Developing through Merits and Demerits: A Literature Review of Online Classroom, Teaching Motivation and Teaching Methods in China Primary School

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Abstract. The objectives of this study were to investigate current issues in online classrooms and examine solutions proposed in past research. Furthermore, this study analyses the teaching motivation and teaching methods used in online classrooms in primary schools in China. This research utilised a Systematic Literature Review (SLR) methodology with six procedures. The articles have been sourced from popular databases like CNKI, Baidu Scholar, Google Scholar, and Eric. The main problem in online classrooms lies in the decrease in and change of interaction between teachers and students. It ultimately leads to three main types of positive phenomena: a reduced effectiveness of teaching and learning, a sense of isolation, and a lack of feedback. The solutions of the researchers can be classified into two categories: Educational technology innovation, and Teaching innovation. The former emphasizes technology and digital tools, while the latter emphasizes solving the problem from two directions: educational psychology and teaching. The findings indicate that teaching motivation and methods are crucial variables in online classrooms. Nevertheless, a significant-scale study examining the role of these two variables in online classrooms has not been carried out yet. In this study we analysed and solved relevant problems from these perspectives. In addition, we also analysed the potential relationship between teaching motivation and teaching methods from three different theoretical perspectives. Thus, we trust to contribute to future studies and offer fresh avenues for addressing numerous issues in online classroom teaching and learning.

Keywords: online classroom; teaching motivation; teaching methods

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1. Introduction

As a general term, the online classroom refers to the activities of teaching and learning mainly through the Internet (Zhao, 2021). Typically, some specific software based on Internet technology was adopted, such as Webex, Zoom, and Google Meet. In the online classroom, great changes have taken place in all aspects (Chen & Hu, 2020): the traditional face-to-face classroom has changed to a virtual classroom; the teaching and learning place has changed from campus to family; students' peers and supervisors have changed from classmates and teachers to parents, which makes teachers' time with students less. Due to the COVID-19 pandemic, online classrooms have become the prominent and widely discussed topic in both educational circles and society from 2020 to 2022. Although students are required to attend traditional face-to-face classes in schools, over 64% of primary school students have more than an hour of online classes every day in their free time. In addition, more than 24% of primary school students have more than two hours of online classes daily (Zhang et al., 2021). During the epidemic, according to Ning and Gao (2020), the average number of online classes per week for primary school students reached 27.6, that is, about 18.4 hours. This indicates that even when offline classes are in normal progress, online classes still form a part of the learning in which students participate every day, which was rare before the pandemic.

The problems and their solutions associated with online classrooms have been addressed in numerous articles over the past two decades. Authors analysed and found solutions from the perspectives of efficacy, motivation, or curriculum and teaching. Despite these efforts, there has been no systematic analysis of the nature of these changes and the key areas in which they are reflected. A thorough examination and analysis of the education community's efforts to address the issues with online classrooms can aid understanding of the current situation and lay a foundation for supporting future research.

(1) What are the problems in the current online classroom?

(2) What solutions have been adopted in past and current research to address these problems? How can these methods be categorized?

(3) What are the current status and the issues in research related to teaching motivation in online classrooms in China primary schools?

(4) What are the current status and the issues in research related to teaching methods in online classrooms in China primary schools?

(5) Does a potential connection exist between teaching methods and teaching motivation?

2. Methodology

The research process used was Systematic Literature Review (SLR), with following procedures:

1. Defining research questions
2. Selecting databases
3. Defining search terms
4. Collecting and sorting results from various databases
5. Analysing the results based on criteria and conducting the review
6. Establishing results.

The articles analysed during this study were all sourced from popular databases such as CNKI, Baidu Scholar, Google Scholar, Eric, and more. The main criteria for data selection by researchers are: (a) the articles must include at least one variable in the online classroom, teaching methods, and teaching motivation; (b) the articles must directly or indirectly support the research and address relevant issues; (c) the articles mainly focus on online classrooms in China, while taking into account some commonalities of online classrooms worldwide; therefore, some important foreign articles also were included in the analysis. The researchers ultimately obtained more than 120 articles, and after excluding those that were irrelevant or insignificant to this study, further analysis was conducted.

It is worth noting that from the final results, some older articles inevitably had been introduced into the analysis. This is because this study focused on analysing and discussing the problems existing in previous studies, as well as exploring the research gaps found. In this case, it is not possible to simply avoid older articles and deliberately limit the scope to new articles within a certain year, which will overlook more valuable discoveries.

