**International Academy of Science,
Engineering and Technology**
Connecting Researchers; Nurturing Innovations

**IASET**

# APPLICATION OF TPACK IN PRIMARY SCHOOL CHINESE TEACHING DESIGN

*Yan Haojing*

*Research Scholar, School of Teacher Education, Huzhou Normal University, Huzhou, Zhejiang, China*

## ABSTRACT

*With the continuous development of education informatization, the national requirements for teachers are constantly improving, and teachers are also facing new challenges. Subject teaching knowledge with integrated technology (TPACK) is a new kind of knowledge necessary for teachers to use educational technology to integrate subject teaching. This article mainly under the guidance of TPACK theory to "little tadpole looking for mother" as an example of teaching design. From the technical knowledge, subject content knowledge, teaching method knowledge, integration technology of subject teaching knowledge to design and application of primary School Chinese teaching. The aim is to improve the effect of primary school Chinese teaching and promote the development of primary school teachers' teaching ability and professional development.*

***KEYWORDS:*** *TPACK; Primary School Chinese; Teaching Design*

## INTRODUCTION

### Overview of TPACK

### TPACK Concept and Connotation

Professor at Stanford university in 1986 shulman presented Pedagogical Content Knowledge, (PCK), emphasizes the subject Content Knowledge in real situation and general method for fusion and teachers in the teaching practice to understand and infer, transformation and reflection, based on a particular topic organization and processing, to form a new Knowledge representation, different interest and ability to adapt to the learner, teaching Knowledge.[1]With the rapid development and popularization of information technology, Mishra and Koehler put forward "Technological Pedagogical Content Knowledge (TPACK)" in 2005 on the basis of Professor Schulman's PCK. Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge, this paper expounds seven elements in the discipline teaching Knowledge Framework integrating Technology. The TPACK Framework includes Technology Knowledge (TK), Content Knowledge (CK) and Pedagogical Knowledge (PK).Technological Content Knowledge (TCK), Pedagogical Content Knowledge (PCK), and Technological Pedagogical Knowledge (TPK) and Technological Pedagogical Content Knowledge (TPACK) are four interwoven composite elements.[2]

## DOMESTIC RESEARCH REVIEW OF TPACK

In 2005, the concept of TPACK was formally put forward abroad. In 2008, Chinese scholars Li Meifeng and Li Yi jointly published the document TPACK: A New Framework for Teachers' Professional Knowledge of Integrated Technology, which introduced TPACK and explained the TPACK framework and discussed the new model of teacher education of

integrated technology.[3]The concept of TPACK was introduced to China for the first time, and as the Chinese government attaches great importance to education informatization, the Outline of National Medium and Long-term Education Reform and Development Plan (2010-2020) was issued in 2010, which clearly points out that the reform of teacher education should be deepened, the training mode should be innovated, and professional teacher teams should be created.[4]Therefore, TPACK has been highly valued by researchers in a certain range, and the research on TPACK has reached a climax in China. Since the National Medium - and Long-term Education Reform and Development Plan (2010-2020) was issued in 2010, the number of publications related to TPACK has remained high and stable, indicating that TPACK is a field worthy of further research and exploration.[5]From the analysis of journal sources, it is found that the research of TPACK is mainly distributed in the field of education. The development of information technology opens a new situation for the further application of TPACK in the field of education, and the combination of educational technology and education has become the main focus in the field of education technology.[6]The research of TPACK is conducive to the professional development of teachers and provides new development space for teachers' professional development. It also helps teachers enrich learning situations, optimize teaching evaluation and improve performance in educational practice."China's Education Modernization 2035" issued by the CPC Central Committee and The State Council in 2019 clearly lists "building high-quality professional and innovative teachers" as one of the ten strategic tasks to promote education modernization[7].TPACK research will remain in an upward and steady state. But the current domestic study of TPACK dimensions have not been fully developed, the study of TPACK centered TPACK teacher's professional development, the concept and status of TPACK, TPACK horizon, improve teachers' teaching ability, etc., and for TPACK horizon, primary school Chinese teaching design research in domestic is less, this article will from CK, TK, PK, TPACK four aspects combined with primary school Chinese teaching design.

