

**The Use of Digital Platforms by Chinese High School Students
to Support Learning Processes**

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Abstract: This study investigates the influence of digital platforms on the learning processes of Chinese high school students. Despite the closed boarding system in most public high schools, the use of the Internet has become a popular trend in education. The study aims to answer the question of how does the use of digital platforms influence on the learning processes of Chinese students? The findings of this study will be used to propose a permission and assessment framework for the use of digital platforms in high schools. The study contributes to the understanding of the role of digital platforms in education and provides guidance for their effective use in Chinese high schools.

Keywords: Digital platforms, Chinese high school students, learning, media literacy, platform studies, informal learning

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I. Introduction and objectives

As one of the most populous countries in the world, China's social competitiveness is increasing with the growing population year by year (Ouyang, 2021). It is gradually spreading to the younger generation as young people must keep up with the fierce competition in education to gain a better future (Li, 2021). Therefore, Chinese people pay a lot of attention to education, especially to high school students who are about to take GAOKAO (University entrance exams), which can largely determine their future university choices and even their future life path (Muthanna & Sang, 2016). To ensure that students are free from outside distractions and are fully engaged in their studies, most public high schools in China have a closed boarding system where students are not allowed to use Internet-enabled electronic devices during the school days.

However, with the rapid development of the Internet, the use of Internet to assist student learning has become a trend. Especially in recent years, under the influence of the COVID-19 pandemic, the combination of online and offline teaching modes has gradually become the norm in China (Chen, et al., 2020). In this new paradigm, student learning will be well integrated with digital media, and students will have more time and access to digital platforms and digital media to supplement their learning. However, problems such as Internet addiction and harmful information persecution exist as well (Li, et al., 2021).

Therefore, in this study, the main research question is: how does the use of digital platforms influence on the learning processes of Chinese students? The main objective of the study is to examine the influence of Chinese high school students use of digital platforms to support their learning by documenting and analyzing how they use them. To reach this objective, this study will try to answer the following questions:

1. What are the platforms usually used by Chinese high school students?
2. In the specific case of learning activities: what are they objectives, desires and main practices when using the platforms?
3. How do they use the platforms for learning activities?
4. What informal learning strategies did they use to develop which kinds of skills?

In addition, a proposal for high school students' permission and assessment to use digital platforms based on the findings of this study will be made ultimately.

II. Research design

2.1 Research objectives

The main objective of this research is to provide a comprehensive understanding of how Chinese high school students use digital platforms to support their learning, and to explore the influence of these platforms on their learning processes by documenting and analyzing how they use them. Through in-depth participatory workshops and interviews, this study aims to explore the objectives that students have when using these platforms, the specific strategies they use to engage with digital media, and the overall effectiveness of these tools for enhancing their learning outcomes.

By providing a more detailed understanding of the relationship between digital platforms and high school students' learning processes, this study aims to contribute to the development of effective strategies and policies for leveraging digital media to support student learning while mitigating the negative effects of excessive or harmful digital media use.

Moreover, by the exploration of the complex ways in which digital platforms are integrated into Chinese high school students' learning processes, the study generates insights that can inform best practices for leveraging digital media to support their learning.

2.2 Research problem

The increasing reliance on digital platforms for learning in China has led to a growing interest in understanding how this shift in learning modalities affects high school students' learning processes (Wang, et al, 2018). While the use of digital platforms for learning has the potential to provide numerous benefits, such as increased access to educational resources and more effective learning experiences, concerns remain about the negative impact of excessive digital media use. Specifically, concerns have been raised about internet addiction and the potential exposure to harmful or distracting information that can detract from students' learning outcomes (Li, et al., 2021).

2.3 Research questions

With such research problem mentioned before, this study seeks to explore the nuances of how digital platforms are used by Chinese high school students in their learning processes, with

the goal of better understanding the specific ways in which these platforms impact their learning outcomes. This includes exploring the different types of platforms that students use, the objectives that they have when using these platforms, the specific strategies they use to engage with digital media, and the overall effectiveness of these tools for enhancing their learning outcomes.

Specific research questions are stated as following:

1. What are the digital platforms that Chinese high school students use to support their learning?
2. How do Chinese high school students use digital platforms for learning?
3. What are the advantages and disadvantages of using digital platforms for learning according to Chinese high school students?
4. How can Chinese high school students be supported to use digital platforms for learning?

