Advances in Educational Technology and Psychology (2023)
Clausius Scientific Press, Canada

DOI: 10.23977/aetp.2023.071315
ISSN 2371-9400 Vol. 7 Num. 13

Development Path Exploration of Online Teaching for Primary and Secondary Schools in Underprivileged Areas Post-Pandemic—A Survey and Analysis of 471 Teachers in Rongcheng District, Jieyang City

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Keywords: Online Teaching, Emergency Online Teaching, Teaching Method, Blended Teaching, Teaching Evaluation

Abstract: During the pandemic, online teaching has become the most important instructional method for "classes suspended but learning continues". However, for educationally disadvantaged areas like Jieyang City, conducting online teaching is faced with difficulties such as outdated hardware and software equipment, lack of teaching resources, and insufficient practical experience for teachers and students. In light of this, based on literature review, policy analysis, teacher exchange, and expert guidance, our research team has preliminarily identified sixteen typical problems in online teaching. We have conducted data research, analysis, and attribution, and discussed these issues from three dimensions: the construction and support of the online teaching environment, the participation and interaction of key stakeholders, and the design and implementation of online teaching processes. Finally, we explore the future development direction of online teaching post-pandemic.

1. Research Background

At the beginning of 2020, the sudden outbreak of the pandemic unveiled the era of online teaching in primary and secondary schools in China. In order to fulfill the deployment of the Ministry of Education's "classes suspended but learning continues"[1], online teaching was urgently implemented nationwide. Located in the eastern region of Guangdong Province, Jieyang City is relatively weak in terms of economy, education, and information construction. It faces difficulties in conducting online teaching due to outdated hardware and software equipment, lack of teaching resources, and lack of practical experience for both teachers and students. This study aims to investigate the situation of online teaching among primary and secondary school teachers in Jieyang's Rongcheng District, identify the problems encountered during the teaching process, and provide representative first-hand data to improve the development of online teaching and promote the upgrading of education informationization in China, thus achieving balanced development in education.

2. Research Objectives and Methods

To understand the situation of online teaching among primary and secondary school teachers in Jieyang's Rongcheng District, the research team conducted a survey among 129 primary and secondary schools in the district, involving teachers from various disciplines. The survey was conducted using the online questionnaire platform WJX (https://www.wjx.cn/) by distributing questionnaires through QR codes and links. A total of 514 questionnaires were received, and after careful screening based on criteria such as questionnaire completion time (no less than 120 seconds), score range, and consistency of options, 511 questionnaires were deemed eligible. Further screening was done to exclude respondents who did not conduct online teaching during the pandemic, resulting in a final sample of 471 valid questionnaires, with an effective rate of 91.63%. SPSS software was utilized for frequency analysis, descriptive statistics, and correlation analysis to explore the situation of frontline teachers in coping with the large-scale online teaching during this time.

3. Questionnaire Validation

Additionally, to assess the reliability of the questionnaire data, the research team conducted a reliability analysis. Using SPSS, the team performed a reliability analysis on 16 indicators from a total of 417 questionnaires. The Cronbach's alpha coefficient was used for the test, and the obtained α coefficient was 0.982, far exceeding the reliability threshold of 0.6[2], indicating a high level of consistency among the data. In terms of reliability testing, factor analysis and significance testing were conducted using Bartlett's sphericity test in SPSS to examine the coverage and scientificity of the research indicator system. As shown in Table 1, the KMO value was 0.967, indicating a strong correlation among variables. The significance of Bartlett's sphericity was 0, which was less than 0.05, indicating a distinct difference among some variables. Therefore, the questionnaire exhibits good structural validity in terms of scale design.

Table 1: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.967
Bartlett's Test of Sphericity	Approx. Chi-Square	10841.572
	df	120
	Sig.	.000

4. Problems Analysis

Online education in China emerged in the late 1990s when the internet entered the stage. In the past 30 years, it has gradually diversified from enterprise to school, from recorded lectures to live broadcasts, and from higher education to primary and secondary education. New products have emerged endlessly, laying a solid foundation for the large-scale application and promotion of online teaching. However, online teaching has long been in the stage of application and exploration in adult continuing education. The rapid and comprehensive promotion of online teaching nationwide disrupted the normal pace of development, leading to inevitable problems in various aspects such as schools, platforms, teachers, students, parents, and resources.

