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SciVerse ScienceDirect

Procedia Engineering 15 (2011) 693 – 698

Procedia Engineering

www.elsevier.com/locate/procedia

Advanced in Control Engineering and Information Science

Development of Management System in Graduation Practice Process Based on Web

Xiao Yu* a

Changzhou Institute of Engineering, Changzhou213164, Jiangsu,21300,China

Abstract

Traditional management of graduation practice process is trivial and complicated as much time is spent in data checking and materials examination and approval by people. We have independently developed a management system in graduation practice based on the NET framework in order to make our graduation practice process more open, fairer and safer, also to provide convenient, scientific and reasonable management methods such as plan, managing communication and evaluation to guide teachers and manage the personnel. In this paper, how to improve management of the graduation practice process through network tools which is mainly discussed.

Selection and/or peer-review under responsibility of [CEIS201]

Key words: Net framework; graduation practice process; management system

1. Introduction

The graduation practice is an important part of plan for talents education in the higher vocational institutes, it is the comprehensive application and test of knowledge acquired during the period of study in higher vocational school, also an important practical teaching stage to cultivate students' abilities of innovation and practice as well as enterprising spirit. Meanwhile, what's more, it is the important teaching stage for students to be cultivated and inspected upon their abilities of integrating theory with practice and solving

* Corresponding author. Tel.: 13961230895
E-mail address: yxiao@email.czie.net

doi:10.1016/j.proeng.2011.08.129

practical problems after analysis in an all-round way, and the important aspect of measuring and inspecting teaching quality. Therefore, it has already become a problem badly in need of research and solving to improve scientific management during the graduation practice, to establish a sound quality monitoring and control system and to develop an effective quality assessment system so as to improve the overall quality of the graduation practice process in an all-round way.

2. General Structure of the System

This system includes the entire process of the management for graduation design and graduation practice. With the system, teachers can not only easily collect all materials in the process of graduation practice through network, but also monitor students in a fixed time. They can also acquire the situation of student's graduation design and practice by limiting time deadline of files uploading. Therefore, the system provides guarantee to make real time and site specific checks for mentor teachers.

2.1 Design of system users

The user roles of the system are divided into three types: query user, data manager and system manager

Operational privileges are divided into four types: data query privilege, data analysisprivilege, data report privilege and data management privilege

The system requires all users do the operations under authorizedprivilege. Only the system manager has the privilegeof user management and system configuration.

The involved users include the system manager, graduation design managers (they comes from different teaching-research offices, departments and administration offices of schools), graduation design supervisors, examining teachers of graduation thesis and assessment, graduation design students, practice managers (they comes from different teaching-research offices, departments and administration offices of schools), practice supervisors and practice students.

2.2 Design of Functionalities

The system can provide the following functions: Qualification examination of supervisors and students, thesis setting, topic selection, task arrangement, thesisproposal, student's logs submission, mid-term inspection table of teachers and students, submission of thesis and oral defense materials, grade examination and approval, data filing and summarizing, all of which are provided in the process of graduation design. Qualification examination of supervisors (enclosed with copies of teacher's ID card, title, academic certificate and degree certificate), assessment of practicing units, supervision of student's practice status, submission of practice weekly reports and practice summary are provided in the process of graduation practice. In addition, the system provides BBS system for the faculty and students to have discussions on academics and scientific research.

2.3 Interface design

CSS (Cascading Style Sheet) is used to decide styles of websites, and makes the different web pages display same background colors, same word size and the same input style.

According to CSS style rules, with the use of forms, ranges ruled by cascading style sheet are different for both a website and a HTML tag. CSS files would be used to unify the style of a website. Internal

documents can be used to complete the work of specifying the style of some web page according to cascading style sheet. Inline style definitions should be used to make special style rules of some HTML tags. The three modes of existence make the whole website distinctive and changeable based on specified styles. Moreover, the two opposites in the contradiction of change and unity are combined together judiciously.

Style. css of Cascading style sheet is established in the management system of the entire graduation practice process to specify the default displaying style of all HTML tags on the webpage in details. For those HTML tags with special display requirement, inline is used to meet the special requirements. Styles of the system interface are unified with organic combination of these two modes.

2.4 Design of database

Management system database during the graduation practice, checking lists of in-post practice, score tables of in-post practice checking, evaluation items list of in-post practice, announcement list, a list of students, a list of teachers, file list, list of supervisors outside the school, graduation design scoring, a list of scoring results, relational tables of scoring, violation list, options list, etc. are included.

3. Key Technologies in the System Application

The system adopts a multi-tier structure based on Web browser/server (B/S) with advantages of good usability, strong flexibility and high reliability. It is completely compatible with Windows operating system so that it is convenient for teachers and students to use the client working by IE browser inherent on Windows.

3.1 This management focusing on authority management and personalized setting has enhanced efficiency.

By role, users can be divided into the system manager, the office of academic affairs, the department, the teaching and researching office, teachers and students. Different roles have different permission authorities. For example, students have the permission to mainly operate the two system functions of checking announcements and submitting files for students who mainly undergo reading and filling of relevant files in the graduation in-post practice.

