

## Discussion on Strengthening Information Technology and Basic Education In-depth Integration Method

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**Abstract.** Information technology penetrates into education field continuously with development of information technology. Information technology is playing an increasingly important role in education. Information technology has changed traditional mode of education, and created a brand-new learning environment for educatees. In-depth integration of information technology and basic education is one of important approaches to improve basic education teaching quality and promote basic education reform. It is innovative development of basic education. In the paper, method of strengthening in-depth integration of information technology and basic education is mainly discussed. Traditional education mode is compared with the in-depth integration teaching mode of information technology and education for discovering their difference. The teaching development trend of information technology and education teaching deeply integrated with basic education is analyzed for discovering problems in in-depth integration of information technology and basic education. Methods of strengthening information technology and basic education in-depth integration are proposed for driving in-depth integration of information technology and basic education.

### Comparative analysis between traditional education and in-depth integration teaching of information technology and education

China has large population, in-depth integration of education and information technology plays a very important role for economic development and education fairness in China. Traditional education mode is greatly different from the in-depth integration education mode of information technology and education. In the paper, both are compared from four aspects of educators, educatees, relationship between teaching and learning as well as education resources. Table 1 shows that educators in traditional education mode assume the responsibility of teachers, and they are responsible for teaching knowledge. Educators in the education mode under in-depth integration of information technology and education include discipline experts, education teaching top designer, teaching designer, etc. and they are intelligent and innovative guiders; educatees in traditional education mode include students in basic education and pre-school education, and they are in neglected position, such education belongs to inculcating learning. The educatees of education mode under in-depth integration of information technology and education are people of basic education, pre-school education, special education and other community groups with learning demand. Educatees can be educated according to own interest, hobby and personalized demand. They are in the center of education teaching activities. The educatees utilize information technology media for two-way communication and man-machine interaction. Teaching activities of traditional education mode aims at learning knowledge and implementing teaching and learning according to teaching outline, subject standard and course plans, etc., and teaching and learning activity under in-depth integration of information technology and education aims at guiding educator to learn how to study and cultivate talents. Teaching resources of traditional education mode include chalk, blackboard, textbooks and notes, etc., or other teaching infrastructure. However, education resource under in-depth integration of information technology and education not only includes resources of traditional education mode, but also includes MOOCs, micro course, courseware, big data

intelligent textbooks, electronic schoolbag, digital library, science and technology innovation laboratory, Web learning analysis system, cloud education platform, etc.

Tab.1 Analysis and comparative table of traditional education mode and in-depth integration teaching mode of information technology and education

	Traditional education mode	Teaching mode under in-depth integration between information technology and education
Educator	(1) Educator = teachers (2) Knowledge-based lecturers	(1) Educator = education teaching top designer, subject expert, teaching designer, leading teacher, teaching assistant, etc; (2) "Intelligent and innovative" guider;
Educatees	(1) Educatees = students of pre-school education and basic education (2) Main body function of Educatees is easily ignored. (3) Inculcating learning (4) Weak interaction	(1) Educatees = people of basic education, pre-school education, special education and other community groups with learning demand; (2) Educatees is always act as main body and core of education teaching activity; (3) Educatees can select personalized learning approaches according to personal demand, interest, own learning experience, etc.; (4) Educatees utilize information technology media for two-way communication and man-machine interaction;
Relationship between teaching and learning	(1) Direct purpose of teaching and learning activity: To learn knowledge; (2) Teaching and learning activities can be orderly organized according to teaching outline, subject standard and course plans, etc.;	(1) Direct purpose of teaching and learning activity: To guide educatees to learn how to study, and cultivate high-quality talent; (2) Double or combo education mode adapting to talent cultivation, turnover classroom teaching mode, management mode, quality guarantee mechanism, etc.
Education resources	(1) Blackboard, chalk, textbooks and notes, etc. (2) Other traditional education teaching infrastructure	(1) Blackboard, chalk, textbooks, notes and other traditional education teaching infrastructure (2) MOOCs, micro course, courseware, big data intelligent textbooks, electronic schoolbag, digital library, science and technology innovation laboratory, Web learning analysis system, cloud education platform, etc.

### Teaching development trend of information technology and education teaching deeply integrated with basic education

In-depth integration of information technology and education teaching will change basic education teaching development trend and basic education traditional teaching mode. In the paper, it is believed that teaching development of information technology and education teaching deeply integrated with basic education has the following features:

#### **Educatees can converted from passive learning to active learning**

Use of information technology: cloud computing, virtual simulation technology, 3D printing and other major information techniques can be used in basic education for enriching students' learning activities, and students can be more interested in learning. In addition, educatees act as the education center of basic education due to transformation of educator role. Educators apply information technology for guiding students in autonomous learning and immersive learning. Educatees can utilize network resources, multimedia information and other information means for creating more learning opportunities according to their own needs. Learning time and space of educatees can not be limited due to information technology. Students can learn anytime and anywhere, thereby increasing learning opportunities of educatees.

#### **Richer and richer education resources**

A large number of high-quality learning resources can be gathered by using information technology. More learning resources can be provided for educatees in basic education. Educatees can select learning resource suitable for own demand according to own requirement. Educatees can

obtain many professional learning resources and massive high-quality learning resources within short time due to application of big data. Such resources can be selected by educatees. Therefore, educatees can obtain denser and high-quality professional knowledge, thereby reaching the purpose of being educated.

