

Improving the Single Mode of Teaching Chinese Ancient Poetry Through the Introduction of Mobile and VR Technology

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Abstract: The current teaching method of ancient Chinese poetry is ineffective as it is mostly confined to textbooks with an emphasis on memorization. Many people have poor practical application skills and struggle to relate ancient Chinese poetry to situations they see in the real world. Therefore, the teaching of ancient Chinese poetry needs to be improved with the use of modern media technology. After researching the affordances of a variety of media, the affordances of mobile and virtual reality are most associated with learning ancient poetry. Therefore, this article initially introduces the affordances of these two media. As for the mobile, there are portability, locationality, interactivity, and communicative. As for VR, there are immersive, spatial-fidelity, interactive, social, and incentive mechanism. Based on the affordances, the article introduces two learning modules. Firstly, it is a mobile module that can take pictures, and locate and then identify scenery with reflections of poetry. This module can encourage users to create poems and cultivate their poetic context. Secondly, it is a VR module that allows users to learn ancient poetry in a fully immersive world. Users can deepen their understanding by experiencing the poetry world in person. Moreover, the module incorporates some of the game's mechanism especially the incentive affordance. Learners can pick their favorite historical character after completing certain learning tasks. It can encourage users to learn as much as they can.

1 INTRODUCTION

Chinese culture is profound and has a long history. Ancient Chinese poetry has been handed down from the Spring and Autumn Period to the present day. However, the poetic literacy of modern people is not very good. It is difficult for people to really understand a poem and apply it to real life. For example, in ancient times, a waterfall could be "Its torrent dashes down three thousand feet from high, as if the silver river fell from azure sky" (Xu 2013) and a lotus flower could be "It rises spotless out of the slimy mud; it stays subdued in the clear water" In these days, however, many people lack this linguistic ability. When they see a view that they find magnificent or elegant, only use simple and poor words such as "good" and "beautiful" to describe it. So, the development of Chinese ancient poetry education in China faces difficulties

The teaching of ancient poetry has been integrated into Chinese language teaching since primary school. According to the new curriculum, no less than 160

great poems need to be memorized at the primary level (Pu 2021). In junior high school, ancient poems account for about four-tenths of one percent (Li 2020). In senior high school, they account for a similarly large proportion, and most of them are masterpieces by famous writers. In addition, the requirements for the development of ancient poetry skills are very demanding in the curriculum. While most of the requirements for learning ancient poetry in primary school require simple comprehension and recitation, in senior secondary school, the main focus is on the development of appreciation skills. In other words, students are expected to take the initiative in exploring and discovering the beauty contained in ancient poems (Lai 2021). In practice, however, the effectiveness of teaching ancient poetry is not very satisfactory. There is a relatively large gap between the actual teaching outcomes and the curriculum objectives. The percentage of dissatisfaction among students is high and students found that it is difficult for them to apply ancient poetry to practice (Ji 2020, Rong 2007). There are three main reasons for this pitiful phenomenon.

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First, it is heavily influenced by exam-oriented education. In Chinese, many secondary school teachers simply count the study of ancient poetry as an index for the final examination, emphasizing rote memorization and which makes students' understanding mostly superficial (Zhang 2022). Second, student participation is limited. The teacher explains more in the secondary school classroom, but students are less involved. This makes students learn ancient poems in a spoon-fed way, lacking the space for independent thinking and feeling (Wang 2020). Moreover, most of the teaching of ancient poetry is restricted to the textbook and to the classroom. Students lack the opportunity and motivation to learn on their own in their daily lives.

