



**FACTORS AFFECTING ONLINE LEARNING RESULTS OF
HIGHER VOCATIONAL COLLEGE STUDENTS BASED ON
THE PHOTOSHOP DIGITAL IMAGE PROCESSING COURSE**

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Thematic Certificate

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Requirement of Master of Business Administration in
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ABSTRACT

With the new crown pneumonia epidemic, carrying out online teaching is a method adopted by teachers in various vocational colleges. However, many teachers just copy offline courses to online teaching, and their students' learning effectiveness is not valued by teachers. Therefore, based on this status quo, this study used "online teaching" and "student learning effectiveness" as the main focus.

The research background of this research was expounded, the research status of online learning at home and abroad was summarized, and the important concepts related to this research were explained. The research design of this subject was formulated, which includes research content, research significance, research method, and other core elements. This research relied on the network teaching platform, combined with the course "Photoshop Digital Image Processing," designed the course in detail and carried out online teaching activities for the students in the experimental group and the reference group in a planned and specific manner. A questionnaire survey was used for online students, and an interview method was used for the teachers of "Photoshop Digital Image Processing" to collect data for scientific analysis and summary. At the same time, the author put forward some ideas and methods that can be used for reference in the prospect of follow-up research on this topic to improve the theoretical application and practical research of online learning activity design.

Keywords: online learning, learning-effectiveness, Photoshop

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"The road is a long way to go, and I will go up and down to seek it out." On the road of learning in the future, I will definitely not forget my original intention, forge ahead, take my dream as a horse, and live up to my youth.

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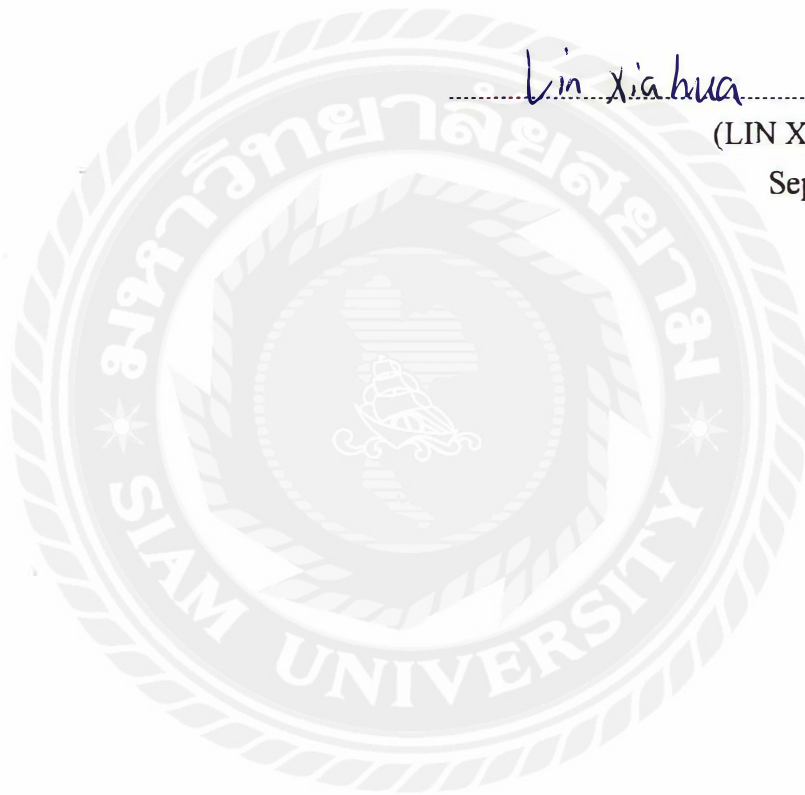
Declaration

I, LIN XIAOHUA, hereby certify that the work embodied in this independent study entitled "FACTORS AFFECTING ONLINE LEARNING RESULTS OF HIGHER VOCATIONAL COLLEGE STUDENTS BASED ON THE PHOTOSHOP DIGITAL IMAGE PROCESSING COURSE" is result of original research and has not been submitted for a higher degree to any other university or institution.

Lin Xiaohua

(LIN XIAOHUA)

Sept 1, 2022



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1. Introduction

1.1 Research Background

"After the new crown pneumonia outbreak, in order to stop the spread of the epidemic to the campus, the General Office of the Ministry of Education and the General Office of the Ministry of Industry and Information Technology jointly issued a 'notice on the work arrangements' related to 'suspension of classes without stopping school' during the postponed opening of primary and secondary schools (Chang, 2019)". The "notice on 'stopping classes without stopping school'" put forward clear opinions on the work of "stopping classes without stopping school", emphasizing the need to strengthen the guidance of home learning, and do a good job of connecting teaching and home learning after the start of the school year, to ensure that the burden of students is not increased and to resolutely prevent over-learning. "Higher education institutions across the country actively respond to the call of the Ministry of Education for 'stopping classes without stopping learning' and carry out online teaching (Zhang, 2020)".

Higher vocational colleges and universities are an important type of higher education schools and an important part of vocational education. "They shoulder the mission of training highly skilled and applied talents for the first line of production, construction, service and management (Xu, 2020)". "Photoshop Digital Image Processing course is a specialized course of our cross-border e-commerce program, which occupies an important position in the curriculum and is also the foundation of the subsequent webpage production course (Lian, Chen, Gao, & Zhu. 2019)". "A quality course should land on the learning effect of students, however, when the keywords of Photoshop are entered into the well-known domestic websites such as Knowledge Network, Wanfang Data Knowledge Service Platform and Vipshop, the query content is more based on the research of teachers' teaching methods, teaching process and teaching mode level (Xu, 2020)". Fewer studies have explored the main factors affecting the learning effectiveness of students' online learning of Photoshop digital image processing courses in the context of the novel coronavirus pneumonia epidemic.