2.4 Methodological framework

In order to explore the research questions, a qualitative research design will be used in this research. The study will be conducted in two high schools of different type (public high school and private high school) in China. A sample of high school students will be selected based on their willingness to participate and their previous experiences using digital platforms for learning. The sample size will be determined by data saturation.

Data will be collected through questionnaires, participatory workshops, and interviews with high school students, which will be conducted in Mandarin Chinese. Besides, netgraphy will be conducted in order to have better understanding of the platforms selected and to better translate the data. The workshops and interviews will be recorded, transcribed, and translated into English for analysis. The participatory workshops will be designed to explore the research questions and will be refined as the study progresses to reflect emerging themes, while the interviews will be conduct based on the results of the workshops.

2.5 Ethical considerations

The study will comply with ethical guidelines and protocols set out by the university's ethics committee. Informed consent will be obtained from all participants, and their anonymity

and confidentiality will be maintained throughout the study. Permission from the school administration and parents will be obtained before collecting data from the students. The study will prioritize the safety and well-being of participants, and the findings will be used to inform best practices for the use of digital platforms in the educational context.

III. Theoretical Framework

3.1 State of the question

In this study, I focus on Chinese high school students' usage of digital platforms in their learning as a supporting tool. The courses and training I received during my master's studies made me realize that this is an issue about students' media literacy to use the platforms correctly and efficiently with their study. Therefore, I positioned my initial keywords for this study between the words: China, students, youth, digital platforms, platform studies, social media, media literacy, education, and learning, and searched academic platforms and databases primarily using the keywords "China", "students", "E-learning", "digital platforms" and "media literacy". In my research and literature browsing, I found that my research topic fits well with UPF's transmedia literacy project. By reading the outcomes on this project and comparing and combining it with my ideas, I included informal learning in my research as well to enrich my content and to make this study more comprehensive. In consequence, three main research areas of media literacy, platform studies, and informal learning are covered in this study.

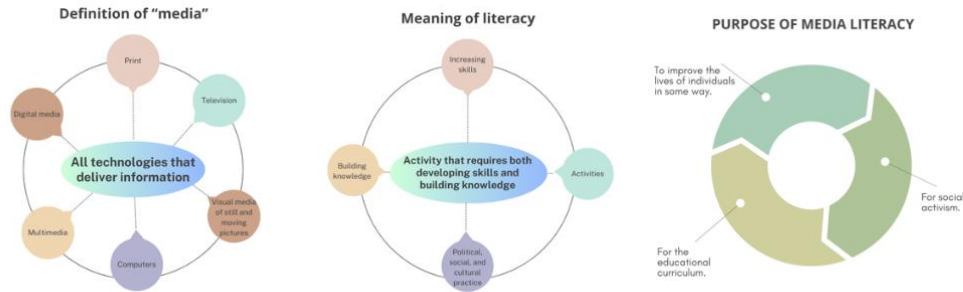
3.2 Theoretical framework

Research in each of the three research areas has been conducted in different countries and by different researchers. In this study, I will provide comprehensive statement of representative authors and their claims in each of the three areas of media literacy, platform studies, and informal learning, and analyze the claims that most fit the development of this research.

3.2.1 Media literacy

Media literacy is an important content of research in the fields of education, communication, and media studies. Research on media literacy can be dated back to the 1930s. W. James Potter, an expert in the field of media literacy, categorizes different scholars' interpretations and definitions of media literacy (Potter, 2010). One widely accepted definition suggests that media literacy involves a set of competencies associated with accessing, analyzing, evaluating, and communicating messages (Aufderheide, 1993). To this day, scholars continue to refine the definition of media literacy.

There are mainly three key issues that make the differences between the definition and the side focus of media literacy, which are the definition of the “media” in media literacy, the meaning of literacy, and the purpose of media literacy (Potter, 2010).



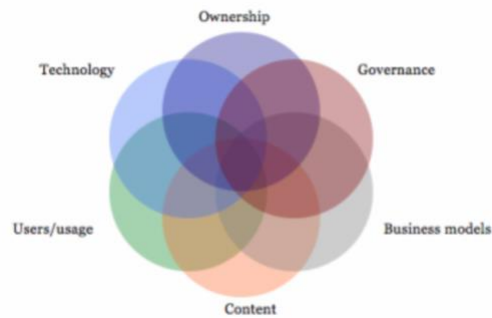
For this study, it aims to explore the impact of digital platforms on Chinese high school students’ learning process. Therefore, the technologies included varies and it would be a process for students to develop the skills to use the platform to gain knowledge. In this sense, Hobbs and Potter’s propositions of that all technologies deliver information (Hobbs, 1998; Potter, 2010) and that media literacy is an activity that requires both developing skills and building knowledge (Hobbs, 1996; Potter, 2004) will be adopted. Furthermore, due to the educational meaning of this study, Aufderheide’s proposition of the the purpose of media literacy which developed in an educational curriculum (Aufderheide, 1997) will also be used as guidance in this work.

