The Advantages and Disadvantages Analysis and Model Construction of Chinese Character Teaching APP for Teaching Chinese as a Foreign Language

Xinyue Xia[a], Lijun Zhang, Xueling Li, Zhen Guo, Lian Zhou, Jiaqi Wang

Jiangxi University of Finance and Economic, Nanchang, Jiangxi 330013, China

[a]2068199172@qq.com

Abstract

Based on the research of APP in teaching Chinese characters as a foreign language, this paper takes foreign Chinese learners and overseas Chinese as the research objects, and studies the autonomous learning theory and mobile learning theory as the theoretical basis. It is committed to breaking a series of boundaries such as time and space, teaching materials and objects of learning Chinese characters by using fragmented time, so as to realize the benign interaction between language technology and language economy. This paper is mainly based on the test results of the Chinese character learning APP in the IOS system. By analyzing their advantages and disadvantages, it summarizes the main problems existing in the current Chinese character teaching APP and the advantages that can be used for reference, and puts forward the prototype of the ideal Chinese character teaching APP -- " Chinese Garden ". It puts forward feasible suggestions to solve the difficulties in writing, memorizing, recognizing and promoting the combination of APP autonomous learning and traditional classroom teaching.

Keywords

International Chinese Education; Chinese Character Teaching; APP; Advantages and Disadvantages Analysis.

1. Introduction

At present, there is a big gap in the online Chinese teaching market, especially the teaching of Chinese characters, which cannot meet the needs of users. Therefore, this paper constructs the " Chinese Garden " Chinese character learning APP. Through the analysis of the advantages and disadvantages of Chinese character learning APP on the market, combined with the survey results of 20 Vietnamese Chinese character learners ' evaluation of the use of Chinese character APP and interviews with teachers and students, this paper comprehensively constructs the " Chinese Garden " model, and puts forward suggestions for the combination of Chinese character APP and traditional classroom teaching.

2. Analysis of Advantages and Disadvantages of App in Market

This paper intends to test 16 Chinese character APPs, but due to version problems, Learn Chinese with laoshi and Hanzitime cannot be downloaded, and finally 14 Chinese character APPs are actually tested. Here is a brief introduction to each APP and its pros and cons.

2.1. Chineasy

English interface, explain Chinese characters through pictures, with detailed English explanation ; Chinese learning in accordance with the word, word, phrase (sentence) step by

step, practice covers listening, speaking, reading, writing ; the content of HSK can be selected ; video, broadcast to expand and demonstrate words.

Shortcomings for example sentence less, part of the learning chapter to pay, supporting practice does not exist time limit and score requirements, is not conducive to students directly see their own problems.

2.2.   Chinesekit

Chinese interface, mainly HSK1-9 words, related oral practice ; whether the word is understood or not can be judged according to the level. If the word is skipped, pronunciation, writing, example sentences and interpretation will be pushed if the word is not understood.

Shortcomings for less function, oral practice most resources need to pay and for new words there is no better review system.

2.3.   HanyuD

English interface, content is very simple, learn the pronunciation and writing of everyday words, suitable for tourists.

Shortcomings for less content, pronunciation practice exists obvious flashback problem.

2.4.   Chinese Writer

The language system has Vietnamese, English, Japanese, Korean optional ; according to HSK to divide the stages of Chinese characters to learn ; all features free, according to HSK learning schedule reasonable arrangement ; according to the character components" classification system learning, the interface is simple, rich in Chinese characters.

The deficiency is that there are advertisements ; lack of learning corresponding practice procedures and lack of examples of Chinese characters.

2.5.   Chinese3D

English interface, using 3D animation, has high interest and technical ability ; have set, search function, can set the number of learning ; according to HSK is divided into four levels ; the interface is in the form of building blocks accumulation, and the building blocks accumulation of each part is classified according to the character components ; the words after learning are marked with different colors to distinguish proficiency.

Shortfalls are mostly paid ; practice way is single, lack of Chinese character demonstration and Chinese character writing training ; new words learning, interpretation is very thin ; the interface is complex and unclear.

2.6.   ELCC

English interface, learning according to different topics, including 250 common root characters and HSK1-3 level 1162 common Chinese characters ; learn Chinese characters through the combination of components of Chinese characters split animation and explain the whole character according to the meaning of components ; can deepen memory through writing ; practice in various forms, interesting.

