THE RELATIONSHIP BETWEEN STUDENT FACTORS AND THE EFFECTIVENESS OF NETWORK TEACHING IN X VOCATIONAL COLLEGE, CHINA

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Abstract: The study aimed to explore the relationship between student factors and the effectiveness of online teaching in Henan X Vocational College, as well as the difference, correlation and impact between student factors and the effectiveness of online teaching. A total of 251 students were surveyed through questionnaires, and finally 251 valid questionnaires were analyzed by descriptive statistics, independent samples t-test, one-way ANOVA analysis, Pearson correlation and regression analysis. The results showed there were significant differences in student factors and the effectiveness of online teaching among students of different genders, different grades, and different family economic conditions. Colleges should comprehensively consider the factors such as students' individual differences, learning environment and starting point ability. These ensured that vocational colleges continued to improve the effectiveness of online teaching. Based on the findings, this study discussed and provided related recommendations, such as strengthening online classroom training, building a good online teaching feedback and evaluation mechanism.

Keywords: Teaching Effectiveness, Higher Vocational College, Network Teaching

Introduction

Internationally, the research on the impact of network education on the development of students has also received extensive attention, and the research results had formed a considerable accumulation. In 1985, the National Science Foundation (NSF) launched a large-scale research project called the "Network Education Project" to develop a new education model to promote lifelong learning, mainly from the aspects of technology, management, quality assurance and other research. In 1995, the National Science Foundation (NSF) and the United States Information Technology Council (CTI) jointly organized the "Network Education Technology and Management Research Group" (CNITS) to study network education technology and management. CNITS was committed to the research,

development, and management of e-education, and provided consulting services for the "E-Education Technology and Management Research Group" (Li, 2023).

With the deepening of educational research on network education, many countries have paid more attention to the importance of students' development. The British government regarded distance education as an important part of the national information infrastructure construction, and gave strong support in law, policy, finance, investment, and other aspects. The British Department for Education established the National Information Infrastructure (NIIT) in the 1970s to provide extensive technical and financial support for distance education. Distance education in the UK had developed rapidly and had become one of the largest distance education countries in the world (Han, 2022).

Since ancient times, Chinese education had attached great importance to the shaping of the Internet, and the Internet had profoundly changed the material life and spiritual life of the public. Network lifestyle had become an important part of People's Daily lifestyle, especially for young students in the growth stage, network behavior had a significant impact on their study and life (Qian & Yu, 2023). According to the 25th Statistical Report on the Development of China's Internet released by China Internet Network Information Center (CNNIC) in Beijing in January 2010, as of December 31, 2009, the number of Chinese netizens reached 384 million, ranking first in the world. Among them, more than 60% (61.5%) of Internet users were under 30 years old. Although the number of student Internet users had decreased significantly compared with previous years, it still ranked first. The Internet penetration rate of college students and above was also close to 100%. This showed that the network had become an essential element in the life and study of contemporary college students.

Nowadays, many research results had proved that network education, as an important influencing factor, played an important role in the development of students (Li, 2012). It was found that the classroom was the main position of education and teaching, and the teaching efficiency of the classroom was directly related to the quality of teaching. Therefore, improving the teaching effect of the classroom was a problem that educators needed to think about. But how could the classroom teaching effect be improved, and what was the effect of information technology in education and teaching? Under the background of comprehensively promoting quality education and teaching information, the integration of information technology and curriculum was an important step in the current curriculum reform (Peng, 2022).

It could find that in recent years, more and more teachers would choose to use multimedia to teach in class. The use of multimedia did provide convenience for some links in the classroom, and stimulated students' enthusiasm for learning to a certain extent, thus improving the efficiency of the classroom. However, this did not mean that the use of information technology was a panacea. If we did not pay special attention to the method and time of its use, and use it randomly, it would not only not play the expected role, but also play the opposite role. However, in Chinese teaching, there seemed to

be a lack of research on the effectiveness of information technology in teaching, and only several methods to improve classroom effectiveness were mentioned. However, there was a lack of research on the combination of information technology and improving classroom effectiveness.

In the face of the above problems, in order to give full play to the role of information technology, so that its application effect in the classroom had been effectively improved, we must prevent its misuse and misuse. It was necessary to grasp the principle of its application and analyze the problems and countermeasures in the process of application, to make it play a better role in education. For those places that couldn't give full play to their role in education, we should actively explore and propose some practical countermeasures so that it could be more widely and effectively used.