3.2.2 Platform studies

Platform studies have been extensively researched worldwide, scholars such as Tarleton Gillespie (2010, 2017, 2018), David B. Nieborg (2018, 2019, 2020, 2021), José van Dijck (2013, 2016, 2018, 2019), Thomas Poell (2018, 2019, 2021), and danah boyd (2014) have all made their mark in different areas in the field of platform studies.

One of the most prominent researchers is the Dutch scholar José van Dijck. In her book *The culture of connectivity*, she combines two theoretical approaches to analyze digital platforms as “technocultural constructs” and also as “socio-economic structures”. For the first approach, she draws on Bruno Latour, Callon, and Law’s Actor-Network Theory (ART), while for the socioeconomic approach, she draws on Manuel Castells’ network society position (Roig, 2017). Van Dijck’s theoretical constructs based on these two theoretical positions approach

digital platforms in a six dimensions analysis: technology, users/usage, content, ownership, governance, and business models (van Dijck, 2013).



Disassembling platforms as microsystems (van Dijck, 2013).

Furthermore, danah boyd plays an important role in the field of platform studies as well, especially in the study of social media. In her research, she mainly explores the ways in which young people use social media and how this use is shaped by broader cultural and technological trends (boyd, 2014). In addition, boyd's research highlights the complexities and nuances of social media use, breaking new ground on common assumptions about young people's use of social media.

Therefore, a combination of the platform analysis theoretical framework created by van Dijck and danah boyd's analysis of young people's use of social media will be adopted to conduct an in-depth analysis of learning platforms commonly used by Chinese high school students to better understand students' experiences and feelings in using these platforms.

3.2.3 Informal Learning

The origins of informal learning can be traced back to John Dewey through his theory on learning from experience (Messmann, Segers & Dochy, 2018). Since then, the theory has also been developed and refined by several scholars.

Jay Cross, as a pioneer in the field of informal learning, has pointed out the importance and the value of informal learning in his work *Informal Learning: Rediscovering the Natural Pathways That Inspire Innovation and Performance* (2011). Cross first coined the concept of "e-learning" and argued that new technologies such as social media and mobile devices can be used to create a more flexible, learner-oriented approach to training and development. Moreover,

he offers certain suggestions for using technology, social media, and other technologies to create informal learning environments and cultures (Cross, 2011).

Furthermore, Julian Sefton-Green also reaches significant achievements in this field. Sefton-Green's research has explored a range of topics related to informal learning, focusing on the role of digital media and popular culture in informal learning, specifically on children's informal learning with technologies outside school (Sefton-Green, 2007). In Sefton-Green's work, he brings together the existing research in the field to create a map of this digital ecology of education, paying attention to young people's use of ICTs outside of formal education (Sefton-Green, 2012).

In general, it is more appropriate to adopt Sefton-Green's research in this study since his work incorporates the views of scholars such as Lev Vygotsky, Jean Lave, etc., which makes it more comprehensive. Besides, he puts his attention on the concept of digital media and the group of young people, which fits more closely with the research concept of this work.

IV. Literature review

4.1 Literature review

In addition to studies and constructs by different scholars in the three fields of media literacy, platform studies, and informal learning respectively, there are existing studies that combine them together in one project.

The *Transmedia Literacy Project* coordinated by UPF integrated media literacy, platforms, and informal learning all together to understand how the young people are learning skills outside the school (Scolari, 2018). The project was mainly divided into two parts and was consisted of several related studies. The first part of the project includes three sections, focusing on different transmedias skills and informal learning strategies, social media and platforms analysis, and the research methods respectively (Scolari, 2018), which provide people a comprehensive way of understanding how informal learning happens and develops among young people and how these transmedia skills support their engagement in contemporary media culture.

In addition, as an extension of the *Transmedia Literacy Project*, Scolari and his colleagues (2020) proposed a methodology for analyzing adolescents' acquisition of transmedia skills in informal learning environments in the background of the change in media literacy, and reflected on the possibility of developing specific research methods to apply to transnational studies. This study focuses on the concepts of transmedia skills and informal learning strategies, but also covers contents such as online platforms, social media, and digital networks. This work has strong links to *Transmedia Literacy Project* and provides guidance for transnational studies combining media literacy, platforms, and informal learning.