## THE SIGNIFICANCE OF TPACK TEACHING DESIGN

a.It is conducive to achieving more efficient teaching objectives. Many studies have found that teaching design based on TPACK framework can help teachers solve many problems that traditional teaching methods cannot solve and achieve a more efficient teaching goal no matter for primary education, secondary education or higher education. And the effective integration of information technology can attract students' attention, can create a more relaxed learning environment, mobilize students' enthusiasm. Some studies show that teaching design based on TPACK framework is effective, and can help students acquire knowledge more than traditional teaching, and promote academic performance, self-efficacy and motivation more effectively.

b.Further promote online and offline teaching mode. With the continuous development of educational informatization, it has become one of the cores of teaching design to make full use of high-quality online educational resources to support learners' online and offline learning and in-class and out-of-class teaching activities. Information technology has also become an important means of auxiliary teaching. QQ, we chat public account, campus broadcast platform and other methods have become the main platforms to expand communication, knowledge acquisition, fragmented learning, and also provide a supporting platform for the teaching model combining online and offline.

## PRIMARY SCHOOL CHINESE TEACHING DESIGN BASED ON TPACK FRAME

### Analysis of Teaching Content

Primary school Chinese is the basis of learning other subjects to improve students' comprehensive quality. Chinese Curriculum Standard (2011 edition) points out that "Chinese curriculum is committed to cultivating students' ability to use

language and characters, improving students' comprehensive quality and laying a foundation for learning other courses well; For students to form a correct world outlook, outlook on life, values, forming a good personality and sound personality to lay a foundation; Lay a foundation for students' all-round development and lifelong development. Chinese course is a comprehensive and practical course to learn the use of language and characters. The unity of instrumentality and humanism is the basic feature of Chinese curriculum."

Instrumentality is reflected in :(1) language is a tool for mutual communication and exchange of ideas;(2) Language is a tool for thinking and developing intelligence;(3) Chinese is a tool for learning other subjects.(4) Language is a tool for passing on civilization and human values.

Humanism is embodied in :(1) cultural characteristics -- cultural knowledge and cultural spirit, which are nurtured in Chinese teaching materials; It contains the glorious spiritual civilization of China for five thousand years and the advanced culture of all countries in the world, including the subject consciousness, creative thought, sense of responsibility, independent personality and aesthetic spirit and many other aspects.(2) The process of Chinese teaching is full of humanism, mainly reflected in the relationship between teachers and students. Teachers and students should establish a good relationship between teachers and students, care for students, respect students.

## ANALYSIS OF CONSTITUENT ELEMENTS

### Content Knowledge (CK)

Subject content knowledge (CK) is the basis of teaching design by using TPACK. Students in the second semester of grade two in primary school can understand the meaning of words according to their existing experience after one year's study, and most of them have already had their own ways to learn new words. In terms of reading, they have been able to read texts by themselves with the help of pinyin, and have some understanding of easy to understand articles. Under the guidance of teachers, they can experience the thoughts and feelings of texts. Primary school Chinese content knowledge can be analyzed from three aspects: basic knowledge, key and difficult points and the expansion of relevant knowledge. The content of the previous learning is usually to lay the foundation for the later learning, so teachers should carry out a reasonable analysis of the subject teaching knowledge, establish a good knowledge system and orderly teaching.

### Technology Knowledge (TK)

Fan Lianghuo understands "technology" as teaching resources needed by teachers in classroom teaching. There are two types of knowledge about teachers' technology, namely, how to apply technical knowledge in teaching and the knowledge of technology itself. The application of multimedia and network technology in teaching, it is emphasized to deep integration of information technology and course teaching, to meet in the traditional teaching can't meet the demand of cognition, with the help of computer technology make pictures, recruit, video game, let the students learn in a more intuitive and vivid teaching environment, deepen students' understanding of knowledge, improve students' interest in learning and teaching efficiency.

