# A Study on Learning Motivation of Newly Enrolled Adult Students in Higher Vocational Colleges

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**ABSTRACT**
China has been vigorously developing vocational education and actively promotes the enrollment expansion of higher vocational education. Some adult candidates can improve their cognition and skills by receiving higher vocational education, which contributes to the iteration of labor force. Existing literature shows that adult learners are different from full-time students from common colleges and universities, and it is of great significance to explore the learning motivation of newly-enrolled adult students. This study takes newly-enrolled adult students who had participated in the expanded enrollment of higher vocational colleges as the research object, and applies the method of questionnaire to quantitatively analyze their learning motivation. Descriptive analysis shows the fundamentals among this group of students that women generally have higher learning motivation than men; the group of age 26 to 35 displays the highest motivation; married people have higher motivation than the unmarried; there are also higher learning motivations revealed in learners with children. The variance analysis presents that different genders lead to the differences in cognitive interest, interpersonal relationship and social service; while childbearing results in differences in career development, external influence and social service. Cluster analysis provides two types of learners, one of which has low average scores and high motivations, the other has high average scores and low motivations. The scores fluctuate sharply in different sub-dimensions, targeted stimulation of learning motivation can be carried out. In-depth research could be taken in further studies, and an enriched sample size may contributes to more accurate results.

***Keywords:*** *higher vocational college; adult education; learning motivation.*

## 1. INTRODUCTION

With the social development in the new era, the social and economic demands for talents in China has shifted from the technical talents with adept skills to compound technical talents who can manage advanced CNC or other new varieties of science and technology. In the 21st century, China has been continuously upgrading its industries, which led to a surplus of labor in many traditional industries. The government proposed at the Two Sessions to develop vocational education and expand the enrollment of higher vocational colleges, aiming at solving the problem of labor iteration.

Faced with the development of industrial technology in the new era, higher vocational education is supposed to cultivate talents with multiple skills. Retired soldiers, new-type professional farmers, laid-off workers, rural migrant workers and other kinds of labor forces in traditional industries are able to become new type of talents who meet the recent needs of socioeconomic development through higher vocational education.

The performance of these new groups of adult students that higher vocational colleges absorbed from the society can be quite different from that of the original sources of enrollments in terms of learning motivation. Therefore, colleges and universities are in urgent need of understanding students' learning motivation first if they intend to give more targeted vocational education. On this basis, attention should be paid to mobilizing their learning motivation, so that the teaching quality could be effectively improved.

## 2. LITERATURE REVIEW

Learning motivation refers to the driving force that promotes the learners to carry out learning activities.

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Literature is collected around the learning motivation of full-time college students and adult education according to related theories.

Researches on the learning motivation of full-time college students are as follows: Young Ju Joo et al(2015)[1] conducted an online survey of 963 college students from an online university in South Korea, and found that learning motivation has a statistically significant direct effect on teaching design; Zhu Hong et al(2015)[2] adopted the "University Students in Beijing Development Survey Tracking Data (2011-2013) " by the School of Education in Peking University to analyze the effect of college students' learning motivation on the development of their comprehensive ability. Li Jiangyong et al(2012)[3] employed a self-made questionnaire for college students' specialty learning motivation and conducted a random sample survey of students from a college in Jiangsu, summarized the characteristics of current college students' specialty learning motivation, and offered the corresponding countermeasures in teaching; Liu Xiaoai (2012)[4] found a lack of learning motivation among college students under the condition of elective courses. Through the analysis and statistics of Chinese and English literature, it is easy to find out that the current researches about learning motivation of college students are mainly concentrated on full-time college students, few research studies the characteristics of the learning motivations of newly-enrolled adult students and the influence of these learning motivations.

Summary of related research on learning motivation in the field of adult education. Domestic and foreign researches on adult learning motivations mainly focuses on three aspects: theoretical orientation of adult learning motivations, types of adult learning motivations, and the influence factors of adult learning motivations. In the dimension of theoretical orientation, among the representative researches, Houle(2010)[5] from the United States first took the lead to study the motivation tendency of adult learning, and proposed the orientation theory of learning motivations, which divides adult learning motivations into three categories: goal orientation, activity orientation, and knowledge orientation. Based on Houle's results, Sheffield(2011)[6] raised five learning motivation directions using scaling method: personal goal direction, learning direction, social need direction, social goal direction, activity need direction.