Research Objectives

(1) To identify the current level of network teaching in X Vocational College.

(2) To compare the differences of factors by student under different background variables, at X Vocational College.

(3) To compare the differences in the effectiveness of network teaching by students under different background variables, at X Vocational College.

(4) To determine a correlation between the factor by students and the network teaching effectiveness, at X Vocational College.

Literature Review

Research on Student Individual Differences in Network Teaching Effectiveness

With the continuous development of China's social economy and the continuous progress of education, more and more attention had been paid to the research on individual differences of students in teaching practice. From the perspective of educational development, teaching should not only be limited to teaching content and teaching methods, but also paid attention to individual differences of students. Teachers should work out more reasonable and effective teaching methods according to the different characteristics of different students' individual differences.

In on the Relationship between College Students' Self-cognition and Self-Expectation, Guo (2015) proposed that college students' self-cognition and self-expectation had a certain relationship, and there was a positive correlation between them. Zhou (2018) proposed in a Study on Vocational College Students' Learning Self-efficacy and learning Motivation that there was a certain correlation between vocational college students' learning self-efficacy and learning motivation. At the same time, it was found that vocational college students' learning self-efficacy was negatively correlated with learning motivation. Yang (2020) proposed in Research on Factors and Countermeasures affecting Vocational College Students' career planning consciousness and career Planning Behavior that there was a certain

correlation between vocational college students' career planning consciousness and career planning behavior. At the same time, the study also found that: vocational college students career planning awareness and career planning behavior of the factors were mainly 4, namely, family environment, school environment, social environment, and individual characteristics. Ding (2021) proposed in the paper Based on the Analysis of Group Differences among post-00s college students and Research on Promotion Strategies that post-00s college students, as a special group, had different personality characteristics, interests, values, social ways, and ways of thinking from previous college students. They had showed some new characteristics in study, life, and growth. The post-00 college students were a special group, which was greatly affected by the social environment. It must not only have faced the pressure of college entrance examination, but also faced the impact of network information. They faced challenges from all sides. Therefore, post-00s college students needed to actively cope with challenges in study and life.

At present, there were few research on the learning motivation and learning behavior of post-00s college students. At the same time, post-00s college students showed certain characteristics in learning motivation. Zhou (2019) pointed out in his Research on Factors affecting Students' Learning motivation that students' learning motivation was influenced by many factors, such as family, school, and society. The family aspect. The way parents educated their children and their children's interests and hobbies had a certain impact on them. In the aspect of school, teachers' teaching methods and teaching environment would affect students' learning motivation. In terms of society, the social environment had a great influence on students. With the continuous development and progress of China's education, the number of colleges and universities in our country was gradually increasing, and the number of college students was also increasing. Among the many students, "post-00" college students had gradually become the main group of college students. He had become a standout among contemporary college students. Post-00s college students were different from their predecessors in that they had some new characteristics.

Research on Student Starting Ability in Network Teaching Effectiveness

Starting ability referred to students' understanding of new knowledge, that is, students' mastery of what they had learned. In the process of learning, students were the main body of learning, and teachers only played a guiding role. The level of students' starting ability directly affected the learning effect.

As for the research of students' starting point ability, foreign scholars mainly focused on the following aspects: Edmund (2019) pointed out in Certainty and Cognitive Skills that starting ability was closely related to learning effect. For example, in reading comprehension, students with high starting ability would understand the content faster, and vice versa; In mathematics operation, students with high starting ability were fast, and vice versa; In spatial thinking ability, students with high starting

point ability were also strong in spatial imagination ability, and vice versa. At the same time, he also pointed out the factors that affected students' starting ability. Such as: age, gender, subject, school nature, etc. Khalil (2019) pointed out in his article Learning Skills that the level of students' starting ability was directly related to their academic performance. Students with higher starting ability showed higher learning efficiency and better academic performance in the learning process. In the learning process, students with high starting ability needed more time to understand the knowledge, while students with low starting ability needed only a short time to understand the knowledge. Different disciplines had different requirements for starting ability. For example, mathematics and English required the most starting ability. Because mathematics was an abstract subject, while English was a language subject. Therefore, there were obvious differences in students' starting ability for different subjects.

