

Research on the Training of Technical Teachers in the Rural Primary School

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Abstract. The paper studies the shortage of technical teachers in the rural primary school. Based on the investigation of the primary school teachers in Guangxi, the author proposes two methods to promote the teachers' IT in the rural primary school. One is to meet the teachers' need of technology in the rural primary school; the other is to advocate the digital experiment teaching method.

Without new equipments and new funding, using the two methods still could improve the information environment and the teaching quality in the rural primary school.

At present, the shortage of teachers in the rural primary school has appeared in Guangxi. Due to the economic reason, few undergraduates are willing to the grass root. Therefore, aging, among the teachers, becomes very serious. After the implementation of the special-- post policy for the normal graduates, the situation has improved. The special-- post graduates' arrival has injected fresh blood into the rural primary school such as new thoughts, new teaching methods and new information. The leaders and teachers feel happy, while their abilities are limited, especially their technology still has a certain gap with the actual need. To counter with the rural primary school teachers' lack of technology which affects the deep development of the IT in the rural area, the paper carries out the research on the training of technical teachers in the rural primary school.

I The Situation and Requirement of the Rural Primary School

After an investigation, we have learned the actual need in the rural primary school. They need multi-skill teachers who not only could teach major subjects and minor subjects but also could be qualified for teachers to charge of a class and do work about the young pioneers. Among these multi-skill teachers, the technical teachers who are good at the IT are most in need. The so-called technical teachers are non-IT graduates, but they understand how to repair the hardware and how to maintain the software. The reason is that except the central schools, other teaching centers have no IT classes---the IT graduates cannot reach the teaching centers, but only the central schools may have the IT teachers. Therefore the non-IT teachers are required to understand the IT skills, especially the maintaining skills. In the local multi-skill teachers could be trained gradually, however, when referring to the technical teachers, it's still difficult to train them in a short term. That is because many villages and towns haven't enrolled young teachers in the past more than ten years, while the formal teachers' knowledge structure becomes aging and the teachers don't have enough energy to learn IT, even if they are willing to learn it.

II The Technology Requirement of Teachers and its Solution in the Rural Primary School

The rural is in need of IT teachers, especially non-IT teachers who understand IT. After the exchange with the rural school leaders and teachers and the discussion with experts, we list a table for the rural technical teachers' basic technical capacity. The specific technical requirements are as follows:

1. Install the operating system of the WINDOWS series by pressing the key, if the system crashes, clone and resume the installation.
2. Maintain the system.

3. Anti-virus including system disks and mobile hard disks, if the U disk is broken, repair it.
4. Download the video and audio files of various formats and upgrade these files to play normally.
5. Download the applied software and install them, for example, the recording software can turn CD into MP3 and the screen recording software can record the un-downloaded videos.
6. Use PPT slides skillfully

It is more difficult for non-IT major students to master the techniques. When in class, the students usually can understand it. But after class, they forget it very quickly. The next class, they don't understand. Therefore, using the digital and experiment teaching method can overcome the disadvantages and meet the students' need to apply their knowledge.

III The Digital Experiment Teaching Method

The digital experiment teaching method refers that all information technology experiment classes are videoed and made into digital videos, then put on the FTP site of the campus network for the students to download and practice repeatedly so that every could learn the practical technology. The only appraisal method is the practice and operation but not the written test.

In order to cultivate the primary school technical teachers, the school sets the relevant courses and increases many experiment hours. The specific practices are as follows:

1. Using the Screen Video Technology

The screen video software includes Super Detective, Camstudio, Hypercam and others. Super detective is a good video software that firstly has the function to capture DV、DC、camera, computer screen, chat video or player screen and save the files as AVI, WMV, MPEG, SWF, FLV and other video files. It performs well in capturing and videoing and allows adding the date and overlying texts and images. It also can broadcast the video and audio files on the computer to the network for us to watch or to listen. At present, most of the IT teachers in the university have classes in the multi-media classroom, but it is difficult for students to take notes. In order to have a good teaching effect, when teaching new knowledge, teachers use the screen video to record it and make it into video files, then put it on the teachers' for students to download in class or after class. Students could watch them repeatedly and have a deep thought, which is great help for students to improve themselves and the teaching effects. The screen recording software-assisted teaching of information technology can do more with less, it is worth learning from.

