STRATEGIES FOR MOBILIZING COLLEGE STUDENTS' LEARNING MOTIVATION UNDER MODERN ONLINE EDUCATION: A CASE FROM CHINA

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ABSTRACT

Based on the current situation of low motivation and poor teaching effectiveness of college students in modern online education environment, a multi-faceted and multi-dimensional analysis of its causes was conducted. The results of the analysis show that students' low motivation is mainly influenced by the low importance of family, the lack of strict management by teachers and the low interest of online education. In view of the above reasons, this paper provides mobilization strategies for improving college students' motivation through four directions: student awareness cultivation, teaching mechanism improvement, teaching mode innovation and driven teaching activities, and further promotes the development of college students' continuous learning motivation under online education.

KEYWORDS: Online education, University education; Learning motivation, Mobilization strategies

1. INTRODUCTION

With the advent of the Internet era and the rapid changes in information technology, the traditional board-book teaching can no longer meet the learning needs of students in the new era and the requirements of today's educational reform (Xie et al., 2001). In March 2015, China Premier Li Keqiang put forward the "Internet+ Action Plan" for the first time in the "Government Work Report", heralding the deep integration of the Internet and traditional industries deep integration with traditional industries. The rich and numerous types of Internet resources have given a strong impetus to the traditional teaching field, creating a teaching model that combines education and technology-online education (Sun et al., 2022). In recent years, the recurring increase of the new epidemic and the frequent postponement of the opening of schools nationwide have made online education an important guarantee for the great decision of "Stopping classes without end teaching and learning"

(Zhang et al., 2022). At the same time, the popularity of smart phones, tablets and other electronic devices has provided great technical support for online education (McConnell, 2018). It is foreseeable that flexible, convenient and inexpensive online education is the inevitable trend of future education development and the inevitable choice of future development (Fischer, 2014).

Compared with the traditional education model, online education has many radical changes (Parsons, 2020). Analyzing the characteristics of online education and exploring targeted and personalized teaching methods are the key strategies to improve the quality of online education (Elshami et al., 2021). Compared with the traditional education model, online education has the following main features:

The first is the separation of time and space. Online education, with Internet and multimedia devices as the main carriers, breaks through the limitations of learning space and time (Zheng, 2022). Online education provides teachers and students with off-site teaching, and anyone can independently choose to receive the educational information they need and obtain the teaching content they need at any time (Yao et al., 2021). In the learning process, students can give full play to their autonomy and initiative, and independently determine the content, time and place of learning (Whittle and Bickerdike, 2015).

The second is the separation of teachers and students. The most essential feature of online education is that the teacher and the student are relatively separated during the whole learning period (Jiang et al., 2021). In this case, students cannot receive direct and continuous teacher guidance as in the traditional education model, but they can independently choose to receive education in fragmented time (Hernandez-Lara and Serradell-Lopez, 2018).

The third is multimedia interaction. Advanced communication technology is an important guarantee for the realization of online education. Thanks to this, a full range of dynamic real-time or non-real-time communication is possible between the teaching content and students, students and teachers, and students and students in the Internet (Liu et al., 2003). Through the multimedia interaction of information technology, the two-way communication between teachers and students is strengthened, which not only meets the requirements of students' personalized learning, but also promotes collaborative learning among students (Lu et al., 2022; Yu et al., 2022).

2. Analysis of problems and causes
2.1 Analysis of the current situation of college students' study motivation and its problems
As a novelty combining traditional education with advanced multimedia, online education should be enjoyed by the majority of students and their motivation to learn should be higher. In addition, online education, which breaks through the boundaries of time and space, is more convenient for students to use fragments of time for independent and targeted learning. However, from the current situation

of online education, most students are not highly motivated to learn online and there are many problems, which are manifested in the following four aspects (Bao, 2020).

(1) Unclear learning purpose

Learning is a boring and creative process that is difficult to sustain based on mere momentary preference and interest, especially in online education, a mode of education that requires subjective initiative. Only by establishing the right learning values and having a deep understanding of the purpose and importance of learning can we achieve persistent and active learning. As a college student, learning is the primary task and also an important mission given to college students in the new era. However, with the influence of many social factors, such as the inculcation of Netflix values, the theory of uselessness of studying and other ideas, college students' views on learning have changed. As a result, college students do not know enough about the purpose of learning, their learning goals are wandering, not scientific and planning, and lack of motivation to learn, which leads to low motivation to learn.

