengthening grit and sustaining interest through meaningful long-term tasks, clear goals, and regular progress checkpoints. Since learners demonstrate good self-efficacy and high intrinsic value but also experience test anxiety, lecturers can provide confidence-building feedback while reducing anxiety through low-stakes practice, clear rubrics, and targeted exam-preparation guidance. Besides that, as learners often rely on memorisation, teaching can emphasise deeper strategies such as understanding concepts, connecting ideas, and using language in tasks, while providing scaffolding to help students persist when learning becomes challenging. As the findings are consistent across disciplines and Mandarin levels, these approaches can be applied broadly, with minor adjustments for learners who need additional support.

Suggestions for Future Research

Future research may extend this study by adding qualitative methods, including focus group interviews and open-ended responses, so that the findings can better explain why learners' interests fluctuate and how anxiety influences Mandarin learning behaviours and processes. Furthermore, the study could be expanded through a longitudinal design to examine whether motivational profiles and grit change across semesters or in response to targeted instructional interventions, especially given that this study found that there were no significant differences across Mandarin levels.

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