

E-learning Portal for Student Teachers of Universitas Terbuka and Teachers in Indonesia

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Abstract

Universitas Terbuka (UT) is Indonesia's Open University established in 1984 to cater for the higher education needs of high school graduates, working adults and in-service teachers. Using open and distance education system, UT currently has four Faculties, i.e., Faculty of Mathematics and Natural Sciences, Faculty of Economics, Faculty of Social and Political Sciences, Faculty of Teacher Training and Educational Sciences, and a Graduate School. The Faculty of Teacher Training and Educational Sciences is the largest Faculty, accommodating 546,153 (85%) out of a total of 646,467 students. UT offers diplomas, undergraduate as well as graduate degrees in 1,065 courses, 571 of which are supported with online tutorial services. This paper presents UT experience in the development of e-learning portal for student teachers and in-service teachers in Indonesia, its uses by teachers and its roles in continuous professional development of teachers through the use of Open Educational Resources (OER).

In response to the growing needs of teachers' continuous professional development and as part of UT spirit to make OER available to 2.7 million teachers in Indonesia, since 2008 the Faculty of Teacher Training and Educational Sciences has introduced an e-learning portal called *Guru Pintar Online*, which literally means *Smart Teacher Online*. The purpose of the development of this e-learning portal is to continually develop and enhance the knowledge and competencies of teachers through the provision of updated online open educational resources on good practices in teaching and learning at schools. The *Guru Pintar Online* has two major content categories, namely instructional laboratory and teachers' discussion forum.

The *Guru Pintar Online* serves as a forum for teachers to share knowledge and good practices in teaching, such as managing a big classroom, evaluating the process of learning, teaching mathematics in primary school, and teaching in kindergarten. The content for the *Guru Pintar Online* portal is developed based on teaching cases of teachers in early childhood, primary as well as secondary schools. These teaching cases are documented in video streaming format for a maximum duration of 5 minutes. Besides, teachers are also invited to add content to the e-learning portal. This e-learning portal has been designed in such a way that teachers can easily use and share teaching cases, upload and download, as well as view the materials online.

The content, variety of teaching cases and accessibility of these OERs for teachers continue to be developed to benefit teachers. It is expected that teachers will make use of these OERs to improve their daily teaching practices. This e-learning portal is expected to enrich UT program for teachers at degree levels and continuing professional development. This portal will in the future serve as virtual teaching

clinics for teachers who wish to learn from good practices in teaching in different contexts throughout Indonesia.

Keywords: E-Learning Portal for Teachers, Online Continuous Professional Development of Teachers, Open Educational Resources (OERs), Teacher Training

Introduction and context

Indonesia is the largest archipelago in the world and is the home over 240 million people. Meeting the needs for access and participation in higher education has been a significant challenge of the government. Universitas Terbuka (UT) was established on 4 September 1984 as the 45th state university as part of the strategy to expand access and enable participation in quality higher education using distance education system. Its original missions have been to improve access to higher education and upgrade qualifications of in-service teachers. Since its establishment UT has evolved in response to advances in new technology and adapted itself meet the constantly changing needs of its stakeholders.

The history of teachers in Indonesia is the history of continuous professional training and development of a sheer number of teachers working in the largest archipelago nation in the world. The training and development of teachers pose specific challenges because many teachers are underqualified, serve in dispersed and remote locations, and have for a long time been underpaid. Significant endeavour and investment have been allocated to improve the quality of teachers, which is expected to lead eventually to the quality improvement of national education system and outputs. Teacher development systems, mechanisms, and institutions have been established and nurtured to ensure quality improvement of teachers (Supriadi, 2003).