(2) Learning emotions are not strong

As adults, college students have a certain emotional basis and possess a certain degree of self-judgment about their preferences. Therefore, in the process of learning, college students have certain emotions about the teaching contents, teachers' teaching methods and learning itself in the process of mastering knowledge and understanding the world. Subject to family, social employment and other reasons, most college students' majors are not their own preferences and are not very interested in what they study. This problem is infinitely magnified in the lack of supervision of online education, coupled with the teaching content itself is not interesting, students do not have strong negative learning emotions, resulting in low motivation to learn.

(3) Lack of will to study

The learning process requires not only intelligence and enthusiasm, but also a strong will to constantly overcome the difficulties on the learning path and achieve the learning goals. Compared with primary and secondary school students, college students are very autonomous in their learning, and it is difficult to achieve impressive academic achievements without a strong will to learn. In online education, the Internet provides a lot of educational resources as well as interesting entertainment programs, which greatly affects college students' learning, and some students with weak will to learn cannot achieve their learning goals with a sense of purpose. Weak will to learn and easy to be influenced by bad environment are also important reasons for college students' low motivation to learn.

(4) Irregular learning behavior

In the learning activities, the standardized learning behavior is the basic guideline and proper performance of the college students. The standardized learning behavior is also the guarantee of good learning effect of college students. In online education, the most important behavioral failure of

college students is the lack of self-discipline in learning. Due to the lack of face-to-face supervision by teachers, college students let themselves go after opening the teaching contents and indulge in entertainment activities such as making friends, online games and chatting, resulting in the quality of online education being greatly reduced. Such unregulated learning behaviors are endless among college students, which makes it difficult to establish a good learning style and makes college students less motivated to study.

2.2 Analysis of the reasons why college students are not motivated to learn online
During the delayed start of the epidemic, online education played an indelible role in realizing the strategy of "stopping classes without teaching, stopping classes without learning" to meet the educational needs of college students. However, college students generally have poor independent learning ability, weak self-control and other learning inactivity, resulting in little effect of online education. The main reasons why college students are not motivated to learn online are as follows:

(1) Family's own reasons
Families play an important role in the process of students' learning and growth, and have an important influence on college students' motivation. The initial world view, life view and values of college students come from the guidance of their parents. However, parents' lack of attention and care to education leads to college students' aversion to learning, lack of attention to basic knowledge learning in college, and hope to graduate hastily and enter the society, thus resulting in low motivation to study. In addition, parents' toughness in choosing majors can also lead to college students' lack of interest in their majors and low motivation to study.

(2) Lax teacher management
In traditional education, teachers and students are in the same time and space, and teaching activities are carried out face-to-face by teachers and students, which makes it easy for teachers to manage teaching (Scherer et al., 2023). In contrast, in online education, teachers and students are in different time and space, and it is difficult to monitor students' learning. Most teachers lack experience in online teaching, which also affects teaching management to a certain extent. The lack of real-time interaction in online education makes teachers unable to understand students' learning situation at the first time, and students' tension will become weaker and weaker, which leads to low motivation to learn.

(3) Online education video is not very interesting
Online education mainly carries out teaching activities through the content of online videos. Although the teaching resources on the Internet are abundant, the quality varies, and when students encounter online videos of poor quality, the quality of learning and learning gains will be greatly reduced, and the learning autonomy will gradually disappear. The content of online videos are all based on knowledge explanation, which is not interesting in itself. Students' motivation in the learning process decreases rapidly with the growth of time, resulting in low motivation.

