

# Analysis on the Strategy for Development of College Teachers Based on Internet Thinking

Hong Lu

School of Finance and Trade  
Ningbo University of Finance & Economics  
Ningbo, China 315175

**Abstract**—Under the strong impact of the network society, the integration of educational philosophy and technology has become an indisputable fact, and teachers' professional development is facing some challenges. This paper compares the difference between Internet thinking and industrial thinking of education, discusses the coping strategies for college teachers' professional development in the network society, and provides innovative ideas for enhancing the teaching execution ability of college teachers and improving the teaching quality of higher education.

**Keywords**—Internet thinking; teacher development; strategy

## I. INTRODUCTION

With the rapid development of network technology, human society has gradually entered the Internet era mainly supported by network. The changes from early communication methods to the current lifestyle are all affected by the advancement of network technology. Through the power of Internet, obstacles that hinder interpersonal communication everlasting, such as geographical distance, language barriers and information dissemination, have been weakened. The new wave of creativity and potential of human beings is erupting, and the Internet has become a powerful technological power for promoting social transformation.

The Internet has changed the music, games, media, retail and financial industries. In the future, Internet technology will change every industry. Traditional enterprises must have Internet thinking even if they don't know how to integrate the Internet. The change of thinking and thought is the basis of all other changes. This is the relationship between "form" and "soul". When the whole society relies on the "soul" of Internet thinking, then all the changes are built around the soul. Similarly, in the context of interconnected network pattern, higher education will face new situations and challenges in surpassing the limitations of time and space to some extent. As another subject of education work, teachers will inevitably be affected in this transformation. [1] [2] In the development of college teachers, the change of thinking mode is a decisive factor. How to integrate Internet thinking to promote the continuous development, improvement and growth of college teachers has become an important topic for colleges and universities in coping with challenges and comprehensively deepening the transformation.

In the current practical work of education, owing to the limitations of thinking mode and continuing education and training, the development and education concepts of many college teachers are still in the traditional era of large industrialization, and far behind the educational needs of the current Internet age. Therefore, through a reflection on the education industrialization thinking, this paper analyzes the characteristics of teachers' teaching practice in the Internet thinking, and explores the strategies for college teachers' development in the Internet era, in order to benefit the contemporary teacher education reform.

## II. COMPARISON BETWEEN INDUSTRIALIZATION THINKING AND INTERNET THINKING IN EDUCATION

### A. Characteristics of Education Industrialization Thinking

From the end of the 18th century to the beginning of the 20th century, the world entered the second industrial revolution from the first industrial revolution; and the typical characteristics of the society also entered the standardization, synchronization and centralization from non-standardization, non-synchronization and dispersion. The first successful model in industrialized production is Taylor's rule of management. In this rule, work is divided in detail, and each person only needs to do repeated actions to improve the work efficiency. The most famous case is the high efficiency of the Ford's assembly line which directly boosts Ford's competitive advantage in the industrial age.

In early stage, the teaching organization, discipline classification and teacher development in Chinese colleges and universities were based on the operating mode of the former Soviet Union's colleges and universities. Just as Lenin highly advocated adopting Taylor's method in doing socialist production operations, it laterally conveyed a passionate desire for industrial standardization. As a result, global industrialization thinking was also naturally integrated into the organization of higher education on the other hand. The thinking of big industrialized education had its specific value after World War II as it could quickly cultivate talents for the country and gain competitive advantage. The nature of education in industrialization thinking regarded students as products from factory assembly line. Ultimately, their knowledge structure, ability and cognition were standardized, and they graduated in batches. The products from such

education form can not meet the requirements of the real world any more.

Standardization was a kind of typical industrialization thinking. Its connotation was to increase efficiency, save costs, and facilitate assessment. In order to enable students to find work after graduation, institutions of higher learning designed standardized courses and implemented standardized scoring systems, teaching methods and degree management regulations. Higher education ruthlessly eliminated all differences by standardization.

Synchronization was also an embodiment of industrialized education thinking, pursuing for time and progress consistence. In the era of industrialization, everyone was working around time, completing a course within a specified time, enrolling and graduating at a specified time, and having breakfast jointly at a specified time. The curriculum of colleges and universities was fully synchronized so that students could learn together in a unified time and in order, regardless of the differences in individual's learning content.

Centralization was getting decentralized resources (i.e., students) combined economically. Students were concentrated in school, just as workers are concentrated in factory. The thinking logic behind it is "this is very efficient". The number of students in colleges and universities is increasing and maximizing, and the number of students in some colleges and universities is increasing rapidly for tens of thousands. This phenomenon was praised as "all people enjoy higher education". The process of centralization moved toward centralization of power, which also prompted the work of university administrators moving toward the management model of bureaucracy.