Despite all the effort, teacher training and development is a relentless continuous endeavour until today and the future. For a long time the qualifications of basic education teachers (early childhood and primary school teachers) had been underqualified. In 1990, the government has introduced new policies which among others required the training of basic education teachers up to two-year university Diploma. Then, since 2005, a new Law has been implemented, requiring all teachers to hold Bachelor degrees. The government has set the target that all teachers must have at least Bachelor degrees by the year 2015. This is a formidable task to be accomplished by the government and all stakeholders of teacher education. Because of its flexibility and use of open and distance learning system, the UT is well positioned to contribute a crucial role in educating a huge number of in-service teachers dispersed in remote and rural locations throughout the country, in which the face-to-face education system lacks the capacity.

UT has stated its vision to become a world quality open and distance higher education institution in producing higher education products, and in conducting, developing, and disseminating information about open and distance higher education (UT, 2010). UT missions have also evolved as follows: (1) to provide access to world quality higher education by the all

members of the community through open and distance education, (2) to study and develop open and distance higher education system, and (3) utilise and disseminate results of scientific and institutional studies to respond to the challenge of national development needs (UT, 2010). Since its inception in 1984, UT has four Faculties: (1) Economics, (2) Mathematics and Natural Sciences, (3) Social and Political Sciences, and (4) Teacher Training and Educational Sciences. Graduate Program has been offered since 2005, and currently has 4 Master's programs, namely Public Administration, Management, Fishery Management, and Mathematics Education.

Faculty of Teacher Training and Educational Sciences, Universitas Terbuka

The Faculty of Teacher Training and Educational Sciences, or simply know as FKIP, of Universitas Terbuka specifically caters for the needs of in-service teachers in pre-schools, primary and secondary schools. The Faculty has 10 Study Programs offering Bachelor's programs, organised into four academic Departments: (1) Basic Education, (2) Language and Art Education, (3) Mathematics and Science Education, and (4) Social Studies Education. The Department of Basic Education is the home of two Study Programs for in-service basic education teachers, namely (1) Primary School Teacher Education, and (2) Early Childhood Teacher Education. The FKIP Study Programs are listed as follows.

1. Elementary Teacher Education (PGSD)
2. Early Childhood Teacher Education (PGPAUD)
3. Mathematics Education (PMAT)
4. Physics Education (PFIS)
5. Biology Education (PBIO)
6. Chemistry Education (PKIM)
7. Indonesian Language and Literature Education (PINA)
8. English Education (PING)
9. Civics Education (PPKn)
10. Economics Education (PEKO)

FKIP has stated its vision to be a teacher education institution that provides in-service training for teachers and administrators, and provides professional certification programs for educators and administrators through world based quality of distance education system by the end of 2021. The Faculty missions are stated as follows.

1. Provide access to in-service teacher training and educational administration programs, as well as professional certification program for educators and administrators through distance education system.
2. Utilize the appropriate technology in organizing the learning process and the education administration for in-service teachers and administrators through a distance learning system
3. Play an active role in research development and dissemination of science and technology in education and teacher training based on a distance learning system.
4. Take an active role in promoting the culture of lifelong learning for educators and administrators through distance learning system

Following implementation of the Law Number 14/2005 on Teachers and Lecturers, FKIP has important roles in upgrading the qualifications of teachers up to the Bachelor level in accordance with the requirements of the Law. The central and local government have attempted to meet these legal requirements, and open and distance learning is the effective way for millions of basic education teachers to upgrade their qualifications.

The UT runs on a semester system, and during the academic year of 2009.2, UT enrolls over 640,000 students. Each year the UT administers examination to 981,052 students, involving 129,091 Examination Committee Members; 99,886 Proctors; 19,977 Proctor Supervisors; 4,800 Location Supervisors; 4,428 Examination Administrators; 99,886 Examination Rooms; 3,212 Examination Locations; conducted in 1,558 Districts throughout the country. FKIP enrolls a total of 536,551 student teachers, 511,187 of them are basic education teachers in early childhood and primary schools. In terms of learning support services, FKIP provides face-to-face tutorials for 29 courses and online tutorials for 167 courses. Since its inception in 1984, the UT FKIP has produced 892,624 alumni in various professions, 845,329 of which are alumni teachers.