3. RESULTS AND DISCUSSION

3.1 Cultivate a sense of responsibility and set the right ambition

College students are an important reserve force for building socialism and bear an important mission to achieve the great rejuvenation of the Chinese nation, and the education and training of college students is the core of national education. In response to the problem of low learning motivation in online education of college students, parents, teachers and schools must jointly adopt a series of practical teaching strategies as shown in Figure 1, so that college students can adapt to online education as soon as possible, improve their independent learning ability and achieve their learning goals (Jiang et al., 2023).
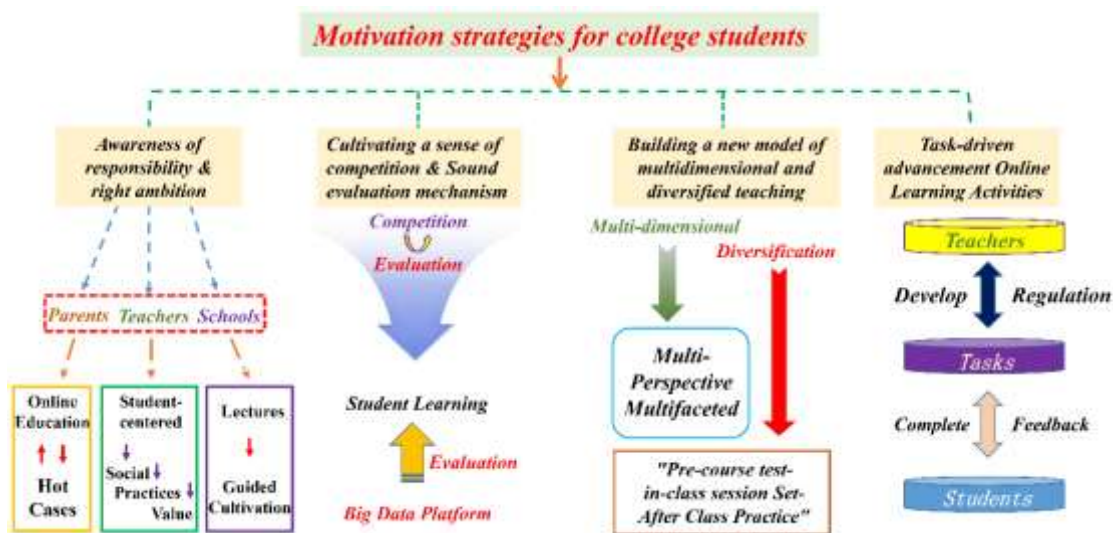

Fig. 1. Flow chart of motivation strategy for college students

Subjective initiative is the first driving force to enhance students' learning motivation, and multi-level guidance and regulation is the core of establishing students' good learning motivation. From the family level, parents are the first teachers of college students, and the influence of family environment on college students is indelible. Parents should take online education as an opportunity to supervise and cultivate college students' sense of responsibility, enhance their sense of social responsibility and establish correct aspirations by using hot positive examples as guidance. From the teacher level, teachers, as the "guide" of students, should practice the educational concept of "student as the main body", emphasizing the full play of students' subjective initiative. Through objective mental regulation, we promote the development of students' subjective mindset. Based on the construction of psychological elements, we analyze the basic factors affecting students' subjective motivation, highlight the influence of social, practical and value-based factors on students' subjective cognition, realize the macro regulation of students' subjective motivation, and provide favorable prerequisites for the formation of students' social development psychology. From the school level, the style and characteristics of the university itself will form a relatively stable environment that affects the learning

culture of students (Aroonsrimarakot et al., 2023). Schools should adhere to an inclusive attitude, rely on new forms of online education, carry out various in-depth lectures and ideological and political classroom learning, implement new ideas and motivate students to form a good sense of social responsibility. Establish an oriented training model to guide students to set up correct and achievable ideal goals, and motivate their inner learning motivation through the sense of accomplishment gained after achieving each small goal.

