Application and Research of FC + Mobile Device Terminal in Practical Teaching

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ABSTRACT

Taking English argumentative writing teaching oriented to real situations as an example, this paper explores how students can use the learning management platform, network system and learning system in mobile device terminals. Combined with the teaching structure of FC, that is, classroom pre-learning—classroom immersion learning—indepentent research after class, to solve the problem of the lack of English thinking ability—logical thinking, critical thinking and creative thinking—in the stage of writing learning in class and in the final draft of writing. The result shows that compared with the traditional teaching mode or the FC, the FC + mobile device terminal teaching mode (FCMDTTM) is more helpful to improve students' English argumentative writing ability.

1. INTRODUCTION

At present, smart education (SE) is widely mentioned in many application levels. SE is based on technologies such as Internet, cloud computing, big data, wireless communication and so on [1] to build the smart education information online-offline unicom mode, to make the education digitization more convenient, to greatly improve the level of smart of the digital education system,
to realize the education of information technology in the teaching process of deep interaction (smart of teaching, learning, evaluation of management, smart, smart research and service) [2]. Many researchers in China pay close attention to how to construct smart education. Nowadays, considering the urban and rural discrepancies and regional differences of education in our country, many schools have not yet completed the standardized smart classroom[3], but with the rapid development of Internet technology in our country, the latest research and development of 5G era is coming, and 4G, WIFI network has been basically realize [4]popularization. At the same time, the android's all kinds of smart phones and other mobile terminal equipment has been widely used. The equipment can also be completed as SE for chartered added the function of classroom teachers and students of teaching information needed [5]. It fully mobilizes students' subjective initiative, ability to accept knowledge and innovation ability, active [6]. The flipped classroom (FC) originated in the United States. At the beginning of class, teachers guide students to watch relevant teaching video before class. In class, teachers further discuss related issues with students and guide students to discuss relevant issues with each other in class. Compared with the traditional teaching mode, FC is an innovative reverse teaching structure that takes students as the subject to carry out teaching activities [7], so some people call it "inverted classroom".

Watching the video is the highlight of FC model. However, in the rapid development of modern information education technology today, mobile terminal equipment is a more intelligent, digital, convenient access to information than watching the related teaching video. It can expand the depth and breadth of relevant class related content information. Mobile devices can provide all kinds of information of English learning to expand data including "listening, speaking, reading, writing, translation, reading", combining with the reverse order of FC teaching structure to improve the teaching quality and efficiency, especially in English writing, to enhance the ability of students to think in English in writing English composition.

2. APPLICATION OF FC + MOBILE TERMINAL DEVICES MODE IN PRACTICAL TEACHING

In the classroom, with network, projector and mobile devices, three teaching classes with 30 sophomores in the school of foreign languages of China West Normal
University, separately exert three teaching modes—traditional teaching mode, FC teaching mode, FCMDTTM to carry out argumentative writing in English. Teaching content of each class is argumentative writing on the same topic. In the following part, compared with the teaching advantages of this mode with the other two modes, each link of the FCMDTTM intuitively show that this mode can achieve a substantial improvement of students' writing and thinking ability in English argumentation writing class through mobile terminal devices in ordinary classrooms.

2.1 Teaching Strategy of Pre-Class Teaching Module—Pre-Learning in Mobile Terminal Devices

The front part of FC teaching design refers to extending relevant knowledge of classroom based on video. The extended need of foreign language subjects for "listening and reading materials" concerns natural sciences and social humanities. The contents imported from books and watching videos in English FC are far from meeting this demand. Meanwhile, the teaching syllabus goal of cultivating students' "Core Literacy of English Language [7]" in foreign language learning cannot be achieved in traditional class with limited class time.

By installing learning-related apps such as Pigaiwang which can check students' English compositions intelligently and give students feedbacks; Superstar Learning app (SL) via which students can submit assignments and search for information, and teachers can check students' homework; MOOC, and smart library of CWNU on mobile terminal devices—the platforms for obtaining information resources, serving as the pre-stage "auxiliary support and information collection". Pre-learning in mobile terminal devices is that students can not only watch teaching video, but also use the Internet for learning in the pre-learning link. By using APP in mobile phones, such as Google, the BBC, VOA, Fox news and other information access way to find a huge number of reference related information, and mobile devices to connect online library--the Super Star Mobile Library, China West Normal University online library, Beijing Shushengzhijia and so on to obtain the required materials, enables students to achieve full collect information needed for writing related topics, writing content and multi-angle conception. Students finally may put forward new and innovative ideas. The learning situation can be timely fed back to the teachers through Superstar Learning app’s learning forum, WeChat, QQ, email and other online methods. Teachers can use in SL or MOOC both software release Related
previewing content, not only can real-time follow up each student's learning content, length, difficult point and so on, can also see chart after statistics of students' overall learning feedback and mutual discussion, can fully grasp student learning and learning needs. Teachers grasp the key and difficult information extracted by students after they read relevant materials, summarize and feedback their own reading information, classify and sort out the feedback information of students, and design it into the focus of lesson preparation, teaching and group discussion in class. (see figure 1).