Domestic scholars mainly focused on the following aspects: Wang (2021) pointed out in their paper Research on the Teaching Quality Evaluation and Guarantee System of Higher Vocational Education Based on Starting Point Ability that with the deepening of education reform, the teaching quality evaluation system had also changed. Teachers needed to start from students' starting ability and evaluate students' starting ability through different methods and meant to improve teaching quality. Zhang (2019) proposed in Research on Talent Training Model of Higher Vocational Education from the perspective of starting ability that the talent training model of higher vocational education could be divided into three levels: cognition, technology and synthesis from the perspective of starting ability. And based on this, the different levels of talent training model were detailed. In higher vocational colleges, it was necessary to take students' starting point ability as one of the core elements of talent training mode.

This paper took students as the main body of research and took the effectiveness of network teaching as the research purpose. The starting ability of students in higher vocational colleges was studied by means of literature review and investigation analysis. The influence factors were discussed to provide reference for improving the effectiveness of network teaching.

Research on Learning Environment in Network Teaching Effectiveness

A Learning Environment was the sum of the various conditions that affected the learner. The learning environment included the physical environment and the social environment around the individual. Individuals could constantly adjust their cognitive strategies through active contact and perception of the external environment, and ultimately improve their academic performance.

Jessen (2021) thought, many scholars had defined the learning environment as all the factors that could affect the learner's behavior in a particular time. These factors included: learners' feelings, perceptions, attention, attitudes, emotions and thinking, learning resources (such as technical equipment, materials, and other support); Interpersonal relationship (including teacher-student

relationship, peer relationship, family relationship, etc.); Psychological needs (such as autonomy needs, self-esteem needs, etc.); Kavli (2019) thought, social factors (e.g. family background, economic conditions, etc.) Studies have shown that learning environment could affect individual learning performance and the use of learning strategies. For example, in a well-organized, fair, and equitable environment, students were more confident in their performance and were more likely to succeed academically.

In addition to the above concepts of learning environment, some scholars divided learning environment into organizational management environment and psychological culture environment. Organizational management environment included physical environment and social environment, while psychological and cultural environment included physical environment and psychological and cultural aspects. Chen (2021) believed that the organizational management environment referred to the content contained in the school structure and teacher team. Specifically, it included the organizational culture in the organizational structure of the school (such as class setting, teaching objectives, educational values, etc.) and the structure of the teacher team (such as the age structure, educational background structure and professional background of the teachers, etc.). Psychological culture includes the interpersonal relationship between school members and the relationship between teachers and students.

The Concept and Research on Network Teaching Effect

The effect of network teaching refers to the relationship among teachers, students, teaching resources and network environment in network teaching. For the evaluation of network teaching effect, most scholars mainly adopted quantitative and qualitative methods. Yao (2023) proposed in Evaluation of Effectiveness in Network Teaching Based on AHP Method: In the teaching using the network transmission of teaching content to reach more than 80% was considered as network teaching. Between 30% and 79% was mixed teaching. Between 1% and 29% were traditional teaching facilitated by the Internet. There was no use of network technology for traditional teaching. American scholars such as Feld, Norman and Ballantine had done a series of studies on the characteristics of effective teaching in colleges and universities, or the characteristics of effective teaching teachers.

Teaching was inseparable from teaching and learning, and to achieve efficient teaching, it was inseparable from the cooperation between teachers and students. On the level of teachers, Luo (2020) believed that in colleges and universities, teachers should have clear goals, incentive ability, dynamic openness, and positive interaction with students. Zhang (2018) studied how to improve students' learning effect from the perspective of learning motivation and learning behavior. Prompt information, combining existing tasks with existing knowledge, and asking questions could improve students' motivation. Self-regulation of learning strategies, self-planning and time management, and active creation of learning conditions could also play a positive role in the production of effective learning. In the process of network-based distance education, students were required to have strong autonomy and

self-management to achieve the purpose of independent learning because they did not need the guidance and supervision of teachers. Self-management could improve students' learning enthusiasm and cognitive level. The research of Hu and Jennifer (2019) shows that self-management strategies such as goal setting, moderate effort, and time management had the best effect on students' network learning.