3.2 Cultivate a sense of competition and improve the evaluation mechanism

The existence of competition is an important spiritual pillar for the development of students' enterprising mentality. In teaching activities, teachers can make full use of the Internet technology to divide the class into several groups and establish a "1+N" grouping model as shown in Figure 2. Under this grouping model, one student with good grades will bring N students with moderate or weak grades to form a learning group, establish a competition mechanism, and use online learning group evaluation, scoring system assessment and other collaborative learning methods to include students' specific tasks and contributions to the group in the calculation of their individual performance honor. At the same time, in developing students' competitive consciousness, a sound and complete evaluation mechanism is needed. As an objective driving force to promote students' learning motivation, the evaluation mechanism is an important guarantee to improve students' learning motivation, and the fairness and accuracy of the online teaching evaluation mechanism is the key to influence the strength of students' competitive consciousness. Therefore, schools and teachers should make full use of the big data platform to analyze, sort out and evaluate students' learning situation regularly, grasp students' learning status in real time, remind students to study regularly, and make supplementary improvement for students' weak links.
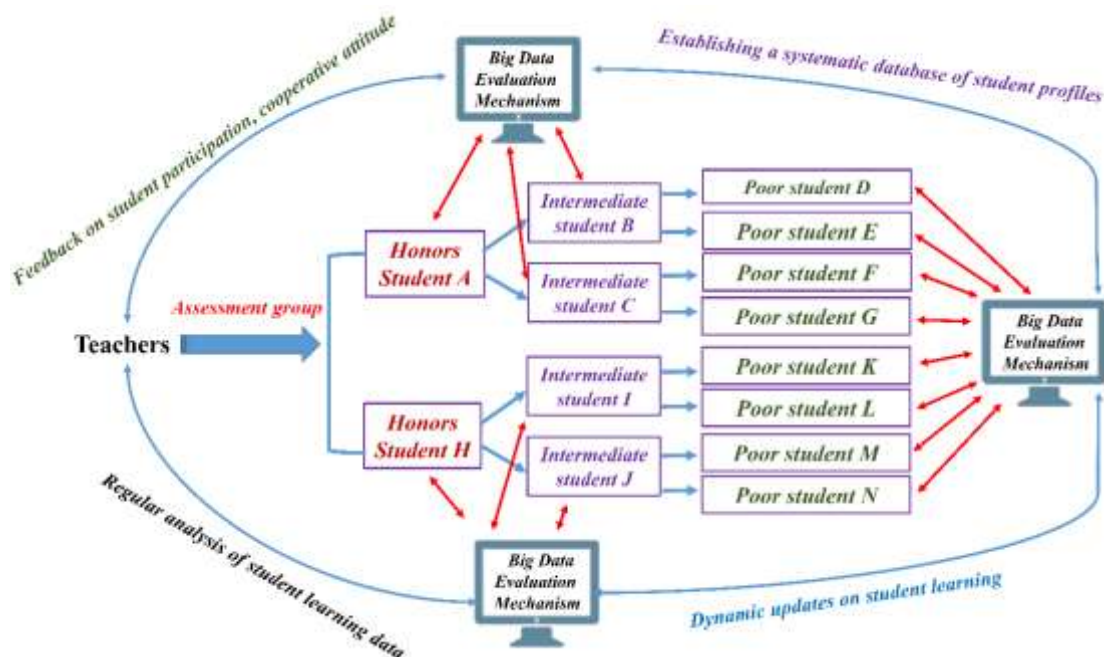
Fig. 2. Case study of the establishment of "1+N" learning model

3.3 Building a new model of multidimensional and diversified teaching

Reasonable teaching structure is the fundamental guarantee to mobilize college students' enthusiasm. With online education as the central platform, we build a new model of multi-dimensional and diversified teaching, give full play to the advantages of online teaching, and promote and guide the formation of a rationalized, in-depth and modularized teaching system (Li and Che, 2022). Multi-dimensional teaching refers to the design and construction of teaching activities from multiple perspectives, levels and aspects to improve students' motivation for online learning. Starting from multiple perspectives, teachers should put themselves in the position of students, think about the inner motivating behaviors and learning concepts that students urgently need, integrate teaching contents into life practices based on teaching content requirements, design personalized teaching programs, and visualize and vividly personalize teaching (Flores et al., 2022). From the level, teachers should carry out hierarchical teaching in response to the differences existing among students, upload the teaching materials needed for online education to the students' platform to facilitate students' review and expansion for their own situation, and lay out the corresponding homework content in a hierarchical manner for different students in the arrangement of after-school homework to realize targeted hierarchical teaching. Diversified teaching is mainly through a variety of teaching methods, forming a diversified form of teaching. We adopt the diversified teaching method of "test before class-set up during class-practice after class" to realize the teaching communication and sharing both synchronously and asynchronously. Before class, teachers and students interact with each other and share their knowledge, learning experience and learning methods; during class, we adopt the method of inspiration and guidance, asking questions for students' consideration and actively guiding them to mobilize their learning enthusiasm; after class, we adopt the method of independent combined with counseling, in which students complete the corresponding exercises independently and teachers answer and counsel students' corresponding problems to further increase students' enthusiasm and participation.