Therefore, it is of interest to conduct an in-depth investigation into the current situation and problems of students learning Photoshop digital image processing courses online in higher education institutions.

1.2 Research Problems

With the rapid development of information technology in the field of education, the form of classroom teaching is also constantly changing. Under the impact of the new crown pneumonia epidemic, online teaching has blossomed everywhere in an instant and has become the teaching method adopted by various higher vocational colleges in China. " Supported by advanced information technology, online teaching has changed the original learning environment of students, and changed the teaching location from classroom to home or dormitory to learn, aiming to allow students to 'suspend classes without stopping' (Xie et al., 2016) ". That is, the student's learning environment has changed.

For the course "Photoshop Digital Image Processing", which is a highly practical course, in the traditional teaching process, teachers can monitor students' learning status in real time and teach online. "Teachers can only see whether students are on a small screen. There is no guarantee of the quality of their learning before the video " (Zhang, 2016).

"From domestic and foreign research, it is found that with the further promotion of online teaching, the research content has become one-sided and single, and the research students pay too much attention to the implementation of online teaching and whether the teaching content can be successfully completed (You, & Wu, 2020) ". The current situation of students' online learning ignores whether students' online learning status can achieve good learning results. It can be seen that under the mode of online teaching, it is an urgent problem to study the influencing factors of students' online learning effect.

Therefore , after researching the factors that affect students' online learning effectiveness, corresponding countermeasures can be formulated according to the influencing factors, so as to improve the problems in the online teaching process and improve the students' learning effectiveness.

1.3 Objective of the study

The specific research objectives of this paper will be carried out from the following three aspects:

- a. Understand the current situation of online-learning the course of "Photoshop Digital Image Processing" for vocational college students;
- b. To analyze the main influencing factors of students' online learning of "Photoshop Digital Image Processing" course in higher vocational colleges;
- c. Specific measures are put forward to improve the learning effectiveness of the online course "Photoshop Digital Image Processing" for students in higher vocational colleges.

1.4 Scope of the study

Students, teachers, and teaching methods are essential elements in a course, and the three are interconnected and interact with each other. Teachers can only innovate online teaching pedagogy if they give priority to improving students' online learning effectiveness in the online teaching process. Therefore, this paper focuses on 3 classes of cross-border e-commerce majors in s college with 158 students as the research subjects, and uses experimental method and questionnaire to analyze the main factors of students' learning effectiveness in the online teaching of Photoshop Digital Image Processing, and concludes effective measures to improve online learning effectiveness.

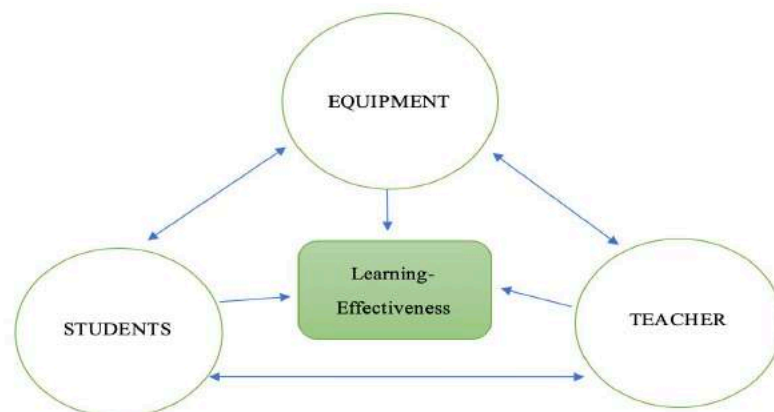


Figure 1: Framework Diagram of Research Scope

1.5 Research Significance

Through the research of this paper, while analyzing the current situation of online learning of Photoshop Digital Image Processing for students in higher education colleges, "we use some proven tests to find out the main factors affecting students' online learning of Photoshop Digital Image Processing for them, and find out effective methods for teachers to improve students' online learning efficiency based on the corresponding specific theoretical data analysis(Zhao, Li, Shu, & Huang, 2019) ". Therefore, from this aspect, the theoretical research of this article has a very great theoretical and practical significance.

During the epidemic, higher education institutions have been teaching online in response to the call of "stopping classes without stopping learning and teaching". "Photoshop digital image processing was also changed from traditional lecture to online teaching, and the place of students' learning was changed from school to home or dormitory (Li, Yu, & Yang, 2021)". Exploring the main factors influencing students' online learning efficiency will not only enhance the efficiency and effectiveness of teachers' online teaching, but also enable students to effectively plan and manage their effective time, and effectively integrate the corresponding learning resources and existing theoretical results, so that it can provide reference and help for students' online learning of Photoshop Digital Image Processing course in higher education institutions in the future.