#### **Formation of lifelong learning education ecological environment**

In-depth integration of information technology and basic education can promote education to form a new code of conduct. New culture forms can be derived through education information-based activities such as knowledge succession, hierarchy succession, secondary succession and cycle succession, thereby affecting learning concept, learning habit and learning approach of educatees in basic education. A good learning atmosphere can be created, thereby forming good basic education ecological environment.

#### **Problem of in-depth integration between information technology and basic education**

In recent year, Chinese schools pay much attention to in-depth integration between information technology and basic education. Information technology in-depth progress of basic education is constantly promoted. All schools invest greatly in hardware construction and infrastructure construction in the aspect of basic education information technology construction, thereby promoting rapid development of basic education information technology in China. However, there are many problems during in-depth integration of information technology and education.

#### **In-depth integration consciousness of information technology and basic education is relatively weak.**

Educators and education management personnel in most technical education schools do not have in-depth understanding on in-depth integration of information technology and basic education. Therefore, in-depth integration of information technology and basic education is in a relatively low level with low development level. Schools are lack of an integral and uniform understanding on in-depth integration of information technology and basic education mainly because it is difficult to embody effect of in-depth integration of information technology and basic education within short term. In addition, it is difficult to quantify the evaluation indicator of in-depth integration of information technology and basic education on talent training quality.

#### **In-depth integration of information technology and basic education is lack of effective supervision**

At present, in-depth integration of information technology and basic education in all basic education schools is regarded as responsibility of network service department. Network service department is responsible for in-depth integration of information technology and basic education. Integration work is lack of effective supervision and guidance in the implementation process without formation of more scientific and effective supervision management mechanism. Executive force of in-depth integration between information technology and basic education is not sufficient. There is no management mechanism with clear right and responsibility division. Therefore, the in-depth integration effect of information technology and basic education in all basic education schools is not ideal, which seriously affect in-depth integration of information technology and basic education in basic education school.

#### **Organization personnel quality of in-depth integration of information technology and basic education is low.**

Overall quality of organization personnel is basic guarantee for in-depth integration work of quality technology and basic education. However, related organization quality of information technology education in basic education schools is low, and information-based level is low. Information-based operation maintenance team and information-based management team of in-depth integration of information technology and basic education in basic education school have lower information-based level, thereby seriously affecting in-depth integration of information technology and basic education.

## **Method of strengthening in-depth integration of information technology and basic education**

It is very important to implement in-depth integration between information technology and basic education in information technology era. All elements of basic education school should be analyzed from perspective of overall system. In the paper, in-depth integration of information technology and basic education is strengthened from the aspects of basic education concept, education environment, education resources, education team, education system, etc. In-depth integration of information technology and basic education is regarded as strategic development plan of foundation education, thereby promoting in-depth integration between information technology and basic education.

### **Updating of in-depth integration concept of information technology and basic education**

Education biological structure can be adjusted through in-depth integration of information technology and basic education. Updating of educator and education management personnel is the foundation for in-depth integration of information technology and basic education. In the era of network information, information technology level of educator and education management personnel can reflect education concept transformation degree and modernization level of education concept. It is required in in-depth integration of information technology and basic education that educator and education management personnel should reposition education and educator role, and original education concept should be changed.

### **Promotion of organization team construction and system innovation in in-depth integration between information technology and basic education**

Overall quality and supervision system of basic education organization personnel act as intelligence support and fundamental guarantee of in-depth integration between information technology and basic education. Basic education school should implement technical training and theoretical learning on teachers according to different intelligence and posts, thereby graduating improving information-based technology team, information-based management team, information-based teacher team and information-based theory research team. Basic education teaching organization form is changed, in-depth integration supervision management system education between information technology and basic education should be strengthened, basic education teaching management system, teaching incentive and teaching evaluation system in line with information technology requirement should be established under information-based education concept. Basic guarantee can be provided for in-depth integration of information technology and basic education.

### **Optimization of intelligent online teaching data support system**

In big data era, teaching form of basic education is greatly changed. Teaching data support system can provide functions of data exploration and data analysis. Data exploration and data analysis are critical for big data era. Related data of basic education teaching activities are recorded by data supporting system. Schools can analyze personalized demand and knowledge demand condition of students through digital data for preparing education plan. Information technology can be effectively integrated in all fields of basic education, thereby providing intelligent support platform for data collection and education decision-making in basic education.

### **Strengthening of novel information technology teaching application innovation**

Innovation of information technology can inject new impetus and vigor for in-depth integration of information technology and basic education. Therefore, information technology can be endlessly applied in technology education field. In-depth integration of information technology and basic education must insist on regarding application as drive, especially application of information technology in classroom teaching. High-quality learning experience is provided for learners through rational application of teaching application. Therefore, integration point between information technology and education can be discovered through applying information technology in concrete teaching practice. In-depth integration of information technology and basic education can be strengthened.

## Conclusion

Education aims at providing learners with wide possibility. In-depth integration of information technology and education can realize mission of education. We should strengthen in-depth integration of information technology and basic education in the digital economy era. In-depth integration concept of information technology and basic education should be constantly updated. Organization team construction and system innovation of in-depth integration between information technology and basic education can be driven. Intelligent online teaching data support system can be optimized, and novel information technology teaching application innovation can be enhanced.

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