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The Investigation of Learning Motivation and Strategy in the Normal Undergraduates

MOTIVATION ET RECHERCHE SUR LES STRATEGIES D'APPRENTISSAGE DES ETUDIANTS D'UNIVERSITE NORMAL

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Abstract
In order to investigate the learning motivations and strategies, and their relationship in current normal undergraduates, we conducted a survey in 249 undergraduates from Qufu Normal University. The results showed that: (1) deep learning motivation and strategy were predominant in these students; (2) there were significant gender differences in learning motivation and strategy; (3) there were significant disciplinary differences in learning motivation and strategy as well; (4) deep learning motivation was significantly different between different grades of students and increased with grade. However, there was no grade difference in learning strategy. We therefore provided relevant advices and strategies in different aspects such as study environment, curriculum, mental health education, the optimization of teacher sources, family, and society, etc.

Key words: Normal undergraduates; Learning motivation; Learning strategy

Résumé
Afin d'étudier la relation de motivation actuelle des enseignants des collèges et des stratégies d'apprentissage, le présent étude est visée sur une enquête sur 249 étudiants de premier cycle de l'Université normale de Qufu. Les résultats montrent que: (1) les étudiants de l'Université Normal, la motivation et les stratégies d'apprentissage repose essentiellement sur la motivation à apprendre en profondeur et les stratégies d'apprentissage basées; (2) la motivation à apprendre et les stratégies d'apprentissage dans les différences entre les sexes, (3) la motivation d'apprentissage et les stratégies d'apprentissage dans Les catégories (arts, sciences) il existe des différences; (4) la motivation profonde d'apprentissage dans chaque classe en fonction des différences significatives, et avec des grades supérieurs ont montré une tendance significative. Toutefois, les différences entre les grades dans la stratégie d'apprentissage n'est pas évident. Enfin, pour l'école dans le milieu scolaire, le curriculum, la formation des enseignants et de la santé mentale des élèves et d'autres aspects de l'optimisation et la famille et du point de vue social pour résoudre les questions pertinentes et les recommandations correspondantes mises en avant.

Mots clés: Etudiant d'Université Normal, Motivation d'apprentissage, Stratégie d'apprentissage

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INTRODUCTION
Baron and others believe that motivation is a force to stimulate, guide, maintain, and direct actions to a specific target. It can be used to explain the cause of individual behavior. Motivation is the direct cause and internal dynamics to promote people to learn. It dominates students' learning behavior, indicating whether students want to learn and willing to learn, and how hard they learn. Learning strategy is referred to students' learning rules, methods, techniques and control methods. Both motivation and strategy have a significant impact on the improvement of student's achievement and knowledge. Motivation has an impact on what kind of effort they make in pursuing their own development and growth. What strategies they take will determine what kind of return they will get and their level of knowledge and

capacity development.

There is a close interaction between motivation and learning behavior, in which motivation dominates and regulates learning behavior on one hand and behavior stimulates and enhances motivation on the other hand. Such an effect of motivation on behavior is closely related to its type. Either in primary and secondary students or in undergraduates, the motive factors that dominate learning process are very complex and should be widely investigated. In other words, a learning behavior is driven by a variety of learning motivations, including curiosity and desire, fun, getting high marks and rates, or obtaining praise from parents and teachers, etc.

Regarding of motivation, Ausubel et al have indicated that students' academic behavior can be explained by driving force from three aspects, namely cognition, self-improvement and ancillary driving force. Cognition is the necessary basis for the induction of motivation. The motivation questionnaire edited by Biggs in 1987 includes surface, deep and achieving approaches to learning, each with a corresponding motivation and strategy.

Currently, most studies on learning motivation and strategy are focused on primary and secondary students and obtained a lot of results. However, little is known about the motivation and strategy in undergraduates, especially those in normal universities. We therefore conducted a survey in Normal Undergraduates to explore what kind of motivation and strategies they have in 4-year study and what the relationship between motivation and strategy is. We also analyzed the grade, disciplinary, and gender differences in order to provide guidance for students to better facilitate learning.

1. Methods

1.1 Survey

A total of 249 questionnaires were distributed to undergraduates in Qufu Normal University and 235 of them were valid. The mean age of students was 21.41 ± 1.37 years. The participants included 85 males and 150 females; 64 in Grade 09, 47 in Grade 08, 80 in Grade 07 and 44 in Grade 06; 125 art students and 110 science students.