3. Results and Discussion

3.1 Online classroom

3.1.1 The issues in online classroom

The primary issue with online classrooms is the lack of effective communication between teachers and students, leading to a deterioration in interaction. Li (2020) found that in the "teacher-student interaction" of online teaching during the epidemic, with the weakening of teachers' power, spatial distance reduced communication efficiency. As per a survey conducted by Li (2021), more than half of the teachers agreed that the online classroom had a lower frequency and less effective interpersonal interaction compared to the traditional face-to-face classroom. Undoubtedly, interaction in the current online classroom is inadequate, ensuing in three main negative phenomena (Figure 1).
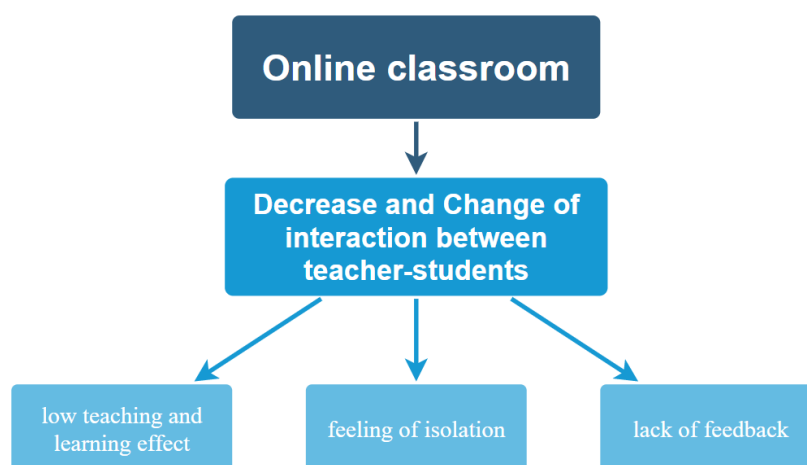
Figure 1: The main problems in the online classroom

First, the lack of such interaction may lead to a decrease in teaching and learning effectiveness. According to Mukhtar et al. (2020), the limitations of online classroom involved inefficiency and difficulty in maintaining academic integrity. *Unable to teach skills*, *limited attention span*, *lack of attentiveness*, *and resource intensive*

are the problems frequently complained about by many teachers and students. Research by Sadeghi (2019) offered more information about some problems, which claimed that *high opportunities of differentiation, complex technology,* and *difficulty staying in contact with instructors* are also very prominent disadvantages of the online classroom.

Second, the lack of interaction during online classes also brings isolation to participants (Croft, Dalton & Grant, 2010; Woods, 2002), which happens not only to students, but also to teachers. The teachers in question here had forgotten to turn on their microphones, which resulted in the students being unable to hear them for two hours. This incident, reported in the Hebei Youth Daily (2021), caused a sensation on the whole network, and had a considerable impact on the students' interest and confidence in their learning. A 2021 survey conducted by Mikesi Research revealed that long-term online classes had left students in several schools in Japan feeling isolated, leading to some dropping out of their courses. Third, another direct consequence of the lack of interaction is the lack of feedback in the classroom (Petrides, 2002; Vonderwell, 2003; Hara & Kling, 1999). Student-to-instructor feedback in online courses presents unique challenges to teaching. Feedback helps teachers to regulate and adjust their behaviour to achieve their teaching goals (Ashford, Blatt & VandeWalle, 2003). Feedback can be considered as a signal given to us by others. Ashford and Cummings (1983) maintain that in their FTF (face-to-face) courses, they received numeric signals to help them confirm that their actions were correct and met the requirements (. This implies that teachers can modify their behaviour based on student feedback to ensure that classroom teaching is on the right track. Unfortunately, accomplishing this goal is challenging in an online classroom. For a series of reasons, including varying feedback, it is difficult for teachers to determine the effect of their online teaching (Anderson, Imdieke & Standerford, 2011) (or they lack confidence to evaluate the impact of their teaching). According to Jones and Blankenship (2017), the physical classroom can provide ongoing immediate feedback to faculty members and students about the lesson, delivery, and experience. The virtual classroom does not provide these same opportunities. At the same time, good teaching is more difficult for students to determine in online courses (Ham & Davey, 2005). Generally, several online classrooms lack feedback designs that are specific, and the interaction between students and teachers is still relatively passive (Luo, 2010).

