

Information Technology Contributions in Developing Education Technology

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Abstrak

Teknologi pendidikan adalah salah satu aspek yang setiap sekolah penyelenggara program pendidikan yang harus diperhatikan. Semua bagian dari Teknologi Pendidikan memainkan peranan penting untuk menghasilkan program pendidikan yang berhasil. Namun, tidak semua sekolah telah menerapkan atau memperhatikan hal tersebut. Salah satu alasannya adalah kekurangan sumber daya manusia.

Teknologi Informasi adalah sebuah teknologi yang menyajikan sistem yang otomatis dan “mudah” yang dapat memberikan beberapa solusi untuk menerapkan Teknologi Pendidikan di setiap sekolah. Dengan memanfaatkan Teknologi Informasi, semua personil sekolah dapat lebih fokus di dalam fungsinya dan memiliki waktu yang cukup untuk mengembangkan keahlian dan pengetahuan yang mereka miliki. Maka, setiap aspek dari Teknologi Pendidikan dapat dikontrol. Terlebih lagi, alasan tentang kekurangan sumber daya manusia dapat ditanggulangi dan penerapan Teknologi Pendidikan dapat ditingkatkan.

Kata kunci: *Teknologi Pendidikan, Teknologi Informasi, pendidikan, sekolah*

1. Introduction

Education has become long life journey and one of the most important things that every human has to get. Without education, no one can be survives to face Life. Sometimes how further someone’s education, the more respect he/she will get from others. Therefore, education is important for everybody.

The only way to reach high education level is we all have to go to school. Without going to school, no one can get any knowledge as high as they want. However, there is one problem to choose which school is the suitable school to improve our knowledge and abilities. Two big reason that one school is different from the other school are how good all the educators that they have and how the school management is being done.

To find a school that has good teachers is not an easy thing to do. All schools will claim that their schools have good teachers. However, in the fact not all of the claims are true. The main problem that not all of the good teachers are not trying to improve what they already have (knowledge or skills). They only teach everything that written on the textbook that they used for teaching. If we asked, why they do

not want to improve their knowledge or abilities, the answer that we could get are they do not have enough time to read another books or they do not know where they can get information to improve it.

We could find many schools still using manual management system. Therefore, all daily information is fragmented on each department or person who has the authority to access it. Sometimes each department or person does not know what is going on, does not know what the latest news, or forget what happen in past view months or years. The main reason that caused all of this things is that everybody is very busy doing they own work, there is no document to write any news, or doesn't have enough time to communicated all information to others. These situations can be worsen if it involves many school's personnel at once.

This entire situation makes every school tries to improve their system management and their personnel on their own. However, in the other hands, for the school with no motivation or have small personnel cannot do such things. If we want to stop all this things and want to improve all schools to be equal, we need something to make all things came true, instead of a same curriculum. The joining of Information Technology and Education Technology will produce one big solution for all problems that we have discussed above.

2. Educational Technology

Education Technology is not a new technology that can be implemented on education system. Therefore, we can find many definitions for the term of Educational Technology. Some of the definitions are:

1. the use of technology to support the learning process [Edt05]
2. multimedia technologies or audiovisual aids as a tool to enhance the teaching and learning process [Int05]
3. iterative process for designing instruction or training used to improve performance [Bob05]

From all definitions above, we could define ourselves that Education Technology affected not only the media used, but also all aspect in the learning process (including educational management). In addition, the final goal for improving Educational Technology is to encourage to use wisely of systems, environments, tools, products, and strategies that can enhance human learning and competence [Bob05]. Therefore, Educational Technology, not only used one discipline, but also included several disciplines. Some of those disciplines are Instructional Systems Design, School Management System, Human Learning Concepts, and so on.

3. School Based Management

Every organization needs a good management system, including education system. In a good education management system, all personnel involved are giving their efforts to guide the all students. They do not have to worry too much about school administration management. However, in reality, almost every school just think how the school administration has to be managed. The guidance to the students

only based on how the teacher will teach them and school's control to them, sometimes, is not enough. Therefore, we could find the teaching standard for every teacher is not same, even in the same school.