2. Literature Review

2.1 Empirical Learning

Experience learning can be traced back to the beginning of last century when it entered the school discipline field. In the 1920s and 1930s, many American educational psychologists put forward the subject of experiential learning "J. Dewey, a famous American educator, strongly criticized the traditional classroom teaching model (Fang, 2010)". "Before traditional teaching, people were centered on knowledge, classroom teaching and teachers, which just ignored the most important point - the main body of the teaching process, the importance of students' own social participation, and the knowledge

of" how to do "was the most unforgettable (Li, 1999)" Therefore, "in order to enable students to acquire lifelong unforgettable knowledge and master necessary skills, students should be given something to do in teaching, rather than listening and reading quietly. All teaching methods should be based on meaningful, direct and specific experiences for learners (Cao, 2008)"

Dewey pointed out that traditional education ignored children's experience, and clearly required that education and teaching must pay attention to individual experience. "There is a close and necessary relationship between the actual experience process and education. Experience plus reflection equals learning, which advocates learning by doing" (Chen, 2000). This has laid the foundation for learner centered learning that emphasizes the effectiveness of personal experience, and promoted the curriculum reform based on experience that affects the whole world.

"In 1957, when the Soviet satellite was launched into the sky, the US government and the opposition were shocked, and attributed the reason why the US faced the challenge of the Soviet Union in science and technology to the US education, believing that the quality of American education was undermined by experience based teaching. Therefore, the US launched a criticism of the idea of experiential learning (Cao, 2009)".

First, "from the interior of progressivism education - the criticism of reformism, which believes that experiential learning only emphasizes individuality and ignores social learning, so it needs to be reformed, emphasizing the social transformation purpose of education (Hu, & Zeng. 2022). Second," from the criticism of the new orthodox essentialism, eternalism and new Thomas doctrine (Mu, & Wang. 2020) that rose in the 1930s ". "The new orthodox school insists on some arguments of traditional teaching, and believes that Dewey's emphasis on" learning by doing "has no universal significance. It emphasizes that the primary goal of teaching should be to cultivate students' cognitive ability with teachers as the center, and teaching should be conducted according to the textbooks compiled by the logical system (Le, 2006)". The third is "criticism from

educational schools such as structuralism, new behaviorism and modern humanism based on new philosophy and psychological concepts" (Dan, 2017)

"J.s. Bruner, an American psychologist who is the main representative of structuralism, believes that students' intelligence should be developed by emphasizing the teaching of knowledge in various subjects of basic structure, and the early learning of subject basis and the role of teachers should be emphasized (Xu, 2005)".

"The curriculum reform in the United States is guided by the 'discipline structure' theory represented by Bruner, which has strengthened science education in primary and secondary schools, implemented the 'new three skills', and shifted the teaching goal from 'life adaptation' to 'basic science teaching' (Chang, 2019) ""Empirical learning has gradually become a supplement to classroom teaching and an important way for students to learn life experience, experience social education, and achieve interpersonal, emotional or social values and other educational goals (Lian, Chen, Gao, & Zhu, 2019)".

The curriculum system based on the discipline structure theory is conducive to the systematic teaching of human cultural knowledge by teachers, but it largely ignores the personal experience of learners, "The exclusion of children's personal knowledge and daily life by subject teaching and the replacement of children's overall and comprehensive development of personality by intellectual excellence have led to students' heavy learning burden, seriously dampened students' enthusiasm for learning, led to strong resistance, and caused dissatisfaction of public opinion (Peng, 2016)."

As a result, experiential learning has made a comeback. It criticizes schools for monopolizing education and inhibiting the development of personality. It advocates that the goal of teaching is to develop personality rather than socialization, and that the center of teaching is children, not subjects. "Because of meeting the reflective needs of traditional learning methods, experiential learning has once again become the highlight of the world curriculum and teaching reform since the 1970s, highlighting its unique educational significance and value (Burnard,1989)".

"Based on Dewey's experience tradition, D. Kolb further propositioned it and formally named 'learning in experience' as empirical learning, which requires in-depth and systematic theoretical research (Wang, 2021)."

In view of the possible danger of Dewey's experience splitting knowledge, and in combination with the needs of scientific development in the middle and late 20th century, "experiential learning is a process of transforming experience to produce knowledge", and puts forward an experiential learning ring model based on knowledge: concrete experience, reflective observation, abstract conceptualization, and other aspects of individual life to establish contact and actively experiment (Xia, 2020) "

In a word, "experiential learning theory focuses on learners' gains and feelings, and its core idea is to stimulate learners' experience, introspection, summarization and the importance of practical application. However, self reflection is not wishful thinking, and the development of these four links requires a certain amount of knowledge and information reserves (Li, 2020)"

2.2 Constructivism Theory

Constructivism has a long history. "New Zealand scholar Nola regards Socrates and Platon as the earliest constructivists in the West (David, 2003)".

"Although as early as 1710, the Italian thinker Ba Vico pointed out that just as the truth of God can only be understood after the existence and combination of God himself, the truth of human beings can only be recognized by the construction and shaping of human behavior (Ashmore, 1989)". In his discourse, the word "construction" has appeared, and constructivism has begun to sprout.