As shown in Table 2, based on a literature review, policy analysis, teacher communication, and expert guidance, our research team referenced the research report on online teaching by the Online Teaching Research Group at Xiamen University's Center for Faculty Development. We have preliminarily identified sixteen typical problems in online teaching and conducted data research, analysis, and attribution around these issues. The purpose of this research is to enhance our

understanding of the challenges and difficulties faced in online teaching.

Table 2: Descriptive Statistical Analysis of the Problems in Online Teaching

	N	Minimum	Maximum	Mean	Std.Deviation
Insufficient student engagement.	471	1	5	3.82	.813
Inadequate teaching space and equipment support for teachers.	471	1	5	3.78	.785
The students'self-learning ability is weak	471	1	5	3.78	.809
Teachers' lack of proficiency in teaching platforms and tools.	471	1	5	3.77	.764
Lack of cooperation from parents.	471	1	5	3.76	.811
Insufficient attitude and energy investment from teachers in teaching.	471	1	5	3.75	.775
Students' unfamiliarity with teaching platforms and tools.	471	1	5	3.75	.751
Insufficient provision of electronic teaching resources for the curriculum.	471	1	5	3.74	.761
Inadequate functionality and stability of the teaching platform.	471	1	5	3.73	.777
Poor network speed and stability.	471	1	5	3.73	.800
Insufficient learning space environment and terminal equipment support for students.	471	1	5	3.72	.788
Inadequate technical support for online services s.	471	1	5	3.72	.774
Some teaching content is not suitable for online teaching.	471	1	5	3.71	.776
Poor classroom teaching order.	471	1	5	3.67	.784
Inadequate policy support from the school for online teaching.	471	1	5	3.64	.739
Teaching strategies and evaluations unsuitable for online teaching.	471	1	5	3.61	.733
Effective number of cases (listed):	471				

4.1 The Construction and Support of Online Teaching Environment

4.1.1 Hardware Facilities Need Upgrading

In terms of hardware facilities, the interviewed teachers believe that the main problems are "Inadequate teaching space and equipment support for teachers(3.78)," "Insufficient learning space environment and terminal equipment support for students (3.72)," and "Poor network speed and stability (3.73)." Although Internet penetration in China has been achieved to a large extent, there still exists a gap between "Internet access" and "online teaching." It is crucial to consider how to smoothly transition from traditional classroom teaching to online teaching by leveraging the existing infrastructure.

4.1.2 Software Services Need Strengthening

In terms of software services, the interviewed teachers identified two major problems in the teaching process: "Inadequate functionality and stability of the teaching platform. (3.73)" and

"Inadequate technical support for online services (3.72)." While there are multiple platforms available to support online teaching, each platform has its own focus. In order to better meet the demands, teachers often choose more than one platform to assist in teaching. However, this brings new problems such as "an excessive number of platforms increase teachers' decision-making difficulty and switching between different platforms, thus increasing learning time and the cost of technical applications" [3].

4.1.3 Insufficient School Policies

In terms of school policies, the interviewed teachers generally believed that "Inadequate policy support from the school for online teaching (3.64)." Policies play a guiding role in the development of education. The support and implementation of online teaching policies by schools are essential factors in the successful implementation of online teaching. Schools need to consider how to create an excellent online teaching environment, provide high-quality online teaching resources, recommend suitable teaching platforms for teachers, increase parental involvement, provide opportunities for teachers to enhance their online teaching skills, and tailor a performance assessment system for online teaching, all of which will have a profound impact on online teaching.

4.2 Participation and Interaction of Online Teaching Participants

4.2.1 Insufficient student engagement.

Table 3: Correlations analysis on the relevant dimensions of students' online learning

			Insufficient student engagement	The students'self-learning ability is weak	Students' unfamiliarity with teaching platforms and tools
Kendall's tau_b	Insufficient student engagement	Correlation Coefficient	1.000	.829**	.792**
		Sig. (2-tailed)	.	.000	.000
		N	471	471	471
	The students'self-learning ability is weak	Correlation Coefficient	.829**	1.000	.848**
		Sig. (2-tailed)	.000	.	.000
		N	471	471	471
	Students' unfamiliarity with teaching platforms and tools	Correlation Coefficient	.792**	.848**	1.000
		Sig. (2-tailed)	.000	.000	.
		N	471	471	471
**. Correlation is significant at the 0.01 level (2-tailed).					