Introduction to OER, OER in UT, and OER for Teachers

Introduction to OER. The history of OER is principally the good will of open access and the sharing of knowledge. OER facilitates the dissemination and use of knowledge so that theory and practice can be further developed and improved. The development of OER has been originated from such initiatives as free software, open source software, open content, and Creative Commons (Wiley & Gurrell, 2009). OER is defined as “digitised materials offered freely and openly for educators, students and self-learners to use and reuse for teaching, learning and research” (OECD, 2007, p. 10).

The OER movement has been pioneered by leading higher education institutions, and the *Massachusetts Institute of Technology (MIT) Open Course Ware (OCW)* is an example (D’Antoni, 2009). MIT OCW has been followed by many, a number of higher education institutions and open universities have moved forward to establish clear policies on OER, supported by stakeholders and foundations, that allows “giving knowledge for free” (OECD, 2007; Kanchanaraksa, Gooding, Klaas, and Yager, 2009; Barrett, Grover, Janowski, van Lavieren, Ojo, and Schmidt, 2009; Gourley and Lane, 2009).

Governments have also concentrated effort on establishing clear policies on knowledge and adopted OER as part of strategies to promote knowledge sharing and dissemination (Kumar, 2009). An international consortium has also been established to help promote OER in small states, initiated by the Commonwealth of Learning (West and Daniel, 2009). These examples indicate seriousness of purpose and interests in OER by stakeholders and educational institutions.

OECD (2007) has extensively reported the emergence and development of OER, as an effort to “giving knowledge for free”. There are a number of reasons for individuals and institutions to use, produce and share OER, encouraged by technological, economic, social and legal drivers. Governments support OER projects on the grounds of its capability to expand access to learning, promote lifelong learning, bridge the gap between non-formal, informal and formal learning. According to the OECD report, educational institutions get involved in OER for reasons relating to the sharing of knowledge in line with academic traditions, allowing free sharing and reuse of resources, reduced cost of quality improvement of content development, improved public image, new approach to cost recovery, and potential capacity to speed up the development of new learning resources. Educators also get benefits of OER through the altruistic motivation of sharing, improved reputation, sharing for economic reasons, and good effects to make resources open (OECD, 2007).

OER in UT and OER for teachers in Indonesia. As an open university, UT has to put a special effort to promote open educational resources (OER) to enrich students’ learning and to improve access to knowledge and educational resources by the wider community. In accordance with its character, UT has utilised OER in various formats. As an open university, UT naturally opens up access to knowledge by the community through its OER in various online resources. When *UT Online* was initiated back in 2001, it has been the stepping stone for UT to move forward to the era of digital world. UT is also in the leading role of educating the society to use new technology and to be technology literate.

OER for teachers is considered important by UT, government, and professional teachers. For UT, it is important that teachers are exposed to new knowledge and sharing experience of good practices of fellow teachers. The government has also made effort to make open educational resources available to the society through the development of *Jaringan Pendidikan Nasional (JARDIKNAS)*. Continuous professional development is imperative for teachers in order to stay updated with most recent develop in theory and good practice in teaching and learning at schools. The government has established mechanism and institution responsible, yet the sheer number, distribution and location of in-service teachers have made continuing the professional development of teachers a formidable task.

Continuing professional development of teachers is conducted in various ways to suit the specific needs of teachers in various locations. The government has established a system to address the continuing professional development of teachers through continuous training. Yet, OER has the potential capability to supplement continuing professional development of teachers.

Guru Pintar Online (Smart Teacher Online)

The purpose of the development of the UT e-learning portal for teachers is to continually develop and enhance the knowledge and competencies of

teachers through the provision of updated online open educational resources on good practices in teaching and learning at schools. More specifically, it is expected that the Smart Teacher Online portal can maintain and improve the knowledge of FKIP's teacher students, alumni and other in-service teachers in developing teaching skills (pedagogic, professional, personality, and social); continuously improving teaching skills (in general) for all teachers in Indonesia; allowing distance teacher students to establish online communication and interaction among fellow teachers, with tutors and lecturers; and contributing to the enhancement of ICT literacy of in-service teachers.