1.2 Study Tools

The motivation questionnaire edited by Biggs (1987) was used in the present study, which included three approaches to learning, namely surface, deep and achieving approaches and each with a corresponding motive and strategy. Surface motive is the motive aiming to just pass test so that students will take passive, superficial and dealing strategies, i.e., surface strategies. Deep motive is referred to the motive aiming to understand and master knowledge. In this case, students are interested in learning content itself so that they will take appropriate deep, specific and active strategies. Achieving motive is referred to that aiming to obtain parents' or teacher's praise and approval. Therefore, the students tend to take the strategies approved by parents and teachers in order to obtain their praise.

We used Biggs Study Process Questionnaire (1987) to investigate the current situation and impact factors of learning motivation and strategies in Normal undergraduates.

1.3 Measurement and Analysis

In the present study, undergraduates from year one to year four in Qufu Normal University were randomly selected and answer the questionnaires in groups. Invalid questionnaires were excluded. The result was rated with 5-point scale. The reliability coefficients of survey was Cronbach's $\alpha = .823$. The statistic analysis was performed with SPSS13.0 software.

2. Results

2.1 Gender Characteristics of Learning Motivation in Normal Undergraduates

Table 1
Gender Differences in Normal Undergraduates' Learning Motivation

Motive and strategy	Female		Male	
	mean	standard deviation	mean	standard deviation
Surface motive	24.29	4.14	24.63	4.13
Surface strategy	25.98	3.24	25.60	3.76
Deep motive	28.46	3.98	28.65	3.40
Deep strategy	28.10	3.61	28.08	4.08
Achieving motive	23.84	4.78	23.50	5.12
Achieving strategy	27.04	3.32	26.27	4.46

Independent t-test showed that deep motivation and strategy were main types in both male and female students. Achieving motivation is higher and relatively stable in females than in males. There was no gender difference in terms of surface motivation and strategy. This indicated that deep motivation and strategy were predominant in the normal undergraduates' learning process. In other words, the normal undergraduates were interested in the overall content of study and took corresponding exploratory and active learning strategies. Achieving motivation and strategies in females were slightly higher than in males probably because females were more susceptible to external influence and wished to get recognition and praise from parents, teachers and others. Therefore, they learned actively and wished to achieve outstanding results. In contrast, male students did not mind the comments from others.

2.2 Disciplinary Characteristics of Learning Motivation in the Normal Undergraduates

Table 2
Disciplinary Difference of Learning Motivation in Normal Class of Undergraduates

Motive and strategy	Art		Science	
	mean	standard deviation	mean	standard deviation
Surface motive	24.63	4.10	24.17	4.17
Surface strategy	24.63	3.34	26.22	3.51
Deep motive	28.84	3.24	28.18	4.29
Deep strategy	28.35	3.76	27.80	3.78
Achieving motive	23.69	4.84	24.63	4.97
Achieving strategy	27.00	4.10	26.49	4.17

As shown in Table 2, the overall motivation in arts students was higher than that in science students but there was no disciplinary difference in learning strategy. This might be due to the influence by public opinions such as fewer job opportunity and more employment difficulties for art students than science students. Without solid learning ability and high professional skills, it was difficult for art graduates to get social recognition and conduct a development in the community. This might encourage art students to have a strong motivation during their studies.

The standard deviation of learning motivation and strategies score was less in art students than in science students, suggesting that the changes in art students were relatively stable. During the learning process, art students tended to take achieving and deep strategies while science students had a balance in taking three strategies. In contrast, art students took either superficial and passive motivation and strategies or exploratory and active motivation and strategies. The impact from others' opinions, especially the practices and methods encouraged, respected, and recognized by teachers and parents, was after deep strategy.

2.3 Grade Characteristics of Learning Motivation in Normal Class of Undergraduates

Table 3
Grade Difference of Learning Motivation in the Normal Undergraduates

grade	06	07	08	09
06			2.49*	
07			2.29*	
08	-2.49*	-2.29*		
09				

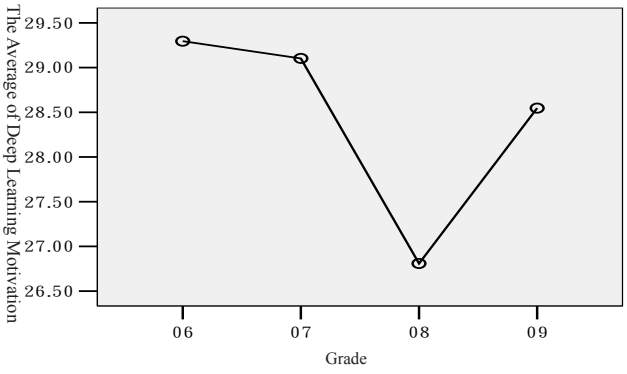
* $p<0.05$

One-way ANOVA analysis showed the development trend of three kinds of motivation as follows:

(1) The overall surface motivation was decreased with grade (F=0.494,P=0.687) and decreased more in Grade 08 (see following figure). However, there was no significant difference comparing each grade, suggesting that such kind of decrease was not qualitative.

