



Research article

A full-flipped classroom mode from the perspective of Junior High School English teachers

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ABSTRACT

Flipped classrooms have been shown to be an effective teaching mode that fosters students' self-learning, stimulates learning motivation, and improves academic performance. However, preparation work and after-class assignments take up a large portion of students' and teachers' time outside the classroom, putting enormous strain on both parties. This study explores the time spent by teachers and students under the current flipped classroom mode and its impact on them from the perspective of junior high school English teachers and then proposes a full-flipped classroom mode to solve these problems. To this end, eight junior high school English teachers who had implemented flipped classroom teaching in a specific district in China were interviewed. The collected data were processed using thematic analysis. The results showed that the current flipped classroom mode does increase the outside-classroom burden for both students and teachers. The learning burden leaves students lacking in exercise and opportunities to develop interests, which is detrimental to their physical, mental, and overall development. The out-of-class burden hinders teachers from achieving work-life balance and is detrimental to their physical and mental health, as well as their professional growth. Based on the views of the interviewees and existing in-class flipped mode, this study provides a full-flipped classroom mode that is in line with Chinese students' actual language learning to concretize the in-class flipped pattern and present its specific steps in language teaching, which integrates all preclass preparation, postclass assignments, and assignment evaluation into one class, including four teaching sessions: preview and lecture, preview tasks, consolidation assignments, and evaluation and feedback.

1. Introduction

The flipped classroom approach is a pedagogical mode that reverses a course's traditional lecture and homework components [1]. A flipped class is that which is traditionally done in class is now done at home, and that which is traditionally done as homework is now completed in class [2]. The flipped classroom requires students to watch brief video lectures at home before attending class, while in-class time is dedicated to activities such as exercises, projects, or discussions [3]. The flipped classroom has been discussed in academic studies by scholars [4–6]. The flipped classroom has demonstrated favorable outcomes, including enhancing students' academic performance [7], motivation, and engagement [8] and promoting social interaction and self-directed learning abilities [9].

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Additionally, it has yielded superior teaching outcomes compared with conventional teaching methods [10]. However, the current flipped classroom mode requires students and teachers to spend much out-of-class time on preclass and after-class assignments [11, 12], which imposes burdens on both students and teachers. Therefore, studies need to be conducted to explore the improvement of the existing flipped classroom mode to free teachers and students from heavy tasks out of class.

Implementing a flipped classroom mode necessitates significant time and effort for educators, as they must devote considerable resources to instructional videos [13]. Research has indicated that the flipped classroom approach requires a substantial investment of time and effort on the part of teachers [13], with selecting appropriate instructional videos being a particularly time-consuming task [14]. Creating original instructional videos is a highly demanding process that often requires an uninterrupted environment, such as the teacher's home [15]. The substantial investment of time and effort in the preparations of the flipped classroom may exacerbate teachers' work-related stress, leading to physical and psychological issues, such as occupational burnout, turnover intentions, anxiety, and depression [16]. Excessive workload and an imbalance in work and life result in inadequate professional growth and a low sense of professional fulfillment [17]. Therefore, exploring strategies and approaches that can alleviate teachers' workload in a flipped classroom teaching environment is imperative.

In China, junior high students are mostly boarding students, so their preclass preparation and postclass assignments are usually completed during self-study sessions in the evening or early morning [12]. They face preclass preparation and postclass assignments for multiple subjects and often feel overwhelmed by their academic workload [18]. Students complain that the flipped classroom produces extra assignments [11]. They prefer to learn in class rather than watch videos for preclass preparation [15], as it is too time-consuming, which increases their extra workload [19]. Excessive academic workload leaves little time for individual interests and exercise [20], resulting in poor physical fitness as well as psychological problems, such as anxiety, depression, and learning-weariness [21]. It follows that further studies are needed to explore ways to reduce students' academic workload in a flipped classroom teaching environment.