Online teaching requires higher self-discipline from students. Once away from the familiar face-to-face classroom teaching, students may lack the constraints of the classroom environment. Some students, especially younger ones, tend to excessively use and misuse electronic devices such as phones and computers, which may lead to physical vision problems and psychological difficulties in adapting to online learning, resulting in unsatisfactory online learning outcomes. In the survey of sixteen issues regarding teaching problems, "Insufficient student engagement (3.82)" ranked first. The interviewed teachers generally believed that students do not actively participate in online

teaching, which is related to factors such as "Weak self- learning ability (3.78)" and "Students' unfamiliarity with teaching platforms and tools (3.75)." As shown in Table 3, Kendall's correlation analysis of these three indicators yielded Kendall's correlation coefficients of 0.829, 0.792, and 0.848, with two asterisks indicating a two-tailed significance of 0.000, smaller than 0.05, signifying a significant positive correlation among them. Insufficient student engagement implies a lack of interactions between teachers and students. Weak self-directed learning ability means that students cannot proficiently master online learning tools and actively participate in teaching situations to successfully assimilate and adapt to knowledge.

4.2.2 Insufficient Teacher Investment in Online Teaching

The sudden outbreak of the pandemic forced all teachers to be involved in online teaching, causing them to navigate through online teaching without much prior experience. The interviewed teachers generally believed that online teaching has brought more difficulties and challenges to teachers, such as increased psychological pressure and increased workload. Some teachers also found that the line between in-class and out-of-class time and space becomes blurred during online teaching, disrupting the teaching rhythm. As shown in Table 4, Pearson's correlation analysis of these two indicators yielded a Pearson correlation coefficient of 0.878 with two asterisks. The two-tailed significance was 0.000, smaller than 0.05, indicating a significant positive correlation between them. Once "Insufficient attitude and energy investment from teachers in teaching. (3.75)," they will be“lack of proficiency in teaching platforms and tools. (3.77) ", making it impossible to conduct normal online teaching, thus compromising the quality of teaching.

Table 4: Correlations analysis of teachers' involvement in online teaching

		Teachers' lack of proficiency in teaching platforms and tools.	Insufficient attitude and energy investment from teachers in teaching.
Teachers' lack of proficiency in teaching platforms and tools.	Pearson Correlation	1	.878**
	Sig. (2-tailed)		.000
	N	471	471
Insufficient attitude and energy investment from teachers in teaching.	Pearson Correlation	.878**	1
	Sig. (2-tailed)	.000	
	N	471	471
**. Correlation is significant at the 0.01 level (2-tailed).			

4.2.3 Insufficient Parental Cooperation

In traditional classroom teaching, teachers and students are in the same physical space. Teachers can exert the greatest control over the entire teaching process and ensure that classroom teaching progresses as planned. In online teaching, physical teaching spaces are separated and virtual teaching spaces are constructed through digital technology, redefining the roles of teachers and students as network nodes. Students' behaviors are no longer under the direct supervision of teachers, weakening teachers' control over the classroom. According to the interviewed teachers, once "Lack of cooperation from parents. (3.76)" and do not actively participate in the online teaching process, it also affects the coordination management of students' home-based learning, thereby lead to "Poor classroom teaching order (3.67)." As shown in Table 5, Kendall's correlation analysis of these two

indicators yielded a Kendall correlation coefficient of 0.769 with two asterisks. The two-tailed significance was 0.000, smaller than 0.05, indicating a significant positive correlation between them. Therefore, the lack of parental cooperation will have a negative impact on the smooth implementation of online teaching.