3.1.2 Improving teaching in the online classroom

At present, there are two major paths for improving online teaching: Educational Technology Innovation, and Teaching Innovation, as depicted in Figure 2.
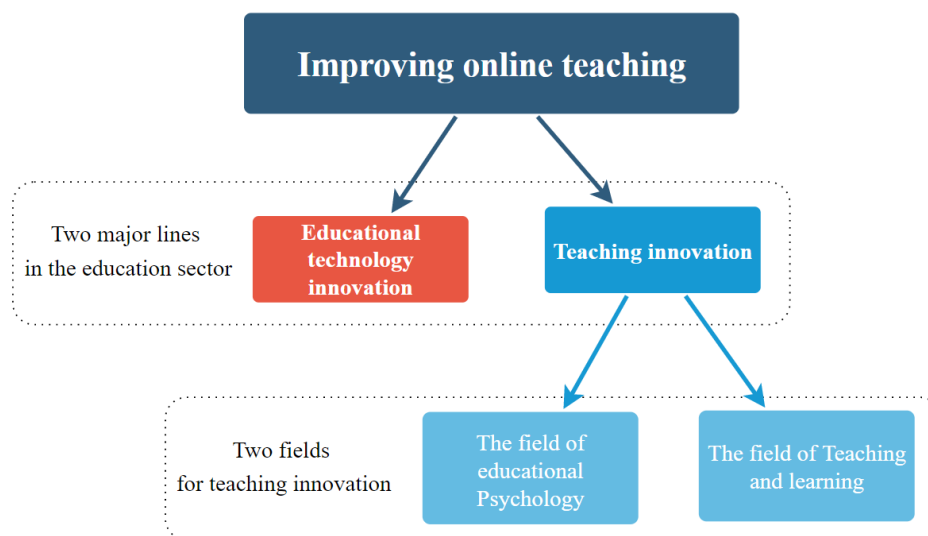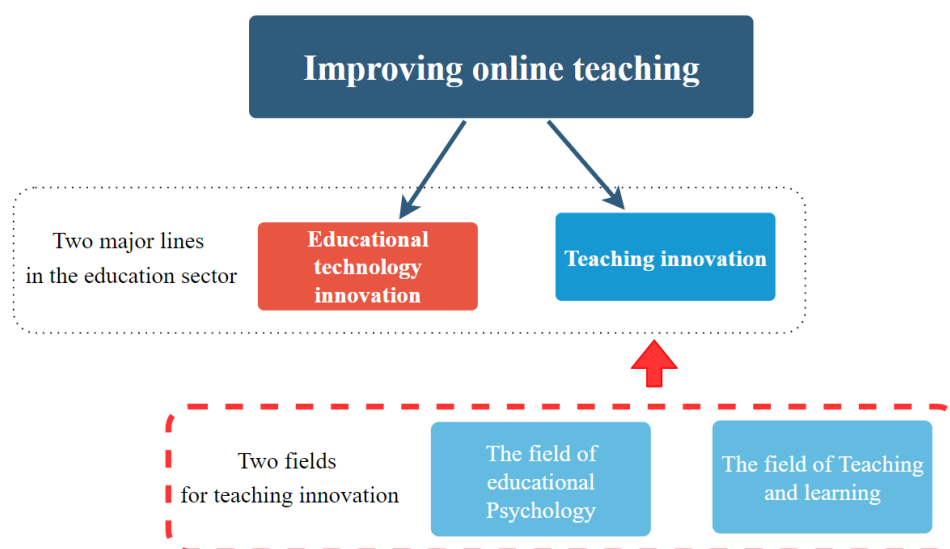
Figure 2: The paths to improve online teaching

3.1.2.1 Educational technology innovation

The use of educational technology is a direct and effective strategy. Certain companies have designed an online system that recognizes the learning behaviour of students based on artificial intelligence technology. This system can identify students' expressions, including boredom and fatigue, and thereby provide data support for the effectiveness of teachers' teaching (Tu et al., 2021). New intelligent systems have been developed to address issues in online classrooms where teachers cannot supervise students' behaviour effectively or encourage interaction, for example, when a system uses pattern recognition technology to recognize the current gesture actions between students and teachers and improve the students' participation in class (Liu, 2020). Technological innovation is a very effective path to improve the success and effectiveness of teacher-student interaction. It can be said that the development of information technology has provided great progress and convenience for modern teaching (Zhao, 2020). Therefore, some disciplines also have started to actively implement higher levels of integration of modern educational technology and discipline teaching, especially after the epidemic (Covid-19) started, which accelerated the process (Zhang, 2021).