The deficiency is that only one subject is free, and due to the change of word meaning and the evolution of font, the meaning contained in Chinese characters and their components requires higher Chinese level of learners, which is not suitable for beginners.

2.7.   Art Chinese 2

Theme teaching, learning common words ; story description, graphic combination, showing the morphological evolution of Chinese characters ; word collocation to strengthen the understanding of Chinese characters ; consolidate learning through listening, writing and selective training.

Shortcomings for the number of Chinese characters is small, need to pay for purchase ; Chinese characters in graphic teaching and morphological evolution are limited ; there are limitations in the connection between specific things in pictures and the meaning of Chinese characters ; training mode is rigid, memory effect is short.

2.8. WordtraceCN

English interface, free use, including exercises and tests ; the directory contains basic vocabulary, everyday language, and various sort tables, with a variety of learning categories.

The deficiency is that there is little difference between practice and test ; Chinese character learning is a single writing practice, which is a dictionary Chinese character learning software.

2.9. Chinagram

English interface, arranged according to the theme and pinyin ; the history of Chinese characters is introduced. A single Chinese character lists the evolution of Chinese characters on the right side, and the components, evolution and significance of Chinese characters are described in detail in the middle. End with Chinese words, writing training.

The deficiency is to pay for download ; there are a few mistakes (currently found that the writing of the word " Bang " is wrong) ; the number of Chinese characters is limited ; Chinese character writing lacks animation demonstration ; suitable for senior Chinese learners, there are some difficulties for beginners.

2.10. 300 Chinese Characters

English interface, with stroke order demonstration function, with corresponding pinyin, meaning and phrase ; it lists all the phonetic alphabets for poly-phonetic characters and helps to master Chinese characters more accurately according to different phonetic phrases ; can point out the Chinese characters as the character components of the special situation and give the corresponding examples.

Shortcomings for most paid learning ; the number of Chinese characters covered is limited, and lack of writing practice.

2.11. American Chinese

Chinese interface, according to the " American Chinese " teaching materials arrangement of learning process, including preschool education and American Chinese 1-10 volumes ; pre-school learning rhyme ; multi-meaning, attach importance to basic meaning ; has the stroke order demonstration, each with different color annotation ; have writing practice writing scoring function, can test their own learning situation by scoring.

The deficiency is that many advertisements affect learning experience ; rough interface, color mismatch, icon function annotation is not clear ; high dependence on the text, the use of small crowd ; the form of practice is single, and the difficulty of practice does not match the content learned ; the initial consonant learning system is incomplete, and the basic learning needs to be improved.

2.12. Chinese Characters Baby

The main function is dictionary, including common words, free no advertising ; pay attention to the specification of strokes, with stroke order query and related knowledge, automatically demonstrate the correct stroke writing sequence after query, and provide the character components and pinyin of the word.

The deficiency is that the interface is too simple and lack of beauty ; single content, it is difficult to produce user stickiness ; it weakens the content of phonetics and meaning.

2.13. Skritter

The language of 21 countries is set, and the words are classified in detail at the interface, with complete functions and graded learning, which is suitable for learners at different levels. Set subscription function, personalized customized learning programs ; word interface test, can be consolidated in time review ; there is a feedback channel in the home page and learning interface, which can timely grasp the user needs ; according to the HSK grade division of each stage to learn Chinese words, up to HSK6.

The deficiency is that some functions are charged and have too many functions, so novices are not easy to start.

2.14. Du Chinese

APP has a wide range of text acceptance, personalized choice of learning difficulty. Text-based learning, systematic ; the number of text is rich, from simple to difficult classification clear ; text in the form of reading, recording playback accurate and clear, personalized design ; no advertising, the page is clear.

Shortcomings for download features and some text to pay for use ; lack of single stroke learning, only suitable for learners with a certain foundation ; the text is dominated by stories and lacks relevant context learning.

3. Summary of Problems

A complete Chinese character learning should include the understanding of pronunciation, shape and meaning. From the above fourteen Chinese character teaching APP test, this paper analyzes some problems existing in the current market APP :

3.1. Lack of Practice

Among the fourteen tested APPs, five APPs did not practice, six APPs were relatively simple or crude, and the remaining three APPs were relatively perfect. Five of the twenty respondents said they used too little APP practice. Adequate after-class tests can provide timely feedback on the learner 's learning situation. Referring to native speakers ' English learning software (For example, scallop words, 100-word chopping) In order to develop learners ' ability to use language flexibly, the test usually examines learners ' familiarity with a word by changing the form of a topic. In this regard, the practice of Chineasy and ELCC is close to the domestic more mature second language learning software, even more interesting.