In terms of the types of learning motivations, Canadian scholar R.Boshier(1980)[7] developed an educational participation scale based on the Sheffield's study, classifying adult learning motivations into six categories: escapism, career progress, social interest, external expectations, and learning interest. An American scholar Lindsey Phillips(2013)[8] studied the interests and motivations of adult college students in service learning activities and voluntary activities. He believes that "the substitution of service learning activities for homework and examinations required in the course will greatly enhance the learning interests and motivations of adult undergraduate students".

Chinese scholar Gao Zhimin(1997)[9] believes that "the six most common types of adult learning motivations are learning interest, career progress, change of life, social service, external expectations, and social relationships." Lu Qiuping(2011)[10] takes the adult candidates of self-taught higher education examinations in Fuzhou as an example, by investigating and analyzing the overall trend of the learning motivations of these adult candidates, she classifies their learning motivations into six kinds: (1) social relations(2) career progress (3) learning interest (4) external expectations(5) self-realization(6) escapism.

In the dimension of factors affecting adult learning motivation, Cross.K.P(2005)[11] proposed the differences in learning motivation orientation among young people, middle-aged people, and people over 50. Johnstone and Rivera(1965)[12] have found that "gender is an important factor affecting adults' learning motivations". SunJooYoo(2016)[13] considered that "the learning motivations of adult learners enrolled in online higher education are affected by the learner's gender, age and past experience. Gender affects internal motivations, age affects external motivations in the long term or short term ". Chinese scholar Ma Xiaojian and Xie Yi(2003)[14] breaks down the influence factors of adult learning motivations into two dimensions. "One is the factors related to individual characteristics: age, gender, initial education level, marital status, social class, place of residence, ethnicity, and sense of self-respect; the other is factors that have nothing to do with individual characteristics: external pressure, emergencies in life, contents of learning, classroom atmosphere and feedback." Chen Xia and Fang Yubo(2018)[15] summarized the internal factors of adult learning motivations as six aspects: physical health, acquired education, mental ability, value orientation, time management ability and study methods; the external factors of adult learning motivation can be summarized as five aspects: external pressure, the level of learning tasks, learning environment, the influence of role models and learning resource.

In summary, the major problem among current researches is that the existing results are related to their subdivided fields of education, while newly-enrolled adult students is a special group of students. In-depth and profound studies on the learning motivation of the newly-enrolled adult students in higher vocational education need to be taken based on the existing results in the two fields above.

## 3. RESEARCH DESIGN

### *3.1. Research questions*

Learning motivation is an indispensable research subject in education. It presents a direct impact on students study. Hence learning motivation is almost a key topic in the research of education. The study of the learning motivation of the newly-enrolled adult students in the context of the enrollment expansion of higher vocational colleges promotes higher vocational colleges to take effective measures based on the characteristics of students' learning motivations. Thus, these adult students will actively engage themselves in learning activities, which plays a decisive role in improving the education quality of this group of students. Therefore, the research question of this essay is: What are the influence factors of learning motivation of the newly-enrolled adult students in higher vocational colleges?

### *3.2. Theoretical construction*

There are several ways to classify learning motivation. The most representative ones outside China are Huole's three-type theory, Sheffield's five-type theory, and R.Boshier's six-type theory. Gao Zhimin, Lu Qiuping, and some other Chinese scholars put forward different types of learning motivations based on different learning motivation theories and combined with their own practical experience and investigations. According to the research literatures, it is concluded that the universality of learning motivation includes five aspects: career development, interest in knowledge, family, social relations and social service. The learning motivations of adults are diverse, and the influence factors are also diverse. The sources of newly-enrolled adult students in higher vocational colleges are complicated. Firstly, according to the policy documents, they used to be retired soldiers, rural migrant workers, laid-off workers, new-type migrant workers, etc.; secondly, they are all grown-up people defined from the age. Their lives may contain work and family other than just study, so their learning difficulties are quite diverse, which can be caused by age, education level, gender, family or marriage and childbearing.