In recent years, some teachers have gradually realized this problem. They have found that teaching ancient poetry is always at a bottleneck stage due to the single mode of teaching and the relatively low motivation of students to learn on their own. They try to solve this problem through some read-aloud teaching methods, comparative reading for appreciation methods, and so on (Bai 2012). Although there is a certain degree of improvement, it is difficult to make qualitative changes. There are also some professors who have realized a good way of contextualizing teaching. By setting up a context, the abstract ancient poems become embodied and more vivid. Students are able to relate ancient poetry to real circumstances. The main subject is really shifted from the "teacher" to the "student", which will actually increase students' participation (Wang 2021). However, the current contextualized teaching is limited to guiding students to do self-images (Wang 2021) or using simple images, videos and audio to create a context (Wang 2021), which does not fully allow the learner to have an immersive experience.

With the advancement of science and technology, the popularity of mobile electronic devices, and the development of virtual reality technology, multimedia technology is no longer limited to playing audio and video. There are many media with very rich affordances (Norman 1999). That means the capabilities of these media to interact with the users are multiple and varied. In other words, many actions are possible for the users. Using these affordances effectively can lead to great teaching results. The mobile affordances containing "locationality", "potability", "interactivity", "multimediality" (Schrock 2015), and the "immersive", "spatial", "interactive", and "social" affordances (Dalgarno, Lee, 2010) that VR devices have, can all help with the teaching of ancient poetry. It enables the teaching of ancient poetry to go beyond the classroom and to be truly contextualized.

It can also solve the problems of "limited student participation", "low practicality" and "difficulty in concretizing abstract concepts".

It is clear that the integration of technology mentioned above into teaching and learning will promote efficiency and effectiveness. Blending some of the excellent traditional teaching methods with the modern technological methods possible today can make teaching ancient poetry less homogenous and fully integrated with real-life situations. It promotes the teaching of ancient poetry beyond the classroom and is suitable for a wide range of ages. It allows people to learn ancient poetry anytime, anywhere, through a variety of media implementations and allows them to be fully immersed in a virtual world of ancient poetry. It will promote understanding of the meanings contained in ancient poetry, deepens the memory of ancient poetry, and facilitates attempts at ancient poetic expression. This approach is no longer a test-based education, no longer teacher-led, and allows students to fully integrate ancient poetry with reality.

Therefore, this article will first explain the pedagogical potential and advantages of mobile devices and VR. Then, through modules and examples, the article will analyze specific examples scientifically (Plass 2002). In terms of needs assessment, design of learning activities, and theory of change, the article will explain how mobile devices and VR devices can be applied to the teaching of ancient poetry, and finally, propose relevant ideas and suggestions.

2 THE AFFORDANCES AND RELATED MODULES

2.1 Learning Affordances of Mobile

Every object has an affordance. It is not just about what features and functions the object itself has, but what features and functions people can actually use. The affordance of each item varies for different objects of use. For example, affordance is different for mobile phones for pet dogs and for people with basic literacy skills. For a pet dog, because it cannot read or understand modern civilization, the affordance of a mobile phone may only mean "hard", "chewable", etc. But for a modern civilized person with basic literacy skills, a mobile phone has a variety of "affordances", such as "communicative", "can access the internet", "multimediality", etc.

Therefore, the object we are talking about now is the mobile device and the subject is the modern per-

son who has the ability and needs to learn. The problem that needs to be addressed is the pedagogical dilemma in teaching modern ancient poetry. In this section, the article will describe what affordances mobile devices possess that facilitate learning. They are “portability”, “locationality”, “interactivity”, and “communicative”.

The first is portability (Schrock 2015). mobile devices can be used anywhere, anytime. This breaks down the space limitations of traditional teaching. Users can learn not only in the classroom but also in other places. It applies to many teaching contexts. In the field of language learning, for example, it is possible to use mobile to memorize words anywhere, anytime. Such as in the underground or in the canteen. It is also applicable in the field of experimentation, where data can be recorded on the object of observation anywhere, anytime.

The second is locationality, the affordance that makes mobile devices location-aware. It is a great help to learn the background of some landmarks. At the same time, this affordance allows the mobile device to be better connected to the real world so that the practical and the theoretical can be truly integrated.

Next is interactivity, where mobile interacts with people by tapping on the screen to achieve a goal. Mobile media can be made smoother by setting a number of signifiers to suggest what the user should do next.