However, many educational technologies cannot be widely used in developing countries. China is still a developing country with a per capita gross domestic product (GDP) of only $12551 (*Xiaoxiang Post*, 2022), just above the world average. China's overall economic level is not high and developments across regions are imbalanced. Urban residents earned $7102 in 2021, whereas rural residents earned only $2835 in 2021 (Read Chuang, 2022). There is a significant income disparity between urban and rural areas, leading to unequal distribution of educational resources in these regions. A previous study by Xiao, Lin and Chen (2020) shows that the quality of online teaching in rural areas, is significantly worse than that in urban areas. As a result of the limited economic resources, several educational technologies that are prevalent in urban areas can barely be implemented in rural schools. Therefore, it is unrealistic to only rely on the progress of educational technology in the online classroom.

3.1.2.2 Teaching innovation

Teaching is the most fundamental and critical behaviour of school education. Related studies are conducted mainly in the two fields depicted in Figure 3.

Figure 3: The paths to improve online teaching

(1) Educational Psychology

Most of the research on educational psychology of online students is typically conducted through large-scale surveys, often employing questionnaires, to identify relationships between variables across a wide range of contexts. In a study of online learning, Su et al. (2020) discovered that 27.7% of students experienced learning burnout, while 22.7% had no evidence of burnout. Almost half of the students (49.6%) were somewhere in between. Some studies are multi-layered, and explore the deep-seated causes of some phenomena. Zhang et al. (2021) found that students were slightly more satisfied with video (asynchronous) courses, than live courses. This might be attributed to the ability of students to review difficult course content through replays, which promotes psychological satisfaction.

Most of the educational psychology research on online classes is focused on students, and research into teacher psychology is rare.

Li and Zhu (2020) in a study of teachers' psychological state found that online teaching exerts great psychological pressure on teachers. This is because online teaching mostly was a first attempt, and the new teaching model brought a sense of strangeness. Some teachers experienced difficulty in maintaining control over students due to the nature of online classes. Additionally, conflicts arising from family obligations also had a significant impact on online teaching.

In 2021, Xu conducted a comprehensive investigation into teachers' adaptability to online classrooms. This study found that many K12 school teachers had little enthusiasm for online teaching, and this ensued in communication obstacles between teachers and students' parents in the online classroom. These factors may result in psychological difficulties for teachers trying to adapt to the online classroom.

The mentioned studies demonstrate the psychological challenges faced by teachers in online classrooms. If we combined these with research on students' psychological problems, it is logical that educational psychological research plays an important role in the research field of the online classroom. These factors offer strong backing for this study's emphasis on teachers' motivation to teach in online classrooms, as understanding teachers' psychology is crucial and represents an overlooked area of research.

(2) Teaching and learning
Specific studies focus on how to apply traditional face-to-face classroom teaching methods in the online classroom. This was common in early research, when online classes were just emerging. Li and Lin (2004) tried to explore the effect and practice of the traditional "situational teaching method" in online courses, so as to better cultivate students' advanced thinking abilities. Such research, which is relatively simple, is evidently preferable to directly employing traditional classroom courses and teaching materials in online learning environments. Similarly, Li (2008) explains how the 'interactive teaching method' can also achieve the same outcome in a network course.

Since 2010, there have been various scientific and technological advancements, including the increased growth of network bandwidth and faster Internet access speeds for mobile devices. These developments have resulted in changes in online classroom research.

Fu, Gong and Jin (2021) explored and designed a set of an online teaching methods called the "multi-integration teaching method". On the whole, they have established a multi-level teaching method covering "teaching-experiment-homework-evaluation". The designed teaching process integrates Constructivism, Multiple-Intelligences, Successful Wisdom, and Multi-Dimensional Interaction. Finally, this method enables students to experience the teaching effect of "understanding, learning, and doing well" in the online classroom. Teaching and learning in the online classroom, which occur independently in contradiction to what occurs in the traditional classroom, have led to innovations based on the unique characteristics of the online learning environment.

