

The Development of the Web-based My Discipline and Counseling Online Management System

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Abstract. This study is aimed at identifying solution regarding students' discipline and counseling management in terms of inconsistent rules and disciplinary action in schools; inadequate existing systems in schools and the State Education Department. It also involved the design and development of My Discipline and Counseling Online Management System (MyDCOMS) and evaluation of MyDCOMS functionality in terms of easy-to-use in the management of discipline and counseling. This research used a qualitative approach namely case study in the process of collecting data. In general, this study was divided into three phases. The first phase involved implementing system requirements analysis and identifying problems in the management of discipline and counseling in schools and the State Education Department. Here, a total of nine respondents were involved, two officers from the State Education Department and seven from the school. Phase two of the study involved MyDCOMS' design and development process that was based on the findings of a system requirements analysis as in phase one. Formative evaluation method was conducted involving all the respondents in the first phase. In the third phase, MyDCOMS test and evaluation was carried out in the end users of the system which involved two officers from the State Education Department; and seven respondents each from the primary and secondary schools. Apart from that, two experts from the law and ICT field were involved. The results of MyDCOMS testing and evaluation had proven that the system could be able to standardize school's regulation and disciplinary action, facilitate the recording of students discipline data, facilitate in determining disciplinary action against students and ensure justice and fairness in the implementation of the actions. Besides, it can be used to access discipline and counselling information, provide communication networking facility for a variety user, facilitate in the production of reports and analysis; and recording counseling sessions. MyDCOMS is also able to the acquire information resources to support discipline and counseling management and helped in monitoring the implementation of the discipline and counseling activities.

Key Words: MyDCOMS; Discipline; Counseling; Web-based Application System; Support System

1. Introduction

Discipline is the positive direction of behaviour toward established standards of conduct, fully understood and based on a reason, judgment, and consideration of the rights of others. An ideal discipline is self-directed and self-controlled. Schools, communities, and parents share responsibility for helping students develop that discipline. When self-control and self-discipline fail, disciplinary forces from outside the individual are imposed to protect the rights of others and to ensure uninterrupted instruction [1]. School indiscipline has been, over time, an issue of concern for educators and we can even state that it has become a huge concern among educators, policy-makers and the public opinion in general, owing to the outbreak of aggressiveness among peers, violence within teacher-student relationship and vandalism [2].

Tobin, Sugai, and Colvin [3], make a good point when they state that administrators need information about the current status of discipline at their school before effective changes can be made. Most schools have developed forms for discipline referrals that can be tracked and used to produce various kinds of information, specifically to analyze student behavior before completing a functional

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behavioral assessment. Discipline referral data has a wealth of information including identifying students at risk, communicating with staff teams, monitoring progress towards school climate improvement and referral for special education. Administrators can use records of discipline referrals as a tool in all these areas to help improve the status of discipline in their schools [3]. This type of administrative leadership fosters a school, home and community partnership for promoting positive outcomes for all students [4].

Accordingly, the use of ICT in school management is seen as an important approach in helping the school achieve its vision and mission. Research into ICT-facilitated home-school links has found that they can foster the development of effective relationships between schools and parents, through email communication, for example, resulting in greater parental involvement in their children's education in general [5]. Effectively using MISs (Management Information System) can reduce time spent on administrative tasks, but compatibility of systems is a key factor [6], [7]. All levels of staff can play a greater role in the school due to new and flexible management structures facilitated by ICT [8]. Successful leaders will have different leadership styles, but they all need to have a vision of learning transformed by ICT [8], [9], [10], [11].

Applying the concept of using information and communication technology (ICT) in school management is an appropriate approach, the National Education Association has outlined that the information and communication technology (ICT) is the catalyst "enabler" key in education information management. It was able to streamline the management of the upgrading of information and communication at all levels, leading to the efficient management of education and reduce bureaucracy. In addition, the "Information for Strategic Planning" (ISP) has been recognized as a basis for planning and implementation of initiatives (ICT) in enhancing the productivity, efficiency and effectiveness of education management system [12].

2. Web-based Application

Web applications are popular due to the ubiquity of the browser as a client, sometimes called a thin client. The ability to update and maintain web applications without distributing and installing software on potentially thousands of client computers is a key reason for their popularity [13]. Some of the motivations that contribute to the development of many web-based systems nowadays are because of its efficiency in handling rapid access of documents and its ability in supporting multi-users simultaneously, thus saving a lot of time and hassle free [14],[15].

3. Materials and Methods

This research used a qualitative approach namely case study in the process of collecting data. In general, this study was divided into three phases. The first phase involved implementing system requirements analysis and identifying problems in the management of discipline and counselling in schools and the State Education Department. Here, a total of nine respondents were involved, two officers from the State Education Department and seven from the school. Phase two of the study involved MyDCOMS' design and development process that was based on the findings of a system requirements analysis as in phase one. Formative evaluation method was conducted involving all the respondents in the first phase. In the third phase, MyDCOMS test and evaluation was carried out in the end users of the system which involved two officers from the State Education Department; and seven respondents each from the primary and secondary schools category. Apart from that, two experts from the law and ICT field were involved.

