

# Construction of training platform for teachers professional ability of normal students based on ThinkPHP

Jingyuan Li\*

Shaanxi Normal University, Xi'an 710119, China

\*Corresponding Author

**Abstract:** Improve teachers' professional ability training and teaching skills of normal students, cultivate innovative and research-oriented teachers in teaching practice, build a classroom professional ability training platform for normal students based on ThinkPHP kernel, and use CSS3, PHP, HTML5 and other network languages to write front and back office related functional modules, And build the server running environment of nginx and MySQL open source database to realize load balancing and support highly concurrent business systems. The platform makes use of big data analysis technology and rich resources to personalized recommend learning and improve the professional ability of normal students, strengthen the combination of professional knowledge and theory of normal students and teachers, and shorten the adaptation period.

**Keywords:** Normal students, Teacher profession, ThinkPHP, Training platform, Nginx, Mysql

## 1. Introduction

According to the documents on the construction of teachers' team and Teacher Education issued by the state, under the new situation of the development of teacher education, the combination of teacher education training of normal students and information technology can bring more efficient and perfect innovation and reform, which is conducive to the realization of the combination of theoretical knowledge and practice and the rapid improvement of personal skills. The training platform for teachers' professional ability of normal students constructed in this study introduces efficient nginx service engine and relevant modules of the fully open source ThinkPHP development training platform, and adopts a multi load architecture with complete separation of data and programs to support the needs of high concurrency [1,2], so as to meet the needs of normal students for online learning and uploading teaching courseware at the same time, At the same time, the judges and teachers can comment on the learning videos of normal students. The background of the system uses big data analysis technology to personalized recommend courses that need to be strengthened according to the personal ability of normal students, further improve the personal quality and ability development of normal students through the platform, and the platform is converted into points according to the learning time of normal students, Those who meet the learning setting requirements can be issued with teacher education and training certificates as personal evaluation criteria [3,4].

Through platform analysis and learning, normal students can effectively improve classroom professional ability training, promote career development and familiarize themselves with the teaching adaptation period of induction in advance.

## 2. Requirement analysis

The traditional teacher education ability training of normal students mainly focuses on online and offline training. With the rapid development of educational informatization and the environmental impact of the epidemic, the construction of online training platform is very important. At the same time, it can be used as a supplementary way to offline skill training. The construction content of the training platform mainly includes notice and announcement, news trends, data download, video database, teacher education courses and other relevant columns [5,6].

The personal Center for normal students can customize the push ability to improve relevant courses and resource base according to personal learning records and test results. The background management

center is divided into two roles: administrator and auditor to complete the management of all materials and comments and suggestions on works uploaded by normal students.

The construction of the training platform for teachers' professional ability of normal students can promote the improvement of teachers' educational ability. Normal students have customized learning space and get more professional online communication opportunities for judges, which is also of great significance to the cultivation of normal students.

### 3. Functional design of training platform

According to the system management, the functions of the training platform can be divided into two categories: background training center module and foreground personal center, as shown in Figure 1.

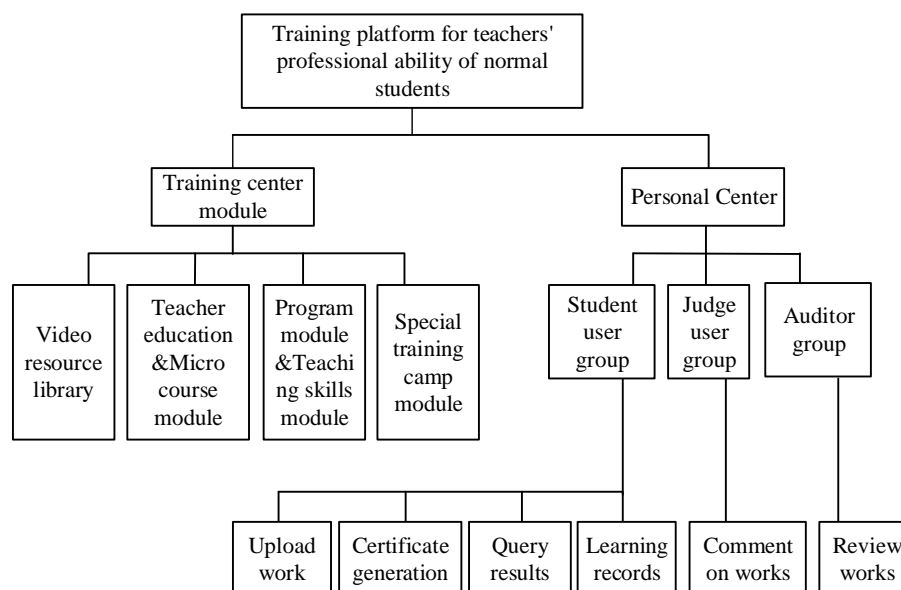


Figure.1 Functional structure of training platform

#### 3.1 Training center module

The background training center module mainly includes six parts: video resource library, teacher education course, programming module, special training camp module, micro course module and teaching skill module [7]. As shown in Figure 1, the main functions of each part are as follows:

**Video resource library:** it is mainly used to publish the excellent courses recorded by famous teachers in the school and the winning works in the national Toshiba cup, tianjiabing cup and red candle cup competitions. Normal students who cannot return to school during the epidemic can either take online distance learning courses or provide online training and learning opportunities for normal students before participating in the competition, Improve personal professional ability by getting familiar with the excellent works of previous winners and self summarizing. Normal students' learning duration and records can be queried in the personal center, and the playing video will be automatically suspended every 5 minutes to avoid users' malicious brushing of learning duration records.