However, the real establishment of construction depends on the promotion and development of philosophers, educators and psychologists such as Kant, Dewey, Piaget and Vygotsky). "In the middle and late 20th century, constructivism, with its novelty and impact, triggered a lasting and profound cognitive revolution. By the 1980s and 1990s, it had become a popular academic school in the West and even the world. The influence of

constructivism was almost involved in all aspects (Jon,& Joseph, 2004)". "One of the important areas of constructivist curriculum research is about human subjectivity, which is mainly reflected in the basic views of students and teachers (Mayer, & Moreno, 1999)"

Constructivism prefers to call students learners. They believe that learners do not enter learning situations with empty heads. "In daily life and various forms of learning in the past, learners have formed relevant knowledge and experience, and they have their own views on everything. Even though they have never touched some problems and have no ready experience to learn from, when problems are presented to them, they will still form explanations and put forward their hypotheses based on past experience and their cognitive ability (Han, Zhang , & Wu, 2021)". Therefore, "constructivist researchers believe that they can not ignore the existing knowledge and experience of learners, simply and forcefully implement the " filling "of knowledge to learners from the outside, but should take the learners' original knowledge and experience as the growth point of new knowledge, and guide learners to grow new knowledge and experience from the original knowledge and experience (Li, Yu, & Yang, 2021)". Students and students need to explore some problems together, communicate and question each other in the process of exploration, and understand each other's ideas.

Due to the inevitable difference of experience background, learners' views and understanding of problems are often different. In the community of students, these differences themselves are a valuable phenomenon resource. Although constructivism attaches great importance to individual self-development, it does not deny external guidance, that is, the influence of teachers (Li, 2015) "

Constructivism requires students to face complex real world situations and complete tasks in complex real situations Therefore, "students need to adopt a new learning style and a new cognitive processing strategy to form their own psychological model of being the constructors of knowledge and understanding. Constructivist teaching requires students to take more opportunities to manage their own learning than traditional teaching (Hu,& Wang, 2021)".

"Constructivism advocates that students should use the method of exploration and discovery to construct the meaning of knowledge. In the process of constructing meaning, students are required to actively collect and analyze relevant information, put forward various assumptions about the problems they have learned and try to verify them (Zhao, Li, Shu, & Huang, 2019)". "We should be good at connecting the current learning content with our existing knowledge and experience as much as possible, and seriously consider this connection. Connection and thinking are the key to meaning construction. Its best effect is to combine it with the negotiation process (Gao, 2017)"

"Constructivism holds that knowledge is not imparted by teachers, but acquired by learners through meaning construction with the help of other people (including teachers and learning partners) in a certain context, that is, social and cultural background (Li, 2020)". "Because learning is a process of meaning construction realized through interpersonal cooperation activities with the help of others under a certain situation, that is, social and cultural background (Xia, 2022)" Therefore, the constructivist learning theory believes that "situation", "cooperation", "conversation" and "meaning construction" are the four elements in the learning environment.

2.3 Situational Cognitive Learning

Traditional knowledge view regards knowledge as a package able, self-sufficient entity, which can be transferred from educators to learners. "In traditional school education, learners are separated from the real environment, knowledge and action, and schools focus on abstract, simplified and de contextualized concepts (Brown, Collins, & Duguid , 1989)". The problems solved by students are well structured and can be solved in 3-5 minutes.

In the late 1980s, some researchers began to challenge the view that learners were separated from situations, knowledge and action. "Knowledge is situational. It is influenced by the activities, situations and cultures used by knowledge, and cannot be separated from them (Young, 1993)". "For example, knowledge is just like that it is impossible to give a complete garment to a learner. A learner must participate in the giving of the environment,

spinning and weaving, and then cutting the cloth into a certain style of clothing. Only through real activities, can a learner weave her own clothing of knowledge (Resniek, 1988)".

Contextual cognition began with the study of vocabulary teaching. "In traditional teaching, the hypothesis about the separation of knowledge and practice leads to the low speed, low efficiency and students' failure of vocabulary teaching in the classroom. On the contrary, in the context of daily communication, people can usually learn words at an amazing speed (Chen, 2022)" Words and sentences are not isolated, they always exist in certain communication occasions and speech situations. Therefore, situational cognition emphasizes that knowledge is regarded as a tool and attempts to promote students' cultural adaptation through activities and social interaction in real practice. This is the original source of situational cognition and situational learning (Shang, 2020) "

From the mid-1980s to the early 1990s, it can be seen as the initial formation stage of situational cognitive theory. "In 1987, Resnick of the United States said in the inaugural speech of the American Association for Educational Research that the first difference between the daily life situation and the school situation is that the school situation has a certain purpose, plan and significance, and it mainly emphasizes the individual work of learners; the second main difference is that compared with the" intellectual work "in the school situation, people pay more attention to the acquisition of knowledge and skills in the school situation, In daily life, people prefer to use tools to solve problems; Third, abstract reasoning and the inevitability of learning are often emphasized in school situations; In daily life, situational reasoning is often used to emphasize the contingency of learning. Therefore, she believes that in school learning is individualized and coherent, while out of school learning has the characteristics and advantages of cooperation, contextualization and concreteness (You, & Wu, 2020) "

The development and improvement stage of situational cognition theory system has been since 1993. "With the development of modern information technology with multimedia computer and network technology as the core, and with the deepening of the

theoretical research of constructivism, the presentation of the research results of human advanced cognitive mechanism in brain science (Zhang, 2020)" The understanding of the essence of human learning has been deepened in the academic circle, and the exploration of theoretical research and practical model based on Situated Cognition and Learning has gradually become the focus of researchers.