In order to help every school to manage their school's administration, Information Technology can take a huge help. By developing a best school's management software, all things that related to school's administration now are in the software, and not done manually. All school's personnel can be more focus to guide the their students. They only have to think what they have to do based on every data from the software.

This condition related to School Based Management (SBM) terminology. In School Based Management, every decision has to come out from its school itself, not by other means to improve the school's product [Zam05] [Dik05]. If this situation can come true, the school can be strong, independence, innovative, and can bring supportive environment for everybody. The school can be more responsive to all conditions and problems that come out at last, all the student's parent and the society around the school could participate fully to develop a good education environment.

In order to implement School Based Management system correctly, there are four principles [Dik05]:

1. Power

All school's headmaster has bigger power than old system in making school's policy. The school's policy not came from top-down, but from bottom-up principle. Therefore, the schools can run more effective and efficiently.

2. Knowledge

This principle is the most important principle in teaching system, because to guide the students the teachers need to have enough knowledge. The knowledge that they have should always be updated by the new knowledge, because knowledge always changing. In this principle, Information Technology can give huge opportunity to help all the school's personnel to improve their knowledge. They can learn by using e-book system, multimedia system or distance-learning system.

3. Information System

Information is the most important thing for any school to make any decision concerning their policy. In the manual system, the time needed to collect all-important information is very long. This situation can make the policy came out too late and the school's response will be late also.

By using appropriate school information system software, the school can collect the important information in a short time. Therefore, they can react to the situation faster than when they doing it manually.

Another benefit of a good information system in school is making the school to be easier in monitor process, evaluating process, and accountability. Beside that, information that is important for every school is all information about every teacher's ability or skills, and all student progress.

4. Appreciation Program

This program is needed to encourage all personnel involved in the program. The targets of this program is not only for the teacher, but also to the students and school's employees. By implementing this program, we hope the motivation and work ethos can be developed. How good this program can be implemented in every school depends on the school's resources. The bigger the school's resources, the bigger the program can be held.

4. Learning Process

How good the student can learn for any knowledge based on how good the teacher can transfer their knowledge. In fact, not all teachers have enough knowledge, even for their own major subject. One of the teacher's problems is the limitation of teacher's knowledge. The reasons for this limitation are they are already feel satisfied for what they already have and they do not know where they can find another subject materials to enhance their knowledge.

For the reason of satisfaction for what already have, there are no tools that can be used to increase the knowledge. The only way to solve this is that they have to have motivation to change in their mindset. Without it nothing can be changed.

For anyone who does not know where to find any subject to enhance their knowledge, Information Technology can offer many choices. They can learn by reading any e-books that downloaded from the Internet to read and learn from multimedia tools or asking questions to the community in the Internet.

By using e-books, the teacher can learn and keep the material. All this e-books can be found in many sites in the Internet. Some of them can be downloaded freely and some of them have to pay some amount of money. Beside of that problem, one thing for sure is the e-books can help all teachers to find the right material to enhance their knowledge.

On using multimedia tools, all teachers can choose many kinds of media to help them learn about any subject material. They can use movie or use interactive media to explain any education's material. We can find in the market, many CDs or video tapes contain the material that can be used by the teacher to explain any teaching subject. All these tools are easy to use and easy to find. They just need television and CD or video player to use all those materials.

In interactive multimedia system, the system can give more attractive education method. The students can explore more thoroughly for what they are interested in. The students are not only focus for one subject, but also they can expand the knowledge to another subject which is connected. This method can lift up exploring experience for the students.

In order to get a good interactive multimedia system, Information Technology is needed with collaboration with another technology (like user interface technology, psychology, etc.). So in this solution, Information Technology can give a big contribution to encourage the sense of learning for every people.