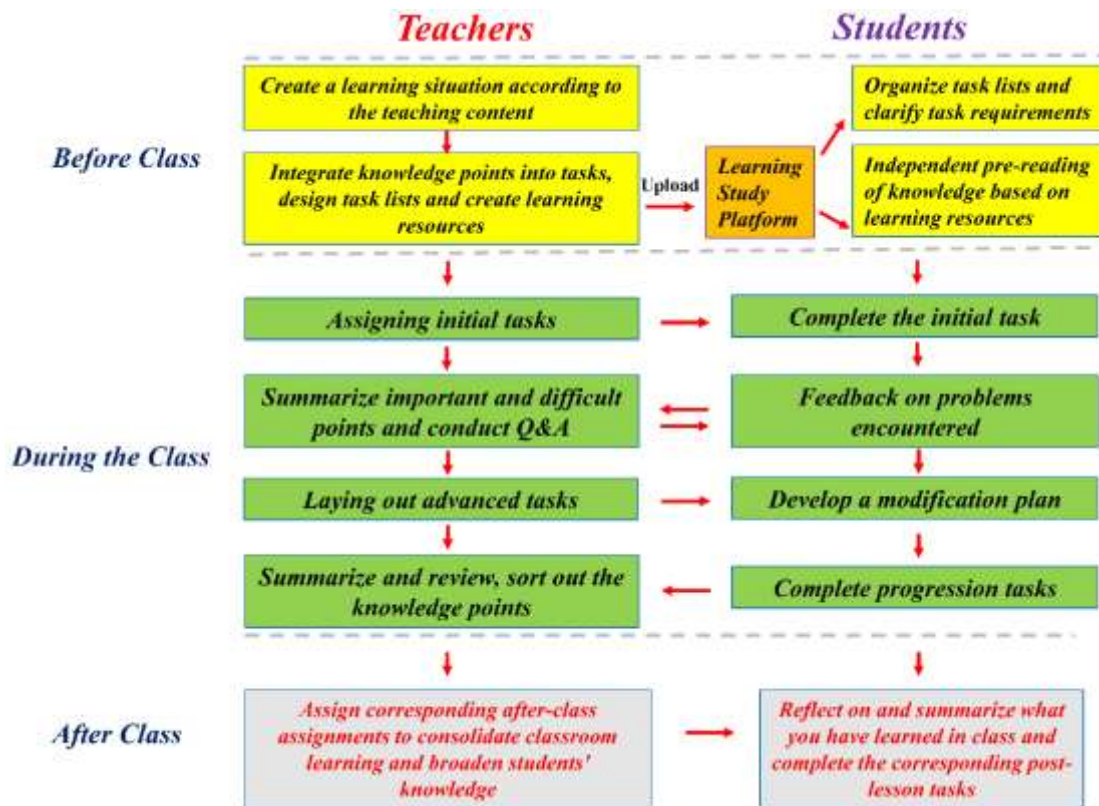### 3.4 Task-driven promotion of online learning activities