"From March 1993, Educational Technology, an authoritative American magazine, opened a column to discuss situational cognition and learning, which lasted until October 1994 (Li, Yu, & Yang, 2021)". In 1996, Hillary Mclellan published these papers as a collection under the title of Situated Learning Perspectives. "This book can be seen as a phased achievement of the theoretical research on situational cognition. The authors present the theoretical and practical research on situational cognition and learning to the readers from different levels, making the theory of situational cognition further developed in the original framework. The breakthrough of the research is mainly manifested in situational learning and computer education, situational learning and classroom teaching, evaluation of situational learning, and some case studies and development (Mclellan, 1996)".

In a word, "situated cognition is a hot spot in the field of contemporary western learning theory, and an important research orientation after the" stimulus response "learning theory of behaviorism learning theory and the" information processing "learning theory of cognitive psychology (Chen, 2022)". "In the late 1980s, from the perspective of educational psychology, situational cognition, as an important part of cognitive learning theory, has become an important learning theory that can provide meaningful learning and promote the transformation of knowledge into real life situations (Shen, 2020)".

2.4 Informal Learning

The term "Informal Learning" originated from the "Information Education" conducted by UNESCO in the late 1940s. "Malcolm S. Knowles, the father of American adult education, published Informal Education for Adults - A Guide for Managers, Leaders

and Teachers in 1950, which is considered the first book written in the name of informal education (Daniel, 2000)".

In the 1980s, many scholars carried out relevant research, such as "American adult education experts Victoria J. Marshick and Karen E. Watkins, Mary Callahan, Carter, Menard and Cervero (Victoria, & Karen, 1990)". "The research on informal learning mainly includes the following aspects: the research on the basic connotation, value and other theoretical forms of informal learning, the research on the application of informal learning, mainly the research on informal learning in the workplace and in the network environment, especially the research on informal learning in the Web 2.0 environment (Lohman & Margaret, 2000)"

"The characteristics of informal learning can be summarized as follows: experiential learning, highly situational, loosely structured, mainly controlled by learners, may be purposeful or aimless learning (Xu, 2020)"

The term "informal learning" was first proposed by Malcolm Knowles in his research on informal adult education in 1950. Many scholars also redefine informal learning. "Gerber believes that learning in the system outside the classroom is informal learning. Informal learning can be defined as all activities that individuals engage in when they are not in the formal classroom or without teachers. Informal learning can also include activities outside the curriculum initiated by schools (Pozgaj, 2008)". "Marcia L. Connor, an American scholar, believes that informal learning describes the lifelong process of individuals to cultivate attitudes, harvest values, learn skills, and acquire knowledge. Its sources of learning may be daily experiences, educational influences, resources in his or her environment, or family or neighbors, work or entertainment, or even the market, library, or mass media (Schulz, & Stamov, 2010)"

In short, "The informal learning of college students refers to the learning activities that are self initiated, self regulated, and self responsible by college students according to their own needs, in addition to classroom learning, and pass on and infiltrate knowledge through non teaching social exchanges. The informal learning of college students can be conscious

or unconscious. College students can read books, collect materials online, read newspapers and magazines, listen to or watch You can learn by watching media programs, visiting or observing, or by interacting with others, such as communicating with classmates, participating in learning activities organized by informal groups, and participating in learning activities in virtual communities (Ma, 2012). "

2.5 Online-learning

"Baidu Encyclopedia's positioning of online learning is: E-learning, which refers to learning in an electronic environment composed of communication technology, microcomputer technology, computer technology, artificial intelligence, network technology and multimedia technology t learning (Li, 2015). "

Learning coach Xiao defines E-Learning as a method of content dissemination and rapid learning through the application of information technology and Internet technology. "The 'E' in E-Learning stands for electronic learning, efficient learning, exploratory learning, experiential learning, extended learning, extended learning, easy-to-use learning, and enhanced learning (Lian, Chen, Gao, & Zhu. 2019). "

"Scholar Wei once defined online learning as a way of using mobile phones, computers and other wireless networks or the Internet to independently carry out online learning in online virtual learning classrooms (Li, 2020). "Online learning is based on the willingness to actively acquire knowledge, the learner is the main body, the instructor is the leader, and the teacher-student and student-student interaction on the teaching platform is the main feature. form the main content.

"Online learning as the behavior of college students and other learners using mobile phones, computers and other electronic devices to independently carry out distance network learning in the learning environment created by modern technology, with online interaction mechanism and rich learning resources (Li, 2020). "

"online learning refers to the way that learners carry out online learning behaviors driven by specific learning goals. Learning goals can be formulated by others such as

schools or teachers, or they can be formulated independently. They are a collection of various explicit or implicit behaviors manifested in the learning process (Peng, 2016). "

At the beginning, online learning mainly refers to the learning method of self-teaching in the electronic environment such as the Internet or wireless network, using electronic devices such as mobile phones and computers as the carrier defines. "At present, online learning is not only a new collaborative learning method, but also provides a place for learners to interact online. It is a key teaching method for learners to construct knowledge and improve teaching effects (Xia, 2022) ".

To sum up, this study defines online learning as a process in which learners, in order to master a certain technical skill, use mobile phones, computers and other electronic devices to enter the teaching platform by themselves within a fixed teaching time period, and complete the learning tasks independently according to the teacher's curriculum arrangement. learning method.

2.6 Learning effectiveness

"American curriculum theorist Eisner first defined student learning effectiveness: the result of students participating in some form of learning intentionally or unintentionally (Xu, 2020) ". The Joint Committee on Standards for Educational Evaluation, an authoritative official organization, defines "student learning effectiveness" as the expected value of the results obtained by students after completing their studies, that is, "after completing theoretical learning and skill training, students can understand what, what to do (Xia, 2020) ". Different scholars have explained the definition of learning effectiveness from different perspectives.