Earlier research has also used certain platforms to explore the knowledge acquiring in informal learning environment. Elaine Tan (2013) explored the use of YouTube in the classroom. The study revealed how students interact in these informal spaces and the role of YouTube in forming communities and supporting informal peer learning. The research also explored students' digital literacy, revealing their strategies for navigating, engaging with, analyzing, and evaluating materials they may find. In this research, the author explored the digital literacy of students rather than media literacy. However, the term 'digital literacy' is often narrowly used to refer only to the competent use of information and communications technology (ICT), as a

subset of media literacy (Koltay, 2011). Therefore, Elaine's study still is instructive for this work.

For China, China is not dominant in media literacy, platform studies or informal learning, research in these areas has mostly built on existing theories and studies and then applied them to different contexts (Ayl, 2016; Yan, et al., 2021; Irawan, Retnaningdyah & Mustofa, 2021). In the field of media literacy, Chinese scholar Zhang Kai, a representative figure, focused on the development of media literacy in the new media environment, news contexts, Chinese society and many other aspects (Y.L. Lee, Zhang Kai & Kara Chan, 2017). In platform studies, Chinese researchers most focused on analyzing certain social phenomenon that exists in reality through a particular platform (Houqiang Fu, et al, 2022; Meichan Li, 2022; Yan Huang, et al., 2022; Lei Mei, et al., 2023; etc.). In addition, in terms of informal learning, China is a late starter in this area. In recent years, research in China mainly focused on exploring and discussing the implementation and the space design for informal learning (Shangrong Cheng, 2022; Yuqian He, 2022; Hanyan Cai, Cheng Yang, 2023; Liwen Zhang, 2023; etc.).

In addition, it is undeniable that social media becomes an integral part of the student's full life (Talaue, et al., 2018). Therefore, it is vital to focus on the influence of social media on students as well. Multiple research in this area has been conducted by different researchers. It is noticeable that lots of research related to the impact of social media on youth's mental health can be searched (O'Keeffe, Clarke-Pearson & Council on Communications and Media, 2011; Keles, McCrae & Grealish, 2020; Nesi, 2020; Alonzo, Hussain, Stranges & Anderson, 2021). Besides, studies that have to do with the influence of social media on student's academic performance can be found as well. For instance, Ezekiel and his colleagues found that social media has a negative effect on students' academic performance (Ezekiel, et al., 2013). A few years later, Gilbert and his colleagues concluded that social media have a dual impact on student achievement (Gilbert, et al., 2018). In consequence, social media has a certain impact on students and cannot be ignored in this work.

4.2 Research gap and contribution to the field

In terms of the academic field, this study is an interdisciplinary project, which covers the theoretical approaches from three different fields, and is diversified, integrated, and innovative.

Although the previous studies researched on platforms, there has been very little certain focus on the platform studies itself. Furthermore, from the perspective of the geographic area, this study selects China as the research object because China has a different educational system and educational model compared to other countries in the world, which makes it more valuable and meaningful to explore. In addition, such research on this topic is not common in China, and there is still much space for development in this field. Therefore, this study fills the gap in the study of students' media literacy in Chinese education to a certain extent. Finally, this project proposes to conclude with a recommendation on whether high school students' use of electronic devices during school time should be relaxed based on the study's findings, which is groundbreaking.

V. Methodology

The main research question of the study is to understand how the use of digital platforms influenced the learning of Chinese high school students? In order to have more comprehensive findings through this study, the research question is mainly divided into four parts. Firstly, what are the platforms commonly used by Chinese high school students to support their learning? Secondly, the students use these platforms for what objectives? Thirdly, how do the students use these platforms and what do they learn through using the platforms? Finally, what problems do students usually encounter, and what advantages do they get in using the platforms?

In consequence, observations, interviews and specific analyses, will be adopted in this study, a qualitative method would be more suitable for this research. It is noticeable that it is a research focused on teenagers, therefore, the ethnographic approach will be applied in this study to go deeper through the ways the students use digital platforms to support their studies.

Due to the vast geography of China, educational resources are not evenly distributed. Therefore, the study will be conducted in Chengdu to highlight the general status of education in China. Chengdu is a city located in southwest China and is the capital of Sichuan Province. As a large city, Chengdu has good educational resources and also contains various high-quality international schools. At the same time, it retains the traditional Chinese educational model, making it more representative of those big cities in China.