### Pedagogical Knowledge (PK)

 Pedagogical knowledge includes the teaching strategies used by teachers in teaching activities that is, how teachers help students to learn subject content. In the process of teaching in lower grades, according to the characteristics of learners, the effect of teaching methods such as PBL, situational teaching method and group cooperative inquiry is obvious. It is easier for students to grasp knowledge by transferring their knowledge of common things in life into learning. This series of

teaching methods can not only enable students to learn knowledge in a state of high concentration but complete relaxation, but also cultivate students' spirit of active inquiry, give play to students' subjectivity in the teaching process, mobilize students' initiative, creativity and consciousness, and cultivate students' sense of teamwork.

### Technological Pedagogical Content Knowledge (TPACK)

Integrated technical knowledge of the subject teaching content knowledge (TPACK) is the subject, teaching knowledge, effective integration of technical knowledge, because involves more conditions and factors, interact each other, so teachers in use TPACK framework for the teaching design, to have cognitive flexibility, according to the time of the pulse to choose, judgment in order to maintain discipline knowledge, technology and the teaching method of the dynamic balance between, considering the characteristics of the Chinese basic course, and the characteristics of the pupils, select the appropriate technology, the appropriate method to present the teaching content.

## IMPLEMENTATION STRATEGY OF INTEGRATED DESIGN OF PRIMARY SCHOOL CHINESE FROM THE PERSPECTIVE OF TPACK

### Create A Situation, Reveal the Subject

Use the playback and audio function of the electronic whiteboard to play the animation micro-video of "Little Tadpole Looking for Mom" to the students, and preliminarily perceive the general content of the text. Through the appearance features and changes of the little tadpole into a riddle, ask students to solve the riddle to stimulate their imagination, and use the electronic whiteboard display and hide function to reveal the answer to the riddle - the little tadpole. Blackboard text title "little tadpole looking for mother". Tolstoy once said: "What is required for successful teaching is not compulsion, but the stimulation of interest."Low grade students are mainly image thinking, and naive and lively character, are very interested in fairy tales, animation, according to the characteristics of children's own body, the use of watching micro animation into the new class, the creation of "tadpoles looking for their mother" education and teaching situation, teaching scene reproduction, deepen students' perception of the teaching situation. Stimulate the children's interest, mobilize students to actively explore new knowledge, positive thinking internal motivation, once there is interest, learning for them is not a burden, but a kind of enjoyment.

### Media Presentation, Learning New Words

Students can read the text by themselves. If they do not know the new words in the text, they can use pinyin to read the text. The teacher shows the new words of the media courseware to learn. Ask the students to share their own memory of new words and pay attention to the pronunciation of new words and say what new words in life. With the page skipping function of the electronic whiteboard, the game of new words is displayed to check students' mastery of new words by reading new words and driving a small train to read. And use the electronic whiteboard writing function, let the students interact to write the word "wide", "eyes", "belly", "jump" standard writing. The Chinese Curriculum Standard (2011 edition) points out that "children's psychological characteristics should be paid attention to in literacy teaching, and students' life experience should be combined to learn and apply to real life. To use a variety of literacy teaching methods and visual teaching means, to create a rich and colorful teaching situation, improve literacy teaching efficiency."So in the teaching design students to share in life to see the new word link. Using multimedia to design the new word game, using the train game literacy, life literacy, pinyin literacy and other teaching methods for literacy teaching.

### Independent Inquiry, Content Understanding

Teachers assign tasks; students learn by themselves, show tadpoles, text illustrations and pictures of different body changes of tadpoles through multimedia, read the text silently and have group discussion to answer questions

**Question 1:** Who did the tadpole meet when he was looking for his mother?

**Question 2:** What do other animals say about the tadpole's mother?

**Question 3:** What happens to the tadpole's body?

Ask the students to answer the above questions; the students organize their own language description, the teacher to answer the imperfect place to supplement. The teacher will arrange and summarize the answers and write them on the blackboard. Teachers randomly select students to read the text, and guide the students to read the corresponding tone according to the text content, then the teacher read extensively. Using multimedia courseware in the form of mind mapping to clarify the overall order of the full text.