Some positive attempts have been made by researchers to address the challenges posed by flipped classrooms. To mitigate issues such as inadequate preclass preparation and excessive student workload, scholars have incorporated preclass preparation tasks into the classroom, a practice known as in-class flipping [22]. Ramirez [23] suggested that in-class flipping has six interrelated stations: the flip station, practice station, self-learning station, feedback station, teacher support station, and peer guidance station. This approach has partially resolved the issue of poor preclass preparation and reduced the burden on students [24]. In China, researchers have explored the in-class flipping mode, which involves conducting preclass preparation in the classroom [25], but little has been done to explore the implementation of the mode in language teaching classrooms.

It is crucial to acknowledge that different subjects possess unique characteristics, which may result in variations in implementing flipped classrooms among different subjects [12]. Therefore, it is recommended to concentrate on a specific subject when discussing the flipped classroom mode [12]. In terms of language teaching practice in junior high school in China, although part of the assignments and assignment feedback have been completed in flipped classrooms, some tasks, such as word memory, language skill consolidation, etc. still need to be completed after class. Therefore, the actual situation for English class is that preclass preparation and postclass assignments occupy much of the students' out-of-class time. In addition, junior high school students learn 7–9 subjects, and their out-of-class time that is available for each subject is limited, so an in-class flipping mode may be more practical. With the English subject as the carrier and junior high school English teachers as the interviewees, this study investigated how junior high school English teachers viewed the academic burden faced by students and the teaching burden faced by teachers and its impacts on them under the current flipped classroom mode, and on this basis, it further made an inquiry about their coping strategies toward this problem. Based on the existing in-class flipping mode, this study provides a full-flipped classroom mode that is in line with Chinese students' actual language learning to concretize the in-class flipping pattern and explore its specific steps in language teaching. The study offers theoretical and empirical support for the reduction of the burden on students and teachers, with a view to promoting their physical and mental well-being.

2. Methodology

2.1. Research tools and methods

In this study, the interview method was used to collect data, and the interview data of junior high school English teachers were summarized and analyzed by the thematic analysis method and MAXQDA software. MAXQDA is commonly used software for qualitative interview data analysis [26], and the collected interview texts were processed using MAXQDA 2022. Thematic analysis is an efficient method for qualitative data analysis that is not restricted to any particular theory and can be combined with multiple theories. There are generally three ways to conduct theme analysis: top-down, bottom-up, and interactive analysis [27]. Thematic analysis includes the following steps: (1) Data collection. Convert recordings into text, repeatedly read the text, ensure that the transcribed text matches the original recording, and make summaries or record insights during the reading process to lay a sensory foundation for the next step of encoding. (2) Coding. Significant concepts were marked in the data, and all the data were coded as detailed as possible to prevent omissions. (3) Summarizing the codes into themes. Group codes into themes, and collect all the data relevant to each theme. Codes that could not be classified into a theme are temporarily placed elsewhere for subsequent classification and processing. (4) Theme reviewing and refinement. Check whether the themes are in relation to the code extracts and the whole interview data. Themes should have internal consistency and can be effectively distinguished from other themes. According to Braun and Clarke [28], at least two themes should be identified, and up to six themes can be identified. (5) Theme definition and naming. Precisely define the name, content, and scope of the themes and draw theme maps based on the relationships between themes. (6) Writing the research report.

Report the results of the theme analysis. The report should focus on the relationships between variables (themes) and analyze the underlying mechanisms.

2.2. Interviewees

This research centers on junior high school English teachers who have implemented the flipped classroom mode in a city in Guangxi, China. Interviewees need to meet the following conditions: (1) He or she should be a junior high school English teacher; (2) He or she has implemented flipped classroom teaching for at least one year (two semesters). This study employs a coding saturation table to determine sample saturation. Initially, the codes present in the first case are recorded, followed by an analysis of the second case and a recording of any new codes that emerge [29]. This process is repeated until no further new codes arise in subsequent cases, which indicates that the data are saturated and data collection can be stopped [29]. This study found that no new codes emerged in cases 6, 7, and 8, so we decided to cease data collection and incorporated eight cases into the study (see Table 1). The sample consisted of three male and five female educators, ranging from 25 to 36 in age, with one senior title, two intermediate title, five junior title, four unmarried and four married.