Table 5: Correlations analysis of parents' cooperation degree in online teaching

			Poor classroom teaching order	Lack of cooperation from parents
Kendall's tau_b	Poor classroom teaching order	Correlation Coefficient	1.000	.769**
		Sig. (2-tailed)	.	.000
		N	471	471
	Lack of cooperation from parents	Correlation Coefficient	.769**	1.000
		Sig. (2-tailed)	.000	.
		N	471	471
**. Correlation is significant at the 0.01 level (2-tailed).				

4.3 Design and Implementation of Online Teaching Process

4.3.1 Insufficient teaching resources and inappropriate teaching content

The interviewed teachers generally believe that the current "Insufficient provision of electronic teaching resources for the curriculum (3.74)" and "Some teaching content is not suitable for online teaching. (3.71)". This lack and inappropriateness do not refer to the scarcity of teaching resources or teaching content available on the market. As early as 2012, the country proposed the goal of constructing the "three-networks and two-platforms" in educational informatization, realizing "broadband network communication between schools, high-quality resources accessible to every class, and online learning space accessible to everyone, and constructing educational resource public service platforms and educational management public service platforms" [4]. In this context, various high-quality online resources for basic education have been continuously developed, such as the national primary and secondary school smart education platform and subject-specific websites, which provide a large number of high-quality materials for teachers to organize teaching content. However, when faced with a large number of online teaching resources, some teachers feel both overwhelmed and at a loss, resulting in a low utilization rate of resources.

4.3.2 Missing teaching strategies and inappropriate teaching evaluations

The interviewed teachers generally believe that the current "teaching strategies and evaluations used are not suitable for online teaching" (3.61). Compared with traditional teaching, online teaching has its own characteristics and rules. It shifts from traditional classroom lectures to student-centered learning, encourages group learning, and is more suitable for organizing teaching content based on projects. It can easily use online assessment tools for formative assessment and collect student data for learning analysis. However, when some teachers engage in online teaching, due to lack of sufficient online teaching experience, awareness, or skills, they do not explore the rules of online teaching and adopt appropriate online teaching strategies or evaluation methods. Instead, they hurriedly "copy and paste" the offline classroom to the online platform, simply digitizing the printed teaching materials, and then conducting live demonstrations online, thinking that this constitutes the

entirety of online teaching, resulting in unsatisfactory results.

5. Development Paths of Online Teaching in the post-epidemic

In summary, the main problems of online teaching include three dimensions: the construction and support of the online teaching environment, the participation of teaching subjects, and the design and implementation of the online teaching process. The construction and support of the online teaching environment provide the hardware and software foundation for the participation and interaction of teaching subjects. The participation and interaction among education subjects are reflected in the design and implementation of the teaching process; the design and implementation of the teaching process cannot be achieved without the construction and support of the online teaching environment. Each of the three dimensions has its own emphasis, interacts with each other, and jointly affects the quality and effectiveness of online teaching. Therefore, the author explores the development paths of online teaching after the epidemic from three dimensions: teaching environment, teaching subjects, and teaching process.

5.1 Supporting the construction of the online teaching environment

5.1.1 Creating a collaborative online teaching environment between schools and families

According to data from the Ministry of Education, as of early 2023, the national internet access rate for primary and secondary schools (including teaching sites) has reached 100%, with over three-quarters of schools having wireless network coverage, and 99.5% of schools having multimedia classrooms [5]. According to the 51st Statistical Report on the Development of China's Internet issued by the CNNIC, as of December 2022, China's internet penetration rate has reached 75.6%. It can be seen that the basic conditions for conducting online teaching are already met, whether in schools or at home. Basic education needs to transition from physical to virtual, becoming a "school campus without walls". Instead of starting from scratch, it can be combined with the actual situation of schools and families to upgrade and build an online teaching environment that connects schools and families. Firstly, a list of household equipment requirements should be established to ensure that every family has appropriate hardware devices, such as computers, tablets, or smartphones. Secondly, network connection testing tools and guidelines should be provided to ensure stable home internet connections to support smooth online teaching. Thirdly, assist parents in choosing suitable online learning platforms to ensure that the platforms are fully functional, easy to use, and compatible with the school's online teaching environment.