The *Guru Pintar Online* has three main features developed in the Portal, namely instructional laboratory, teacher communication forum, and references from online learning instructional resources. Brief description of each of these features is as follows.

Instructional laboratory. This facility provides a set of learning cases experienced by teachers when they teach in the classroom along with an alternative solution to the problem. Collections of case studies are presented in streaming video format lasting for about 5 minutes. The learning laboratory concept has been developed based on theory of teaching clinic where there is a cycle of learning taking place that is caused by the interaction and communication among teachers when they see the video show case of learning and give their opinions and get feedback from other teachers. Thus, communication processes and interactions that occur among teachers who watch the video show cases of the learning process is expected to build a new understanding of one or multiple perspectives of learning in the classroom and can develop passion for teachers to improve their skills in teaching. Until 2010, the *Guru Pintar Online* has developed a collection of 51 programs in the format of video streaming of teaching learning cases from all educational levels.

Teacher communication forum. One important feature in the Online Smart Teacher portal has been developed to accommodate the teachers who have learning questions that have not yet found the answers. In addition, through this forum, anyone signing up in the forum can tell the learning experiences in the class and also give their opinions, suggestions, criticisms, or strengthening the learning experiences.

Links to other online learning resources. Another feature that is characteristic of this portal is a collection of links of the selected teaching and learning cases from a variety of learning resources online. The portal visitors who wish to find a variety of learning resources both in the form of legislation or regulation, and learning practices undertaken by various educational institutions, can select and retrieve sources that fit their needs. Teachers can have access to various examples of educational innovations and lessons from the experiences of various countries such as in the area of curriculum development, lesson plans, learning scenarios ranging from kindergarten to

elementary school, or video and audio programs on various teachers' creativity in the field of instructional media, or instructional approach.

Interested teachers visiting the portal can have access to the Portal Curriki, TeacherTube, Khan Academy, ICT Portal for Teacher, Edutube, and other web sites that provide online learning resources accessible through the Smart Teacher Portal. In addition, teachers can connect to and use the facilities in the UT Online, such as Internet Television, Web Supplement, UT digital library resources that are freely accessible as learning resources.

Students can also use Customer Relationship Management as a means to convey the complaints about various things associated with a variety of learning services at UT. There are several facilities in the UT online that can only be used by students of UT such as Online Tutorial, UT Online Community Forum, and other academic administrative services. There are also academic and other administrative services available in UT online, such as facilities to see the progress of students' learning, to check the exam result, and to perform verification of UT diplomas and certificates.

Content categories: instructional laboratory and teachers' discussion forum

Adjusted to the purpose of development of the portal, the content of the *Guru Pintar Online* portal is divided into several categories, related to early childhood education, primary education, and secondary school education. The scope of discussion in every level of categorization is based on competencies that must be acquired teachers and these competencies are divided in four domains, namely the development of pedagogical, professional, personality, social competences, in accordance with the Indonesian Government Regulation Number 19/2005.

Pedagogical competence refers to the ability of teachers in managing teaching and learning in the classroom, including deeply familiar with the characteristics and learning needs of students. Professional competence refers to the ability of teachers in mastering the content of each subject matter and how to teach those contents to students. Personality competence is related to the ability of teachers to develop themselves as independent and entrepreneurial spirit, as well as polite, creative and innovative abilities. Social competence is related to the ability of a teacher to communicate with people and their environment, including collaboration with colleagues, principals, and parents by utilizing various means such as cellular phones and the internet.

Various issues associated with these four domains of teachers' competences in early childhood education, primary education, and secondary education are shown with an approach based on the perspectives of teachers who become guests of the portal, not from portal's operator and developer perspectives. Thus, the issues presented in the portal is a real event as good practice and lessons learned from the experience of professional teachers as well as examples of ideal practices, that is, the application of the theory of learning by a teacher on the basis of research results.