3.2. Unknown Basis

Chinese characters are the biggest difficulty in Chinese learning, so even learners who have a good command of Chinese are not necessarily able to write Chinese characters. Chinese character learning runs through the whole process of Chinese learners 'learning, so it is very important to have a software that can meet the needs of learning Chinese characters from introductory to advanced learners. Unfortunately, most Chinese character software did not do this. In the app, Du Chinese is a software that can choose what to learn according to the level of learners, but compared with other software, it is not a strict sense of Chinese character learning software, in fact, it does not account for a large proportion of Chinese character learning. In addition, such as Chineasy, Chinesekit can choose HSK level software is also a reference for different levels of Chinese learners.The setting of different levels and contents not only improves the efficiency of different learners in searching for Chinese character learning software, but also helps cultivate long-term users.

3.3. Lack of Drawings

Compared with alphabetic and phonetic characters, Chinese characters are complex block structures, resulting in hard to recognize and hard to remember. With the aid of graphic teaching, Chinese characters which are developed from pictographic symbols become relatively easy to remember. At present, the known picture-aided teaching software includes three - Chineasy, Art Chinese 2, Chinagram (Skritter is not obvious so not included). The first is to help learning by adding cartoons to Chinese characters, and the latter two are assisted by demonstrating the morphological changes from Oracle to modern Chinese characters. Roughly speaking, cartoons may be more suitable for beginners of Chinese characters. For learners with good mastery, they may wish to explore fun in the ever-changing Chinese characters, which should be viewed with the level of learners.

3.4. Poor Interpretation

The meaning of Chinese characters, like the meaning of English words, may have many meanings. For beginners of Chinese characters, as well as Chinese characters with simple form and single interpretation, it may be no problem to simply explain them in English words. However, if Chinese characters with complex forms are encountered, it cannot solve the problem of "difficult to recognize" Chinese characters by explaining their meanings only once through words. In the learners 'eyes, the word interpretation is not enough to meet them. It is necessary to understand and distinguish the similar words by example sentences, or by splitting and explaining the structure of Chinese characters.

3.5. Advertising Interference

The emergence of advertising will not only distract people, but also easily make learners bored. Even in entertainment software, people do not like to have too many advertisements. So, try to avoid advertising when setting APP. Most paid software doesn't have this problem, but free software, especially the "American Chinese" APP, advertising has affected learning. If free software can only insert advertising in order to maintain operation, it is better to make paid software, try to do the content well, and provide users with a certain period of trial, believe that good software can let users pay.

In addition, the basic functions of Chinese character learning APP should be:

First, Chinese character writing practice. Most Chinese character APPs do not miss this exercise, but there are also a few exceptions, such as 300 Chinese characters. For Chinese beginners, who have not learned the basic strokes of Chinese characters, they write Chinese characters like " pictorial symbols ". At the 2022 Beijing Winter Olympic Games, Simon DESTHIEUX, a French athlete, insisted on signing with Chinese characters, and first wrote " Π " when writing " 西 ". The remaining vertical, folding and horizontal are unusual. Such strokes, stroke order completely disordered writing of Chinese characters, will not only affect the beauty of writing, but also easily " lack of arms and legs ", or directly " writing variation ". Therefore, some Chinese characters APP does not have stroke writing practice, which is difficult to solve the problem of Chinese characters " difficult to write ". There are three APPs in the survey that have no writing exercises, two of which have no writing exercises, and the other has exercises but no exercises (HanyuD). This is a problem that cannot be ignored for Chinese character teaching APP.

Second, basic training. The shape of Chinese characters is complex, but after mastering the basic stroke system, it can solve the problem of difficult writing of Chinese characters to a certain extent, and provide rules for future writing of Chinese characters. At present, beginners in the difficulty of Chinese character writing are the various stroke lines of Chinese characters intertwined, do not know how to do next. After having a basic understanding of the form of Chinese characters, we can effectively avoid the confusion of " one pen writes half and another ".