In general, the current domestic research mainly focused on the traditional classroom effective teaching, while the research on the network effective teaching was basically only focused on a certain aspect, there was a great fragmentation, no system problems. At present, there was no systematic research on effective teaching strategies in the network environment. This paper made some attempts to comprehensively consider the effectiveness of network education, hoping to make some efforts to improve the effectiveness of network education.

Methodology

This research took the students at Vocational College in Henan Province as the research object. According to the survey on the official website of X Vocational College, there were 12800 students at school. Therefore, 251 questionnaires were distributed according to the sample size requirement of Keri and Morgan table (1970).

A total of 251 questionnaires were distributed, after screening and eliminating 0 invalid questionnaires, 251 valid questionnaires were finally obtained, with an effective rate of 100%. In the form of electronic questionnaires, this researcher surveyed on the students with different from Grade one to three at this X Vocational College in a ratio of 3:3:4 to facilitate sampling.

The study selected the mature scale developed by previous researchers, adopted Chen's (2020) students' network teaching effectiveness scale, Wang's (2020) status of network teaching effectiveness. All these scales had Cronbach α coefficient over 0.80, the KMO value was 0.78, thus, the reliability and validity were at a good level.

Results

Demographic Analysis of Questionnaire Participants

In this questionnaire survey, there were 251 samples of X Vocational College in Henan Province. Demographic variables included gender, grade, and family status. The results showed that there were 116 males, accounting for 46.2%; There were 135 women, accounting for 53.8%. In terms of the grade of the subjects, 37 were in the first year of college, accounting for 14.7%; There are 39 students in the second year of college, accounting for 15.5%; There are 71 college juniors, accounting for 28.3%; There are 104 college seniors, accounting for 41.4 percent. In terms of the family status of the subjects, there were 141 poor families, accounting for 56.2%; There were 66 people in ordinary families, accounting for 26.3%; There were 44 people from wealthy families, accounting for 17.5

percent.

Descriptive Statistics on the Levels of Student Factors, Teaching Effectiveness

1) The mean score of student factors is at a high level (M=3.286). The mean score of each dimension was also higher than the mean level, and the mean score was 3.276, 3.412 and 3.169, respectively. The one with the highest mean value is the starting ability (M=3.412). The second was individual difference (M=3.276). The lowest is the learning environment (M=3.169). Therefore, the overall level of student factors is high. as Table 1 shows.

Table 1: Descriptive Statistical Analysis of Student Factors (N=251)

Item	Mean	SD	Analysis
Student factor total	3.286	0.762	high
Individual difference	3.276	1.063	high
Starting ability	3.412	1.009	high
Learning environment	3.169	0.935	high

2) The mean score of student factors was at a high level (M=3.286). The mean score of each dimension was also higher than the mean level, and the mean score was 3.276, 3.412 and 3.169, respectively. The one with the highest mean value was the starting ability (M=3.412). The second was individual difference (M=3.276). The lowest was the learning environment (M=3.169). Therefore, the overall level of student factors was high, as shown in Table 2.

Table 2: Descriptive Statistical Analysis of Teaching Effectiveness Level (N=251)

Item	Mean	SD	Analysis
Teaching effectiveness overall	3.332	0.766	high
Achievement of teaching objectives	3.274	0.994	high
Teaching Effect Satisfaction	3.288	0.976	high
Test effect of classroom training	3.436	0.992	high

Differences Analysis on the Levels of student factors and network teaching effectiveness Compared with Demographic Factors

The statistical results showed that the student factors of college students had significant difference in gender ($t=3.890$, $p < 0.001$). By observing the mean value, we could see that the mean value of male students was significantly higher than that of female students. In the three dimensions of individual difference, starting ability and learning environment, the mean value of male students was significantly higher than that of female students. Therefore, the overall difference of student factors in gender of students in X Vocational College was significant, and the mean value of male students was significantly higher than that of female students. In the analysis of grade difference of student factors,

the results show that there were significant differences in the grades of college students ($F=6.956$, $p < 0.001$). Multiple LSD comparisons showed that there were significant grade differences in the overall mean of student factors. The mean value of senior students was significantly higher than that of freshmen and sophomores. The mean of college students in the third year was significantly higher than that in the first year.