### *B. Characteristics of Internet Thinking*

Up to June 2018, the number of netizens in China reached 802 million, and the penetration rate of Internet was 57.7%; in the first half of 2018, there were 29.68 million new netizens, increased by 3.8% compared with that in the end of 2017; the number of netizens on mobile phone in China reached 788 million, and the proportion of access to the Internet by mobile phone was up to 98.3%. [3] The rapid development of Internet technology and the substantial increase of Internet penetration in people's lives have in fact revolutionized many industries. For example, e-commerce, represented by Taobao, has subverted the basic laws of the world of commodity circulation, and has subverted the industry's old mechanism and led to new industrial regulations, and further led a trend of the times. The Internet's subversive transformation on retail, financial, and service and other industries has made the "Internet +" developed into a national strategy from up to down levels of the society.

At the moment, Internet education has become a hot topic in the field of education. The definition and value of Internet education are still being explored, and the conclusion has not yet been formed. However, from a technical perspective, "Internet education refers to a method for spreading educational content and rapid learning based

on IT technologies such as Internet and mobile communications, big data, cloud computing, social platforms, search engines and so on". [4] From a formal point of view, all forms of education that are related to Internet or use the Internet as a carrier and module can be classified into the category of Internet education, represented by open courses, online education, flipped classroom, and micro-courses. The subversion, creativity and huge potential value of Internet education reflected behind the forms provide favorable conditions for educational transformation, education sharing and fairness.

Internet practitioners are innovating traditional game rules through Internet thinking, and Internet thinking is becoming a magic weapon for Internet practitioners. There is not a unified definition on what is Internet thinking on earth. All parties have different voices. Some people conclude that Internet thinking "focuses on user experience, free strategies, and excellent products"; others think that it is "a thinking method to make review on the market, user, product, enterprises' value chain and even on the entire commercial biology against the background of unceasing development of many technologies such as (mobile) Internet, big data and cloud computing"; in this paper, it is believed that the core of Internet thinking is to reorganize resources through Internet, and show the shining role of human nature through products in line with the demand of the market and the times. The opposite of Internet thinking is industrialization thinking. If industrialization thinking is restricted, Internet thinking is full of emotion and temperature; if industrialization thinking is in male style, Internet thinking is more in female thinking — perceptual and emotional; if industrialization thinking is repressing and ignoring human nature, Internet thinking is re-emerging human nature; if industrialization thinking emphasizes standardization and mass production, then Internet thinking emphasizes individualization and customization. As a group of teachers, especially college teachers, organizing teaching in accordance with the inertial industrialization thinking has become incompatible with the times. Thinking and working with Internet thinking, namely actively using Internet tools and ideas to re-organize the flow of knowledge is more in line with the law of personality and behavior of students. [5] [6]

### III. COLLEGE STUDENTS' BEHAVIOR AND LEARNING CHANGES IN THE INTERNET PLUS ERA

The technological breakthroughs in Internet and new technologies also represent a significant advance in culture. Contemporary college students gradually find that they are living in two worlds, namely the online world and the offline world. They may acquire information, process content, and increase knowledge in two distinctive worlds. How to interact with others and how to treat themselves will be affected by the online and offline societies. In offline society, college students' identity is determined on the basis of class, position, score and school and other elements in traditional meaning, while in online society, everyone is equal, and education is achieving status where students of complete difference in geographical location, time dimension, and social status and so on are treated without discrimination. For

example, the Khan Academy, established in 2007, often has a large number of well-designed and produced short films (currently concentrated in science and mathematics) uploaded on the internet for free sharing. More and more American educators edit learning units based on the textbook and students' needs. In 2012, more online classroom platforms such as Coursera, edX and Udacity emerged in the United States, which led to a deeper educational revolution. A network cable allows students in slum to connect with the most fascinating teachers in the world's top schools online, share learning experiences with classmates around the world at home, and collaboratively finish homework. Followed by, Chinese online education platforms such as Xuetao Online and Chinese MOOCs also provide more and more online courses. The large-scale and open online courses have opened a new path for the popularization of higher education in China.

By sorting out the behavior and learning changes of college students in the Internet+ era, it is found that the changes are mainly reflected in the following aspects: first, they are a generation armed with Ipad and many new tools, like the culture and elements of animation and 2D; secondly, they can learn online by virtue of Internet tools, like such learning content as in forms of video, audio, etc., and are easier to accept learning and fragmentation learning methods; further, they hate to receive knowledge taught just on the basis of textbook and refuse to input such knowledge as to be memorized into brain.