At present only the word baby, Chinagram has the corresponding stroke explanation, the follow-up software setting should take this into account.

4. Drawing on Advantages

Some unique innovations of individual software are worth learning:

4.1. Category Learning

Cui Yonghua (1997) pointed out that there are three ways to teach Chinese characters as a foreign language: through strokes, through parts and through the whole characters. However, stroke teaching is too fragmented, and the whole character teaching is too difficult. At the same time, according to Mr. Sun Qingshun's research, at least 80 % of students" writing errors can be attributed to component errors, so scholars try to teach Chinese characters with components. There are three software for teaching the meaning of Chinese characters by explaining the meaning of each component: Chineasy, ELCC and Chinagram. However, only ELCC takes character components learning as the mainstream. It not only discusses each component separately in explaining the meaning of the word, but also allows learners to explore a series of rules such as the location of different components, the relationship between Chinese characters of the same category, and the connection between generics and pronunciation. For learners in non-Chinese character circle countries, this exploration method may be more effective than directly presenting Chinese characters in front of learners, which is conducive to mastering the rules of Chinese character configuration and accelerating the learning progress.

4.2. Video Expansion

Short video is a popular medium for information dissemination at present, and it is also the focus of this software design. Skritter and Chineasy achieve the purpose of spreading Chinese character knowledge through video. Among them, Chineasy not only has videos, but also blogs and broadcasts to explore the mystery of Chinese characters from multiple channels and angles, and the content will be updated in real time, with better results in practice. At the same time, considering the network situation of different countries, the download method is provided for low-bandwidth countries and regions, and audio is used as much as possible. Video and audio can be played in real time in high-bandwidth areas.

4.3. Historical Introduction

Fei Jinchang (1998) put forward that some students in non-Chinese circle countries still stay in the wrong cognition of Chinese characters in picture words, and their language system will also have a negative impact on their learning Chinese characters. Therefore, by introducing the history, nature, characteristics of Chinese characters to cultivate their concept of Chinese characters. Chinagram, as the most clearly APP to explain the history of the development of Chinese characters in the above software, has contributed to helping learners cultivate the concept of Chinese characters, understand the meaning of Chinese characters, spread Chinese culture and cultivate interest in learning. Clear historical expansion can not only reduce learners" fear of the difficulty in writing Chinese characters and appreciate the charm of Chinese characters, but also deepen their impression of Chinese characters through physical association.

4.4. Ranking Records

The existence of ranking can make students more clear about their own strength, stimulate their learning motivation, and see their progress and retreat. Skritter urges learners to achieve perfection in learning the pronunciation, meaning and shape of Chinese characters by ranking test competition that other software does not have.

4.5. Confusion Comparison

The results of the questionnaire showed that 41.67 % of the students thought that the most difficult part of Chinese characters was "hard to remember ". Chinese characters create a large number of Chinese characters with limited components, so there are many similar form characters. Liu Mengdan (2016) said that there are a large number of Chinese characters with similar forms but very different meanings. For Chinese non-native speakers, they may not clearly distinguish these similar words. Such as "于"and "干", "很"and "银", similar in shape, pronunciation, meaning is very different. In the Word Baby(a software), there is a plate called ' easily confused ', including some easily confused words, such as "凹" and "凸", but this function is not perfect. When designing APP, we may classify confusing words into a group, focusing on explaining the differences between them.In addition to the above analysis, there are many factors need to be considered, such as language setting. At present, the most widely used software is Skritter, which can choose 21 language interfaces, which undoubtedly provides convenience for Chinese learners in some countries. However, there are 233 countries and regions in the world. Chinese learners are all over the world. It is impossible to take into account all learners, coupled with memory size and other issues. Therefore, it is necessary to discuss the details of interface language.

5. Prototype of "Chinese Garden"

Through the above analysis, we build a comprehensive Chinese character APP (skill class + dictionary class) as the goal, we can initially conceive the prototype of ' Chinese Garden ' software:

5.1. Language Setting

According to the results of the questionnaire, 58.33 % of the students prefer Chinese interface, 16.67 % choose English and 16.67 % choose mother tongue. Therefore, at least two languages can be chosen : English and Chinese. English is a world language, most countries will learn English ; Chinese is the target language, for high level of Chinese people can choose to help them further familiar with Chinese. In addition, several common national languages are set up in countries with a high number of Chinese learners and a high proportion of population in the world.