5.1.2 Integration of Functional Services in Teaching Platforms

Online teaching relies heavily on various teaching platforms. Currently, these platforms vary in quality and functionality. Several improvements can be made in the following aspects: First, the integration of effective service functions in the platforms can reduce the time and technical application costs caused by switching between different platforms. Second, the stability of the platforms should be enhanced to avoid disruptions in the online teaching process caused by lagging, freezing, disconnection, and other issues. Third, timely technical training and maintenance services should be provided to ensure that teachers, parents, or students can quickly master the functionalities of the platforms. In case of difficult problems, they should be able to receive corresponding technical support promptly.

5.1.3 Improvements in School Support Measures

Before the outbreak, the normalization of online teaching was mainly achieved and supported by national open universities and 64 network education pilot universities. Explorations in the field of basic education usually focus on localized applications, such as online tutoring, online question banks, and online assignments. In order to smoothly integrate online teaching into schools, in addition to providing technical support, schools need to explore more support measures. First, appropriate online teaching technology training should be provided. Tailored training courses should be offered to teachers, parents, and students to tackle difficulties in applying online teaching technologies. Second, effective coordination between schools and families should be carried out. Through effective communication, parental involvement can be enhanced, and assistance can be provided to families with students facing difficulties in creating online learning environments. Third, relevant psychological counseling should be provided to teachers, students, or parents to address the psychological burdens arising from online teaching. Fourth, a scientific and applicable performance assessment system for online teaching should be established to quantitatively manage online teaching work and clarify reward and punishment standards. Fifth, various learning support services should be well implemented to organize, coordinate, and control the smooth implementation of online teaching in accordance with the teaching plan of the school.

5.2 Enhancing the Participation of Teaching Subjects and Role Interactions

5.2.1 Enhancing Students' Participation in Online Teaching

Constructivism argues that "students are the center of teaching"[6] and teachers should organize teaching around students. According to connectivism, real knowledge is generated in the process of connecting nodes, and "learning is a process of connection"[7]. This kind of connection is obviously based on teacher-student interaction and requires students' active participation. Therefore, both classical teaching theories and new learning theories based on the Internet have raised higher requirements for students' autonomous learning abilities. First, they should bravely adapt to new learning environments and master online learning skills to enhance their autonomous learning abilities under the guidance of teachers or parents. Second, they should actively participate in the interaction between teachers and students and integrate into classroom discussions or team collaboration through various interactive tools provided by online teaching platforms. Third, they should know how to provide feedback and solve problems by using question and answer functions, emails, and other methods on online platforms, thus seeking solutions from teachers when encountering difficult problems. Fourth, they should actively carry out learning effectiveness evaluations. Through online quizzes, learning trace records, and other functions on teaching platforms, they can engage in self-directed learning and evaluation, identify and address any deficiencies, and improve learning outcomes.

5.2.2 Enhancing Teaching Interactions among Teachers, Students, and Parents

Education is "a purposeful activity of cultivating individuals, and its essential characteristic is promoting socialization"[8]. In traditional offline teaching, the teacher as the educator and the student as the learner are the two basic elements of education and occupy the core positions in the teaching process. By focusing on educational content, teachers and students can form a complete cycle of educational activities. "The degree and effectiveness of teaching interactions are also considered as important indicators to measure the success of online teaching" [9]. The interaction between teachers and students helps "stimulate students' learning motivation, facilitate their deep understanding of course content, and reduce negative emotions, thereby increasing their level of engagement in

teaching"[10]. Furthermore, a survey study showed that "high parental involvement is beneficial for alleviating academic fatigue symptoms in primary and middle school students in the context of online learning"[11]. Therefore, teacher-parent collaboration is also a key factor affecting the success of online teaching. Thus, teachers and parents should provide various learning support services centered around students.

First, "as the organizers of online teaching activities, teachers' teaching design, methods, and attitudes directly influence the effectiveness of online teaching"[12]. Compared to traditional teaching, teachers should assume even more roles, such as organizing teaching resources, applying teaching tools, creating teaching contexts, guiding teaching interactions, and conducting teaching evaluations. Throughout the entire teaching process, teachers should establish online interactive relationships with students as much as possible, increasing teacher-student interactions. They should also establish effective communication mechanisms with parents, comprehensively grasp the students' home learning situations, and continuously adjust online teaching strategies based on various learning feedback.

