

Status and improving countermeasures of information technology education and students' application ability in primary and secondary schools in Qinghai ethnic areas

*1Zhanlong Guo

*1Qinghai Normal University ,Xining, Qinghai, China
*1qhguozhanlong@163.com

Abstract

this paper makes a field survey on teachers and opening status of information technology courses, and the status of computer configuration and students' application ability in primary and secondary schools in Qinghai ethnic areas, and analyzes problems and proposes feasible improving countermeasures.

Keywords: Qinghai ethnic areas, information technology, application ability, status and countermeasures

1. Introduction

Currently, the development of China's educational reform has entered the stage of full implementation of quality-oriented education. Popularizing and improving the quality of information technology education of primary and secondary schools with weak basic education and backward information educational facilities in pastoral areas in Qinghai, is an important component of promoting ethnic education information. Due to lack of teachers and hardware devices, the status of some schools' application ability of information technology is not optimistic, let alone improving innovation ability of information technology education. Therefore, a full understanding of and research on the status of information technology education and students' application ability in agricultural and pastoral areas in Qinghai, and proposal of corresponding reform measures play a significant role in accelerating the reform of information education development in agricultural and pastoral areas in Qinghai, narrowing the gap with educational

development in eastern areas and building a harmonious society in ethnic areas.

2. Opening status of information technology courses

In this paper, the investigation methods mainly include questionnaire, field survey and individual interview. The respondents mainly include students from county-level and township-level primary and secondary schools, in-service information technology teachers, leaders of schools and county education bureaus in Qinghai Yushu Tibetan Autonomous Prefecture, Golog Tibetan Autonomous Prefecture and Huangnan Tibetan Autonomous Prefecture. This paper also has sample surveys on teachers, software and hardware configuration, course opening status and application ability etc of information technology course.

2.1 Status of teachers

According to the survey, in county-level and township-level primary and secondary schools which have opened information technology course, only 6.8% of formal teachers have the first degree of junior or undergraduate degree of computer education, and about 58% of information technology teachers are original mathematics, physics, education and Tibetan teachers etc who change their posts or hold a concurrent post through self-study or short-term training, and this kind of teachers generally have poor and weak foundation. Due to less qualified teachers, it is difficult to ensure the most fundamental teaching quality of information technology, let alone training of teaching level and

information technology innovation ability. The good news is that, part of specially contracted teachers, volunteers and computer professionals of continuing education etc join the teacher group of information technology course, accounting for about 35%. Although they have solid computer knowledge structure, their teaching experience has room for improvement.

In addition, some objective causes also affect the stability of teachers. Due to remoteness, title, status and development space etc, information technology teachers could not settle down or even have turnover.

2.2 Hardware configuration status of information technology

Hardware devices of schools in pastoral areas in Qinghai are mainly invested by the government, social organizations and individual investment. Most of township-level primary schools do not have information technology course due to absence of computers, while schools with hardware conditions for information technology course are mainly county-level primary and secondary schools and a small number township-level schools.

(1) Computer configuration status

Through sample survey, every 27 students in county-level primary and secondary schools and a small number of township-level schools with hardware conditions of information technology have one set of computer. In 57% of schools, two and even three students have one set of computer, while for few primary schools, 5~6 students have one set of computer. Due to remoteness, less qualified teachers and lack of maintenance funds etc in pastoral areas in Qinghai, computers could not be repaired timely when fail. In some schools that the author has visited, nearly 30% of computers do not work properly, and thus the precious resources are not fully made use of.

(2) Internet access status

Most of schools have built or are building campus network, among which, 64.3% of schools access to the internet by ADSL modem or other ways, and 64.7% of students use computers in school teaching. 39.5% of students have bought their own computers, and 16.2% of them have accessed to the internet at home. Students use network for mainly three purposes including playing games, searching for information and chatting on the internet, accounting for 74.5%.

2.3 Opening status of information technology course

As most of township-level primary schools do not have information technology course due to absence of computers, the investigation results show that: in county-level primary and secondary schools and a small number of township-level schools that have hardware conditions for information technology course, the average class hour of each class is 1.25 per week, and this course is mainly opened for students who are at grade three or above. In interviews of students and teachers, it could be learned that the information technology course is sometimes occupied by other core subjects or taken by students' free computer practice.

3. Application ability status of information technology

3.1 Professional competence of information technology teachers

Although most of teachers are capable of teaching tasks such as Word, Excel, PowerPoint, network and multimedia applications etc, 71.2% of teachers are only at a level of "simple application" in terms of using common software tools such as CAI courseware design, web design, Photoshop and 3Dmax etc.

About hardware application ability, most of teachers are in an urgent need for practical skills training of information technology, in order to improve their application ability. For the question "Improve professional qualities and skills requirements" in the survey, 86.7% of teachers choose "Common network problems solution", 71.3% of teachers choose "Computer hardware maintenance and failure recovery", while 70.8% of teachers choose "Wed design and website building".

3.2 Students' application ability

In response to the question of "How do you think about the content of information technology course?", 34.6% of students choose "Have learned about most of the content", 57.3% choose "Know generally" and "Need further studying", while 8.1% of students choose "Could not understand"; for question

“Evaluate your computer competency”, 15.5% of students choose “Great”, 41.4% choose “General”, 35.9% choose “Know a little” and 7.2% choose “Never know about it”.