The results showed that the effectiveness of network teaching for college students had significant difference in gender ($t=2.809$, $p < 0.01$). By observing the mean value, we could see that the mean value of male students was significantly higher than that of female students. In the two dimensions of achievement degree of teaching goal and detection effect of classroom training, the mean value of male students was significantly higher than that of female students. There was no significant difference in gender in the dimension of teaching effect satisfaction ($P > 0.05$). Therefore, the overall difference in the effectiveness of network teaching of students in X Vocational College is significant. The mean value of male students was significantly higher than that of female students. There was no significant difference in the dimensions of teaching effect satisfaction.

Through multiple LSD comparison, it was found that there were significant grade differences in the overall mean of network teaching effectiveness. The mean of students in the fourth, third and second years was significantly higher than the mean of students in the first year. There were significant grade differences in the mean scores of teaching goal achievement. The mean of students in the fourth, third and second years was significantly higher than the mean of students in the first year. But there was no significant difference in the dimensions of teaching satisfaction among different grades ($P > 0.05$). There were significant grade differences in the mean value of classroom training detection effect. The mean of college seniors and college juniors was significantly higher than the mean of college sophomores and freshmen.

About the analysis of differences in family status, the results showed that there was significant difference in family status of teaching effectiveness ($F=5.947$, $p < 0.01$). The mean value of students from poor families and ordinary families was significantly higher than that of students from rich families. There was no significant difference in the mean value of teaching goal achievement degree in family status ($P > 0.05$). There were significant differences in the mean value of teaching effect satisfaction. The mean value of students from poor families and ordinary families is significantly higher than that of students from rich families. There were significant differences in the mean value of classroom training detection effect. The mean value of students from poor families and ordinary families is significantly higher than that of students from rich families.

Correlation Analysis among Six Main Variables

In this study, the Person correlation coefficient is used to analyze whether there is correlation between the six main variables. it was found that there was a positive correlation between Student

factors (Individual difference, starting ability, Learning environment) and Network teaching effectiveness (Achievement of teaching objectives, Teaching effect satisfaction, Test effect of classroom training). The overall relevant situation was shown in Table 3.

Table 3: Summary of Correlation Analysis of Variables

Item	Achievement of teaching objectives	Teaching effect satisfaction	Test effect of classroom training
Individual difference	.227**	.207**	.312**
Starting ability	.286**	.279**	.250**
Learning environment	.321**	.183**	.171**

Note: *p<0.05, **p<0.01, ***p<0.001

Discussion

Current Status of the Effectiveness of Network Teaching

The overall level of network teaching effectiveness in X Vocational College of Henan Province was relatively high. The highest mean value was the classroom training detection effect (M=3.436). The second was teaching effect satisfaction (M=3.288). The lowest was the degree of achievement of teaching objectives (M=3.274). It could be seen that the reason why students believed that school network teaching was more effective lies in the comprehensive effect of these aspects, which enabled students to better acquire knowledge, cultivated practical ability and improve academic level in the network teaching environment.

Relationship between student factors and the effectiveness of network teaching

1) The relationship between individual differences of students and the degree of achievement of network teaching goals, teaching effect satisfaction, and classroom training detection effect.

The analysis results showed that individual differences of students had a significant impact on the degree of achievement of teaching goals. According to Smith (2018), individual differences of students included subject interest, learning style, cognitive level, and other aspects, which directly affected students' absorption and understanding of specific knowledge fields.

The individual difference of students had significant influence on the satisfaction of teaching effect. According to Brown's (2019) survey, students with large individual differences may be more likely to perform well in specific areas and thus be satisfied with the effect of network teaching. However, for students with different subject interests, diversified teaching methods needed to be adopted in the course design to improve their learning satisfaction.

The individual difference of students had a significant influence on the classroom training detection effect. According to the research of Jones (2020), students with large individual differences may perform more actively in classroom training and pass detection tasks more easily. This paper was consistent with its view that students with large individual differences were more active in learning and

were easier to pass the test and consolidate what they had learned.

2) The relationship between students' starting ability and the degree of achievement of network teaching goal, the satisfaction of teaching effect and the detection effect of classroom training.

The analysis results showed that there was a positive correlation between students' starting ability and the degree of achievement of teaching goals. According to the research of Wang (2017), students with higher starting ability were more likely to understand and absorb new knowledge in network teaching, so it was easier to achieve teaching goals.