Based on the theory of learning motivation and other demographic characteristics from related literatures, combined with the characteristics of the newly-enrolled adult students, this essay classifies the learning motivations into five dimensions: cognitive interest, career development, external influence, interpersonal communication and social service. The influence factors are defined to be basic demographic characteristics such as gender, age, marital status, and childbearing status. The questionnaire is designed around these specific indicators. The relationship diagram is as follows:

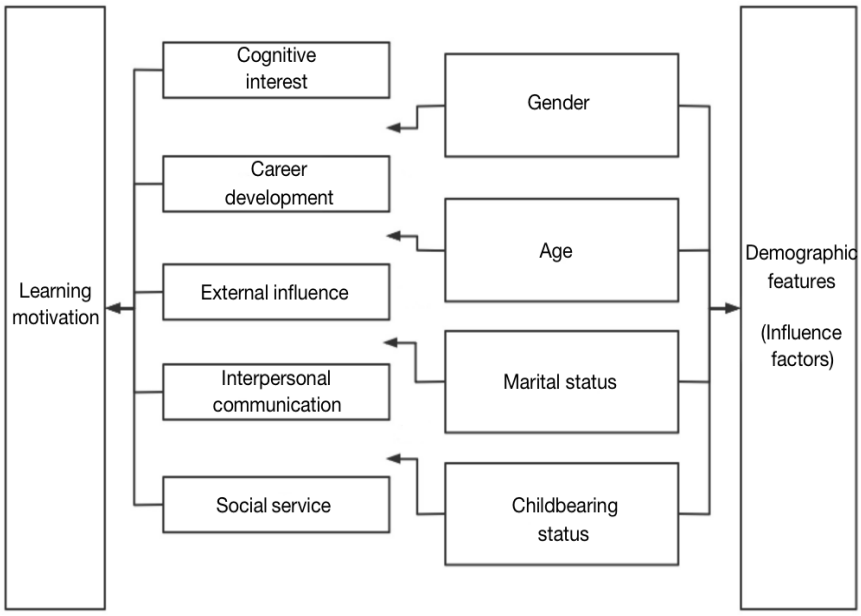


**Figure 1.** Schematic diagram of the coupling mechanism of learning motivation and influencing factors

### *3.3. Research object*

The newly-enrolled adult students who entered higher vocational colleges after the enrollment expansion of millions in number are the major research object. Random sampling was adopted to conduct in-depth investigations on several higher vocational colleges in East China and Central China, including Hangzhou Vocational-technical School, Zhejiang Construction Vocational-technical School, Shanghai Urban Construction Vocational College, Qingdao Hotel Management Vocational-technical School, etc.

### *3.4. Research tools*

This study draws on the analysis dimensions and thinking points of relevant literature as references, and the questionnaire is made based on these references. The questionnaire contains demographic information and a learning motivation scale. Reliability and validity test results: According to the theory of psychometric, a good questionnaire should show a total reliability coefficient above 0.8. [16]The Cronbach's Alpha in this experiment is 0.835, indicating that the questionnaire has high reliability; for the expert validity test, the framework of the questionnaire was schemed after interviewing experts, and evaluated by several senior professor experts, adjustments were made to the questionnaire based on the evaluation results.

This research questionnaire was handed out through the wjx.cn platform. A total of 867 questionnaires were returned, and a total of 829 valid questionnaires were used after removing the invalid ones. SPSS24 was applied for mathematical statistical analysis, reliability analysis, variance analysis, T test and K-means cluster are mainly used in the study.

## 4. RESULT ANALYSIS

### *4.1. Fundamental analysis of learning motivation*

After weighted scoring processing to the data of the learning motivations of the newly-enrolled adult students, scores of each dimension were added up using SPSS, four influence factors were classified and analyzed and the specific data are as follows:

**Table 1.** Learning motivation and its influencing factors combined analysis table

| Dimension | Sub-dimension | Cognition Average | Career Development Average | Interpersonal communication Average | External Influence Average | Social Service Average |
|---|---|---|---|---|---|---|
| Gender | Male | 6.42 | 8.19 | 9.34 | 16.86 | 4.45 |
| | Female | 6.34 | 7.96 | 9.25 | 16.74 | 4.47 |
| Age | Under 25 | 6.42 | 7.88 | 8.98 | 16.3 | 4.49 |
| | 26-35 | 6.32 | 8.06 | 9.24 | 16.63 | 4.37 |
| | 36-45 | 6.5 | 8.53 | 9.8 | 17.84 | 4.53 |
| | Above 45 | 6.5 | 8.91 | 10.32 | 17.82 | 4.62 |
| Marital status | Yes | 6.38 | 8.29 | 9.47 | 17.12 | 4.43 |
| | No | 6.43 | 7.97 | 9.15 | 16.5 | 4.49 |
| Childbearing status | Yes | 6.39 | 8.31 | 9.48 | 17.11 | 4.43 |
| | No | 6.41 | 7.97 | 9.16 | 16.56 | 4.48 |

In summary of the data presented in Table 1, in terms of gender characteristics, women's scores in each dimension of learning motivations are lower than men's, which means that women's overall learning motivations are higher than men's; in terms of age structure, the newly-enrolled adult students aged 26-35 have the lowest scores in learning motivation, indicating that they own the highest learning motivations; in terms of marital status, married people have lower scores in different motivation dimensions than unmarried people, while their learning motivations are higher than that of unmarried; in terms of childbearing, the data show similar tendency to that of marital status. The newly-enrolled adult students with children has lower scores in different dimensions than those without children, and their learning motivation is considered higher.

### *4.2. Variance analysis of learning motivations and major influence factors*

After using statistical analysis tools to process the raw data of learning motivation, and doing variance analysis with the influence factors one by one, the results of the analysis of learning motivation, gender and childbearing situation are relatively representative. For example, the result of variance analysis of learning motivation and marriage conform to the results between learning motivation and childbearing status. Generally, the learners who have given birth to child/children are married, so the two groups of research objects are highly overlapped. Therefore, only the variance analysis of learning motivation and childbearing status is presented. The specific analysis data are as follows.

(1) Variance analysis of motivation and gender

**Table 2.** Independent sample test of learning motivation and gender factors

| Dimension | Gender | Mean | Standard Deviation | F-test | Significance | T-test |
|---|---|---|---|---|---|---|
| Cognitive interest | Male | 5.28 | 0.74 | 7.25 | 0.01 | 1.35 |
| | Female | 5.21 | 0.52 | | | 1.63 |
| Career development | Male | 9.33 | 1.65 | 11.79 | 0.00 | 1.76 |
| | Female | 9.09 | 1.42 | | | 1.91 |
| Interpersonal relationship | Male | 9.34 | 2.31 | 0.72 | 0.40 | 0.46 |
| | Female | 9.25 | 2.12 | | | 0.49 |
| External influence | Male | 16.86 | 4.31 | 10.50 | 0.00 | 0.34 |
| | Female | 16.74 | 3.79 | | | 0.37 |
| Social service | Male | 4.45 | 1.08 | 0.01 | 0.93 | -0.18 |
| | Female | 4.47 | 1.04 | | | -0.19 |

After weighted scoring applied to the learning motivation data of this group of students, Table 2 shows that the cognitive interest dimension, interpersonal relationship dimension and social service dimension of learning motivation have significant differences in gender; the career development dimension and the external influence dimension show no difference in gender.[17]

(2) Cluster analysis of learning motivation and childbearing status

**Table 3.** Independent Motivation and Analysis of Study Motivation and Children

| Dimension | Childbearing Status | Mean | Standard Deviation | F-test | Significance | T-test |
|---|---|---|---|---|---|---|
| Cognitive Interest | Yes | 5.23 | 0.60 | 8.33 | 0.00 | -1.55 |
| | No | 5.30 | 0.78 | | | -1.55 |
| Career Development | Yes | 9.47 | 1.62 | 5.82 | 0.02 | 3.54 |
| | No | 9.08 | 1.57 | | | 3.54 |
| Interpersonal Relationship | Yes | 9.48 | 2.36 | 9.80 | 0.00 | 2.06 |
| | No | 9.16 | 2.16 | | | 2.06 |
| External Influence | Yes | 17.11 | 4.17 | 0.10 | 0.75 | 1.90 |
| | No | 16.56 | 4.21 | | | 1.90 |
| Social Service | Yes | 4.43 | 1.01 | 2.65 | 0.10 | -0.73 |
| | No | 4.48 | 1.13 | | | -0.73 |

After analyzing and processing, the learning motivation data of the newly-enrolled adult students are illustrated in Table 3.