2.3. Procedures of interviews and ethical considerations

The interview took place from May 10, 2022, to June 15, 2022, via the Tencent Meeting platform for online interviews. The interview was recorded for subsequent coding processing. Additionally, interviewees were informed that they might review research results later to complete member checking. One day before the scheduled interview date, an informed consent form and interview outline were sent to each participant, who was expected to return them promptly. This study strictly adhered to the regulations of the Medical Ethics Review Committee of the National Health Commission, respecting the rights and interests of the interviewees while ensuring that the interviews did not cause any harm. The teachers interviewed were recommended by the principal, and the interviews were conducted with the permission of the principal. All interviewees signed informed consent forms, and no separate application for ethical review was conducted.

2.4. Interview outline

This study aims to understand junior high school English teachers' views on students' academic burden and teachers' teaching burden and its impact under the current English flipped classroom mode and to understand the coping methods adopted by junior high school English teachers to reduce both students' and teachers' burden. To this end, we designed an interview outline with the following questions:

1. According to what you know, please talk about the time that your students spend on English learning outside the classroom and how does that time affect them?
2. Talk about the amount of time you spend on teaching-related tasks outside the classroom, and how does that time affect you?
3. What is your recommended approach for improving the current flipped classroom mode to reduce students' learning burden and teachers' teaching burden?

2.5. Trustworthiness and credibility analysis

The trustworthiness and credibility of qualitative research in this study were ensured according to the recommendations of Morse et al. [30], which include the following five aspects: (1) Method consistency. This is to ensure the fit between research questions and

Table 1
Coded saturation table.

| Code | Primary Coding | Interviewee | | | | | | | |
|--|----------------------------|-------------|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Time Students Spend outside the Classroom | Time Spent by Students | ✓ | | | | | | | |
| The Effect of the Time Spent outside the Classroom on Students | Physical Health | | ✓ | | | | | | |
| | Mental health | | | ✓ | | | | | |
| Time Allocation outside the Classroom for Teachers | Learning Outcomes | ✓ | | | | | | | |
| | Time Spent by Teachers | ✓ | | | | | | | |
| Impacts of Time Allocation outside the Classroom on English Teachers | Physical health | ✓ | | | | | | | |
| | Mental Health | | | | | | ✓ | | |
| | Professional growth | | ✓ | | | | | | |
| | Interpersonal relationship | | | | ✓ | | | | |
| Full-flipped Classroom Mode for Junior High School English classes | Preview + Lecture | ✓ | | | | | | | |
| | Preview Tasks | ✓ | | | | | | | |
| | Consolidation Assignments | ✓ | | | | | | | |
| | Evaluation and Feedback | | | ✓ | | | | | |

methods. Qualitative research requires a match between the question and the method, between the method and the data, and the analysis process. Our research questions are to explore junior high school English teachers' views on the English flipped classroom teaching mode implemented in their current classrooms. Interviews and thematic analysis methods are adopted to ensure matching between research questions and research methods. (2) Sample appropriateness. The samples should consist of participants who best represent or understand the research topic. The adequacy of the data is ensured by saturation and replication; sufficient data should be obtained to explain all phenomena, and saturation data ensures replication in categories, which ensures comprehension and completeness. Our interviewees are junior high school English teachers who can understand the interview topics well. We also conducted a saturation test and gradually increased the number of interviewees to ensure data saturation and replication. (3) Concurrent data collection and analysis. This simultaneous collection and analysis of data is the most fundamental method to ensure reliability and validity. This study collected and analyzed the data simultaneously. We analyzed the data from the first sample, discovering what was obtained and what needed to be learned, and made adjustments or preparations for further information collection. (4) Thinking Theoretically. Ideas obtained from data are confirmed again in new data; ideas have to be validated in the data already collected. The ideas that emerged from the data in this study were gradually formed and reconfirmed in the existing data. (5) Deliberate theory development. Theory is developed through two mechanisms: (a) as a result of the research process, rather than as a framework for driving analysis; (b) as a template for theoretical comparison and further development. The full-flipped classroom mode constructed in this study is the result of the research process and can be used as a comparison and further development of the flipped classroom mode.

