

FACTORS AFFECTING THE EFFECTIVENESS OF LEARNING AND TEACHING MANAGEMENT ON THE COVID-19 EPIDEMIC SITUATION IN HECHUAN COLLEGE, CHINA

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ABSTRACT

The objectives of this research are as follows: 1) to study the impact of various factors, including the level of instruction, students, lesson content, networking, and information technology, on the effectiveness of teaching and learning management during the COVID-19 pandemic; 2) to study whether the effectiveness of teaching and learning management varies among teachers according to individual factors; and 3) to study the elements that influence the effectiveness of teaching and learning management. The samples used in the research were 302 teachers in Hechuan College, China during the 2020 academic year. The data were evaluated using statistical methods such as frequency, percentage, mean, standard deviation, and multiple regression analysis. The following were the outcomes: 1) The levels of variables such as teacher proficiency, lesson content, and student engagement in learning and teaching management during the COVID-19 outbreak were moderate, whereas the levels of networking and information technology factors were low. Teaching and learning management effectiveness was found to be low, resulting in students having low academic achievement and moderately desirable characteristics. Furthermore, there were no significant differences in teaching and learning management effectiveness based on teachers' gender, age, education, teaching experience, or academic standing. The factors that significantly influenced the effectiveness of teaching and learning management, in order of importance, were lesson contents ($\beta = 0.58$), networking and information technology ($\beta = 0.30$), teachers ($\beta = 0.26$), and students ($\beta = 0.12$).

Keywords: Effectiveness, Learning and Teaching Management, COVID-19 Epidemic Situation

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INTRODUCTION

The role of human resources is crucial for the advancement of a nation. The teaching and learning structure is designed to facilitate human quality development and potential amid the unforeseen alterations that transpire within the educational institution. As a result of the coronavirus disease 2019 (COVID-19) outbreak, academic establishments have been compelled to modify their instructional and learning structures as part of preventative measures. Implement an online teaching method, known as online learning, for educational purposes. This is an instructional model that utilizes electronic media as a means of communication between students and teachers. Learners are granted unrestricted access to abundant information sourced globally, transcending geographical, temporal, and spatial constraints (Zhang Zhiming & Ma Junshan, 2020). However, despite the online teaching method, amid the COVID-19 spread, online teaching is a suitable approach and presents several challenges. The issue of inadequate efficacy in teaching and learning across several domains, as highlighted by Hu Heng (2022), mainly manifests in the realm of academic accomplishment, where pupils consistently demonstrate subpar performance. Due to a lack of focus among pupils. The study identified two main issues: 1) a lack of enthusiasm to learn and 2) undesirable qualities exhibited by pupils in different categories, such as eyesight impairments. Extended screen time discourages pupils from maintaining good health and physical strength. Or the aspect related to society. Students will need more interaction with friends. This provides youngsters with an opportunity to enhance their social skills, etc.

The assessment of the factors contributing to the suboptimal efficacy of online instruction during the COVID-19 pandemic (Cai Lin, 2021) revealed the following to be the primary contributors: 1) Teachers who still lack understanding and proficiency in managing online learning, 2) Factors contributing to students' insufficient knowledge, aptitude, and awareness in online learning 3) Aspects arising from the incomplete coverage of subject matter in lessons about the subjects for which students have registered; and 4) Defects and limitations of network systems and information technology that continue to hinder the fulfillment of students' requirements. Each problem contributes to the ineffectiveness of managing online education in each institution.

Examining the matters previously mentioned constitutes an analysis of the typical operation of an academic establishment. This contrasts with the outbreak of coronavirus disease 2019 (COVID-19), a critical situation that imposes numerous restrictions on teaching and learning, potentially leading to divergent research outcomes. It may vary. Hence, it is beneficial to examine the variables that influence the efficacy of teaching and learning amidst the COVID-19 outbreak among the faculty members at Hechuan College, China, in the 2020 academic year. This research can then be applied to educational institutions, such as those supervised by Hechuan College, China, to enhance the effectiveness of their teaching and learning management systems during crises.

The significant impact of the COVID-19 pandemic on education, particularly the challenges and opportunities associated with the transition to online learning. It calls for a focused examination of factors influencing the efficacy of teaching and learning, with the aim of improving educational management systems during crises. The specific focus on Hechuan College, China, adds a practical and context-specific dimension to the research.

LITERATURE REVIEWS

Criteria for Assessing Teaching and Learning Management, the success of teaching and learning management is often measured by the extent to which defined aims or objectives are achieved. The criteria for assessing an educational institution's effectiveness in teaching and learning include scholastic success, positive qualities desired in students, adaptation to the environment and mastery in resolving complex.