According to Table 3, there are significant differences in the childbearing situation in the dimensions of learning motivation, career development, external influence, and social service; there is no difference in the dimensions of cognitive interest and interpersonal relationship.

(3) Cluster analysis of learning motivation

K-means cluster is a simple and classic distance-based cluster analysis method. It takes distance as the evaluation index of similarity, that is, the closer the two objects, the greater the similarity.[18]

According to the results of factor analysis, cluster analysis was made to the learning motivation cognition, career development, interpersonal relationship, external influence and social service of the newly-enrolled adult students to analyze the learning motivation of learners. According to the distance from each points to the horizontal and vertical axis, the results of learning motivation are finally concluded into two categories: one

is learners with higher learning motivations, and the other is learners with lower motivations. Scatter diagrams are presented as follows after sorting the results of cluster analysis for the convenience of observation:

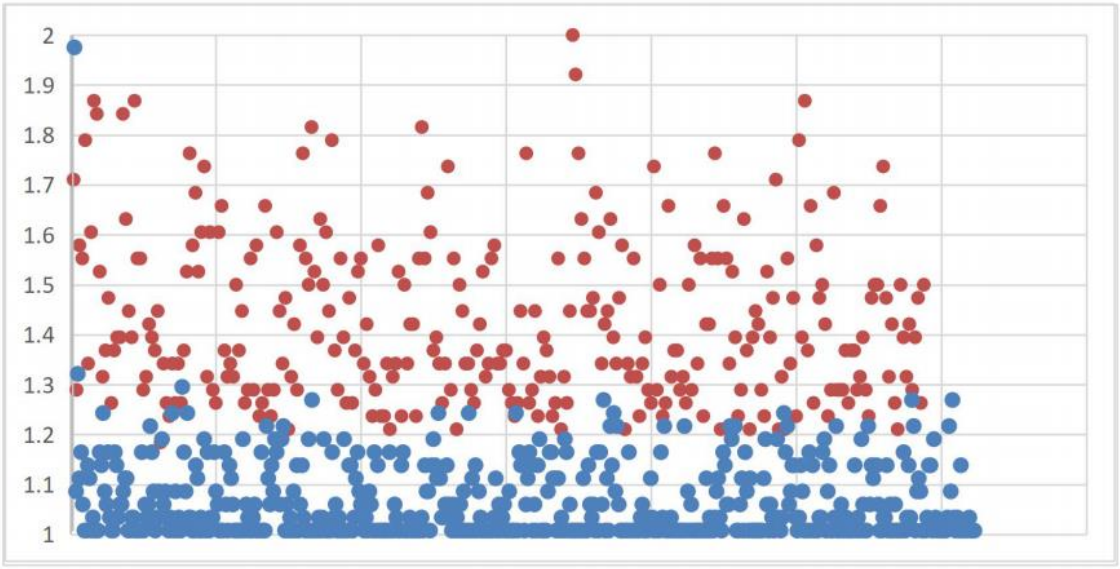


**Figure 2.** Scatterplot of learning motivation

This study investigates the learning motivations of the newly-enrolled adult students generally from five aspects: cognitive interest, career development, interpersonal relationship, external influence and social service. The question set in the part of learning motivation is presented in the form of scale. After categorizing the contents of the scale according to the above 5 dimensions, in order to facilitate statistical analysis, the options of each question are assigned points, Yes scores 1points and No scores 2 points. That is to say, groups with lower scores after calculation have higher motivations, and vice versa.

Figure 2 shows that the points on the figure can be divided into two main areas in accordance with the distance between the horizontal axis and the vertical axis. The points in one area are relatively concentrated, and points in the other area are relatively dispersive. First of all, the points in the scattered area represent Type I adult students, and their scores range from 1.2 to 2, with a larger span and higher scores, which means that Type I students have lower motivation and high heterogeneity. Secondly, the distribution of Type II social students in the range 1-1.3 is concentrated and close, which means that their motivations are higher.