The analysis also found that students' starting ability had a positive impact on the satisfaction of teaching effect. According to a survey conducted by Chen (2018), students with higher starting ability were more likely to achieve good academic performance in network teaching, thus improving their satisfaction with teaching.

There was a positive correlation between students' starting ability and the detection effect of classroom training. According to the research of Li (2019), students with higher starting ability may adapt to the difficulty of classroom training more easily and complete the detection task better. For students with low starting ability, educators should design differentiated training tasks and provide additional learning support to ensure that they can effectively complete the testing tasks.

3) The relationship between students' learning environment and network teaching goal achievement, teaching effect satisfaction and classroom training detection effect.

The results of this paper show that students' learning environment had a significant positive impact on the degree of achievement of teaching goals in network teaching. A good learning environment provides students with adequate learning resources, equipment, and support, making it easier for them to focus on their studies and easier to access educational materials. In such an environment, students were able to participate more effectively in the course and improve their understanding and mastery of the teaching objectives. According to Liu (2018)'s research, a good learning environment could help students maintain learning motivation and make better use of network teaching resources. Schools and educational institutions should focus on providing good network learning platforms, library resources, learning equipment, etc., to improve students' learning environment.

The students' learning environment had a direct and positive impact on the teaching satisfaction of network teaching. In a good learning environment, students were more likely to felt the pleasure of learning and a sense of achievement, to improve the satisfaction of network teaching effect. This was closely related to the comfort students felt in the learning process, the cultivation of subject interest and the stimulation of learning motivation. According to the research of Yang (2019), a good learning environment helped to improve students' satisfaction with network teaching. Encouraging students to actively participate in subject-related communities and discussions and promoting interactive learning

would further increase students' satisfaction with teaching.

The students' learning environment also had a significant impact on the classroom training detection effect in network teaching. An environment conducive to student learning would provide sufficient support to make it easier for students to adapt and complete various classroom training and monitoring tasks. Based on the research of Zhang (2020), a good learning environment could help improve students' enthusiasm in classroom training and better complete detection tasks. Therefore, schools should provide an environment conducive to students' learning to promote their better participation in classroom training. The influence of students' learning environment on classroom training was mainly reflected in the technical support, subject resources and subject environment provided by the school. In a learning environment with perfect technical support, it was easier for students to conduct network classroom training and detection and reduce the interference of technical problems on learning. At the same time, the rich subject resources and subject environment also provided students with more opportunities for subject exchange and discipline competition and urge them to work harder to complete related tasks.

Conclusions

1) The overall level of network teaching effectiveness in X Vocational College of Henan Province was relatively high. The highest mean value was the classroom training detection effect (M=3.436). The second was teaching effect satisfaction (M=3.288). The lowest was the degree of achievement of teaching objectives (M=3.274).

2) The results of the personality study of the student factors of X vocational college had a significant positive relationship with the effectiveness of online teaching. X vocational College students were able to correctly recognize their individual differences, starting point abilities, and student learning environment, and realize that each student had unique individual factors. They could also proactively identify their own problems and challenges in subject preferences and subject areas to better adapt to the network teaching environment. This kind of active learning attitude helped students to make better use of the advantages of the subject, while facing and overcoming the subject difficulties that may be brought by individual differences. Through the correct understanding of their own problems, students could seek more targeted help and improve learning strategies, to better improve the degree of network teaching goal achievement, teaching effect satisfaction and classroom training detection effect.

3) there were significant differences for student factors and network teaching effectiveness under different background variables. The student factor of X vocational college students had significant difference in gender ($t=3.890$, $p < 0.001$). In the three dimensions of individual difference, starting ability and learning environment, the mean value of male students was significantly higher than that of female students. In terms of different grades, the mean value of senior students was significantly

higher than that of freshmen and sophomores, and the mean value of junior students was significantly higher than that of freshmen. In terms of family economic status, the mean of students from poor families and ordinary families was significantly higher than that of students from rich families. The overall difference of network effectiveness of X vocational college students was significant in terms of gender, and the mean value of male students was significantly higher than that of female students. There was no significant difference in the dimensions of teaching effect satisfaction. In terms of the grade difference of the effectiveness of online teaching, the mean value of the fourth, third and second grade students was significantly higher than the mean value of the first-grade students. In terms of the difference of family economic status of the effectiveness of online teaching, the mean value of students from poor families and ordinary families was significantly higher than that of students from rich families.