The last one is communicative, a mobile device that allows two or more users from the same or different regions to communicate with each other in a variety of ways. When applied to teaching and learning, this communication allows users to learn from each other and progress together.

These are some of the affordances of mobile devices for teaching and learning. In the following section, a hypothetical model is presented to explain exactly how these affordances can be applied to the teaching of ancient poetry and what pedagogical outcomes might be achieved.

2.2 The Module of Mobile Learning

The module is designed to modernize the teaching of ancient poetry through mobile devices.

2.2.1 The Need Assessment

Many people love ancient Chinese poetry, but it is difficult for people to apply it to real life after memorizing it. Not to mention the ability to create ancient

poems on their own. The current state of education hardly addresses this issue. By the way, nowadays, many poetries learning app simply allows people to recite, lacking the ability to relate to the real world. So, this module is for people who want to learn Chinese poetry and want to apply it to their lives. They can use the module at anywhere, such as on a street, on a hill, by the water or even use it at a specific historical or cultural site.

If they download the app on their mobile device, then they will be able to know how the scene in front of them is expressed in ancient Chinese poetry. It will facilitate them to relate ancient poems to real life and to develop a personal context for ancient poems. It will also encourage them to create poems of their own.

2.2.2 The Learning Design

This is a mobile device application. This application can be installed on mobile devices of any system. It has two main functions, search for poems and write poems.

Users can search for relevant poems by taking photos and locating them when they see a certain type of scenery. Especially when visiting some famous places, they can learn the poems which describe the monuments at the same time. They only have to click on the button to search for the poem, then take a photo of the view in front of them and upload it, and use the software's own positioning system to make a secondary confirmation of the landscape. The app then automatically gives the relevant ancient poem. If they want to study in-depth, they can click on the ancient poem they want to study, which will be explained accordingly

Furthermore, users can create their own poems based on the scenery in front of them. If they are not very good at writing, the app will provide words, sentences, relevant knowledge, and related works that are suitable for the scenery. Users can follow the hints to create their own poems. And, as they create, there will be a rhyme check function. If the rhyme is wrong, the words will have a red marker to indicate

In addition, the model has a communication function. Users can post their own poems to a public forum to discuss and exchange with each other.

2.2.3 The Theory of Change

The table 1 describes the specific application of each affordance in this module and the possible results for the users.

Table 1. mobile module’s theory of change

Affordance	Effect	Outcome
Portability	Can be carried around anytime and anywhere	Users can take photos, be located and search for the corresponding poems any-time, anywhere
Locationality	Identify the user's environment and the surrounding topography through the location function.	Users can get more specific poems.
Interactivity	Give some hints and correct the rhyme when users creating poems.	Encourage users to create more suitable poems and develop a personal context for ancient poems.
Communicative	There is a special poetry forum	Users can share their own poems, their experience of writing poetry and their personal understandings with other people.

The last affordance, for example, is communicative, which in this model is mainly implemented in the form of a forum. The outcome is that users can interact with each other through this forum, evaluate their poems, learn from each other and progress together.

2.3 Learning Affordances of VR

As well as mobile devices, VR devices have a lot of affordances and can also be used well for learning. These affordances such as immersive, spatial-fidelity, interactive, social, and incentive mechanism are all very closely linked to learning and education.

The first is Immersive. VR allows the users to be fully immersed in a virtual world and experience life or an environment that is not possible in the real world. This affordance is often used in classes that are more dangerous or require the teaching of knowledge across time and space, such as chemistry or history and literature classes. Teachers can simulate dangerous experiments that they would not dare to do in real life, or allow students to experience the circumstances and atmosphere of ancient societies.

The second affordance is spatial-fidelity, which is mainly used for the adaptation and experience of 3D environments. This is also used extensively in teaching and learning and is particularly suitable for structuring spaces that are difficult to understand, thus enhancing students' spatial imagination and perceptual skills. For example, when learners want to understand the internal structure of an atom, they may choose to use VR to construct a model of the inside of an atom to better understand its structure. Or, when learners want to see the interior space of a building, they can simply tour the building through VR without having to personally arrive at the place.