Both relevant pedagogies and the theories behind their design and implementation are continuously evolving. For example, Harasim (2015) demonstrated a collaborative learning theory applicable to online learning, which emphasized the importance of students' discussions and collaboration with the help of teachers or moderators, especially in asynchronous text-based online environments. Technology facilitates student discussion and collaboration as well as teacher-student interaction, but technology alone cannot replace discussion, collaboration, and interaction. Therefore, current teachers need to enhance communication and collaboration between teachers and students as well as among students in online teaching.

These are the innovations in teaching, that can instruct teachers' work and follow-up research. These studies also provide theoretical support for our study, and they

strongly reflect the role of new teaching methods in improving the effectiveness of online classroom.

To sum up, there is currently a lack of a large-scale study that adequately combines the two significant fields (teaching and educational psychology) to explore, analyse and solve the issues related to the online classroom from the primary school teacher's perspective.

3.2 Teaching motivation
3.2.1 The definition and popular theories of motivation
According to several widely-used textbooks in China, motivation is defined as a psychological tendency or internal drive that stimulates and sustains an organism's action towards a specific objective (Lin, 2003). Interdisciplinary courses related to psychology have been offered in many fields in China. For example, in some universities, schools for education will offer educational psychology programmes or courses, business schools will offer consumer psychology, and media schools will offer media psychology. In these programmes or courses, they will teach relevant knowledge and content of motivation. From a training centre's opinion, by studying motivation we improve our understanding of specific human behaviours, thereby helping us to achieve goals in diverse areas, such as education, business, and communication (Sichuan Psychological Counsellor Training Network, 2013). The importance of motivation has been verified in many fields, particularly with regard to its direct relationship with behaviour and the driving role it plays in affecting behaviour. Therefore, motivation is one of the keys to solving online classroom problems.

For a long time, the dichotomy of intrinsic motivation and extrinsic motivation has been widely agreed upon and applied. This theory divides people's motivation into two parts: intrinsic motivation is an instinctive tendency to seek and overcome challenges when we pursue personal interests and ability improvement. When intrinsic motivation exists, we can perform specific behaviours without external rewards or punishment. Extrinsic motivation means that there is a certain external driving force (reward or punishment) to drive us to perform a specific behaviour (Woolfolk, 2015). To understand motivation, it is very necessary to understand its structure through dichotomy.
It is worth noting that some studies believe that the dichotomy of intrinsic and extrinsic motivation is too simple and extreme. For example, people sometimes voluntarily choose to accept the influence of some external factors (such as obtaining a certain qualification certificate) and benefit from it, which is the internalized extrinsic motivation (Vansteenkiste, Lens & Deci, 2006). This is sufficient to show that the two are not completely opposite to each other -- in fact, they sometimes are highly integrated. Based on this conclusion, a large number of motivation theories were born, such as Ryan and Deci's Self-determination theory (2000), which integrates intrinsic and extrinsic motivations and explains the issue of motivation from another perspective: motivation can be divided into three dimensions: competence, relatedness, and autonomy. Motivation increases when these are improved.

3.2.2 Issues of Teaching Motivation
Teacher motivation refers to individuals' intrinsic values that influence teachers' decision to teach and maintain teaching, as well as the level of effort expended on teaching, which can be influenced by various contextual factors (Han & Yin, 2016). Some studies on primary and secondary school teachers, show that teachers' high level of work enthusiasm and sense of responsibility will require teachers to have internal strong and lasting teaching motivation (Chen, 2012). Teaching motivation has a great impact on teaching behaviour since it is closely associated with it, as mentioned before.

Teaching motivation has a similar structure to the broad term of motivation, mentioned above. By studying the motivation of primary school teachers, Zhong, Shen and Xin (1999) found that teachers' teaching motivation is a hierarchical multi-dimensional model composed of intrinsic motivation, extrinsic motivation, and external internal motivation. Wang (2007) adopted a similar method in the research on the subjective well-being and teaching motivation of kindergarten teachers. The teaching motivation of kindergarten teachers is divided into two dimensions by this research: intrinsic motivation (professional interests and hobbies, preferences for teaching objects), and extrinsic motivation (expectations and recognition of society and leaders, recognition of colleagues, attitudes of students and parents, and life needs). Although researchers have coined slightly different standards and theoretical frameworks, they have successfully classified and defined teaching motivation and achieved the research objectives. It thus is clear that the research on teachers' motivation has some commonalities regarding results. Although few relevant studies could be found, the topic actually has exploration value and feasibility.