3. Results

3.1. Time students spend outside the classroom

Students' assignments outside the classroom consist of two main parts: tasks in language consolidation and preparation for a new class. Most teachers assign students 20-min tasks, of which 10 min are used for previewing a microlecture video for a new class, which is paired with a list of tasks. Typically, it takes 20–30 min for students to complete their assignments outside the classroom.

Preclass previews should be completed outside the classroom, and students are supposed to watch microlecture videos every day, which last approximately 10–15 min (F03).

Our school has implemented the English flipped classroom mode, and some homework is completed in class. We will assign some outside-classroom tasks, such as copying words, sentences and writing compositions, which take 15–20 min every day (F07).

3.2. The effect of time spent outside the classroom on students

Too much time for outside-classroom tasks leads to adverse outcomes in physical health, mental health, and academic performance.

A. Physical Health

Most teachers believed that the time allotted for English assignments was appropriate. However, students have to learn many subjects, so their spare time is often spent catching up with assignments for multiple subjects, which leads to a lack of exercise, poor physical fitness, and aggravated myopia.

Our students are commonly sedentary and lack physical activities, leading to poor physical health, and as a result, many students' physical test scores are not satisfactory. (M04).

Most of our students are busy with assignments during recess and seldom go out for physical activities, resulting in myopia aggravation and poor physical fitness. (M08).

B. Mental health

Chronic pressure from outside-classroom tasks results in a lack of interest, weariness of learning, and even depression in some students.

Outside-classroom tasks occupy much of students' spare time, and they have little time to develop their interests and hobbies, which is not conducive to their mental health. (F05).

Long-term pressure from these tasks causes weariness of learning, which may make some students feel anxious, or worse, depression may occur (F07).

C. Academic performance

Students' inability to learn independently leads to poor academic performance. They encounter difficulties when they deal with outside-classroom tasks, and long-term pressure from these tasks causes procrastination or failure to complete them.

Some students fail to develop the ability to learn independently, and the effect of preclass preparation is poor when they watch microlesson videos in advance, which results in poor academic performance. (F01).

Some students become exhausted of outside-classroom tasks and have difficulties handling them, which results in procrastination or failure to complete them. (M04).

3.3. Time allocation outside the classroom for teachers

The central part of assignment management for English teachers after class is the evaluation of written assignments, such as English composition and subjective questions, which cannot be handled by teaching platforms. Most of the English teachers interviewed teach two or more classes with a student population of approximately 50 each, and the time for assignment evaluation is between 2 and 4.5 h.

I teach English in two classes with nearly 100 students, and it takes me 2–2.5 h to evaluate assignments every day. (F05).

Evaluation of assignments for each student takes two to 3 min, I have 90 students, and it takes 3–4.5 h per day. (F07).

3.4. Impacts of time allocation outside the classroom on English teachers

A. Physical health

Assignment management and other teaching-related tasks take up a lot of teachers' time, and many English teachers have to go to bed late and get up early, resulting in lack of sleep and a poor state of mind. Sedentary lifestyles and lack of exercise have led to physical ailments, such as frozen shoulders, muscle pain and other symptoms.

I need to sit for a long time at night to evaluate students' assignments. Long-term night work results in a poor state of mind, reduced diet, and physical symptoms such as shoulder periarthritis. (F05).

Because evaluation and management of students' assignments takes a significant amount of time, I lack time for exercise, remain sedentary for a long time and often stay up late, and all these contribute to the poor state of my physical health, such as a lack of sleep and muscle pain. (M06).

B. Mental health

Psychological problems, such as job burnout, turnover intentions, anxiety, and depression, often occur in English teachers who work long hours without leisure.

In terms of mental health, long-term pressure makes me feel suffocated and experience job burnout. I want to have a good rest and occasionally even consider quitting the job. (F05).

Psychologically, due to the evaluation and management of students' assignments almost every day, coupled with other workloads, I lack time for leisure and entertainment, and as a result, under great pressure, I feel anxious, irritable or depressed. (M06).