**Teacher education courses:** release famous teacher classes related to teacher qualification examination. Normal students in the school can systematically learn the contents of teacher qualification examination online and review the theoretical knowledge of teacher education. Normal students' learning duration and records can be queried in the personal center, and the playing video will be automatically suspended every 5 minutes to avoid users' malicious brushing of learning duration records. It is required that the learning duration of the course and the course duration of the special training camp shall not be less than 36 hours.

**Programming module:** normal students of computer college enter the personal center after logging in, and publish teaching design, lecture video and PPT courseware through the upload entrance to participate in the programming competition. After the deadline, the auditor reviews the effectiveness of all works, and then the judge log in to the system to score and comment on all works.

Special training camp module: specially excellent normal students will receive intensive training through the training platform. Students are required to complete the course duration of special training camp and teacher education course for no less than 36 hours, otherwise they will not be able to obtain the training certificate. The learning duration and records can be queried in the personal center, and the playing video will be automatically suspended every 5 minutes to prevent users from maliciously brushing the learning duration records. At the same time, students can upload their learning experience through the personal center, such as writing photos, book review notes, class recording videos, mutual evaluation reports, etc.

Micro class module: release their own recorded micro class videos, PPT courseware, teaching design and other works through the upload portal. After the deadline, the auditor will review the effectiveness of the works, and the system will open comments on the uploaded works of normal students to the judges.

Teaching skills module: This module mainly provides services for the annual teaching skills competition for normal students. Normal students upload impromptu speech, teaching design and courseware, lecture and simulation teaching, hard pen writing and impromptu speech videos online. After the upload deadline, the auditor checks the effectiveness of all uploaded works. Finally, the system will open the randomly selected judges for a specified period of time. The judges log in to the teaching skills module of the training platform to score and comment on the competition works. Through the comments of professional judges, students can self check and improve their teaching ability.

### 3.2 Front interface personal Center

The personal center of the training platform mainly includes three roles: student user group, judge user group and auditor group. When logging in to the personal center, the authority judgment process of the user group is shown in Figure 2. The student user group enters the personal center to upload works, query learning records, query scores, etc. After logging into the personal center, the auditor group will display the list of works to be reviewed. After checking that they meet the release requirements, the batch operation will pass the review. The personal center of the jury user group will display the list of works that they have the right to comment on, and can score the works and make detailed suggestions, which is conducive to improving the self-examination of normal students.

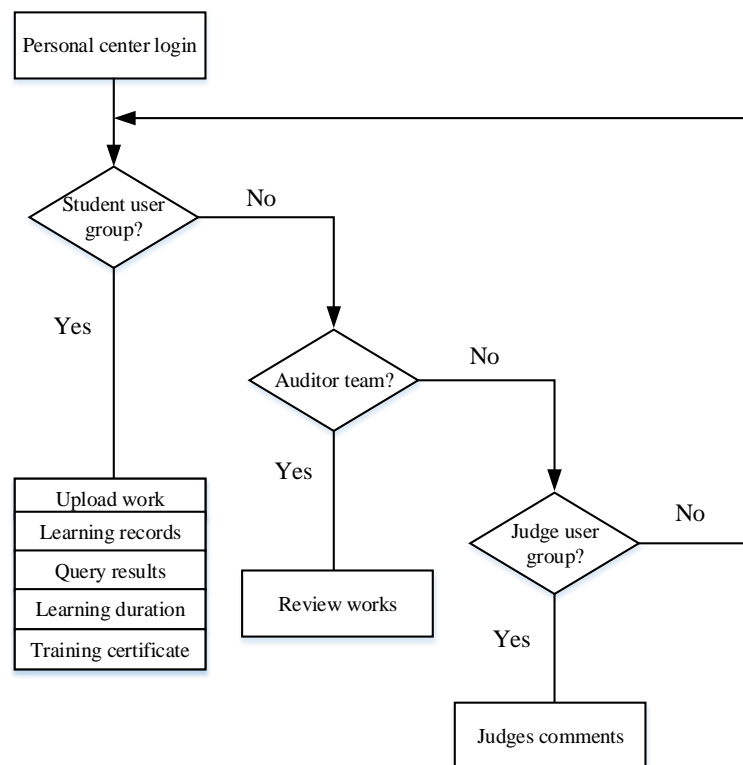


Figure. 2 Flow chart of personal center judgment

The home page of the personal center of normal students shows the length of courses learned, and big data analysis is carried out in combination with the personal quality and learning report of normal students to recommend courses to be learned. After online learning, the teaching skills and comprehensive quality of normal students can be further improved.