The third affordance is interactive. Like mobile, it allows VR to interact with people. The interaction is through the VR headset and the joystick. When immersed in the virtual world, people can touch objects in virtual world through the joystick, just as they would touch objects in reality. This interactivity is unique to VR and is also very conducive to teaching and learning. For example, students can explore the virtual world through VR and complete some difficult, high-risk tasks in it.

The next one is social. This affordance means that VR can also be connected remotely. In teaching, students can learn from each other and compete via remote connection. The teacher can also interact with the students remotely and participate in their exploration. There is a hypothesis proposed that the improvement of representational fidelity of the environment increases the ability to migrate, thus deepening the sense of co-presence and increasing the ability to collaborate (Dalgarno, Lee, 2010).

The last affordance is the Incentive mechanism, which is usually combined with a game mechanic. By setting rewards and tasks to increase the motivation of the user. When the user is immersed in the tasks and rewards prescribed by the virtual world, a psychological effect of flow is created, which increases their interest and motivation to participate. This use in teaching will increase student engagement and will promote the ability of students to take the initiative in learning.

These are some of the affordances of VR that can be used in teaching and learning, and I will then also present a module that explains how these affordances can be used in teaching ancient poetry to improve learners' learning efficiency, deepen their comprehension of ancient poetry and increase their interests and engagements.

2.4 The Module of VR Learning

What follows is still an introduction about how VR can be used in teaching ancient poetry through three dimensions. This will lead to a further understanding of its affordance effect, as well as the possible outcomes and impacts.

2.4.1 The Need Assessment

Most of the teaching of ancient poetry in China nowadays is limited to the recitation of ancient poems merely. People's practical application skills are very inadequate. Because of the single approach to teaching and the difference in context and background between ancient and modern times, many people find it difficult to understand the deeper meaning of ancient poetry and naturally cannot relate it to the real world. Therefore, there is a need for a product that can take people deeper into the situations portrayed in ancient poems and help them understand their meanings. So, VR is a great learning tool as a form of media that promotes immersion and exploration of the world of poetry by the users.

2.4.2 The Learning Design

When users put on the VR headset, a picture will appear in front of their eyes. It will let you choose the type of poetry, there are three types of poetry: landscape make, narrative poetry and lyric poetry, and users can also search for the poetry they want to study. After interacting with the VR grip and selecting a certain type of poem, a number of poems will then appear with the corresponding genre. After tapping into it, a virtual scene will be created based on the content of the poem.

As the user moves, verses and corresponding explanations float in the air. At the same time, the user can interact with the objects in the virtual space, users can climb the trees, jump into the water to catch fish, or do many other things. And the explanation or background information or something related to this object will appear.

This game has an incentive mechanism. By completing the corresponding learning tasks, users can pick a favorite relevant historical figure to travel with and explore the poem world together. By completing more tasks, users can discover more characters or more of their voices and actions. For example, if a learner loves Su Shi, then he/she can choose to travel with Su in the world of poetry after he/she has completed a certain amount of poetry study. Su will become your virtual companion, offering his reflections and appreciation of the poem.

In addition, this VR model supports remote interaction. Two or more users can enter the same poetry world together to learn.

2.4.3 The Theory of Change

The table 2 also reflects how the above affordance is applied to the module and presents the corresponding outcome predictions. For example, the Incentive mechanism, which rewards users for completing a certain number of tasks with a favorite historical figure as a companion, is predicted to encourage users to learn more ancient poems.