China has a different education system than other countries, and there are two main types of education models in China. Most public high schools in China have a closed boarding system, where students have nearly no access to electronic devices with internet connection or contact with the outside world, and need permission from their teachers to use computers or cell phones. In contrast, some private and international high schools have a semi-closed or fully open administration. At these schools, students have the flexibility to use a variety of electronic devices to support their studies. Therefore, based on this situation, in this study, I will conduct a field study of two schools with two different management models.

In order to conduct the fieldwork, I will follow the following steps:

- a) Since this project will be carried out mainly among minors, it is important to inform the participants of the purpose of this research and how it will be conducted, and obtain informed consent from the school, students, and parents.

- b) To answer the first research question of this study, questionnaires to briefly understand the platforms that students commonly used for learning will be conducted.
- c) Create participatory workshops at school for the private school students, and participatory workshops in peer spaces (e.g., in the room of the students themselves, or in the community) for the public-school students to observe and video-record students' use of platforms to support their learning (time spent on digital platforms, dynamics and emotions of using the platforms, etc.). In addition, individual production activities such as online research and online discussions will be offered as supplemental options to address the school's restrictions.
- d) Conduct in-depth interviews with the students based on the results of the questionnaire and the observations of their use of the platforms in order to understand the purpose of their use of the platforms and the problems they encounter in the process of using them.
- e) Do netgraphy in order to have better understanding of the feelings and experiences of the students when using these platforms.
- f) Analyze all the information obtained above in detail and draw conclusions.

To integrate the data, thematic analysis approach (Clarke, Braun & Hayfield, 2015) and discourse analysis approach (Gee, 2014) will be conducted for the workshops and the interviews respectively. Thematic analysis will be used to help me actively reflect on the students' performance in the workshops of common ideas, problems, and purposes of the usage of the platforms, while discourse analysis will be conducted to give me a more comprehensive view of the focus of Chinese high school students in terms of their feelings, thoughts, imaginaries and metaphors when using the platforms for learning.

It is noticeable that the information would not be analyzed separately but in a more coherent way. The questionnaires will be conducted first, with the answers of the questionnaires, the contents of the workshop will be confirmed. The candidates and the contents of the interview will be determined by the student's performance in the workshop. Finally, netgraphy on some significant platforms will be done in order to have a direct experience of them and all the information obtained will be summarized and conclusions will be drawn.

Finally, as a consequence of the research, I will produce a set of recommendations for the educational integration and the use of platforms by Chinese high-school students in campus.

VI. Connection with the Department of Communication

This study is an interdisciplinary study of media literacy, informal learning, and platform studies among Chinese youth. The content and purpose of this study is very close to the Transmedia Literacy project at UPF, and to some extent, it is an extension of the current Transmedia Literacy project, extending its research geographically to Asia and China. Therefore, conducting this research at UPF was the best choice for me and for this project.

More specifically, this research fits well with the research directions of the MEDIUM group in the Department of Communication at UPF, which has conducted extensive research on transmedia literacy projects and whose research directions also include platform research and informal learning research. Therefore, with almost all of the major research directions fitting together, it would be the most appropriate way to develop my project in the MEDIUM group.

VII. Research timeline

	Year 1			Year 2			Year 3		
	1st term	2nd term	3rd term	1st term	2nd term	3rd term	1st term	2nd term	3rd term
Keep in touch with the research team, get advice and guidance.	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
WP1: Literature review and research design									
Determine the significance of the selected topic. Define the research question and objectives. Draft the “state of the art” of the work.	Blue								
Relevant references finding and reading. Classify the existing literatures and identify primary sources. Commence literature review.	Blue	Blue	Blue						
Define and test the feasibility of the methodology. Draft theoretical framework and research question part.		Blue	Blue						
Contact the relevant schools and person in charge in China to get the accessibility and obtain informed consents.			Blue						
WP2: Fieldwork in Chinese schools, first data integration and analysis									
Identify the meaning and purpose of the fieldwork, begin the analysis.				Red					
Identify questionnaire questions, questionnaire results collection and evaluation.				Red					
Conduct specific workshops and interviews.					Red	Red			
Do netgraphy on certain platforms. Integrate and evaluate all the information gotten through the fieldwork, draft a report.					Red	Red			
WP3: Final data evaluation and thesis redaction									
Research data re-integration and analysis. Daft the whole thesis.							Green	Green	
Thesis redaction and refine.							Green	Green	Green
Final presentation of the project									Green

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