Based on the influence of Internet, the lifestyle of contemporary college students has gradually changed, and the channels and methods of receiving knowledge have also changed. In the future, the roles and functions of teachers and students will undergo profound changes; the subject position and creativity of students will become more prominent; the network will make learning become ubiquitous and omnipotent; the learning style will become more personalized and subtle, while teachers' job is to guide, lead, care for and inspire students. Therefore, Analyzing the learning behaviors and customs of college students in the context of Internet becomes particularly important in the teaching process.

#### IV. STRATEGIES FOR DEVELOPMENT OF COLLEGE TEACHERS IN INTERNET THINKING

##### A. *On the Basis of Teacher*

1) *Guiding course teaching by user thinking:* The core of Internet thinking and its behavior is user thinking. Teachers must deeply understand the behavior and psychology of post-90s students, understand their current use of Internet technology, and understand their language styles. In Internet business, all commercial behaviors are castles in the air if you don't understand users. For example, in order to produce a laptop that college students like, Haier Group spent several months in reading users' comments on all laptops in Jingdong and Taobao, and acquiring consumers' demand from user complaints. Before developing new products, MIUI first searched keywords on Sina Microblog,

BBS and blog articles, to pay close attention to user dynamics, listen to users' opinions, and truly understood users.

In contrast to the current status of colleges and universities, how many teachers may listen to students' private and real inner thoughts about the course before class? How many teachers may search for the course related comments on the Internet? How many teachers can accurately grasp the degree of students' understanding of knowledge of the course? Many teachers have no way to learn about the changes in student group due to the pressure of scientific research, the generation gap and many other factors.

2) *Integration of cross-border learning and professional knowledge:* In the Internet thinking, teachers return the choice of learning to students, which can promote teachers to continuously improve curriculum design and teaching methods, face the opinions and needs of students, and further improve the enthusiasm of students to participate in the course learning. The process of student participation is also a process of cultivating their creativity and imagination. The participation and emotional input are important factors in the frequent interaction between students and teacher.

Internet thinking pays attention to speed and requires agile service. Only fast-response, fast-improving teaching and courses can meet students' expectations. Teachers should be good at combining daily work with network technology, highlighting the agility of teaching work in the new era, such as using online forums, Microblog and WeChat to support the teaching of a curriculum, quickly responding to students' questions and appealing, and excluding the difficulty and anxiety of students through Internet.

3) *Establishing an open and shared teaching platform under the guidance of open and platform thinking:* In higher education, it is needed to apply the open and platform thinking of the Internet to change the closure of traditional education, making college an open system that can not only realize the exchanges and cooperation between students, teachers, and teacher and students, but also enhance the awareness of mutual assistance and cooperation between various subjects. Guided by open and platform thinking, it is suggested to create various open and shared teaching platforms in colleges and universities, for teachers and students to really experience online interaction and Q&A exchange through human-computer interaction mode and artificial intelligence.

The essence of platform thinking is connection thinking. Supported by platform thinking, by extensively establishing school-enterprise cooperation bases and resource sharing platforms, students can obtain information exchange and growth in a broader platform. By connecting resources through the platform, students can develop an awareness of open and dynamic thinking, and further show inclusiveness and wide vision in future occupations. For example, teachers are encouraged to connect to the world by opening Microblogs, WeChat and so on, to transfer information, produce potential energy and obtain value.

Open thinking requires opening the framework for teacher qualifications. In those disciplines with is very strong operability, teaching should be actively integrated with the market. For example, in software engineering and new media majors, it is available to hire leading figures from company and scholars in industrial circles to serve as visiting professors or course professors, so as to get the industry's ongoing cases and trends introduced into the curriculum teaching, and encourage students to combine their own theories with practice.

4) *Embracing the new technologies and applications adaptable to information field:* The application of new technologies, such as digitalization, cloud computing, network video, virtual world, subject recording and mobile teaching, has brought about the formation of an interactive innovation model for education and teaching. For teachers, how to adapt to new technologies and new applications is the primary issue that determines whether "Internet + education" can be put on the right track. The Internet is disintegrating the traditional educational system. Internet information spreads at almost no cost, which is affecting and deconstructing the teaching organization mode relying on entities. Without exaggeration, it can be said that "Internet + education" will "eliminate" many mediocre teachers.

The way of Internet thinking highlights the transformation on education, contributes to the innovation and upgrading of education. It belongs to the new substance and form produced after a series of chemical reactions. Education should adapt to the Internet based on the information development pattern of human beings and students' change in learning behavior, and make informatization improvement from traditional education itself, instead of abiding by the old closed teaching manner.

#### *B. On the Basis of Management Personnel*

1) *Actively exploring changes in organizational structure and management system:* Whether Internet thinking is implemented or not greatly depends on the organizational system of colleges and universities. The organizational reform of colleges and universities should start from the flexibility of organizational structure. The organizational setting should try the best to reduce the level of hierarchy; the post setting should be as close as possible to the basic level; and the staffing should be as close as possible to the profession and interest of teachers, and encourage reasonable flow of teachers.