Fig. 3. Flow chart of task-driven promotion of online learning activities

The new form of optimized task-driven teaching is a "grasp" to promote the learning motivation of college students. Task-driven does not only mean that the teacher sets the task and the students go to practice to complete the corresponding task, but also integrates the well sorted out knowledge points into the corresponding task, so as to promote the students to complete the learning task and establish a complete knowledge system at the same time, thus maximizing the teaching effectiveness (Selvaraj et al., 2021). As shown in Figure 3, the setting of tasks should be closely integrated with the teaching content, and the tasks should be used as the carrier and the main line of the course, linking the whole teaching process, while the teacher, as the guide and supporter of the teaching process, should grasp the division of tasks as a whole, and make specific division of tasks in combination with the learning content and teaching reality. The difficulty of the tasks should be adjusted accordingly as students' learning progresses. In the task module, the teacher should first create a learning situation, sort out the knowledge points according to the teaching content, integrate the knowledge points into the preliminary tasks, show the corresponding learning tasks, explain the content and requirements of the tasks through demonstrations, summarize and condense the important and difficult points in the process of the tasks, guide the students to carry out independent learning and collaborate in learning groups to complete the corresponding preliminary tasks, and the students should give feedback to the teacher in the process of completing the preliminary tasks. In the process of completing the initial

tasks, students give feedback to the teacher on the problems they encountered, and further complete the advanced tasks according to the answers given by the teacher, and finally the teacher summarizes and evaluates the students according to their completion of the tasks to motivate and promote students' independent participation in the classroom tasks, so as to realize the dynamic regulation of students' motivation in a task-driven way.

4. CONCLUSIONS

The success or failure of online education is determined by the level of motivation of college students, which also affects the implementation of the "Stopping classes without end teaching and learning" policy. In order to improve college students' learning motivation, we will conduct a series of practical teaching and control strategies by analyzing the problems of unclear learning purpose, weak learning emotion, and weak learning will, which are highlighted in the current situation of online education, and by combining key factors from parents, teachers, and schools, so that college students' motivation can be continuously improved, and they can integrate into the online education environment and improve their independent learning ability. In order to achieve the purpose of learning, we will adopt a series of practical teaching and control strategies.

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REFERENCES

Aroonsrimarakot, S., Laiphrakpam, M., Chathiphot, P., Saengsai, P., Prasri, S., 2023. Online learning challenges in Thailand and strategies to overcome the challenges from the students' perspectives. EDUCATION AND INFORMATION TECHNOLOGIES. https://doi.org/10.1007/s10639-022-11530-6

Bao, W., 2020. COVID-19 and online teaching in higher education: A case study of Peking University. HUMAN BEHAVIOR AND EMERGING TECHNOLOGIES. 2(2), 113-115. https://doi.org/10.1002/hbe2.191

Elshami, W., Taha, M.H., Abuzaid, M., Saravanan, C., Al Kawas, S., Abdalla, M.E., 2021. Satisfaction with online learning in the new normal: perspective of students and faculty at medical and health sciences colleges. MEDICAL EDUCATION ONLINE. 26(1). https://doi.org/10.1080/10872981.2021.1920090

Fischer, G., 2014. Beyond hype and underestimation: identifying research challenges for the future of MOOCs. DISTANCE EDUCATION. 35(2), 149-158. https://doi.org/10.1080/01587919.2014.920752

Flores, M.A., Barros, A., Simao, A.M.V., C., 费.P., Flores, P., Fernandes, E., Costa, L., Ferreira,

P.C., 2022. Portuguese higher education students' adaptation to online teaching and learning in times of the COVID-19 pandemic: personal and contextual factors. HIGHER EDUCATION. 83(6), 1389-1408. https://doi.org/10.1007/s10734-021-00748-x

Hernandez-Lara, A.B., Serradell-Lopez, E., 2018. Student interactions in online discussion forums: their perception on learning with business simulation games. BEHAVIOUR & INFORMATION TECHNOLOGY. 37(4), 419-429. https://doi.org/10.1080/0144929X.2018.1441326

Jiang, M.Y.C., Jong, M.S.Y., Lau, W.W.F., Meng, Y.L., Chai, C.S., Chen, M.Y., 2021. Validating the General Extended Technology Acceptance Model for E-Learning: Evidence From an Online English as a Foreign Language Course Amid COVID-19. FRONTIERS IN PSYCHOLOGY. 12. https://doi.org/10.3389/fpsyg.2021.671615

Jiang, X.H., Nam, B.H., Tian, X.Y., Jin, H., 2023. How to Cope With Emergency Remote Teaching for University Academics: The Case of a High-Profile Language University in China. SAGE OPEN. 13(1). https://doi.org/10.1177/21582440231158026