In traditional teaching, parents generally delegate the responsibility of basic education to schools and teachers, with minimal involvement in the educational process. In online teaching, due to the temporal and spatial separation, teachers find it difficult to have immediate control over students' learning feedback. Therefore, parents need to assume some of the roles and functions of teachers and become "teaching assistants". On one hand, parents need to change their mindset, actively learn, and actively cooperate with the school's online teaching arrangements. They should create a suitable home learning environment for students and guide them in mastering various teaching platforms and tools. On the other hand, parents should maintain close communication with teachers, conduct real-time monitoring of students' learning progress, provide timely feedback and guidance, and ensure that students can carry out online learning in a controllable environment.

5.3 Promoting the Online Reconstruction of Teaching Processes

In the field of education, there is an abundance of theories regarding teaching processes. However, regardless of how they are categorized, the four simplest and most essential stages cannot be ignored: pre-class preparation, course organization, classroom implementation, and post-class evaluation. To a certain extent, the online teaching process is a reconstruction of traditional teaching, and it also corresponds to the four stages of traditional teaching. This is manifested in the collection and re-creation of teaching resources, the organization and reconstruction of teaching content, the personalized transformation of teaching strategies, and the diversified development of teaching evaluation.

5.3.1 Pre-class Preparation: Collection and Re-creation of Teaching Resources

Based on previous research, it is generally acknowledged by interviewed teachers that the main problems with current online teaching resources are either the lack of supplementary teaching resources or the inadequacy of content for online teaching. To address this issue, teachers need to adopt a "taking what is available" approach while conducting "characteristic re-creation". They should prioritize the selection of national-level "cloud platform teaching resources" and carry out relatively down-to-earth "personalized development". National-level cloud teaching resources are constructed by the whole country, with the highest standards and unquestionable quality. However, the drawback is that nationally-produced quality courses and other resources are usually designed from a macro perspective and may not meet the current teaching needs of individual teachers or lack practicality. Therefore, teachers need to modify or organize teaching resources to make them truly usable.

5.3.2 Course Organization: Organization and Reconstruction of Teaching Content

Online teaching requires the reorganization and transformation of traditional teaching content, but it does not mean the complete abandonment of printed textbooks or arbitrary determination of teaching content. The teaching content of basic education needs to follow national educational policies and goals, which are uniformly planned, regulated, and compiled by experts according to the logical structure of each subject, possessing the highest authority. Therefore, teachers should respect the textbooks and adhere to the laws of online teaching. Developing teaching content independently is time-consuming and of varied quality. Instead, teachers can adopt a "personal or collaborative construction" approach to develop school-based online teaching materials that are tailored to local needs, making them more applicable.

5.3.3 Classroom Implementation: The Trend of Blended Teaching Methods

Compared to traditional teaching, online teaching has its own characteristics and rules. It emphasizes student-centered learning, encourages students to engage in online group learning, and adopts project-based organization for teaching content, among other approaches. However, online teaching does not mean that the entire teaching process takes place online; it also emphasizes students' offline learning process. In this regard, "blended teaching, as a fusion of new and traditional learning methods"[13], is regarded as "an important teaching form that overcomes the limitations of traditional or purely online teaching"[14]. Blending can be reflected in various aspects: the blend of individualized learning and group learning, the blend of learning for specific knowledge points and learning based on the context of a complete project, and the blend of online classroom learning and offline pre- and post-class learning, as well as the allocation of learning time based on holidays and non-holidays.

5.3.4 Post-class Evaluation: Diversified Development of Teaching Evaluation

"Teaching evaluation involves measuring, analyzing, and assessing the quality of teaching work"[8]. The current trend in teaching evaluation is focused on "goal-oriented," "process-oriented," "developmental," and "multidimensional" approaches. Through diversified evaluation methods, more emphasis is placed on the process of teaching implementation to promote students' personal development. Compared to traditional teaching, online teaching aligns well with the new trends in teaching evaluation research. Teachers can combine traditional paper-based evaluations or portfolio evaluations with intelligent assessments provided by platforms to conduct online teaching evaluations. This makes the process evaluation both simple and traceable. After teachers post questions on the platform or through online tools, students can discuss and form a collection of viewpoints individually or in groups. Throughout the process, all knowledge activities can be easily recorded by the learning platform or evaluation tools, enabling teachers to analyze the learning process and implement personalized instruction to promote individual student development or improve the entire group.