"Learning effectiveness is the ratio of the comprehensive result of learning behavior to the learning cost paid to obtain this result, that is, the comprehensive learning result of unit learning cost (Zhang, 2016) ". These scholars expounded the relationship between learning effectiveness and learning outcomes, and believed that learning effectiveness is a quantitative indicator.

Some scholars define students' learning effectiveness from the perspective of evaluation. "Learning effectiveness as the changes in knowledge, skills and attitudes of learners after they receive education (Chen, 2022) ".

"Learning effectiveness is different from simple academic performance and learning efficiency (Xie et al., 2016) ". If we say that learning efficiency emphasizes the role of unit time, it is the ratio of learning effort and learning, and explore how to use less time and energy. "To acquire more and higher-quality knowledge and abilities, then the learning effect refers to the effect that has a far-reaching impact on the learner after the learning activity, and is a comprehensive consideration of the learner's knowledge, skills and quality modality (Zhang, 2012) ".

To sum up, this research defines the learning effectiveness of the online learning of "Photoshop Digital Image Processing" for vocational college students as: after vocational college students use modern electronic equipment to study in a specific time period, they will continue to study in their majors. Knowledge, technical skills, and emotional attitudes have different degrees of change from those before learning, which is a comprehensive consideration, not a single standard.

2.7 Past research

Foreign scholars' research on learning effectiveness started earlier, and the source of student learning effectiveness evaluation can be traced back to the evaluation movement in the 1970s. "In the 1980s, the American Higher Education Association pointed out that the evaluation of learning effectiveness is an effective evaluation procedure for the quality of personnel training, which fully plays the role of improving teaching and promoting student learning (Li, Yu, & Yang, 2021) ".

"The dimension division of learning effectiveness evaluation, foreign scholar Frazer proposed that the standard to measure the quality of college education, talent training, and students' learning effectiveness is the degree of improvement of students' cognition, skills, and attitudes (Hu, & Zeng, 2022) ". The American Joint Committee on Educational

Evaluation Standards defines learning effectiveness, and believes that knowledge and understanding, practical skills, attitudes and values are specific manifestations of learning effectiveness.

Fulks believes that students' learning outcomes should include knowledge (cognitive), skills (behavioral), and attitudes (emotional). "The above aspects can prove that students have gained in the process of course learning and practical activities through learning (Han, Zhang, & Wu, 2021) ".

"Foreign scholars once pointed out that the effectiveness of distance teaching based on two-way interactive communication is only effective when it is measured by learning achievement, teacher attitude, investment and return (Cao et al.,2009) ". In 2001, The American Federation of Teachers, by exploring the research on the effectiveness of distance education in the past ten years, came to the following conclusions: "In recent years, there is a lot of literature on distance education, but only a small part of the research is true, original and committed (Shang, 2020) ". To reveal and explain the phenomenon of distance learning, in this part of the research, the evaluation of teaching effectiveness includes the following three aspects: " first, students' academic performance, including their grades and test scores; second, students' attitudes towards learning through online education; third It is the satisfaction level of students with online education(Wang,2021) ".

"Many foreign countries adopt the method of empirical research to analyze the influencing factors of online learning effect. For example, the basic structure of students' participation in online learning based on the two-factor exploratory structural equation modeling, and provided a reference for exploring the influencing factors of online learning (Wang, 2021) "; By setting experiments, and studied the degree of attention and correlation. "Confidence, Satisfaction, and Volition Model's Incentive Strategies for Online Learners' Academic Performance, Motivation, Volition, and Course Interest (Mu, & Wang, 2019) ".

Through research that to improve the effectiveness of online learning systems, "it is necessary to improve the usability of the online system, increase the social experience of users of the online system, and improve the self-learning ability of users (Qu, Wang, Chen,

& Zhu , 2018) ". "Based on structural equation model concluded that knowledge construction, teacher-student interaction, and information processing have a direct and positive impact on college students' online learning outcomes (Shen, 2020) ". "The characteristics of online courses, online teaching interaction, learner characteristics and online learning platforms as the key factors affecting the effectiveness of online learning (Wang, 2017) ".

Research based on domestic literature is mainly divided into empirical research and non-empirical research. For example, " Solar selected 6 dimensions of students' personal factors, network environment and equipment, classroom teaching organization, teacher participation, teaching resources, and learning pressure to conduct an empirical analysis on the influencing factors of online teaching effect (Hu & Wang 2021) "; " Solar analyzed the factors affecting the quality of online teaching from the perspective of students from the quality of students' online courses, teaching design, teaching methods, and students' learning feedback (Gao, 2017) ".

To sum up, this study discusses the software and hardware level, the student level and the teacher level as the main influencing factors to explore the effectiveness of students' online learning.

3. Finding and Conclusion

There are mainly two problems in the research, which are as follows:

The first is not to consider the motives of students' online learning because the research is mainly based on the online learning status of higher vocational college students under the background "courses suspend but teaching and learning continue". " For students, such online learning method is a special behavior with a certain particularity in this specific sense. Therefore, the consideration of students' online learning motives is not true or scientific in the research (Zhang, 2020) ". Thus, the research has not taken it into account. However, in fact, learning motives have been always considered an important factor affecting students' online learning results according to theoretical literature.