### Deep Exploration Experience Feelings

Using electronic whiteboard video and audio playback function, play text clips, with text description: they see carp mother teaching small carp to hunt, "up", ask: "Carp aunt, where is our mother?"They saw a turtle swinging four legs swimming in the water, quickly "catch up", called: "Mother, mother!"

Use multimedia courseware to show "chase" and "go up" two text illustrations. And guide the students to think about the meaning of "catch up" and "face up". What's the difference between "chasing" and "ying"? Small tadpoles "hurriedly""catch up", repeatedly called "mother", small tadpoles at the time of the mood is what? Using the play function of the electronic whiteboard, play the video of little green frogs jumping on the lotus leaf, and the caption: their hind legs "stare", a "jump" forward, "jump" to the lotus leaf. Use the writing function of the electronic whiteboard to circle the key words, and let the students experience this series of actions.

### Look At Pictures and Tell Stories, Role-Play

A tadpole grows into a frog. Let the students tell the process of tadpole growing into frog in their own language. Then show the three illustrations in the text and ask the students to tell who the tadpoles met and what changes happened in the process of looking for their mother in their own language.

Let the students assign roles to perform on stage, sort out the perception of the whole text, distribute the performance props prepared in advance to each role, and show several groups of pictures related to the course through multimedia. T: Let's act out the dialogue according to the pictures and the text. In the performance process, the design of a "small judge" link, in addition to the students assigned to the role, as a small judge to evaluate the performance.

### Use Information Technology to Expand Teaching

"Little tadpole looking for mom" after learning, encourage conditional children accompanied by long at home, go to the pond to carefully observe the appearance of small tadpoles and frogs, lets the student with VR were recorded, or the use of network resources, to find the little tadpoles and frogs related knowledge, let the student will be recorded by the video and find the relevant knowledge of the use of QQ, We Chat, nailing group of social software to class, the class of extended to extra-curricular knowledge.[8]

## CONCLUSIONS

Since the proposal of TPACK in 2006, research on TPACK has reached a climax both at home and abroad. T PACK provides a new direction for teachers' teaching design and becomes a new teaching integration. The key point of primary school Chinese teaching design based on TPACK perspective is how to perfect the integration of CK (subject content knowledge), TK (technical knowledge) and PK (teaching method knowledge). Mishra and Kohler have said: "Teachers need to have knowledge of the techniques used for teaching; Teaching techniques that use technology to teach content are needed; Need knowledge why some knowledge is difficult or easy to learn, and how to use existing technologies to develop new theories of knowledge or strengthen existing epistemology."How teachers use technology to present knowledge and what kind of teaching methods to explain content have great influence on students' learning motivation and learning effect. Cox also once said: "TPACK is in the concrete teaching strategy and the specific theme of the subject matter of the characterization of context of situation, the interaction between and among technology, teaching method, subject content knowledge, it requires teachers know how to use new technology, the specific subject or a particular theme activities, with a particular subject attribute coordinate to promote students' learning."Teachers should have the ability to integrate technology, teaching content and teaching methods, so as to optimize the integration, so as to launch a new information-based teaching and improve students' independent learning ability and teaching efficiency.

## REFERENCES

1. *Hu Mercury.Research on teacher TPACK professional development: based on the perspective of education big data [J]. Education research,2016,37(05):110-116.*

2. *Li Mei-feng, Li Yi.TPCK: A new framework of Teacher professional Knowledge integrating technology [J].Heilongjiang Higher Education Research,2008(04): 74-77.*

3. *Xu PENG, ZHANG Hai, WANG Yining, et al. Research status and implications of TPACK abroad [J].China Electronic Education,20I3(09) : II2-II6.]*

4. *HUANG Bin, WU Chenglong. Review of Domestic Research on TPACK Based on Content Analysis method Journal of guizhou normal university, 2019, 35(10):65-73.*

5. *Tang XIAOchun. Multiple strategies of "storytelling" in the Context of new media -- A Case study of the Textbook "Little Tadpoles looking for Their Mothers" [J].Teacher construction, 2019, 32(10):94-95.*