#### 4. Construction of training platform

The construction of the platform is based on ThinkPHP to develop relevant functional modules for the system framework to meet the proposed demand analysis. ThinkPHP is a completely open source, concise and practical API high-performance framework. It introduces new features of PHP to optimize the kernel, reduce dependency and improve loading speed. The data is stored and managed by open source mysql, and the data is processed based on big data analysis technology, and the courses to be learned are pushed according to the personalization of different users. The day before yesterday, the UI was written with CSS3, JavaScript and HTML5. Next, the main part of the training platform will be completed and realized.

##### 4.1 Online course learning

Online course learning is mainly processed by the background program, added to the corresponding fields of the learning record and learning duration record database, and automatically refreshed in the personal center, as shown in Figure 3. The main code of the program is as follows:

###### Add learning duration:

```
public function video_time(){
    $info = $this->model->get_info($this->user[uid],'uid');
    if ($this->request->isPost()) {
        $data = $this->request->post();
        $sarr = array(31,32,35,37); // Define teacher education curriculum columns
        if($data[fid]==33){
            $data[txy_time] = $info[txy_time]+round($data[time]);
            $time_all=$data[txy_time] + $info[jszg_time];
            Db::table(qb_memberdata)->update($data[txy_time]);           }elseif(in_array($data[fid],
$sarr)){
            $data[jszg_time] = $info[jszg_time]+round($data[xuexi_time]);
            $time_all=$info[txy_time] + $data[jszg_time];
            Db::table(sx_memberdata)->update($data[jszg_time]);
        }
    }
}
```

###### Front desk 10 minute pause: this part of function implementation is mainly based on JavaScript.

```
myVideo.addEventListener("timeupdate",function(){
    var timeDisplay;
    timeDisplay = Math.floor(myVideo.currentTime);
    current.innerHTML = timeDisplay;
    if(timeDisplay>0 && (timeDisplay+j)%300==0){
        myVideo.pause();
        j=j+1;
        write_video_time(timeDisplay);
    }
})
```

##### 4.2 Upload works

Program main code:

```
public function add($fid=0,$mid=0){
    $user=$this->user;
    if($user[groupid]==8&&count($num)>=$this->webdb[fabu_num])
    {
        $this->showerr(' The number of releases exceeds the limit ',deny_permit);
    }
    }else{
        return parent::add($fid,$mid);
    }
}
```

### 4.3 Personalized recommendation

Carry out big data analysis according to individual learning situation, push courses to be learned, improve professional skills, and realize the main program code:

```
public function tuisong()
{ $info = $this->model->get_info($this->user[uid]);
  $tuisong = analysis($info[uid]);
  return $tuisong;
}
```

### 4.4 Total score of micro class competition

Program main code:

```
{list:tag name="list_excel" sql="select * from sx_weike"}
<tr >
  <td>{$rs.title}</td>
  <td>{:get_user($rs.uid)['username']}</td>
  <td>{$rs.xingming}</td>
  <td>{$rs.xueyuan}</td>
  <td>{$rs.pingjunfen}</td>
  <td>{:date("Y-m-d",$rs.create_time)}</td>
  <td>{if $rs.status==0} Not approved {/if} {if $rs.status==1} Reviewed {/if}</td>
</tr>
{/list}
```

### 4.5 Generate training certificate

Program main code:

```
<div class="all">
  <div class="title" align="center">
<p> Practical training of teachers' professional ability of normal students in Shaanxi Normal University
</p>
<p> Training certificate </p>
  </div>
  <div class="div1">
    <b class="f1">{$userdb.nickname}</b>
    <b class="f2"> classmate:</b>
  </div>
  <div class="div2">
    <p><u>{$userdb.xueyuan}</u> College, student number<u>{$userdb.username}</u>, major
    is <u>{$userdb.zhuanye}</u>, in <u>{$userdb.xuexi_over}</u> Completed the courses related to the
    training platform of teachers' professional ability of Shaanxi Normal University. This certificate is
    hereby issued after passing the examination.<br> My study duration:<br> Special training
    camp:{$userdb.txy_xuexi_time} Hours, teacher education courses:{$userdb.jszg_xuexi_time} hour
  </div>
  <div class="div4"><p>{$userdb.xuexi_over}</p></div>
  <div class="div5"><p> Teacher Education Division </p></div>
  <div><p> Certificate No.:{$userdb.uid}</p></div>
</div>
```

## 5. Conclusion

Based on the kernel framework of ThinkPHP, this paper constructs a training platform for teachers' professional ability of normal students, uses high-performance and high concurrency nginx as the engine, Mysql to store data and separate applications from databases, so as to reduce the coupling dependence of the system. Using PHP network programming background program and relevant modules of personal center, after online training, learning and competition test, it can meet the functional requirements of the training platform, and all aspects of performance can run smoothly

under the condition of high concurrency. The launch of the classroom professional ability training platform has brought great convenience to the online centralized learning needs of normal students inside and outside the school, which has been widely concerned and highly praised by teachers, students and school leaders, and highly affirmed and praised by brother colleges and universities.

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