Li, J.L., Che, W.Y., 2022. Challenges and coping strategies of online learning for college students in the context of COVID-19: A survey of Chinese universities. SUSTAINABLE CITIES AND SOCIETY. 83. https://doi.org/10.1016/j.scs.2022.103958

Liu, Y., Lin, F.Z., Wang, X., 2003. Education practice and analysing behaviour of students in a Web-based learning environment: an exploratory study from China. ONLINE INFORMATION REVIEW. 27(2), 110-119. https://doi.org/10.1108/14684520310471725

Lu, G.C., Wang, W.H., Li, P., Wen, Q., Cui, B.T., Zhang, F.M., 2022. Washed preparation of faecal microbiota changes the transplantation related safety, quantitative method and delivery. MICROBIAL BIOTECHNOLOGY. 15(9), 2439-2449. https://doi.org/10.1111/1751-7915.14074

McConnell, D., 2018. E-learning in Chinese higher education: the view from inside. HIGHER EDUCATION. 75(6), 1031-1045. https://doi.org/10.1007/s10734-017-0183-4

Parsons, A.F., 2020. Exploring Everyday Chemistry: The Effectiveness of an Organic Chemistry Massive Open Online Course as an Education and Outreach Tool. J. Chem. Educ., 97(5), 1266-1271. https://doi.org/10.1021/acs.jchemed.9b01151

Scherer, R., Siddiq, F., Howard, S.K., Tondeur, J., 2023. The more experienced, the better prepared? New evidence on the relation between teachers' experience and their readiness for online teaching and learning. COMPUTERS IN HUMAN BEHAVIOR. 139. https://doi.org/10.1016/j.chb.2022.107530

Selvaraj, A., Radhin, V., Nithin, K.A., Benson, N., Mathew, A.J., 2021. Effect of pandemic based online education on teaching and learning system. INTERNATIONAL JOURNAL OF EDUCATIONAL DEVELOPMENT. 85. https://doi.org/10.1016/j.ijedudev.2021.102444

Sun, Z., Xu, Z.H., Yu, Y., Xia, S.L., Tuhlei, B., Man, T.J., Zhou, B., Qin, Y.H., Shang, D., 2022. Effectiveness of an "online plus in-person" hybrid model for an undergraduate molecular biology lab during COVID-19. BIOCHEMISTRY AND MOLECULAR BIOLOGY EDUCATION. https://doi.org/10.1002/bmb.21704

Whittle, S.R., Bickerdike, S.R., 2015. Online Preparation Resources Help First Year Students to Benefit from Practical Classes. JOURNAL OF BIOLOGICAL EDUCATION. 49(2), 139-149.

https://doi.org/10.1080/00219266.2014.914554

Xie, X.Y., Lin, F.Z., Zhang, T., 2001. Comparison between on- and off-campus behaviour and adaptability in online learning: a case from China. BEHAVIOUR & INFORMATION TECHNOLOGY. 20(4), 281-291. https://doi.org/10.1080/01449290110083594

Yao, L.J., Li, K., He, J., Liu, L., 2021. Pathophysiology teaching reform during the COVID-19 pandemic. ADVANCES IN PHYSIOLOGY EDUCATION. 45(4), 779-785. https://doi.org/10.1152/advan.00031.2021

Yu, S., Meng, X.L., Wu, G.G., 2022. APPLYING MULTISCALE SIMULATIONS IN EDUCATION OF CHEMICAL ENGINEERING FOR INTERNATIONAL STUDENTS. International Journal of Education and Social Science Research. 5(3). https://doi.org/10.37500/IJESSR.2022.5320

Zhang, Q., Yang, L., Wang, Y., 2022. Problems and Countermeasures of Ideological and Political Education Communication based on Multimedia Network. MATHEMATICAL PROBLEMS IN ENGINEERING. 2022. https://doi.org/10.1155/2022/5033687

Zheng, Y., 2022. An Analysis of the Innovative Model of English Course Translation Teaching in Foreign Language Listening Teaching Relying on Interactive Digital Media. MATHEMATICAL PROBLEMS IN ENGINEERING. 2022. https://doi.org/10.1155/2022/7737367