C. Professional growth

Owing to too much time for assignment management and other tasks outside of the classroom, English teachers do not have enough energy to carefully prepare microlecture videos; they cannot take the time to learn new knowledge, advanced technology and educational theories, nor do they have time to carry out teaching research. All these factors are not conducive to improving their teaching and achieving relevant research accomplishments and thus hinder their professional growth and title promotion.

Assignment management takes up much time, and English teachers do not have enough energy to carefully prepare microlecture videos, which makes it difficult to guarantee the quality of microlecture videos. (F01).

I have done almost nothing in professional learning and educational research; my ability and performance in teaching practice is average, and there is little hope for professional title promotion. (M06).

D. Interpersonal relationship.

Lack of time to accompany their families and care for their children is a problem that plagues married English teachers, and they often feel guilty. Unmarried teachers have no time or energy to socialize with others, and problems in marriage and love may plague them.

I have little time to spend with my family and feel guilty. (F07).

I am tired of dealing with work every day and have little time to socialize with others. This makes it difficult to find a suitable partner (M04).

3.5. Full-flipped classroom mode for Junior High School English

The full-flipped classroom mode for junior high school English is an improvement based on the previous English flipped classroom. It completes the preclass preview, postclass assignments, and assignment evaluation in the classroom, freeing up time for students and teachers. The full-flipped classroom mode allows students to fully utilize their after-school time to exercise, expand their interests, and develop comprehensively. Likewise, teachers are able to use the saved time for physical exercise, time with families, socializing, personal development and professional growth. The full-flipped classroom mode not only improves the quality of teaching but also promotes teachers' physical and mental health. Specifically, the full-flipped classroom for junior high school English is designed with four parts, namely, Preview + Lecture, Preview Tasks, Consolidation Assignments, and Assignment Evaluation, based on a 40-min class. The full-flipped classroom mode can be seen in [Fig. 1](#).

Step 1. Preview + Lecture

The teachers interviewed proposed that microlecture videos are played for students to preview the new lesson during the first 10–15 min of the class. The preview and learning of the new lesson will be carried out synchronously and efficiently, emphasizing the teacher’s on-site guidance on key knowledge and learning methods of the new lesson.

As our students’ self-learning ability is not yet adequate, the effect of using microlecture videos under the guidance and supervision of teachers may be better. I suppose I would probably spend 10–15 min on this part. (F03).

In my opinion, a preclass preview could be incorporated into classroom teaching, in which the teacher could spend approximately 10 min guiding the learning of microlecture videos, focusing on the key points and important learning methods. (M08).

Step 2. Preview Tasks

As suggested by the teachers interviewed, this step provides the task list for preview and learning of the new lesson, focusing on the learning and understanding of the new lesson. The task list is supposed to be completed under the teacher’s guidance and takes 5–10 min.

What follows are tasks for practicing their language knowledge that they have previewed and learned from the microlecture videos in the class regarding listening, speaking, reading, writing and other skills. This part may take 5–10 min (F03).

Due to the higher efficiency of previewing and learning microlecture videos under the teacher’s guidance, it may be possible to spare students another 10 min to carry out targeted exercises to examine what they have learned about the new lesson. (M06).

Step 3. Consolidation Assignments

According to the interviewees, the next step is the consolidation assignments. In accordance with the objectives and contents of the class, the assignment list is to be matched with the preview task list and designed to practice and consolidate what is supposed to be grasped in the class, contributing to the cultivation of language competence. Assignments are to be completed efficiently under the teacher’s guidance, which may take approximately 10 min.

Teachers should develop an assignment list to practice and consolidate the knowledge learned in this class for the purpose of improving the students’ language competence. Assignments should be matched with the preview task list as well as the objectives and contents, and it takes approximately 10 min to complete them efficiently under the teacher’s guidance. (M06).

Under the teacher’s guidance, there will be a five-to 10-min in-class assignment training session for consolidation and improvement. (F07).