5.2. Function Setting

In front of new users entering the page, they need to choose to learn complex or simplified, country, and their own level (entry, beginning, middle, high or HSK1-6). If they don ' t know, they can choose to carry out the level test first to obtain the corresponding learning suggestions (the level and font can be changed in the setting). Wenjun Zhang (2009) concluded through experiments that different levels of Chinese students should pay attention to different aspects in learning Chinese characters. Primary learners should pay attention to the writing training of Chinese characters 'strokes and components, and middle and senior learners should systematically learn the knowledge of Chinese characters ' partial head, and correspond the shape, pronunciation and meaning of Chinese characters. Therefore, after the level is selected, the change of learning content should also be paid attention to.In addition, Chinese learners in different countries should also be provided different learning strategies. For the learners of Japan and South Korea, which have the foundation of Chinese characters, the difficulty of learning Chinese characters can be appropriately increased and the learning progress can be accelerated. At the same time, instead of focusing on the writing of Chinese characters as for the learners of non-Chinese circle countries, more emphasis should be placed on the listening and reading of Chinese characters. Functions are set at the bottom of the page, including study and review, customs clearance and ranking, exploration (video broadcast), search, my (mall,

collection, setting, problem feedback) five sections. It is worth noting that the function setting must be concise and the icons and text descriptions must be added. It is easy to cause users to spend more time understanding the functions of each icon and forget the situation after a period of time after rejecting the situation that only icons have no text and many functions like "American Chinese".

5.3. Content Setting

5.3.1. Learning and Review

Users must have a clear learning outline and reference materials for learning Chinese characters, which cannot be learned without knowing the source of Chinese characters. In addition to clearly identify the HSK tutorial learning APP, as well as WordtraceCN based on the frequency of use of Chinese characters arrangement software, there are part of the application of Chinese character learning order unknown source, such as 300 Chinese characters, HanyuD. Therefore, the software settings need to have a formal and clear textbook reference, including ' HSK standard course and other foreign Chinese learners commonly used textbooks. Users set the HSK vocabulary to learn (or other teaching materials) and the amount of daily learning and review according to their own needs, and set a card reminder. If users don 't want to follow the rules of the word book, they can switch to topic learning, like ELCC, Art Chinese 2, etc. The learning of each Chinese character includes the pronunciation and interpretation of the Chinese character (in addition to the English word interpretation, the interpretation should also have part splitting interpretation and comprehensive explanation, such as Chinagram), tone, writing content, and at least one example sentence and several phrases. If a word contains multiple meanings, it should be distinguished by corresponding examples (applicable to middle and high levels).

5.3.2. Crashing and Ranking

In our test APP, there are more than one model of breaking customs, but only Skritter achieves user ranking, seizes the learner ' s competitive psychology and progressive psychology, and makes it maintain a lasting motivation in the competition with other learners. Pass break form can refer to the test, according to the progress, accuracy and time to rank. At the same time, if there is no reward for the hard-working users, the nihility ranking will also lose its attraction for some users. Considering that it is difficult for the latecomers to take the lead due to different levels and reduce self-confidence and motivation, it is necessary to set the progress list (updated every week) and the score list (updated every day) at the same time. It is best to do a ranking one by one, and give the top 10 points reward. In the subsequent opening of the mall, points can be used to exchange the desired goods.

5.3.3. Exploration

In the form of video, text, broadcast to explain some Chinese characters and expand practice. Especially short video, as one of the current hot spots and network teaching forms, has rich learning resources. The survey shows that 41.67 % of learners want to teach with short video animation. Under the influence of the epidemic situation, He Jiayao(2021) found from the survey report on online teaching abroad published by QS that the proportion of completely offline teaching was only 8 %. This new media can make up for the time limit of classroom teaching to some extent and prolong the learning time of learners. According to the selected level, some small knowledge about Chinese characters are updated daily, including the development history of font, meaning and applicable context, and different contents are updated according to the change of level. At the same time, we can also refer to the short video mode of Douyin and Bili, so that users can participate in the discussion and learn together in the comment area. According to the survey, 50 % of learners want APP to open learners exchange forums to learn together. In addition, because short video production is less difficult

and easy to start, if possible, it can even hold short video production competitions regularly, specify themes, and make learners achieve success.