If in all these learning processes, someone have difficulties, they can use the Information Technology to facilitate communication with anyone who has the same interest. This facility can be found in many sites in the Internet. Every subject has their own sites to communicate. They can be discussed about something or argued for something new aspects of technology. One benefit by using this facility is the student can know from other people about the subject that he or she is interested in, and then can take the benefit from the discussion or from the argumentation.

Another tool that can help some one to learn about certain subject is using a game or a simulation [Edt05]. By using this tool, the learner can make any experiments without any possibilities to harm themselves. They can make the experiment from the basic experiment to the extreme experiment that very dangerous to be done in the laboratories.

The bottom line of using Information Technology in learning process are the student can get every information that they need in easy way and they can interact with other that have a same interest. This condition can bring the student to be more enhanced in their own major subject.

5. Distance Learning

This is another contribution of Information Technology in Educational Technology. By using distance learning concept, the teacher and the student do not have to be in the same room again. They can be placed in different place, address, city, and even different country. Therefore, the teacher and the student not limited by the classroom walls any longer.

By using this technology, there is no reason to say that they cannot learn again because of their distance from the city or no books to read. The only thing that they need is a communication line to communicate using the Internet.

Everybody can learn from every site in Internet that provides this service. Many education subjects are provided in each site. We only had to connect to the site, than learn anything that we like. In some sites, we not only can learn from the site, but also can download the material to our computer using certain tools. So to learn it, we do not have to connect online to the site. In this case, this learning system is much more like using the e-books, but had a view differences. One of the differences is we need a program to get the material. This program can only get from the sites that supporting the study materials.

In distance learning program, we could find a facility to communicate with our tutor too. This facility is very important, because the learning speeds of the students are not same and can be used to increasing the knowledge of the student for a certain material.

Some distance learning system also included other facilities such as digital library or e-journal [Edt05]. Both facilities give opportunity for the entire member to search about the material that they interested in. In digital library, every registered member can find any textbook or other complementary material concerning the

subject that they like. The e-journal only published by the education institution. In this e-journal, the member can read the report of any research that already taken by someone. It is important for a student to read some journal, because they can see how fast the development technology.

6. Evaluation Process

Evaluation is the last thing that the student needs in a learning process. By doing the evaluation program, the student can know how good they have known or understand for a certain subject material. The result of the evaluation can be used to determine whether the student can continue to study next material or have to learn the study material again.

In traditional ways, evaluation process is done by face to face meeting or by using a paper and pencil. In this process the student and the teacher has to be in a same place or a same room. Sometimes this procedure can cause a problem, for example if the student is getting ill or the evaluation taken by a student from far place. If those situations happen, the student will get into problem. On the worst case, the student will be failed the evaluation without taking the evaluation.

By implementing the Information Technology, those situations can be handled. The student and the teacher do not have to be in a same room or a same place. They can communicate each other by using communication line. This communication can be held live or through a specific program.

In distance learning program, there is a specific program that can be used to evaluate the student. This program can be embedded to the downloaded program or have to online through the Internet. If the program was embedded to the program, the questions must be downloaded first, than the student can answer it by offline. After finish answering the questions, the program can deliver the result through the site in the Internet. This evaluation method can make all teachers to be more effective in making an evaluation of a material that they educated, because can reach a far place from they are stay and the student can take the test 24 hours a day 7 days a week.

The last thing that the teacher can get from using Information Technology in the evaluation process is they can get the test analysis after the test was taken. From this analysis, every teacher can determine what they have to do to teach the same material in the future, which material that not well known by the student or how the response of the student to every questions. Although the question may be same for every test, the analysis result can not be the same. So the analysis result can help the teacher and the school to make a new policy about the education program.

7. Conclusion

Implementation Information Technology in Education Technology can bring many benefits. The biggest benefit that the education institution can get is the education's

administration can be more easy and effective. Therefore, the teacher can be more focus to improving knowledge for themselves and for the student.

This implementation is very suitable for everybody who want to improve the knowledge, included they who live in the village which had a communication line

By using the Information Technology, the learning responsibilities not in the teacher hand, but in the learner's hand. Who want to learn, they could get what they want to know.

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