Step 4. evaluation and feedback

The interviewees suggested that it is better for teachers to spend 10–20 min on assignment evaluation in class. Evaluating students’ consolidation assignments already completed in class allows the teacher to focus on the students’ weaknesses and then provide immediate feedback on their performance, helping them solve problems timely and accurately understand the new lesson.

Teachers evaluate students’ assignments immediately after they complete them in class, give timely feedback and guide them to correct the assignments to make them better understand what has been learned. (F05).

Teachers make differentiated evaluations and provide instant feedback, focusing on students’ problems and weaknesses and downplaying the grading of their assignments. This part may take 10–15 min (M06).

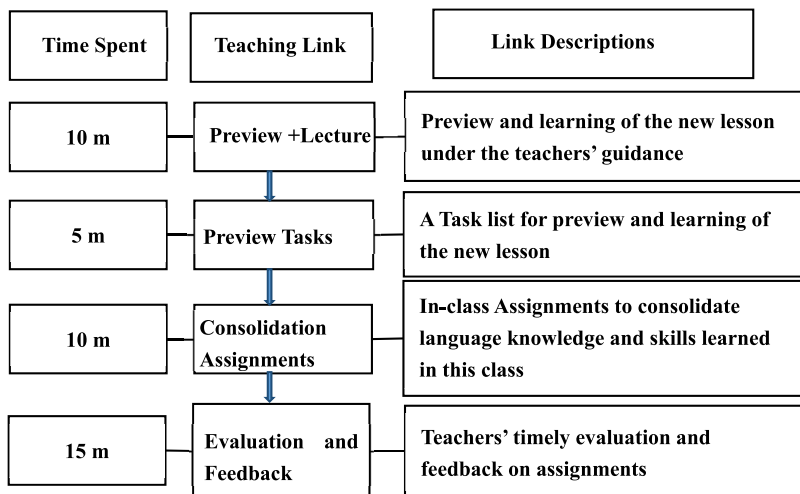


Fig. 1. The Mode of the Full-flipped Classroom for Junior High School English. Note: m represents minutes.

4. Discussion

4.1. Out-of-class assignment burden and its impact on students

According to the junior high English teachers interviewed, the time allocation for out-of-class assignments in the English subject is reasonable, at approximately 20 min. However, due to the lack of the overall planning of assignment time among different subjects, students have a heavy assignment burden, which leads to poor preclass preparation or inability to complete assignments. This finding is consistent with Luo and Li's research results [18]. The preclass preparation and postclass assignments take too long [15]. Junior high school students believe that flipped classrooms result in more out-of-class assignments [11] because the additional workload of preclass learning increases their learning burden [19]. At the same time, this study found, from the teacher's perspective, that excessive academic burden adversely affects students' physical and mental health, which is consistent with previous research results. For example, Hu and Yu [20] found that an excessive assignment burden leads to poor physical fitness due to a lack of exercise and interest development, while Wang and Yang [21] found that an excessive academic burden leads to anxiety, depression, and aversion to learning.

4.2. Out-of-class assignment management and its impact on teachers

The interviewed teachers generally teach two or more English classes with approximately 50 students each, and the time to evaluate students' assignments ranges from 2 to 4.5 h. As suggested by Peng et al. [31], the assignment evaluation and management is one of the primary sources of work pressure for junior high school English teachers. Most interviewed teachers mentioned heavy workloads, including assignment evaluation, which leads to a lack of sleep and exercise, poor state of mind, and physical symptoms, such as shoulder peri-arthritis and muscle pain. Long-term stress without relief leads to burnout, job-quitting intention, anxiety, and depression symptoms. The findings are in line with previous studies. As suggested by Deng et al. [16], assignment evaluation exacerbates the work pressure of junior high school teachers, leading to physical symptoms and psychological problems. Lack of time for learning and research leads to a halt in personal and professional growth, which in turn negatively affects the improvement in teaching quality. Excessive time allocated to exhausting work reduces the value of professional time, resulting in insufficient professional development and low job satisfaction [17]. The interviewed teachers generally feel they lack time to spend with their families and engage in other interpersonal interactions. These problems are mainly caused by excessive workloads, leading to work-life imbalance [32].