(2) ANOVA test showed a significant grade difference in overall deep motivation (F=4.693, P=0.003), which was due to the significant difference between Grade 08 and Grade 06 and 07 ($p<0.05$). As shown in following figure, deep motivation was decreased with grade, which reached the lowest level in Grade 08 students. This indicated that Grade 09 students had strong wish to learn and explore and were interested in all subjects because they just started university life. Therefore, their deep motivation is relatively high. In Grade 08, the students lost interest to learn after one year of university life compared with those in Grade 09. Also, it might be due to different kind of thinking characteristics and learning styles. Deep motivations in Grade 06 and 07 were similar and relatively high, suggesting that they maintained the interest in learning after 2-3 years of study. They regained the interest of learning under the employment pressure and circumstances. Therefore, there was a qualitative change in deep motivation.

(3) The results did not showed any significant grade difference in achieving motivation.



According to above figure, we found that the level of motivation in Grade 06 was the highest, which gradually decreased to the lowest in Grade 08, and then increased again in Grade 09. It suggested that high motivations in Grade 06 and 07 showed a real learning motivation due to the pressure from graduation and society. Such kinds of pressure were small for the students in Grade 07 and 08 so that their motivation was lower. However, the students in Grade 09 just involved in university life with great hope in the future. They were interested in all subjects and consistent with their learning model in high schools, which tends to understand every piece of information from teachers.

2.4 The Relationship Between Motivation and Strategy in the Normal Undergraduates

Table 4
The Relationship Between Motivation and Strategy in the Normal Undergraduates

	Surface strategy	Deep strategy	Achieving motivation	Achieving strategy
Surface motivation	.458**		.305**	.202**
Surface strategy			.191**	.237**
Deep motivation		.590**	.317**	.426**
Deep strategy	.239**		.362*	.590**
Achieving motivation	.191**	.362**		.514**

** $p<0.01$

(1) There was a significantly positive correlation between surface motivation and achieving motivation, suggesting that the learning process of the normal undergraduates was not only influenced by a single motivation. Two or even three motivations might have impacts on their learning. On the other hand, we also noticed that both surface and deep motivations were positively correlated to achieving motivation, suggesting that students with either surface motivation or deep motivation also had a composition of achieving motivation.

(2) In the normal undergraduates, surface strategy was significantly correlated to deep strategy and achieving strategy and deep strategy was also significantly correlated to achieving strategy, suggesting that dealing learning behaviour and exploratory learning behavior could coexist in a learning process.

(3) If students had a surface motivation, they likely took surface strategies to learn passively. Of course, surface motivation might lead to a certain level of achieving strategy, but not deep strategy (Table 4).

(4) As shown in Table 4, if students had deep motivation, they would accordingly take deep strategy and achieving strategy, not surface learning behavior.

(5) If they had achieving motivation, they might take surface, achieving, or deep strategies.

3. DISCUSSION

3.1 The Overall Characteristics of Learning Motivation in the Normal Undergraduates

According to the results of the present study, we can find that the normal undergraduates have different motivations in the learning process, including surface motivation, deep motivation and achieving motivation. However, from the overall point of view deep motivation is predominant, indicating that their learning attitude is active. They have a strong interest in learning, are willing to spend time and energy assiduously on knowledge, and satisfy with what they have done in this process.

According to the development trend, deep motivation was kept at a high level in year one, fell into the bottom in year two, and then rebounded in year three and four, and reached the highest level in year four. The difference between students in year two and year three and four was significant, indicating that when students just entered universities, they were curious about the specific courses in universities and eager to learn the knowledge with a strong spirit of exploration. They liked challenging topics more than others. Over the year, their attitude about learning has gradually changed. Especially in year two, they did not feel learning pressure as big as that in high schools and they also paid more and more attention to other things such as community activities, interpersonal relationships, and emotional issues, etc. so that they spent less time and made less effort on their study. However, senior students had to prepare for postgraduate examinations and civil test, and face the pressure of employment as well. Under such circumstances, their learning motivation was changed significantly to the direction of deep motivation, which reached the highest level in year four.

From the disciplinary perspective, the overall motivation in art students was higher than science students, in which the levels of surface motivation and deep motivation were higher but the level of achieving motivation was lower than science students. This may be due to fewer employment opportunities for art students and it is difficult to gain a position in the community without a higher level of professional skills. Therefore, they study harder than science students. In contrast, science students had a relatively wide range of employment so that the overall pressure was less than that for art students. As a result, their overall motivation was lower than art students. However, science students are more willing to get other people's recognition. Their performance can only be shown by the results or figures of research while arts students pay more attention to inner thoughts. This may be the main reason why achieving motivation was higher in science students than art students.