The main facility in *Guru Pintar Online* is Instructional Laboratory, that serves as a forum for teachers to share knowledge and good practices in teaching through the delivery of instructional cases along with the solution. This collection consists of cases related to instructional strategies of Bahasa Indonesia (Indonesian language) in elementary schools, learning mathematics with fun, developing a kindergarten student's imagination through drawing activities, and managing science classroom in secondary schools. Examples of cases are presented below.

The video program *Instructional Strategies of Bahasa Indonesia in Elementary School* presents illustration of teachers who apply the wrong instructional approaches in teaching Bahasa Indonesia in elementary schools. For example, there are illustrations about students who feel bored after finishing reading assignments so that students make noise in the classroom. In addition, there is also a video streaming program featuring scenes of students' difficulties in expressing his opinion because not knowing how to understand the core problem of a reading lesson. After a scene that illustrates the instructional problem is shown, there is also the solution of problems in learning Bahasa Indonesia. For students who have difficulty in expressing opinions, teachers must adjust the amount of time for reading and writing practice for students. For problems when students make noise in the classroom after completing the assignment due to boredom, the solution shown is the teacher must have additional learning scenarios where students have to complete activities faster.

Another video streaming program for *Learning Mathematics with Fun* illustrate how students cannot concentrate on their lessons in mathematics at noon, and it presents a solution when the teacher invites students to learn mathematics outside the classroom. For example, to teach a unit of length, students measure the length along the basketball court or the school yard. Meanwhile, to introduce specific concepts of mathematics, teachers can invite students to sing by changing the lyrics of the song.

A video streaming program in *Developing a Kindergarten Students Imagination through Drawing Activities* presents the problems kindergarten children who imitate the picture previously made before, or imitating fellow students' pictures. To explore ideas and imagination of children in kindergarten, the teacher is visualized by displaying a strategy such as freeing the child to draw any line with what he or she has in mind and interests of the child at that time. Another teacher's strategy is to invite students into the school yard to see the surrounding environment so that students can explore ideas and bring their own imagination.

A video program on *Managing Science Classroom in Secondary Schools* displays teaching science in junior high school focusing on how to improve the homogeneity of knowledge of students in a class with several methods. The first method is to ask students to study independently at home and at school. The second method is giving individual tasks, and the third method is designing remedial activities through the use of peer tutors.

In each show of the video streaming programs, it is equipped with a synopsis of programs and columns for teachers who wish to provide comments, suggestions and criticisms of these video streaming programs. This is important so that it enhances good practice and the sharing of experiences among practising teachers in different school and contexts.

Profile and practice of teacher communication forum in *Guru Pintar Online* portal

In essence, the Teacher Communication Forum is designed for teachers who are enrolled in the UT program and this facility allows student to contribute their thoughts, ideas, and criticism of various aspects of education. Through analyzing the experts and from several sources, various aspects of education are grouped into major topics of learning strategies, evaluation, curricular materials, administering education, learners, and research. There are also facilities for teachers to provide comments and suggestions. Each major topic is divided into more specific topics, such as in the topic of learning strategies, teachers can write ideas, thoughts, and criticisms about learning methods, instructional media and classroom management.

On the topic of evaluation, it provides minor topics such as tests, portfolios, assessment of attitudes, and skills assessment. While the topic of curriculum displays a small topic of curriculum development, implementation, weaknesses and strengths, and curriculum problems coverage. For the topic of new curricular materials, it presents the topic of English language in elementary school. Furthermore, the topic of educational administration provides a discussion of topics on formal and non formal education, home schooling, and inclusive school. On the topic of learners, there is the discussion forum on child development, children with special needs, and guidance and counseling. In addition, there is a big topic of research in which there is a topic of classroom action research and writing scientific papers.

The teachers who visit and want to use this facility have to register first. Until now there were already 481 people who become members of this facility. The number is certainly to increase, considering the decreasing costs of internet access and decreasing price of computers.