4.3. The full-flipped classroom mode for Junior High School English classes

This study is a further improvement on the current flipped classroom mode. In junior high schools in China, some English classes have implemented the flipped classroom mode, and assignment evaluation and feedback have been partly completed in class. However, it still requires students to complete out-of-class assignments, such as word memory and language skill consolidation, and therefore teachers still need to evaluate them and provide feedback after class. The full-flipped mode for junior high school English classes, developed in this study, integrates preclass preparation, postclass assignments and evaluation into the classroom to free students and teachers from out-of-class burdens. If all subjects can achieve high-quality course teaching goals through careful teaching design, students can engage in more physical exercise and expand their interests. The full-flipped classroom mode may help junior high school students become well-rounded and happy learners. It may also give teachers more energy to promote professional growth and improve teaching quality, and spare them more time for families, leisure and socializing, helping them become healthy and happy educators.

5. Limitations and future suggestions

The full-flipped classroom mode for junior English classes was initially constructed through interviews with junior high school English teachers. However, some shortcomings in the following research are still worthy of further discussion.

First, this study only interviewed junior high school English teachers, and the research results have limited reference value for other subjects. Although the full-flipped classroom mode developed in this study may apply to other subjects, the time allocation for each stage may vary, and appropriate adjustments should be made when applying this mode due to the characteristics of different subjects.

Second, this study only discusses junior high school English teachers' views on the current flipped classroom mode, lacking students' views. Future research should interview students to discover their views and feelings on the current flipped English classroom so that the full-flipped classroom mode constructed can improve students' academic performance and reduce their academic burden.

Third, although this study mentions that consolidation assignments and preview tasks should differ, it has yet to describe the differences between them. Future research needs to collaborate further with junior English teachers, researchers on English teaching, etc., to construct an assignment list that consolidates students' knowledge and skills in the English language, improving their language competence.

Fourth, the results of this study are still in the theoretical research stage, and the mode has yet to be tested in practice. Although this mode can solve the problem of out-of-class time for students and teachers, whether all steps of the full-flipped classroom mode proposed by the interviewed teachers are practical for English classes still needs to be continuously tested and improved in practice.

6. Conclusion

The current flipped classroom mode for junior high English classes in China increases the out-of-class burden for students and teachers. The burden is not conducive to their health and comprehensive development. This study developed a full-flipped classroom mode for junior high school English classes, integrating preview, lecture, assignments, evaluation and feedback into the class. It includes four teaching links: preview and lecture, preview tasks, consolidation assignments, evaluation and feedback. The full-flipped classroom mode concretizes the in-class flipping mode in language teaching, presents detailed steps of in-class flipping in English classes, and provides a new possibility for the flipped classroom mode in English teaching in the Chinese context.

Ethics approval statement

Review and/or approval by an ethics committee was not needed for this study because, according to Article 32 of the “Measures for Ethical Review of Human Life Science and Medical Research” issued by the National Health Commission, the Ministry of Education, the Ministry of Science and Technology, and the National Administration of Traditional Chinese Medicine, “Where human information data or biological samples are used to conduct human life science and medical research in the following circumstances, which does not cause harm to human body and does not involve sensitive personal information or commercial interests, Ethics review can be exempted to reduce the unnecessary burden on researchers and promote research in human life sciences and medicine”. The interview research conducted in this study meets the provision of exemption from ethics review stipulated in this article. The study procedures comply with the ethical standards set by China, and informed consent forms were signed and obtained from all individual participants included in the study.

Data availability statement

The data that support the results presented in this paper are available from the corresponding author, upon reasonable request.

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CRedit authorship contribution statement

Yan Ma: Writing – review & editing, Writing – original draft, Investigation, Funding acquisition, Formal analysis, Conceptualization. **Changwu Wei:** Writing – review & editing, Project administration, Conceptualization. **Feixue Huang:** Writing – review & editing, Validation, Methodology, Investigation, Formal analysis.

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

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