References

Aydian, A., & Demark, M.S. (2023). The effectiveness of computer aided video modeling in teaching basic basketball movements to individuals with down syndrome. *Children*, 65(1), 238-247.

Benner, D. (2023). Education [Building]–Literality–Competence: On competing tasks of public schools and the need for new links between teaching and educational research. *ECNU Review of Education*, 23 (7), 1156-1166.

Chen, G., & Ying, H. (2023). Strategies for enhancing the effectiveness of elementary science classroom teaching based on key competencies. *Science Journal of Education*, 11(3), 189-198.

Chen, R. (2023). Teaching translation theory in English to Chinese students: an example of psycholinguistic understanding of languages. *Journal of Psycholinguistic Research*, 123(11), 532-541.

Cannington, S., & Coder, A., & Nelson, E. (2023). The shifting public health Landscape and virtual learning environment: the effectiveness of practice-based teaching delivered In-Person, Virtual and Hybrid. *International Journal of Environmental Research and Public Health*, (4), 345-356.

Dai, R., & Zhu, P. (2022). Research on the effectiveness of teaching based on "helpful learning classroom" - taking computer network security technology course as an example. *Computer Knowledge and Technology*, (34), 177-192.

Han, C. (2022). The effective integration of red genes into ideological and political education in universities. *Journal of Wuhan University of Technology (Social Sciences Edition)*, (06), 163-169.

Hauk, D., & Groschens, A. (2022). How effective is learner-controlled instruction under classroom conditions? A systematic review. *Learning and Motivation*, 9(06), 133-146.

James, J. (2007). The effectiveness of network instruction: A literature review. *Canadian Journal of*

Medical Radiation Technology, (2), 99-111.

Li, J. (2023). Analysis of the effectiveness of teaching information technology basic courses in vocational colleges under the network environment. *Computer Knowledge and Technology,* (08), 134-136.

Mahmud. (2017). The effectiveness of web-based instruction on writing skill of English department students of FKIP Riau university, *Indonesia. International Journal of Multimedia and Ubiquitous Engineering,* (4),765-778.

Mahmood, M.R., &Shavian, S., & Alongside, M. S. (2023). The effectiveness of teaching complementary and alternative medicine based on the components of theory of planned behavior on nutrition students: multicenter research study. *BMC Medical Education,* (1), 322-334.

Qian, H.J., & Yu, H.J. (2023). Research on the effectiveness of network teaching in primary schools in the context of "Internet plus education". *Science and Technology,* (06), 44-46.

Shaky, F. (2022). Meta-analysis as an emerging trend to scrutinize the effectiveness of L2 pragmatics instruction. *Frontiers in Psychology,* (12), 177-189.

Tang, Y.H., & Ma, X.J. (2022). Research on the effectiveness of integrated construction of Xinjiang radio and television university course network teaching platform - based on the practice of Chinese literature basic course. *Science and Technology Information,* (22), 198-209.

Wang, M., & Shi, Y.M. (2021). The impact of network learning environment and learner learning efficiency on the effectiveness of network teaching - based on the network teaching survey during the COVID-19. *Applied Higher Education Research,* (01), 35-44.

Wu, H. (2021). Exploration of strategies for improving the effectiveness of network teaching in vocational computer courses. *Science and Technology Perspective,* (29), 150-151

Yao, J.G. & Chen, L.F. (2023). A model for the construction of the curriculum system of Hua people students' China knowledge education. *Teacher Education and Curriculum Studies,* (1), 19-22.

Zhang, H.P. (2021). Analysis of the effectiveness of network teaching based on big data. *Journal of Physics: Conference Series,* 133(3), 21-28.

Zheng, Y.Y. & Otgondalai, L. (2023). An empirical study on the effectiveness of teacher teaching in multicultural contexts. *The Educational Review,* (1), 182-191.

Zhou, L.Y., & Wei, C.J., & Zhan, X.G. (2021). Research on the effectiveness and practicability of information teaching in mathematics classroom for Preschool education majors. *Science Advisory (Education Research),* (07), 118-120.

Zhou, Q. (2022). How to improve the effectiveness of college English teaching in the context of network? *English Abroad,* (11), 152-153.