Various factors impact teachers' motivation to teach, such as the region, gender, length of their teaching career, and working environment. Research designed by Zhang (2012) aimed to explore and analyse the relationship between primary school teachers' work motivation, creative teaching efficacy, and creative teaching behaviour. Finally, it is found that male teachers and female teachers, as well as urban teachers and rural teachers, attained different levels in a series of results, showing obvious differences. Xin, Qiu and Shen's research (1994) found that educational background would greatly affect teachers' work motivation. At the same time, the higher the maturity of teachers' psychological development, the higher the level of expectation for the success of their own educational work, and the higher their work enthusiasm. These conclusions provide some theoretical support for this study to explore and investigate the relationship between teachers' teaching motivation, teaching experience, and educational background in the online classroom.

The results of these studies demonstrate that teaching motivation is a multi-level concept with rich content, and is also affected by many factors. Nevertheless, previous studies on teachers' teaching motivation show shortcomings, among which is that the total number of studies in this field is small. Research on teachers' teaching motivation for primary school education in China is very rare. Most studies on teachers' teaching motivation concentrate on the concept of teaching

motivation itself. Few studies analyse or validate the relationship between teaching motivation and other variables. Furthermore, just a few studies focus on creating the theoretical framework of teaching motivation and teaching methods. Merging the above issues, there is a lack of research in the education field that employs self-determination theory in online classroom to study the teaching motivation of teachers.

3.3 Teaching methods
3.3.1 The definition and issues of teaching methods
The teaching method is the way in which teachers and students implement neatly ordered and interrelated activities to conduct the tasks of teaching, education, and development in the teaching process (Babanski, 1986). Zhu (1989) maintains that the teaching method is a synthesis of orderly ways in which teachers' work and students' learning activities are organized to achieve the purpose of teaching and learning. These definitions of teaching methods have one thing in common, that is, the teaching method is a specific activity used as an approach or a way to achieve a special teaching goal in the classroom, be it interactive or individual.

The concept of teaching method has existed since the inception of the practice of teaching. In primitive societies, at the beginning of its inception, education was carried out in the entirety of society's production and daily life. Despite the lack of relevant research, some textbooks cite a general statement that, although some were extremely primitive and of a crude nature, teaching methods have a long history, and various teaching methods, including practical teaching methods, are still applied in daily life and production (Zhonggong, 2022). Bearing this in mind, it is problematic to state that someone "invented" any specific teaching method.
This, however, does not mean that no new teaching methods exist. After an extensive literature analysis, the researchers reached the following two conclusions:

First, a new teaching method may be the result of the integration of many traditional teaching methods. For example, the "multi-integration teaching method" by Fu, Gong and Jin (2021) mentioned in 3.1.2.2, is a highly integrated (new) product of a series of teaching methods.

Second, new teaching methods may be methods that have already existed in the past but have not been formally named, theorized, or conceptualized. For example, the practical teaching method mentioned above existed in education in primitive societies. However, it was formally defined in the Chinese language after 1949 (it is difficult to verify details because of a lack of relevant literature).
It can be seen from these two phenomena that different naming does affect the research on teaching methods. Therefore, it is reasonable and scientific to adopt a popular classification and naming standard, and then judge "whether the teaching methods adopted by a teacher are suitable and diverse".

Wang (2021) studied the current situation of teaching methods against the current online teaching background. According to his analysis of the online classroom, the lecture method has very clear advantages, especially in terms of efficiency, and speed of content and information dissemination, which is further amplified

in cyberspace. Each year, multiple studies are conducted to examine the application of various teaching methods in Chinese online classrooms. (2013) study explored the combination of collaborative learning with initiation and self-regulation learning with feedback as an effective online teaching method. He found that these two teaching methods, which were often used in traditional face-to-face classrooms in the past, also had a very important role to play in online teaching and learning and could significantly improve results. It is precisely because online classrooms and face-to-face classrooms have some similarities that many traditional teaching methods, or classifications, are also applicable in online classrooms. Liu and Zong (2021) studied discussion and communication in Online Webinar Classes. They found that in the online classrooms in China, which adopted discussion and communication as the main instructional method teachers still held the dominant role in teaching activities, and teachers still enjoyed high-power status. Kebritchi (2014) summarized two specific teaching methods, narrative and episodic, based on the characteristics of the online classroom. His findings suggest that a narrative with a high level of interactivity is the preferred method. Also, instead of using one specific teaching method for various teaching tasks, a combination of narrative and episodic methods helps to meet the preferences among different learners. This feature is consistent with traditional face-to-face classroom teaching, which provides support for analysing the use of traditional teaching methods and their classification methods in online classrooms.