6. Conclusion

As the most important teaching approach during the pandemic, online teaching successfully ensured the smooth implementation of national basic education, and its importance during this special period cannot be ignored. Currently, the epidemic is basically under control, but it has not yet completely ended. When the wave of online teaching inevitably subsides, should it leave only chaos, or should it replace traditional offline teaching as the mainstream approach? How should the relationship between online teaching and traditional teaching be positioned? All educators need to contemplate these questions. In a sense, as frontline teachers who are most sensitive to teaching and have the most say, they have already shown through three years of practical action that online teaching

and traditional offline teaching are not contradictory. Regardless of whether it is "online" or "offline," both are means rather than ends, and fundamentally, they are part of teaching. As long as we recognize the advantages and disadvantages of the two teaching methods, make up for each other's weaknesses, combine their development, and adapt according to our needs, we can embark on a new path of blending and coexistence.

Acknowledgement

Funding Project: 2020 Research Program of Jieyang Federation of Social Sciences (Project No: JY20KL12); 2021 scientific research project of Jieyang Polytechnic (Project No: 2021JYCKY09).

References

[1] Ministry of Education. "Utilizing online platforms for 'stop classes but not learning'" [EB/OL]. 2020-01-29. http://www.moe.gov.cn/jyb_xwfb/gzdt_gzdt/s5987/202001/t20200129_416993.html.

[2] Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. Journal of Marketing Research, 24(2), 337-346.

[3] Hattie, J., & Yates, G. C. R. (2018). Visible Learning and the Science of Learning. (P. Peng, X. Deng, S. W. Yang, Trans.). Beijing: Education Science Press, 198-204.

[4] Ministry of Education. "Seizing opportunities, accelerating and creating a new situation in educational informatization"[EB/OL].2012-11-09. http://www.moe.gov.cn/jyb_xwfb/moe_176/201211/t20121109_144245.html.

[5] Ministry of Education: Internet access rate for primary and secondary schools (including teaching points) nationwide reaches100% [EB/OL].2022-02-9. http://www.moe.gov.cn/jyb_xwfb/xw_fbh/moe_ 2606/2023/cfh_0209/baodao/202302/t20230209_1043212.html.

[6] He, K. (1997). Constructivism: The theoretical basis for innovating traditional teaching (Part 1). Distance Education Research, (03), 3-9.

[7] Siemens, G. (2005). Connectivism: A Learning Theory for the Digital Age. Instructional technology & distance learning, 2(1), 3-10.

[8] Wang, D., & Guo, W. (2021). Education (7th edition). People's Education Press, 13-14, 244.

[9] Bettinger, E., Liu, J., & Loeb, S. (2016). Connections matter: How interactive peers affect students in online college courses. Journal of Policy Analysis and Management, 35(4), 932-954.

[10] Qin, H., Zhou, J., & Li, Z. (2021). A study on the differences in the continued intention to use online teaching among teachers and students in higher education. Higher Education Research, (1), 83-93.

[11] Zhao, L., Liu, Y., & Shen, S. (2022). The influence of parental involvement on perceived academic fatigue in online learning: A survey report on online teaching in primary and secondary schools in Jiangsu Province. Journal of East China Normal University (Educational Sciences), 40(04), 29-42. DOI:10.16382/j.cnki.1000-5560.

[12] Artino, A. R. (2012). Understanding satisfaction and continuing motivation in an online course: An Extension of Social Cognitive, Control-Value Theory. Poster Presented at the Annual Meeting of the American Educational Research Association, New York.

[13] Feng, X., Sun, Y., & Cao, J. (2019). Blended learning in the era of "Internet Plus": The theoretical foundation of learning theories and teaching methods. China Distance Education, (2), 7-16+92.

[14] Schlager, M., Fusco, J., & Schank, P. (2002). Evolution of an online education community of practice. In Building virtual communities: Learning and change in cyberspace (pp. 129-158). New York: Cambridge University Press.