4. Design and Development of the System

The research involved the Development of Web-based Discipline and Counselling Management System (MyDCOMS). The organization of the system is by way of adaptation of organization management theory, ICT technology; especially web technology and Effective Behavioral Support System, the method of Systems Development Life Cycle (SDLC), strict guidelines, and proper procedure in discipline management, Educational Development Master Plan (PIPP, KPM), concept Effective School and with the technology of the "Support System". The draft of the theoretical analysis has been divided into three phases which is the phase one, phase two and phase three. Phase one is the process of gathering information regarding the

guidelines and the procedure in disciplinary management which were enforced by the Ministry of Education given it to be in form of directory books or Circulation Letters of Professionals from Ministry of Education.

In addition to the gathering of the information process, phase one also consists of the detailed aims and targets of the Educational Development Master Plan in the aspect of developing role models among individuals and Effective School will also be applied and will be produced in the written form of necessity analysis system. That analysis conducted which was supervised by the Malaysia's Ministry of Education, was used to identify the essentials in the disciplinary management system and the information resources which was used to assist the procedure and student's disciplinary actions. Next, the phase two is the development of the MyDCOMS and the web-based system for school discipline support system. The development of the MyDCOMS and the web-based system for school discipline support system are based on the General book of Directory on Discipline in Schools (KPM, 1981), Directory book on Disciplines among Students for Parents (KPM, 1982), Directory book on Procedural Discipline among Students for Headmasters and Teachers (KPM, 1988), Directory book on Discipline for Students (KPM, 1988), Directory book in dealing with Truancy in Schools (1994), Directory book for dealing with Bullies in Schools Management (KPM, 2005), and Rules and regulations of Education (School Discipline) (KPM, 1959) and Circulation Letters of Professionals from Malaysia's Ministry of Education. (Please refer to the appendix for the complete list).

MyDCOMS is a dynamic web-based application of type client-server developed and implemented in a Windows-Apache-MySQL-PHP platform [16],[7],[18]. Therefore, the application is installed once in the server and, the clients (MOE Administrator, State Educational Department Officer, School Principals, teachers, students and parents). The developing process system is separated into two main portions, whereby the first is the development of the system by using the Web-based Open Source technology; whereas the second is the development of students' discipline support system. Researchers used Systems Development Life Cycle (SDLC) which was based on the Prototyping Model which is the Evolutionary Prototyping Model. In this development system, the aims and targets of the Main Plan of Educational Development (PIPP, KPM) were taken into account on basis of the guidelines, rules and procedures with the Circulation Letters of Professionals from Ministry of Education which was passed by the Ministry of Education. Besides that, the ICT technology of development system was used too, amongst them were web based technology in Standards, Policies and Guidelines – Portal Guidelines, which was suggested by the Malaysian Administrative Modernization and Management Planning Unit (MAMPU). However, from the viewpoint of the system interface, the technology usage of Human Computer Interface (HCI) will be more focused and be adapted into the development system.

The usage of the Evolutionary Prototyping Model in the system development life cycle had enabled researchers to build the system in parts and in stage-by-stage, whereby tests will be carried out for each stage until every stage is passed and fully satisfies the system user before all of the parts are to be joined back to be a whole and complete system. Furthermore, in this phase too, every analysis about the accomplishment of the disciplinary action will be entered into the system as the support system which will be enabling the system to give suggestion and advice about the disciplinary matters in schools. The guidance and suggested solutions will be in fully referring to the procedures and rules drawn by the Ministry of Education.

The third phase is the evaluation of the MyDCOMS. This phase will be evaluating the well-built prototype system. Evaluation will be done in one Johor State Educational Department and two schools in order to receive data about the evaluation of the functional system in aspects of facilities, the ability in students' disciplinary management, and to assist certain parties in gathering information about the action and procedure in conducting students' discipline accurately.

The results of MyDCOMS testing and evaluation had proven that the system could be able to standardized school's regulation and disciplinary action, facilitate the recording of students discipline data, facilitate in determining disciplinary action against students and ensure the justice and fairness in the implementation of the actions. Besides, it can be used to access discipline and counselling information, provide communication networking facility for a variety user, facilitate in the production of reports and analysis; and recording counselling sessions. MyDCOMS was also able to the acquire information resources

to support discipline and counselling management and helped in monitoring the implementation of the discipline and counselling activities.

5. Conclusion

This study has identified the themes of discipline and counselling management problem in the state education departments and schools. In this study, MyDCOMS has been developed to strengthen the existing system, the system has gone through the formative tests. Three versions have been produced and MyDCOMS Version 3 is the last version was able to meet the user's criteria. MyDCOMS final version was also tested by end users in the summative test. The results of MyDCOMS testing and evaluation had proven that the system could be able to provide convenience to the subject of study in the management of discipline and counselling in schools and state education departments.

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