3.3.2 The popular theories of teaching methods in China and concomitant issues
In China, the teaching methods theory used in official textbooks, and the teachers' professional qualification examination applicable to the normal education profession is by Li, Li and Tian (2001), which advocated that the majority of teaching methods can be divided into the following categories:
A. Transmitting information, including the lecture method; conversation; discussion; reading guidance, and more.
B. Direct perception, including demonstrations, visits and observation, and some others.
C. Practical training, including practice; experiments; practical operation, and more similar tasks.
D. Appreciation activities, such as edification, elevation and so forth.
E. Guided exploration, such as discovery; inquiry, clarification.
At the same time, Li, Li and Tian's (2001) theory emphasized flexible and diversified use of teaching methods, claiming that teachers should not use a single teaching method in their teaching, but rather focus on a combination of teaching methods. According to Hobson et al. (2009), in the process of teaching, teachers experience the establishment and development of new teaching models by imparting knowledge and information to students in various ways, preferably in the most interesting way. Robert and Bulloug (2012), from a more comprehensive perspective, demonstrated the role of using diversified teaching methods in improving students' overall ability. The two studies advocated the importance of diversified teaching methods. In research by Zeid, Assadi and Murad (2017), they directly and completely used the term, diversity of teaching methods, as Li, Li and Tian (2001), and advocated that teachers should use it actively.

The diversified use of teaching methods has been proven to be feasible and effective in most disciplines in China.

Yu (2012) mainly focused on the cultivation of students' management abilities. Through the integration of various teaching methods, including experimental teaching, practical teaching, non-leading group discussion, case analysis, role-playing, and similar activities, he stimulates students' interest in learning and makes students change from passive to active participants in the learning process. Finally, the management ability of students was strengthened. It is worth noting that these teaching methods he adopted are closer to the classification of Li, Li and Tian (2001) (in this study). This research has shown that teaching methods play a significant role in teaching and learning activities. Additionally, combining and improving teaching methods can have a positive effect on these activities.

Chen et al. (2021) developed a model that combined many kinds of advantageous teaching methods, including case study, experimental study, scientific research discussion, and so on. In the end, they widely verified the effect of this teaching model. They found that it did not only stimulate students' interest in the study and scientific research, but also effectively guided them to change their bad habits of indulging in online games and skipping classes, which actively facilitated the cultivation of comprehensive and creative talents.

However, the research on teaching methods in China basically is aimed at the traditional face-to-face classroom teaching, or a certain discipline or subject - neither the online classroom nor the primary school. In addition, these studies did not link teaching methods to psychological variables, such as the aforementioned teaching motivation.

3.4 The relationship between teaching motivation and teaching methods

Based on long-term literature analyses, we found a direct relationship between teaching motivation and teaching methods.

(1) Teaching motivation and teaching and learning activities
The psychology of teachers is a significant determinant of teaching practices. Positive or negative psychological factors can significantly influence teaching behaviour and outcomes (Wang, 2014). As a significant aspect of teachers' psychology, their motivation to teach not only influences other psychological factors such as enthusiasm and a sense of responsibility (Chen, 2012), but also impacts teachers' teaching. For example, Zhang (2012) found that there is a strong relationship between teachers' work motivation, creative teaching effectiveness, and creative teaching behaviour. As a part of work motivation, teaching motivation also plays a very important role, especially in promoting students' learning motivation, which is particularly critical in teaching and learning activities (Lu, 2004). To maintain high work enthusiasm and a sense of responsibility, teachers need to have a strong and lasting internal motivation for teaching (Chen, 2012). Therefore, we can draw a conclusion from the above literature analysis that teaching motivation is closely related to teaching activities,

which not only affect teachers' own teaching behaviour, but also affect the final teaching effect.