Scholastic Success: Effective teaching and education should empower students to achieve favorable academic outcomes. This includes demonstrating creativity and confidence, contributing to high academic standing and the potential for further education at universities. Issues earning and instruction administration effectiveness the success of teaching and learning management may be measured by the amount to which it achieves the defined aims or objectives (Gibson, 2000). The criterion for the efficacy of an educational institution's teaching and learning can be assessed based on the following four factors (Mott, 1992: 1). Scholastic success. Efficient instruction and education should empower pupils to attain favorable academic outcomes. Demonstrating creativity and self-assurance can contribute to most students in the school achieving high academic standing, as measured by classroom-level educational achievement evaluations. They also consider the fact that many students can attend universities to further their studies. 1) Academic achievement. Effective teaching and education should encourage students to achieve positive academic results. Based on assessments of educational attainment at the classroom level, demonstrating originality and confidence may greatly contribute to the academic success of most college students. They also take into consideration the fact that many pupils can attend universities to enhance their education. 2) Positive qualities desired in students: Efficient teaching methods should promote cultivating desirable qualities in students across all areas of knowledge. It is crucial to prioritize the physical well-being of learners and facilitate their overall development in alignment with their age. It is important to actively encourage the development of moral and ethical ideals in learners' cognitive abilities. Learners should be actively encouraged to participate in critical thinking and logical analysis to improve their intellectual capacities. Further, students should be motivated to apply their knowledge practically to cultivate a satisfying social existence in the community. 3) Adaptation to the environment Enabling effective and efficient education and skill acquisition requires a modern and up-to-date design Keep up with progress. The degree of rigidity should be manageable to exclude any potential for modification. Concurrently, it is necessary to have the capacity to adapt to various changes in the environment. 4) Mastery in resolving complex issues. Enabling effective teaching methods and acquiring knowledge Educators must possess a comprehensive understanding of the various problems that arise during the teaching and learning process. We were able to resolve the problem till it was completed.

During the COVID-19 pandemic, teaching and learning have shifted to an online style. The efficiency of education and learning through the online system may be influenced by several aspects, as outlined (Xia Meng, 2021).

1) Teachers transmit knowledge and facilitate learning opportunities for students. The instructor should fulfill the dual role of imparting knowledge and providing guidance. Assume the roles of a mentor, a trainer, and a facilitator. Teachers must cultivate various abilities to facilitate knowledge transmission and boost their teaching and learning processes. Teachers must possess diverse communication skills across several media types and the ability to flexibly organize and allocate study time to transmit information effectively through online systems. They are communicating the fundamental principles of the primary lesson and modifying criteria for measuring and assessing performance.

2) Learners are those who acquire information and expertise from educators. Proficiency in technology and information use is essential for learners. Develop media literacy skills, which involve effectively seeking and critically analyzing information. Analyze the text methodically by employing discernment to create suitable choices of information. Preparation is necessary for the acquisition of knowledge. This includes taking personal responsibility for self-directed learning. The lesson material is the crucial component that enables online education to accomplish its objectives. The course goals should organize the content goals. The course map is designed to function as a navigation system, facilitating easy access to lecture content and

enhancing students' comprehension. The lesson material should include clarity, conciseness, and accessibility to ensure students can independently study and comprehend it effectively. Network systems and information technology serve as conduits for the organization of teaching and learning and for obtaining information to be utilized in the learning process. Information technology is employed through the utilization of computers and interconnected telecommunications networks. To facilitate the comfortable and rapid exchange of knowledge, it is imperative to ensure that the access point is user-friendly, allowing for continual learning and development.

In summary, the text underscores the multifaceted nature of teaching and learning management, emphasizing the criteria for success and the specific challenges and considerations associated with the shift to online learning during the COVID-19 pandemic. The roles of teachers, proficiency in technology for learners, the quality of lesson material, and the functionality of network systems play pivotal roles in the effectiveness of education in this evolving landscape. Review of research on the adaptability of online learning at home and abroad. In the context of face-to-face classroom learning, a lot of research results have been obtained in terms of the concept of learning adaptability, the assessment of learning adaptability and the related research progress. In contrast, the research results on the adaptability of online learning are not very rich. In terms of the concept of learning adaptability, researchers at home and abroad have different opinions. In terms of assessment tools, there is no unified authoritative tool for assessing the adaptability of online learning. Therefore, the study of learners' adaptability in online learning environment is worthy of further study. It is necessary to grasp the overall characteristics and development characteristics of learners' adaptability development in online learning environment from the perspective of online learning adaptability, and conduct further research and discussion on its element structure and assessment.