The significance of the organizational structure reform in colleges and universities is to break the rigidity of the organization and reduce the horizontal and vertical communication costs within the organization. The structure reform should orient to the needs of teachers and students. In the future, the work of higher education institutions should be closely related to the actual needs of teachers and students, and the resources should be mainly allocated to the core business departments of the school.

Therefore, the future colleges and universities should become a flat platform organization that decomposes the functions of the original teaching institution into several post goals. School should encourage teachers to freely form several teams taking post goal as the center, and encourage the teams to exist in dynamic way and compete with each other.

2) *Guiding the practice direction for personalized professional development of teacher:* Since the 1950s and 1960s, the professional development of teachers has been widely valued by the education circles all over the world, and relevant theoretical research has become increasingly mature. However in practice, the professional development of teachers has always been not optimistic. "When information technology is applied on education, the balance of knowledge spreading by traditional education is broken due to the highly symmetric nature information; further, the power of educators is accordingly weakened". The Internet era presents new and severe challenges to the role of teachers and knowledge structure. The traditional "expert lectures" and "training class" typed teachers' professional development modes are facing difficulties.

Nowadays, with the help of Internet technology and its way of thinking, the problems that traditional social teachers are troubled have been provided with applicable improvement technologies and solutions Personalized services that are promoted in commercial field also have the same practical environment in the field of teachers' professional development training. Teachers' learning methods, teaching methods, online learning behaviors, thinking methods, etc. in professional growth can be modeled by big data mining and analysis technology. Those data can be integrated and analyzed to find suitable training channels and training content, to further achieve a personalized training education in the true sense.

The traditional view is that teachers are an important part of school education and they should travel between classrooms and laboratories. With the introduction and in-depth implementation of "practice is the standard for testing all truths", it has become an inevitable way for teachers to step down from the platform and put into practice the teaching content. The two different roles of teacher and engineer are gradually fused and merged. Therefore, practitioners with strong practical ability such as entrepreneurs, technicians, operators and engineers are emerging in the teaching team. Teachers also gradually go out of the campus and become applied teachers in basic level, instead of being regarded as a special group "fastidious but incompetent". The diversified development of teaching team is a practical example of the saying "Among any three people walking, I will find something to learn for sure". The availability to go out fully reflect the core ideas of resource reorganization under the Internet thinking, and also provides new development idea and reform direction for the development of the teacher team. And the change in the teacher team further provides a preliminary basis for "teaching students according to their aptitude".

3) *New ideas should be expanded in the evaluation on teachers' professional development:* As one of the important contents of research on modern teachers' professional development, the thinking mode of the Internet era provides new ideas for evaluation on such development, showing the following trends: first, developmental evaluation will emphasize the actual needs of teachers, aim at the development of teachers' subjectivity, and focus on the development of emotions, attitudes and values reflected in the daily work of teachers. Second, the scope of evaluation will be expanded. At present, the evaluation on college teachers lacks extensive participation of the society, students and peers. In particular, students' evaluation on teachers is limited to form and exists in name only. The object of evaluation on teachers' professional development should be not only limited to teacher, but also cover the contents having critical impact on education activities such as schools, students and courses.

The teacher team has changed in the Internet age, and the teacher needs to be further redefined. What follows is the innovation on the evaluation mechanism for teachers. Traditionally, teachers' evaluation faces three aspects of comprehensive evaluation: teaching, research, and students and management. With the development and change of the structure of teacher team, there is no doubt that it is in line with the development trend to get social service incorporated into the evaluation mechanism. Each evaluation item involves a lot of details. As the so-called "no one is perfect", the evaluation on teachers can be made in classifications according to the position or responsibilities to fully reflect their value. For example, in terms of teaching post, the evaluation should give priority to teachers' teaching method, teaching effect and other abilities; in terms of research post, the evaluation should pay more attention to teachers' theoretical level, research ability, achievements and patent acquisition; in terms of serving the society, the evaluation should focus on the social benefits generated in teachers' process of serving the society and the impact on technological innovation and so on.

## V. CONCLUSION

The impact of the Internet age on education is not only at the technical level, but more on the ideological reform. In the face of the transmission advantage of the Internet, the change in students' way of receiving knowledge, educators can enable education to occur qualitative change only by using Internet thinking to organize teaching activities and communicate with students. As a college teacher, it is necessary to actively understand the behavioral characteristics of college students in the new era, start from the communication methods students like, actively use Internet tools, and continuously promote educational progress, efficiency improvement and organizational change, to further enhance educational innovation and productivity.

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