(2) Teaching methods and teaching and learning activities

Improving teaching by improving teaching methods is essential, so as to improve the effectiveness of learning, especially when the content involves abstract concepts and theories, which are difficult for students to understand and remember (Zheng & Pu, 2004). In fields that value hands-on skills and practical experience, such as nursing, reforming teaching methods is a significant and efficient way to enhance teaching quality and effectiveness (Zhai, Lin & Liu, 1999). In recent years, some special teaching methods have been studied in depth to analyse the relationship between these methods and the effectiveness of teaching and learning activities. For example, the task-based teaching method has played a significant role in software classes (Lu et al., 2020). The interactive teaching method in primary school Chinese classes enables primary school students to acquire knowledge and cultivate good learning habits by stimulating their curiosity and desire to explore (Chen, 2022). These two studies have proved that at least some teaching methods can promote teaching and learning activities through appropriate application, and there is a close relationship between teaching methods and teaching effectiveness. When analysing the teaching situation of chemistry undergraduates, Liu (2011) believes that the teaching method is one of the tools used to realize teaching goals and complete teaching tasks. The emphasis on this "tool" explains the importance of teaching methods and that these cannot be disregarded in teaching and learning activities. Logically speaking, it is impossible for a teacher to participate in teaching and learning activities and support students in the creation of knowledge without applying any teaching methods. As long as a teacher communicates, he/she speaks, that is, he/she actually uses a "lecture" or a "lecturing method", which refers to the method by which teachers directly and systematically impart information and understanding to students through talking (Yu, 2001). Therefore, the connection between teaching methods and teaching and learning activities is confirmed: this is the common choice of teachers and students, which is accomplished through teachers' design and use of teaching methods; the presence of at least one teaching method is necessary for any teaching and learning activity to take place.

(3) Cause and behaviour

All behaviours have their own causes, which is a conventional conclusion and has been recognized in various fields for a long time. For example, in teaching and learning activities, when pupils have problematic behaviours or bad behaviours, it may be caused by a variety of complex reasons (Jin, 2018). Li and Hu (2016) found that the "house culture" in China widely held by college students, such as living at home and hating going out, originates from both personal and social causes, and students with different majoring subjects have differences in this regard. From this it can be derived that cause leads to behaviour, and behaviour is the result of a cause, which is a logic theory, widely recognized and applied. Teaching motivation is an essential aspect driving teacher behaviour, and, as mentioned before, teaching behaviour comprises teaching methods. Therefore, it can be inferred that teaching motivation has an indirect impact on teaching

methods. As a "cause", teaching motivation can affect the teaching method, which is a "behaviour", which is logically reasonable.

Therefore, we can speculate to some extent that there is a certain relationship between teaching motivation and teaching methods, especially that teaching motivation may directly affect teachers' teaching methods. Further research on online classroom teaching is needed, which is conducive to understanding the circumstances under which teachers choose certain teaching methods.

4. Conclusion
We found that previous studies, conducted on online classroom teaching respectively focused on the paths of educational technology, or teaching. Educational technology has a relatively direct effect, but its implementation requires high-level technology and information in the schools, including new equipment or software. Additionally, medium-sized developing countries have limited economic resources, making it very difficult for them to receive the required government support. With limited technological and economic investment, seeking improvement in teaching becomes less feasible. Teaching innovation is usually realized through educational psychology, and teaching and learning. In this study the importance and value of teaching motivation and teaching methods are analysed. Further study of these variables also may help to address numerous issues regarding online classroom teaching. In addition, this study analysed the potential connection between teaching motivation and teaching methods. The study also analysed their relationship with teaching and learning activities. Meanwhile, researchers highlighted the link between teaching motivation and teaching methods, and revealed their potential correlation with the perspectives of cause and behaviour.

Online classrooms have often suffered from lack of interaction. To address this issue, this research on teaching motivation and methods proposes new solutions to improve student-teacher interaction. These solutions further emphasize the importance of encouraging teachers to enhance students' enthusiasm for interaction through a variety of means. By providing new insights into interactive problems faced in online classrooms, this study is expected to contribute significantly to cross-border research in the fields of educational psychology and teaching and learning, thereby paving the way for future research directions. It is important to note that this study is a literature review, which highlights the need for empirical studies to explore these solutions further.

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