5.3.4. Search

Search corresponding to the " language garden " dictionary features, you can quickly find the software contains Chinese characters. Meanwhile, Yusha (2020) emphasizes that translation function should be set up. Only a small amount of research Applications have the function of photo translation, lack of speech recognition translation function. This can be considered in subsequent design. Search and translation function is mainly used in the daily life of learners, so that students can not only learn in the classroom, but also find opportunities for learning in all aspects of life. For example, when eating in Chinese restaurants, you can learn Chinese characters on the curtains or menus by taking pictures. After learning Chinese characters, you can also test whether the pronunciation is accurate or not through speech recognition translation.

5.3.5. My Treasure Box

Including question feedback, mall, setting and collection. An Youchen (2021) said to maintain the communication feedback of users, teachers and developers to help maintain, develop, absorb opinions, obtain data, and communicate between teachers and students. Therefore, it is necessary to set up the problem feedback function to provide feedback channels for learners. The APP is supported by big data and reads the users ' learning state and feedback. Therefore, it is necessary to maintain and update according to user needs, and deal with various unexpected faults. In addition, 33.3 % of students want teacher-student interaction. With this function, students in addition to contact with teachers in the classroom, after class if you want to consult learning and other related issues can have a channel. Shopping mall is the part that most APPs will ignore, even if there is, it is basically to allow users to follow up the use of recharge. Software development should not only take into account the spiritual needs of learners, but also their material needs. Just as kindergarten teachers reward children with lollipops, people also tend to use their own labor and efforts to obtain some substantive rewards. The " Chinese Garden " mall can exchange items with rankings or daily learning points. The selection of mall items can be screened by filling out questionnaires. Settings can change font size, speed, complexity, language, grade, while backing up their learning records to prevent system failures from being accidentally lost. Collection can collect Chinese characters that they like or often forget, and deepen their impression of Chinese characters through repeated learning.

5.4. Interaction Design

An Youchen also pointed out that color and interface beauty will affect the learners ' learning state, 33.3 % of the learners complain about the poor interface and the discordant color matching. Psychology also shows that a neat and harmonious environment can keep learners calm and enter the learning state. Therefore, although the interface color matching we initially use red, black, light brown can highlight the Chinese style of color matching, pay attention to color harmony, clear interface, between or insert Oracle, brush characters reflect the background and decoration of Chinese character culture, but can be replaced according to the needs of learners. Be sure to refuse to use color clutter like the American Chinese APP, the saturation of high color wrapped together impact line of sight, lost beauty.

5.5. Testing Design

To learn Chinese characters, especially writing, we must first lay the foundation of the stroke system. Before learning Chinese characters, first learn Chinese character stroke system and four tones (basic can skip), after-school test to include the pronunciation, shape, meaning of the word, pay attention to interesting. The questionnaire shows that 50 % of the users think

that the Chinese character APP is low interesting, and 66.67 % of the students like to learn Chinese characters by small games. So you can design a series of basic small games, such as continuous watching (combined parts), memory flipping (Chinese characters and pinyin practice), looking for squirrels pine nuts (form and meaning collocation), true and false beauty monkey king (shape recognition). Wang Li (2018) designed Chinese character games for foreign Chinese learners, such as Xiaole and Fishing, gradually cultivates users 'short-term memory into long-term memory through time constraints and physical repetition. In addition, other innovative forms are needed to attract users' attention. Through linkage with other users, competition, using cooperation or competition to limit the theme, maze and other different from daily test practice. Pass-through can still be the previous test content, can also be appropriate to add Chinese culture content, such as Xihu Longjing is what type of tea (black tea, flower tea, green tea), but must have time limit, time also affect the final results.

6. Conclusions and Recommendations

Chinese character mobile Application software should implement the teaching objectives, teaching objects and teaching principles of classroom teaching Chinese as a foreign language, and realize the purpose of APP assisted classroom teaching Chinese as a foreign language. At the same time, Chinese character learning should be combined with vocabulary learning and sentence learning to achieve the systematicness and integrity of Chinese learning. Chinese characters are the basic structure unit of Chinese, the writing symbol system and cultural carrier of Chinese. Learning Chinese and learning Chinese well cannot do without learning Chinese characters. Today, online teaching is the mainstream, and APP-assisted teaching is the trend of the people and the general trend.

Acknowledgments

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