In addition, from the gender perspective, deep motivation was predominant in both male and female students. Achieving motivation in females was higher than males and it was stable. There was no gender difference in surface motivation level. In general, the normal undergraduates mainly have deep motivation. They learn with interests and a positive attitude. Achieving motivation was higher in females than in males probably because female students wish to get high scores and praise from others. They are more susceptible to other people's comments, especially the methods and actions encouraged, respected, and recognized by parents and teachers. Male students like to do what they want and don't want to give up their principles because of external impact. Therefore, they likely had deep and surface motivations rather than achieving motivation compared with female students.

3.2 The Overall Characteristics of Learning Strategy in the Normal Undergraduates

Based on the results of the present study, we found that the normal undergraduates mainly had deep learning strategies, combined with surface strategy and achieving strategy. This indicates that the normal undergraduates learn actively and are willing to take some special and exploratory learning strategies. They are interested in the content of knowledge and aim to understand and master it.

We found that there was no significant disciplinary difference in learning strategies. Art students tended to have achieving and deep motivations while science students had a balance in three kinds of motivation. This is maybe due to fewer development opportunities and big pressure for art students. Thus, they study harder and more seriously.

In terms of gender difference, achieving strategy level was higher and stable in female students than male students. There was no gender difference in strategies, which may be due to serious and responsible characteristics of females. Moreover, there is a certain degree of discrimination against women in communities, which results in more difficulties in women's future development. As a result, female students are more cautious in learning while it is relatively easy for male students.

There was no obvious grade difference in three learning strategies. That is to say, in all grades the application of three learning strategies is balanced, suggesting that learning strategy is relatively stable in grade level, not changed with grade. Surface strategy, deep strategy and achieving strategy remain in the students at different grade.

4. ADVICES

Based on above findings, we would like to provide some advices from following three aspects to stimulate the normal undergraduates' motivation and improve their learning strategies.

4.1 Advices for Universities

(1) To create suitable learning environment to stimulate learning behavior. Universities should take appropriate strategies to create a suitable learning environment to stimulate student learning behavior according to the current situation and the characteristics of their learning motivation and strategies. They should fully stimulate the initiation of students in different disciplinary and different gender, get rid of authoritarian and oppressive teaching models, and respect students' rational interests and hobbies. In the meantime, universities should make clear and appropriate expectations and requirements for students to stimulate students' deep motivation so that their behavior and learning effect will last longer.

(2) To set a reasonable curriculum. The curriculum in universities should be improved from basic need-focus to development-focus. For example, for junior students some strategies can stimulate students' interest to learn specific knowledge, including providing some basic and interesting subjects, enriching campus culture, organizing leisure activities such as club, lectures, etc. For senior students, universities should create some specific, practical subjects and offer some guidance courses for graduates in order to guide them to establish a correct employment concept and accurate positioning in the future. As a result, they may change their learning attitudes and clearly recognize their ultimate goal of learning to reduce the level of utilitarian motives.

(3) To increase students' self-confidence. Universities should increase students' self-confidence for task accomplishment so that they will learn positively and try new learning strategies continuously. Their learning abilities and outcomes will be significantly improved.

(4) To emphasize students' mental health education and ideological education. The problems and frustration encountered in study and daily life can easily affect students psychologically, resulting in a sluggish behavior in learning. Therefore, universities and teachers should concern about the psychological and ideological aspects of students and provide necessary guidance. They should not only create a good learning environment but also create a healthy mental environment.

In addition, universities should optimize teacher resource, improve teachers' quality, and improve reasonable presentation of teaching materials, and finally enhance the motivation of the normal undergraduates.

4.2 Advices for Societies

(1) The community should be more open and develop in multiple directions. As a result, it will require high level of professional quality, thereby promoting students' learning behavior.

(2) We should encourage student's independence, creativity, curiosity, and spirit of adventure. We should get rid of consistency and unification in order to provide a condition for students to develop diversely.

(3) The society should have a good atmosphere to provide students with prolific environmental stimuli and pay attention to students' physical and mental development.

4.3 Advices for Families

Families should maintain a harmonious relationship. Parents should pay more attention to the overall physical and mental development not only the academic achievement of their children, and avoid comparing their own children with others excessively. They should discover, appreciate and encourage the unique characteristics of their children rather than criticism, and teach their children scientifically and reasonably to help

them developing a good moral and study habit.

CONCLUSION

There were gender, disciplinary, and grade differences in normal undergraduates' motivation and learning strategies but the gender difference did not remain in strategies. Therefore, normal universities should produce different teaching models in specific stages of physical and mental development for students in different gender, different disciplinary, and different grade in order to train and stimulate their learning motivation.

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