RESEARCH METHODOLOGY

This study employs a quantitative research methodology. The research population was unspecified. The research utilized a sample size of 302 professors from Hechuan College, China, during the 2020 academic year. The sample size was determined by applying Yamane's (1973) formula to calculate the margin of error. The allowed value is 0.05, and the sampling method used is random stratified sampling based on the school's size. Subsequently, proceed to choose instructors from each school size randomly. Using the Simple Random Sampling technique, individuals are selected by drawing lots. The study instrument employed was an internet-based survey comprising three distinct sections: 1) personal variables, 2) characteristics related to the management of teaching and learning, and 3) the efficacy of teaching and learning management. The questionnaire has a correlation index (IOC) exceeding 0.81 for each item and demonstrates a confidence coefficient (Cronbach's alpha coefficient) for the teaching and learning management variables. The variables representing teaching and learning effectiveness were 0.982 and 0.974, respectively. The statistical measures employed for data analysis were frequency, percentage, mean, and standard deviation. One-way ANOVA, Independent Sample t-test, and Multiple Regression Analysis.

RESEARCH RESULTS

Table 1 Factors affecting the effectiveness of teaching and learning in COVID-19 Epidemic Situation in Hechuan College, China

	B	S.E.	β	t	Sig.
Constant	0.79	0.11		4.98	0.000***
Instructor (X1)	0.22	0.09	0.19	3.39	0.001**
Learners (X2)	0.15	0.09	0.17	2.76	0.005**
Lesson Content (X3)	0.58	0.08	0.58	8.62	0.000***
Network systems and information technology (X4)	0.23	0.08	0.29	4.49	0.000***

Sig. < 0.01, *Sig. < 0.001

Table 1 : Variables influencing the efficacy of education and acquisition of knowledge amidst the outbreak of coronavirus illness 2019 (COVID-19). There are four elements, listed in descending order of their influence, as follows: The lesson material has a beta coefficient (β) of 0.58 and a significance level (Sig.) of 0.000. Similarly, network systems and information technology have a β of 0.30 and a Sig. of 0.000. Teachers have a β of 0.26 and a Sig. of 0.001, while students have a β of 0.12 and a Sig. of 0.005. These factors are listed in order of importance. The collective independent factors may account for 47.3 percent of the variability in the efficiency of teaching and learning during the COVID-19 pandemic ($R^2 = 0.403$).

Table 1: highlight the variables influencing the efficacy of education and knowledge acquisition during the COVID-19 pandemic. The descending order of influence, as indicated by beta coefficients (β) and significance levels (Sig.), provides valuable insights into the factors that significantly contribute to the variability in teaching and learning efficiency. This analysis emphasizes the critical role of lesson material, network systems, teachers, and students in the efficacy of education during the COVID-19 pandemic. Addressing these factors strategically can contribute to a more successful and efficient online learning environment. The statistical significance adds a layer of confidence to these findings, indicating that these relationships are not by chance but reflect meaningful influences on the variability in teaching and learning efficiency.

DISCUSSION & CONCLUSION

Currently, humanity is in the epoch of information and intellect. The ongoing repercussions of the new coronavirus outbreak have led to the emergence of "Internet + vocational education" as a prevailing trend in college education and teaching reform. The quality of online learning may be accurately assessed by evaluating college students' adaptation to the online learning environment. Using a questionnaire survey, this study investigates the factors and impacts of college students' ability to adapt to online learning during the pandemic. The study also examines cognitive development theory, social learning theory, and constructionist learning theory and examines the underlying reasons that affect college students' adaptability to online learning. Propose effective techniques to mitigate the negative impact of network learning maladjustment on college students. Based on pertinent studies, the following findings are derived:

Analyze the variables that influence students' capacity to adjust to online learning in the context of an epidemic. This study initially provides a concise overview and analysis of the theoretical foundation, previous research on the factors that influence learning adaptability, and the specific learning traits of college students during the epidemic period. The main focus is on the impact of teacher instruction, online teaching platforms, the quality of course information, and

the learning environment. The study proposes a hypothesis regarding the relationship between these influencing factors. It constructs a model to explain their impact on college students' adaptability to online learning during the pandemic.