Methods of presentation in *Guru Pintar Online*

The purpose of the development of Online Smart Teacher Portal is for teachers to get the solution of learning and teaching problems that they face in the classroom. The approach used in the content's display in the portal is through problem-based learning approach and teaching clinics.

Problem-based learning approach. Problem-based learning is defined as “a learning approach that uses real-world problems as a context for students to learn about critical thinking and problem solving skills, as well as to acquire the essential knowledge and concepts of the course material or subject matter” (<http://note.2707125.n2.nabble.com/Problem-Based-Learning-Suatu->

[Model-Pembelajaran-untuk-Mengembangkan-dan-Meningkatkan-Kemampuan-Memecah-td2746650.html](#))

As observed, most users of Online Smart Teacher portal are professional teachers. Problem-based learning approach can be an alternative choice that best suits the characteristics of the UT, in which and the majority of students are already working. Based on work experience as teachers who teach in the classroom in a set of learning cases, the teacher portal users have the option to learn from each other.

Teaching clinic. Quoting Roos (1976, pp. 6-7), “the teaching clinic, a peer interaction model, is a strategy for improving teaching which identifies and analyzes specific behavioral components of effective teaching. It is a systematic attempt of peers: (a) to plan a lesson, (b) to critique this lesson plan as a group, (c) to teach a lesson while peers observe and record data relative to specific teaching skills, (d) to conduct a critique of the lesson, and (e) to develop a strategy for improved teaching in the future.” The Design of Learning Laboratory in the Online Smart Teacher portal is based on a concept adopted and tailored to the needs of teachers and the UT mission as an open and distance teaching university focusing on in-service teacher education. Although the concept has not been fully used, in the future the Online Smart Teacher portal is designed to function in a cyclical activities as earlier described by Roos (1976).

By using these two approaches, it is expected that the portal can present material that teachers can use to enrich themselves with a variety of different findings and to learn to adopt the findings that can be adapted to the context of the learning environment in their classrooms.

Enriching UT program for teachers at degree levels and continuing professional development

There is no doubt that the *Guru Pintar Online* has the potential to enrich UT academic programs for teachers at degree levels as well as in continuing professional development levels. Student teachers taking academic programs at UT receive printed learning materials, and they are supported through various means of face-to-face as well as mediated learning support services.

Enriching learning process. The *Guru Pintar Online* has the convenience of supplementing the materials and enriching the content of the materials for in-service teacher students of Universitas Terbuka.

Enhancing technology literacy of teachers. The *Guru Pintar Online* is open to UT students, teachers, and the public. It can serve as a powerful and effective tool to develop and enhance the technology literacy of teachers. Open access to open educational resources encourages practising teachers to utilise such resources and develop communication and interaction among teachers to share their good practices and lessons learnt in teaching and learning in the classroom.

Conclusion

E-learning has obvious benefits for teachers and student teachers to continually develop their professional competence. This can be achieved through various efforts involving other educational stakeholders. The UT has had clear policy on utilising e-learning to enhance distance learning for teachers and other groups of students. FKIP has also upgraded its e-learning content and develop the content to be OER for practising teachers.

In accordance with the OER principles, knowledge can be shared, disseminated, utilised and continuously improved to benefit all stakeholders. It is obvious that OER is a way forward, and for the case of Indonesia, open access to knowledge by teachers through OER is one effective of helping teachers continuously develop their professional competence. With the support of the government's initiative in connecting schools through the internet through *Jaringan Pendidikan Nasional* (National Education Network), teachers and students will have easier access to knowledge in digital formats.

UT is well positioned to reach wider audience and have a leading role in making knowledge accessible to the public through its OER initiatives. The *Guru Pintar Online* is one form of UT initiatives that will have to be followed by other OER initiatives in various fields of the professions, representing Study Programs offered by UT. Building OERs takes a great deal of effort, particularly in a country where information and communication technology infrastructures and facilities are yet to be improved and technology literacy of the people is to be enhanced. It is in fact an important contribution of UT to educate and make the society more technology literate.

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