3.2 Dynamic distribution of the key data is achieved in the system through developing Web service to ensure of promptness and uniformity.

A Web service is programmable application logic with application Web protocol (for example SOAP). On the surface, a Web service may be regarded as the application to provide a component for the exterior to make remote procedure calls through Web. In this sense, the component can be called through Web by programming. As the Web service is the programmable component based on standardized Web protocol, the Web service can surpass firewalls as well as neglect difference of heterogeneous platforms. This is to mean that different heterogeneous platforms just need to expose the necessary web services to the exterior without considering of operational systems.

3.3 The third-party controls are used to meet users' requirements, such as drawing of complex graphics and data export of Excel documents.

With Office's support of .NET, the system can export data list through the form of Excel by calling components of Interop. Excel, Interop. Office and Interop. Owc. Dundas WebChart control of .NET provided by the third party is adopted to display selected data of users.

The system is aesthetic in data display and highly-efficient in operation.

4. System Application and Development Environment

4.1 Software used in the system development includes:

Operating system: Windows 2003 Server.
Web server: IIS 6.0 .
Database management system: SQL Server 2000 Enterprise.
System development software: Visual Studio.NET 2003 from Microsoft.

4.2 System design and development tools include*:*

Demand analysis and design tools: IBM Rational Rose and SODA.
Configuration management and source program controlling tools: Microsoft's Visual Source Safe.
Database analysis and design tool: Sybase Power Designer.
Integrating tool of business system: Microsoft's DTS.
Others: Microsoft Office software.

5. System Implementation

5.1 Announcement management

The main functions of this module are to add, check and manage content of announcements. Through the announcement module, students can be informed of different announcements published by the school and department online during the in-post practice.

```
 Private void BindData(int PageSize,int PageIndex,string strWhere)
{
        dg.VirtualItemCount=Model. AnnouncementList.GetCount(strWhere);
        dg.CurrentPageIndex=PageIndex-1;
        dg.DataSource=Model.AnnouncementList.GetList(PageSize,PageIndex,strWhere);
        dg.DataBind();
}
```

5.2 Graduation practice scoring

The main functions of this module are to mange all processes of the graduation practice, including assessment and management of scores out of the school and scores of graduation in-post practice (including ability training and practice process), setting of the comprehensive scores (including scores of supervisors both in school and out of school and materials submitted during the practice), in-post practice check and adding checking records and etc.

```
 private void LoadTaskData(int id)
{
Model.DocumentList model=Model. DocumentList.GetModel(id);
        lblTaskName.Text=model.DocumentName;
        hlDetail.NavigateUrl="Task_Detail.aspx?id="+id.ToString();
}
```

5.3 Task management

Through this module, school can release relevant tasks of the graduation in-post practice, record and check violations of students during the practice (for example, failing to submit files on time), mark files submitted and etc. Moreover, students can submit files through this module. The main functions of this module are to release tasks, mark documents, check violations, manage task list and submit files.

Codes of part functions are shown as the following:

```
int id=Convert.ToInt32(e.Item.Cells[0].Text);
Model.DocumentList model=Model. DocumentLis.GetModel(id);
//CheckingExaminationSituation
((LinkButton)(e.Item.Cells[7].Controls[0])).Text="Correct";
```

5.4 Graduation design scoring

This module mainly deals with management of thesis defense in the graduation design. It includes three function modules: assessment and management, scoring of thesis defense group and teacher's scoring.

Codes of part functions are shown as the following:

```
Protected void lbtnSaveR_Click(object sender, System.EventArgs e)
{
Model.ScoringRelationalTable model=new bysj.Model. ScoringRelationalTable ();
DataTable dt=
Model.ScoringRelationalTable.GetList("ScoringListNo.='"+ddlTable.SelectedValue+"'").Tables[0];
Model. ScoringRelationalTable.Add(model);
}
```

5.5 System management

This module deals with management of all sorts of data needed in the system. It includes system logs, department management, management of the teaching and researching office, faculty management, class management, students' management, materials modification, authority assignment, system configuration, supervisors out of the school, inquiry of teachers out of the school, user management, password change, BBS and etc.

```
Protected void lbtnSearch_Click(object sender, System.EventArgs e)
{
DataSet ds1=Model.AuthorityList.GetList("");
DataSet ds2=Model.RoleAuthorityList.GetList("RoleName='"+ddlGroup.SelectedValue+"'");
cbl.DataSource=ds1.Tables[0];
cbl.DataTextField="AuthorityName";
cbl.DataBind();
}
```

6. Conclusion

This system making full advantages of web ensures that the graduation design (thesis) and graduation practice process can be carried out as normal and improves management of the graduation design (thesis) and graduation practice process. It solves the problem of management lack-age as students individually

undergo graduation practice and design (thesis). The system puts the entire process of graduation practice online for operation.

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Introduction of the author:

Xiao Yu (1968-), female, Changzhou, Jiansu, of Bachelor Degree, associate professor.
Research direction: media and software development.
Address: Xiao Yu, Room1502, UnitB, Building17, Runde Pennisula, Changzhou, Jiangsu.
Postcode: 213000.