When answering questions “Write a brief introduction of classes in Word”, “Make a brief introduction of classes in PowerPoint” and “Calculate examination results of classmates in Excel”, 17% of students choose “Good skills”, 38.5% choose “General skills”, 23.5% choose “Less skilled operation”, and 21% choose “Never use”. For question “How’s your image editing operation”, 20.3% of students choose “Quite skilled”, 51.8% choose “A little”, and 27.9% choose “Incapable”. For question “Do you have email address or QQ?”, 19.8% of students have email address but no QQ, 32.7% have QQ but no email address, and 47.5% of students have neither.

According to the above data, the teaching effects of information course for students in Qinghai ethnic areas are unsatisfactory. Due to poor Chinese foundation of teachers and students, relatively lack of bilingual teachers and language difference, the teaching and application of information resources are affected to some extent, and students’ application ability of information technology is still very weak.

4. Analysis of problems in information technology education

(1). Backward level of economic development, and poor information education equipment. Information education in ethnic areas has a late start, and schools have poor infrastructure and teaching equipment. Due to a small number of hardware devices, students have less time for operation practices. Lack of funding for electricity, internet access and maintenance etc of hardware devices is the second objective factor that affects information technology course, so that network-related teaching content cannot be completed, and thus original teaching content and application ability cultivation cannot be guaranteed.

(2). Leaders pay less attention to this course, and the educational concept is backward. Schools emphasize examination-oriented education and ignore information technology education. As a subject not related to entrance examination, information technology course is not paid the same attention to by school leaders like other subjects. In addition,

teachers also have an insufficient knowledge of information technology education. Sometimes, information technology course is occupied by other core subjects, or students only type on the computer freely. Thus, the teaching content of information technology course is random, low-efficiency and low-quality.

(3). Teachers are less qualified, and their professional qualities need improvement. As information technology course is an emerging discipline that is in continuous development and improvement, it is gradually difficult for original knowledge structure and application skills of teachers to adapt to modern requirements. As teachers of information technology course who change their posts or hold a concurrent post through self-study or short-term training generally have poor and weak foundation, combined with remoteness, heavy workload and low salary etc, teaching effects and teaching quality of information technology course are restricted.

(4). Prominent issues in information resources construction and bilingualism

Educational information resources are the foundation of information application of education. Lack of digital teaching resources and appropriate multimedia courseware is the biggest obstacle of information technology in classrooms. Teachers and students in minority areas with mainly Tibetans use Tibetan in daily life and teaching and learning, and have poor Chinese foundation, and thus the advantage of online Chinese information resources is not given full play to. Moreover, bilingual teachers generally have a relatively weak level, and it is difficult for them to edit, revise and develop for the second time, and thus lead to slow development of information education in ethnic areas.

5. Improving countermeasures

(1). Increase multi-dimensional investment led by the government

To change the insufficient investment status of information technology education in ethnic areas with backward economy, education information construction fund should be included in the compulsory education project plan. The government should continue to increase information education investment in western minority areas, raise funds by all means and widely mobilize various social

forces to participate in education information construction, further improve per capita amount of computers in primary and secondary schools in ethnic areas, and provide good hardware devices to improve the teaching practice and teaching content of information technology course.

(2). Strengthen professional application skills training for teachers

Establish and build training base and teams, actively carry out professional training for teachers' information technology, constantly update teachers' knowledge structure and professional skills, and improve their ability of software and hardware application, management and maintenance, so that all the information devices could work normally, and avoid the embarrassment of fear to use and maintenance incapability, minimize the influence of equipment failure on information technology teaching, and improve the teaching effects and teaching quality of information technology course.

(3). Enrich bilingual information resources by bilingual (Tibetan) teaching mode

According to "*Qinghai Medium and Long-term Educational Reform and Development Project Summary (2010-2020)*", implement "bilingual" educational reform, strengthen the building of "bilingual" teachers with a reasonable structure, good qualities and proficiency in "ethnic languages and Chinese", focus on solving problems such as lack and low quality of "bilingual" teachers, and at the same time construct and integrate various standard and high-quality disciplinary courseware, complete and improve bilingual information resources and teaching resources.

(4). Actively seek for "counterpart assistance" to develop school-based courses

While strengthening teacher training, actively seek for "counterpart-assistance" units, in terms of "hardware" resources and "software" "charging" assistance. Employ famous teachers to give lessons and lectures, attend and evaluate classes regularly or irregularly, so that teachers could make a contrast, reflect on their own, learn from them and thus improve their own professionalism and teaching level. Meanwhile, for the problem of seriously backward development of bilingual teaching information resources that could not meet teaching requirements, experts and famous teachers could help guide schools in ethnic areas to develop school-based

information technology courses, and explore the road of educational development of basic course reform that is suitable for ethnic areas.

6. Conclusion

In recent years, the government continues to increase investment in information construction in agricultural and pastoral areas, in order to constantly improve the hardware construction of school information education. Since 2012, the Qinghai provincial government would take three years to build 1,549 computer classrooms in all primary and secondary schools according to their scales within the province, and build multimedia devices in classrooms for 19,515 classes in these schools for the sake of covering "all classes", and at the same time the education layout adjustment in agricultural and pastoral areas in Qinghai would significantly improve educational resources and achieve a new leap of information education in ethnic areas.

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