2. Teaching the Thematic Knowledge Deeply and Thoroughly

Teaching the thematic knowledge deeply and thoroughly requires the teacher to present the most basic, the latest and cutting-edge practical knowledge to the students. The thematic knowledge of U disks has three aspects--- killing virus, finding the damaged files and volume production. When used, the U disk is often infected with the virus, the files damaged or missing. The solution is to kill the virus. The common anti-virus software such as 360, Rising and Jinshan can solve most problems. But after killing the virus, many files are lost. Most people contribute this to the virus damage, while, in fact the files are hidden. The solution is to open "My Computer" ---- "Tools" ---- "Folder Options" ---- "View" ---- "Hide protected system files" and remove the hook in front of "Hide protected system files". If the methods above can not solve the virus problem, The USB cleaner provided by the anti-virus Software Company could be used. If still unsolved, that's because your U disk has serious quality problems. The last way is to resume it with the volume production tools, which is the final way to solve problems of the U disks. If the volume production resuming cannot solve, the hardware of the U disk is broken and it has to be scrapped.

3. Practicing the Knowledge Points Repeatedly

In order to teach the practical information technology well and achieve good results, only setting dozens of sessions cannot achieve. Because students don't study computer as their major, and they don't have enough systematic knowledge. The curriculum practice of the thematic knowledge becomes very important.

Knowledge comes from practice. The teachers should provide special exercises for every knowledge point. Taking making the boot U disk as an example, students should correspond to the master software of the boot U disk and practice carefully, finding the error, practicing it again until they could make the qualified boot U disk. Actually, such training is not enough for students who lack of the ability to practice. They should strengthen the training of the possible problems and consolidate the achievement so as not to make mistakes when meeting similar knowledge.

It can be seen that only teachers' teaching and students' listening one or two times or simply reading and writing cannot make students to master the knowledge. Sorting out the content and putting emphasis on the knowledge structure must be attached to the related practice. The practice has proved it is the necessary way to improve the quality of the practical IT teaching. Students not only improve their practical operation ability but also exercise their psychological quality and thought ability. These are very helpful to their future job.

4. Advantages of the Digital Experiment Teaching Method

① Cultivating students' ability to combine theories with practice

The digital experiment teaching method not only can consolidate students' theoretical knowledge but also can enhance students' practical skills. Taking notes rigidly and listening carefully one or two times, without hands-on practice, students cannot comprehend the accepted knowledge. For instance, two science university students came to the author's department for social practice. There was nothing to do at that time. It happened that there was a broken day-light lamp. They were asked to repair it and told to take care of the charged day-light lamp. The author prepared a lamp, a ladder and tools such as pliers and left away. As a result, they did not dare to check whether they connect it right or wrong until they got off work. One of them went to the library and borrowed a textbook of the junior high school, then followed the circuit diagram to connect it. The author asked: why?" the students said that they were worried to connect it wrongly. Once energized, the lamp would be burned. Under the teacher's encouragement and guidance, they solved the problem finally. The two students looked as if relieved of a heavy burden, showing a happy smile. At this time, the student embarrassed to say: standing on the ladder, he was nervous in the whole process and wet all over including the underwear. It could be seen that students' theoretical knowledge is seriously divorced from the practical operation.

By the experiment, students could deepen their understanding of the teaching content in class and find their disadvantages in learning. Through a large number of thematic experiment learning, students could strengthen their training on analyzing and solving problems. They could work independently and take charge of the whole teaching in the rural primary school.

②. Training Students to Think Independently and to Create

The traditional teaching focuses on teaching, and the students are passive to accept knowledge, which is difficult to train students to think independently and to create. While by the thematic teaching and solving the actual problem, the digital experiment teaching creates a problem scenario to enhance students' interests so as to promote them to think actively and to explore on their own initiative. Achieving the change from "I am asked to learn" to "I want to learn" can stimulate students' enthusiasm to create. The digital experiment teaching method provides a good network environment for the students. They can download and watch, thinking repeatedly and practicing until they succeed. It can inspire students' positive thinking and arouse their initiative so that it can improve students' rigorous logical reasoning ability, which is good for students to grow and to enter into the society.

IV Social Benefit

Rural primary school information education is leading, supporting enterprise, plays an important role in. Universities take the digital experiment teaching to implement the practical IT education. All graduates are composite talents and all have a good knowledge of hardware and software. When they go into the rural primary school, they could play parts as models and coaches

to spread IT from school to the local other area. Taking the teaching reform as an opportunity, they can promote the widespread use of IT, achieving the integration of the information technology and subject teaching and upgrading the IT level in the rural primary school.

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