Table 2. VR module's theory of change.

affordance	effect	outcome
Immersive	Immersing the user in the world of ancient poetry	The ability to fully immerse learners in the world of ancient poetry without distractions.
Spatial-fidelity	Converting text to 3d environments	Enables users to experience the world of ancient poetry in a realistic way.
Interactive	Users can explore the scenery and communicate with the characters in the scenes	Learners can promote autonomy and freedom of learning and get a deeper understanding of the poetry scenario
Social	Multiple users can learn together and enter the same scenario together	Users can learn from each other and experience the world of ancient poetry together
Incentive mechanism	Historical figures travelling together in the world of ancient poetry as a reward	Encourage users to learn more ancient poetries.

3 CONCLUSIONS

This article first introduces the affordances of Mobile, relates its relationship to teaching and learning, and then uses these affordances to design a Mobile module. The model is primarily applicable to those who want to understand how the immediate situation can be expressed in ancient poetry anytime, anywhere. It is also applicable to those who want to learn to com-

pose ancient poetry and have a context for ancient poetry. Next the affordances of VR are introduced and the module is presented. This is the module for those who want to gain a deeper understanding of the connotations of ancient poetry and want to immerse themselves in the world of ancient poetry. The two media and the models analyze the possibilities of modern media to facilitate the teaching of ancient poetry from different perspectives. In designing the module, this article also applies a scientific and analytical approach. From the analysis of requirements, to the design of the model, and finally the interpretation of the effects and results.

However, the article has some limitations as well. The two modules are still in their prototype stage and have not been actually designed. Therefore, the results need further examination to verify. It is hoped that this article can provide new ideas to solve the dilemma of teaching Chinese ancient poetry. More people will be able to use ancient poetry in real life. It is also expected that the article will provide a reference for the integration of science and technology into teaching. More teaching dilemmas can be alleviated or even solved with the involvement of technology.

REFERENCES

- Bai, J. (2012). An introduction to teaching ancient poetry in secondary schools. *Jiannan Literature: Reading the Classics (in Chinese)*, 1, 1.
- Dalgarno, B. , & Lee, M. J. W. (2010). What are the learning affordances of 3-d virtual environments?. *British Journal of Educational Technology*, 41(1), 10-32.
- Ji, Y. (2020). Reflection and improvement of teaching ancient poems in high school based on language core literacy. *Journal of Weifang Engineering Vocational College*, 33(2), 4.
- Lai, C. (2021). Strategies for implementing the effectiveness of teaching appreciation of ancient poems in high school. *In and out of language classes* 20, 312.
- Li, X. (2020). Improving language teaching strategies to help junior high school students improve their ancient poetry appreciation skills. *Extracurricular Languages in Chinese*, 10, 60-61.
- Norman, D. A. (1999). Affordance, conventions, and design. *interactions*, 6(3), 38-42.
- Plass, J. L. , & Salisbury, M. W. (2002). A living-systems design model for web-based knowledge management systems. *Educational Technology Research & Development*, 50(1), 35-57.
- Pu, B. (2021). An introduction to teaching ancient poetry in primary school language. *Legendary stories: A hundred lecture halls*, 1, 1.
- Rong Z. (2007). Reflections on the teaching of ancient poetry in high school. *Guangdong Education: Comprehensive Edition*, 7, 76-77.
- Schrock, A. R. (2015). Communicative affordances of mobile media: portability, availability, locatability, and multimodality. *International Journal of Communication*, 9(1), 1229-1246.
- Wang, M. (2021). A study on the teaching strategy of "contextualization" of ancient poems in high school language. *In: Inside and outside the language class*, 14, 331.
- Wang, S. (2021). Contextualized teaching of ancient poems in high school language. *Language Teaching and Research*. 12, 80-81.
- Wang, X. (2020). Exploration of efficient teaching methods of middle school language with the introduction of ancient poems in the context of teaching reform. *Talent*, 27, 69-79.
- Xu, Y. (2013). *Xu Yuanchong's classic English translation of 1000 ancient poems.3, Tang poems. Shang: English-Chinese translation*. Dolphin Press.
- Zhang M. Exploring the problems in teaching ancient poems in junior high school. *In and out of the classroom (Middle school teaching and research)*, 4, 20-21.