When students are conceiving compositions, they should consider who are the potential readers of written content, and then based on the cognitive level of potential readers students should read, select, and then collect related native English materials from mobile terminal that can help them to produce brainstorming about writing content in native thinking logic. In this link, students use the massive information in mobile phone to select learning, which can generate more extensive brainstorming than watching video prepared by teachers. Students complete the first draft of writing, submit to the online learning platform, such as correction network (a Chinese network) for students which can correct English composition’s grammar mistakes and offer advice on writing style and sentence structure, and for teachers which can digitize the students’ paper writing level at the
preliminary stage of the classroom feedback to the teacher, so that the teacher can
save time to intuitively grasp the students' level before class, so as to design the
relevant content needed to guide students in the classroom.

2.2 Teaching Strategy of Classroom Teaching Module—Immersive Learning
of Mobile Terminal Devices

In the English writing class, if there is no supplement of relevant knowledge,
the group discussion in class will not be able to come up with topic sentences
with more English thinking and highly condensed topic sentences than the first
draft of the paper, and the quality of an argumentation paper largely depends on
the quality of topic sentences and topic sentences.

Confronting problems mentioned above, under the condition that Teachers
has already known that students have some background knowledge of English
argumentative writing topic, in class, students state the writing process of the first
draft and existing problems in the pre-learning stage that cannot be solved
through group cooperation. The teacher provides feasible revision directions and
methods for students' shortcomings of the first draft, and answers students'
questions in the pre-learning stage. Students are invited to participate in group
discussions in class that is also the key link to improve the English argumentative
writing level. In this part, group members further discuss and modify each other
on the shortcomings of their own writing content. At this time, relevant materials
of the topic need to be expanded to help group members to provide more in-depth
and multi-angle knowledge supplement on the argument, to make the thesis
statement and topic sentences more coherent. The simplest device of intensive
learning is mobile phones, especially if classrooms are equipped with computers
and electronic whiteboards. Mobile terminal devices equipped with applications,
software, and the Internet to access data can become Intensive Learning platforms.
In this way, information can be shared with teachers and classmates in a timely
manner, and there is no need to spend time to copy materials and send them to
students in the next class, to improve the efficiency of group discussion. In order
to make the topic sentence of an argumentative essay reflect English thinking,
students need to collect facts in multi-dimensional ways (such as images, audio,
video, text), summarize as many pros and cons as possible, and then put forward
their own opinions because of the collected opinions to be more profound and
convincing. With the support of mobile device terminals for fast and efficient
search and acquisition of relevant knowledge, students have more new directions
and bases to discuss the modification of topic sentences, so that they can construct a logical framework between paragraphs and within paragraphs of an English argumentation paper instead of relying solely on the limited viewpoints and directions of textbooks.

### 2.3 Students in The Writing Class Study Independently

At the end of the lesson, students in combination with the teacher's comments and team members of the group discussion out method, how to further optimize the article again to modify the article content and grammar, logic, and finally submit the end draft by mobile phone in the English learning platform, such as Pigaiwang. Students by using artificial intelligence system independently reviews article grammar and sentence structure if there is a problem, then concluding the final draft argument. Teachers can follow up students' revision content and frequency in real time on these platforms, master students' learning situation, and make comments on the online platform, which greatly saves the class time required for this writing curriculum, and ensures that teachers can fully get all students' learning dynamic progress of this learning content. Compared with the traditional model, teachers participate in the whole process of English argumentative writing. Finally, students summarize the useful knowledge in the whole process of writing and revising an article they have written, so that they can have first-hand reference materials in line with individual conditions when writing an argumentation in the future. Teachers grade students' final drafts through the online platform, and feedback their Suggestions to students through the platform, which greatly saves the required class hours and mobilizes students to study independently after class.

![Figure 2. Comparison of the effect of student's mastery of knowledge.](image-url)
3. SUMMARY AND PROSPECT

In the mode of FC + mobile terminal device, which takes English argumentative writing as a specific case study, FC is a teaching process, which can fully involve students in the application of argumentative writing methods compared with the traditional classroom where teachers give priority to teaching; Group teaching includes pre- and after-class group assessment, group discussion in class and group cooperation after class to give full play to students' subjective initiative in absorbing knowledge. The diverse information available in mobile terminal devices for teachers to choose for different teaching subjects and contents makes up for the narrow amount of knowledge introduced by the single video content in the pre-teaching design stage of FC. The innovation model enhances students exerting ability of argumentative composition. In addition, under the guidance of teachers, students can collect, sort out and logically apply the expanded background knowledge needed for writing on a specific topic. At the same time, students' enthusiasm for independent learning after class is mobilized, which greatly improves the efficiency of the class. This paper explains the advantages of the new teaching mode and the possibility of realizing the intelligent education in the absence of smart classrooms by applying this mode to the English argumentative writing, and hopes that this mode can provide reference for the arrangement of more subjects and teaching contents.

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