To examine the impact of college students' fundamental information on characteristics related to their ability to adapt to learning. This study conducted a comprehensive analysis of college students' learning adaptability. The analysis employed an independent sample T-test and one-way analysis of variance to examine the differences in online learning adaptability among college students based on gender, grade, primary category, online time, online age, and frequency of learning courses during the epidemic period. The findings indicate no substantial disparity in e-learning adaptation across students of varying gender and frequency of e-learning. Notable variations exist in the capacity of college students from different academic levels to adapt to online instruction. College juniors exhibit greater adaptability to online learning compared to college sophomores. There is no discernible disparity in the adaptation to online learning among college students who spend varying durations per day engaged in online activities. Nevertheless, employing the LSD technique for multiple comparisons reveals that students who dedicate more than 6 hours to online activities daily have markedly superior learning adaptability compared to students who allocate 2 to 4 hours per day for online activities. College students of varying online age exhibit notable disparities in their learning adaptability. College students who have been using the internet for more than five years have much greater flexibility than those who have used it for one year or less.

Propose the adaptive intervention technique for enhancing college students' online learning. The questionnaire survey yielded insights into the elements that influence and the functional correlations in college students' adaptation to online learning throughout the epidemic era. An extensive survey was conducted, interviewing students from various majors across many colleges and institutions to identify the underlying factors contributing to students' limited capacity to adjust to the learning environment. Ultimately, drawing on the learning theory, intervention methods are formulated to enhance the adaptability of college students to online learning. These strategies are devised at the individual student, teacher, school, and learning environment levels to advise college students in adapting to online learning.² Experts conducted a suitability study on the elements influencing online learning adaptation among Chongqing College of Mobile Communication Students during the pandemic. The results indicated a high degree of appropriateness and feasibility.

This research has completed the initial research objectives, but with the deepening of the research, some deficiencies have been found. Due to the limitations of time, realistic conditions and personal abilities, further exploration and improvement will be carried out in the future.

The object of empirical research is relatively simple. The questionnaire survey and interviews in this study are only for college students, and no in-depth interviews are conducted with college teachers and parents. Therefore, the causes of college students' manipulative learning and countermeasures are not comprehensive enough.

Lack of empirical research on intervention strategies. Based on the results of questionnaire survey and interview, this paper proposes intervention strategies to improve students' learning adaptability. However, due to the limitations of time and practical conditions, intervention practices are not carried out on the online teaching platform, so as to further test the effectiveness and scientific of intervention strategies.

REFERENCES

- An, Y., Kaplan-Rakowski, R., Yang, J., Conan, J., Kinard, W., & Daugherty, L. (2021). Examining K-12 teachers' feelings, experiences, and perspectives regarding onlineteaching during the early stage of the Covid-19 pandemic. *Educational Technology Research and Development*, 69(5), 2589-2613.

- Banks, T. (2015). Teacher education reform in urban educator preparation programs. *Journal of Education and Learning*, 4(1), 60-71.
- Boonsem, A., & Chaoensupmanee, T. (2020). Determining the factors of teaching effectiveness for physical education. *Int. Educ. Stud.*, 13, 43-50. doi: 10.5539/ies.v13n3p43.
- Clausen, J. M., Bunte, B., & Robertson, E. T. (2020). Professional development to improve communication and reduce the homework gap in grades 7-12 during COVID-19 transition to remote learning. *Journal of Technology and Teacher Education*, 28(2), 443-451.
- Figlio, D. N., Rush, M., & Yin, L. (2010). *Is it live or is it Internet? Experimental estimates of the effects of online instruction on student learning* (NBER Working Paper No. 16089). Cambridge, MA: National Bureau of Economic Research.
- Jaggars, S. S. Beyond. (2012). *flexibility: Why students choose online courses in community college*. American Educational Research Associational Meeting.
- Kyaw, B. M., Posadzki, P., & Paddock, S, et al. (2019). Effectiveness of digital education on communication skills among medical students: systematic review and meta-analysis by the digital health education collaboration. *J Med Internet Res.*, 21(8), e12967.
- Moftakhar, L., & Seif, M. (2020). The exponentially increasing rate of patients infected with COVID-19 in Iran. *Arch Iran Med.*, 23(4), 235-238. doi: 10.34172/aim.2020.03.
- Noguera, P., & Akom, A. (2000, June 19). *The significance of race in the racial gap in academic achievement*. Motion Magazine. Retrieved from <http://www.inmotionmagazine.com/pnaa.html>.
- Soong, M., Chan, H. C., & Chua, B. C., et al. (2001). Critical success factors for on-line course resources. *Computers & Education*, 1(2), 101-120.
- Volery, T., & Lord, D. (2000). *Critical success factors in online education*. The International Journal of Educational Management.
- Xiaofang, M. A. (2023). Effectiveness and influencing factors of online teaching among primary and secondary school teachers in China during the COVID-19: in depth interviews. *Educational Psychology*, 14.
- Zhang, T. (2021). Chinese parents' perception of emergency remote K-12 teaching/learning in China during the COVID-19 pandemic. *Asian Journal of Distance Education*, 16(1), 16-30.

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