The second is to fail to list exchanges between students in the research scope. We know that online learning in the true sense fully shows learners' learning autonomy and individual requirements. Therefore, learners should have enough time and energy to exchange and interact with other learners. "However, from the research subjects of the paper, online learning that they conduct has basically not deviated from the original offline learning framework(Hu & Wang 2021) ". It just moves offline courses online actually. Even though this approach breaks through the constraints of space and region and meets the needs of a special period, it has not completely got rid of the constraints on online learning understanding.

4. Recommendation

In the context of the epidemic, in response to the call of the Ministry of Education to "suspend classes without stopping school", to improve the learning effectiveness of the Photoshop digital image processing course for students in vocational colleges and universities online, the author makes the following suggestions:

First of all, Innovate course design and teaching methods. When having online courses, teachers should pay more attention to the innovation of teaching methods and course design where students have no operable training equipment at home, and at the same time should also integrate ideological and political courses into teaching, and reasonably give students certain employment pressure to stimulate students to improve their learning results.

Secondly, A firm students' learning belief and clarify learning objectives. "Under the epidemic, students have online courses home. Their psychology is generally fluctuating and their learning state is relatively lax, etc (Wang, 2017) ". Therefore, original families should attach more attention to students' mental state and constantly actively encourage students to study. Students should stick to the learning belief, clarify learning objectives, plan their college life and realize self-education, self-management, self-service and self-development so as to realize the high quality of online learning results.

Finally, Choose teaching software suitable for teachers. The convenience and intelligence of platform software guarantee the improvement of students' learning results. "Teachers should choose suitable teaching software according to the needs of their teaching conditions (Cao et al.,2009) ". Enterprises should try opening some professional function interfaces or small props on the basis of perfecting the original function keys according to the talent training plan of higher vocational colleges to attract students' attention and improve the efficiency of students' online learning.



REFERENCES

- Ashmore, M.(1989).*The Reflexive Thesis: Writing Sociology Knowledge*. Chicago and London: University of Chicago Press.
- Burnard, P. (1989). *Teaching interpersonal skills: A handbook of experiential learning for health professionals*. London: Chapman & Hall.
- Brown, J. S. , Collins, A. , & Duguid , P. (1989). Situated cognition and the culture of learning. *Educational Researcher*,18(1) ,16-19.
- Cao, J, J. (2008). *Reflection and conception: research on the new curriculum reform of basic education in china*. Changsha: Hunan Normal University.
- Chen, Y, Q.(2000).*On Educational Activities*. Nanjing: Jiangsu Education Publishing Press.
- David, S. (2003). *Curriculum studies*, London: Routledge.
- Daniel, S. (2000) . *The forms of informal learning: towards a conceptualization of the field*. NALL Working Paper (19). 24-29.
- Cao, J. (2009). A study of the Influential Factors on the effectiveness of E-learning. *Journal of Hubei Radio & Television University*, 29(05), 15-16.
- Chen, J. (2022). Application Research used the Cass to Practice Method in Photoshop Course. *Technology Wind*, 2022(10), 17-19.
- Chang, J. (2019). Research on Factors Influencing the Learning effect of college students. *Chinese and Foreign Entrepreneurs*, 20(34), 133-134.
- Dan, C. (2017). *Research on the Influencing Factors of the flipped Classroom Learning Satisfaction in BYOD Environment* (Master’s thesis). Ningbo University, Ningbo.
- Fang,H.(2010). On Reflection and Construction of Experiential Learning. *Journal of Xinan University*,30(08)23-38.
- Gao, J. (2017). *Analyzing and Modeling of Learners’ Learning Behavior in SPOC Environment* (Master’s thesis). Central China—Normal University, Beijing.

- Han, L.L., Zhang, J.Y., & Wu, S.Y. (2021). Study on the Online Learning Daptability of College Students from the Perspective of COVID-19: Taking the Universities in Tianjin as an Example. *Journal of Suzhou Education Institute*, 2021(24), 24-30.
- Hu, J.H., & Zeng. L. T. (2022). Investigation and Research on the Online Learning Effects of College Students. *Office Informatization*, 465(11), 26-29.
- Hu, X.Y., & Wang, Q. (2021). Research on Online Teaching Mode of Photoshop Courses in Higher Vocational Colleges. *China Modern Educational Equipment*, 2021(359), 146-149.
- Jon, W., & Joseph, B. (2004). *Curriculum development*, Beijing: Foreign Language Teaching and Research Press.
- Lohman & Margaret. (2000). *Environmental Inhibitors To informal Learning in the Workplace: A Case Study of Public School Teachers*, *Adult Education Quarterly*,1, 10-18
- Li, B, D. (1999). *Teaching Theory: Principles, Strategies and Research of Classroom Teaching*. Shanghai: East China Normal University Press.
- Li, B.M., Yu, Q., & Yang, F.L. (2021). The Impact of Blended Instruction on Students' Learning Performance: A Meta-analysis Based on 106 Empirical Studies at Home and Abroad. *Open Education Research*, 2022(28), 75-84.
- Li, G.F. (2015). *Reflection and Reconstruction of College Class Teaching Mode under the Background of MOOCs* (Master's thesis). Shandong Normal University, Jinan.
- Lian, L.W., Chen, Y. Y., Gao, X.Y., & Zhu. L. L. (2019). Analysis and Quality Improvement Research on Online Learning Mode of Higher Vocational Students — Taking Jiangsu Maritime Vocational and Technical College as an example. *Quality Management*, 2019(18), 19-21.
- Li, M. X. (2020). Exploration and Research on Online Teaching Based on COVID-19. *Journal of Liaoning Higher Vocational*, 22(08),11-16.