To profoundly present the results of cluster analysis, the results are as follows:

**Table 4.** Results of cluster analysis of learning motivation

| Type of cluster | Cognitive average | Career development average | Interpersonal relationship average | External influence average | Social service average |
|---|---|---|---|---|---|
| Ⅰ | 1.14 | 1.31 | 1.42 | 1.67 | 1.28 |
| Ⅱ | 1.03 | 1.08 | 1.02 | 1.08 | 1.02 |

After the learning motivation cluster results of the newly-enrolled adult students are divided into Type I and Type II, they have corresponding scores in the five dimensions of cognition, career development, interpersonal relationship, external influence and social service, as shown in Table 4 above. The scores of Type I students in all dimensions are higher than Type II students. The higher they score, the weaker their motivations are. And the lower they score, the stronger their learning motivations are. Therefore, the sub-dimension ratio of the learning motivations of Type II students is higher than that of the Type I group.

## 5. CONCLUSION AND DISCUSSIONS

### *5.1. Conclusion*

The fundamentals of learning motivation for newly-enrolled adult students: women generally have higher learning motivation than men; the group of age 26 to 35 displays the highest motivation; married people have higher motivation than the unmarried; there are also

higher learning motivations revealed in learners with children.

The variance analysis of newly-enrolled adult students reveals: first, the gender of a learner presents differences in learning motivation, mainly in the three dimensions of cognitive interest, career development, and external influence. From the perspective of the inherent physiological differences between men and women, the processes of obtaining social expectations and conforming to their gender characteristics are different. Therefore, the differences in the three aspects of learning motivation caused by gender can be explained by the fact that men and women accept the social and cultural norms of their gender roles respectively after they're born, and constantly adapt their behaviors to their gender roles. Consequently, the differences in gender roles between men and women will lead to the development of gendered behaviors, which makes them contrasting in different motivational dimensions. Second, whether the learner have children has an impact on his/her learning motivation, mainly results in the differences in the two dimensions of career development and interpersonal relationships. Most of the newly-enrolled adult students in higher vocational colleges who participated in the enrollment expansion of millions in number choose to study after obtaining social qualifications and work experience. The diverse social roles of this group of students require them to be students in school and do a good job in their workplace. Furthermore, they need to go home and play their roles as parents and partners. Time is the most precious resource, and the problem of time management is often insurmountable.[19] Work and child caring require great commitment of time and energy, so does study. For this reason, the learning motivations of the newly-enrolled adult students who are married with children show differences in the three dimensions of cognitive interest, career development and interpersonal relationship.

Through the cluster analysis of the newly-enrolled adult students, it is found that the average score of Type I students is higher, which indicates that their learning motivations are lower, and the scores in each dimension are significantly different, indicating that the learning motivations in different dimensions are heterogeneous. However, the average score of Type II students is low, their learning motivations are high, and the scores of different sub-dimensions are relatively close, which shows that their learning motivations are consistent.

The learning motivation of learners is generally affected by external social factors and internal psychological factors, and is closely related to their learning autonomy and utilitarianism. newly-enrolled adult students can be much more affected by money, power, and other distractions than full-time college students. Thus it can be seen that higher vocational colleges can stimulate the learning motivations of newly-enrolled adult students with lower motivations. Specifically, the learning motivations of adult students can be improved from the following aspects: one is to pay attention to gender differences, especially to explore ways of promote Male's learning motivations; the other is to pay attention to students' multiple social roles, especially the adult students who are married with children.

Generally speaking, it is necessary to enhance the adult students' sense of self-efficacy and stimulate their learning motivations from their standing points. Attention needs to be paid to shaping the learning atmosphere and create a learning community. A variety of learning resources should be provided to meet the actual needs. For example, for learners with low motivations, external means such as financial subsidies and certificate of academic level can be utilized to stimulate their learning motivation.

### *5.2. Limitations and prospects*

From the perspective of research period, this research is basically a cross-sectional research, so that it is impossible to track and understand the learning motivations of students in time after the enrollment expansion policy implemented. Therefore, in-depth studies are needed in the future, and some new sources of adult students should also be involved as objects in order to carry out long-term follow-up research.

From the perspective of research object, the investigations were only conducted in East and Central China, the selected samples could not precisely represent the situation all over the country, resulting in low external validity of the research results.

From the perspective of investigation methods, learning motivations cannot be accurately reflected in questionnaire alone since it is individual's psychological performance. A combination of interviews and other methods could be applied to achieve more accurate results.

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