- Li, M. (2020). *A Study on the Influence of Learning Behavior Patterns on Learning Effectiveness in MOOCs* (Master's thesis). Central China Normal University, Wuhan.
- Le, Y,L.(2006). *Reflective teaching*. Chendu: Sichuan Education Press.
- Ma, L,J.(2012) *A survey of college students' informal learning* (Master's thesis).Yangzhou University, Jiangsu.
- Mayer, R. E, & Moreno, R. (1999). *Cognitive principles of multimedia learning: the role of modality and contiguity*. Educational Psychology Review, 2,358—368.
- Mclellan, H. (1996). *Evaluation in a situated learning environment*. In H. Mcllellan , (Ed.), *Situated Learning Perspectives, Englewood Cliffs*, English: Educational Technology Publications.
- Mu, S., & Wang, Y. N. (2020). Turning Crisis to Opportunity: How to Change Emergent Online Teaching into Systematic and Effective Online Teaching. MODERN DISTANCE EDUCATION RESEARCH, 32(03), 22-28.
- Peng, L. (2016). *Research on Resources Development and Teaching Practice Based on Cloud Learning Platform in Blended Learning* (Master's thesis). Central China Normal University, Wuhan.
- Pozgaj, Z.(2008). *International Journal of Emerging Technologies in Learning*. Informal Learning in Lifelong Education, 18(03),50—53.
- Qu, C. M., Wang, F. S., Cheng, Y., & Zhu, S. D. (2018). Analysis and Improvement of Learning Effect of Online Learning System. Journal of Chongqing Technology and Business University (Natural Science Edition), 35(03), 87-93.
- Resniek, L.(1988). Learning in school and out. *Educational Research*,16(9),75-89.
- Schulz, M., & Stamov, R.(2010). *Informal workplace learning: An exploration of age differences in learning competence*. Learning& Instruction,10 (20):383-399.
- Shen, W.G. (2020). Research on the influencing factors of college students online learning effect and satisfaction: Empirical Analysis based on Structural Equation Model. Research on Educational Development, 15 (11), 1-8.

- Shang, Y.J. (2020). *Research on the satisfaction of Online Learning For college students Take S university for example* (Master's thesis). Capital University, Beijing.
- Vietoria, M., & Karen, W. (1990). *Informal and Incidental Learning in the WorkPlace*. NewYork : Rotledge, 27(09),25—34.
- Wang, H.G. (2021). *Research on the Effects of M-learning on College Students' Learning Achievements* (Master's thesis). Nanjing University of Posts and Telecommunications, Nanjing.
- Wang, S.L. (2017). *Research on the Effects of Blended Learning on College Students, learning motivation and achievements*(Master's thesis). Central China Normal University, Wuhan.
- Xie, L.R. (2016). *Research on college students, study effect and attitudes under the influence of peer assessment which based on STAKRC* (Master's thesis). Central China Normal University, Wuhan.
- Xu, M.D. (2020). *Research on Intervention Strategies to Improve Learning Effectiveness in Blend-Learning* (Master's thesis). Zhejiang Normal University, Zhejiang.
- Xia, X. N. (2020). *Research on the Influence of Learning Style on Learning Results in Blended Teaching—Taking computer students in secondary vocational schools as an example* (Master's thesis). Zhejiang University of Technology. Zhejiang.
- Xu, X, F. (2005). *Research on Inquiry Teaching*. Guilin: Guangxi Normal University Press.
- Xia, X.Y. (2022). Analysis and Countermeasure Research of Online Learning Outcomes—Taking a Higher Vocational College in Guangzhou as an Example. *Journal of Sichuan Vocational and Technical College*, 2020(30), 138-142.
- Yang, Y. (2017). *The Building of the Relationship Between the Cloud Classroom Teaching and the Offline Classroom Teaching* (Master's thesis). Gannan Normal University, Ganzhou.

- You, H. N., & Wu, D. P. (2020). The Survey of the Basic Situation of College Students' Online Learning and Mobile App Use during the Epidemic period. *Science & Technology Vision*, 28 (02), 68-72.
- Young, M. F. (1993). Instruction design for learning. *Educational Technology research and Development*, 41(1),23-44.
- Zhao, C. L., Li, M., Shu, F. F., & Huang, Y. (2019). Research on Models of Participation in Online Learning Resources and Learning Effectiveness. *Modern Distance Education*,184 (04), 20-27.
- Zhang, C. (2012). *Design of online learning activities Based on the effectiveness of teaching theory ——Practice of “the modern distance education course” Online Learning Activities* (Master’s thesis). Northwest Normal University, Lanzhou.
- Zhang, F. (2020). *Research on the Application of Online Teaching on the Platforms of "Ding Talk", "Super Star" and "QQ" -- A Case Study of the Major of Teaching Chinese as a Foreign Language in Hebei Normal University* (Master’s thesis). Hebei Normal University, Shijiazhuang.
- Zhao, Q.Q. (2016). *Project teaching method in the secondary vocational school image processing application research courses ——taking "Photoshop" course as an example* (Master’s thesis). Northwest Normal University, Lanzhou.