
DESIGNING ICT COMPETENCES-INTEGRATED SYLLABUSES OF RESEARCH SKILLS PROFESSIONAL ADMINISTRATION COURSES

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ABSTRACT

ICT has affected all aspects of life and has been used extensively in all sectors of human life, including Education. Integrating ICT into learning is one of the ICT implementations in the educational aspect. Therefore, one of the critical competencies of an educator in improving his professional abilities is Research Skills and Professional Administration courses in Education. This study designs the integration of ICT in the syllabuses of Research Skills and Professional Administration Courses. This study aimed to design the syllabuses for Research Skills and Professional Administration Courses based on integrated ICT competencies for the English Study Program. This study used Design and Development Research (DDR) as the research design and qualitative research methods. The stages used by DDR in this study are Need Analysis, Designing Preliminary Research, Evaluation, Revision and Design of Prototype Syllabus. This analysis involves ICT competencies proposed by UNESCO, Digital Media Descriptors from the European Profiling Grid (EPG) and other ICT-based theories. This study found that ICT competencies were integrated mainly into Learning Outcomes, Teaching Methods, Learning Activities and Assessments explicitly or implicitly. The study provides ICT integration procedures and designs the syllabuses of Research Skills and Professional Administration Courses; Introduction to Research Methodology, English Language Research Methodology and Professional Education in Administration. The resulting syllabus design is Content Based Syllabus which is product oriented.

Keywords: ict competencies, syllabus design, ict unesco framework.

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INTRODUCTION

The 4.0 industrial revolution and the Disruptive Era became popular discourses from 2017 until mid-2018. On nearly all occasions, people talk about these two things and what must and needs to be done to face or anticipate them (Iskandar, 2018). In dealing with this, the University as an educational institution needs to make improvements and updates in preparing graduates who can compete in the fast-changing world of work because technology affects several aspects of life in this era.

As stated earlier, today, technology is part of human life and is related to the Industrial Revolution 4.0. The Industrial Revolution 4.0 is an automatic trend and data changes in factory terms in this era (Piliang, 2019). This term includes physical, cyber systems, the internet, etc. Current technological advancements have had a significant impact on society, so experts have launched the growth of this technology as the initial stage of the industrial revolution 4.0. the significant implications of the industrial revolution, like 4.0, are not only at the industrial level but also in Education. Higher Education must be adapted to the advanced technology featured in this fourth industrial revolution: literacy, Data Literacy, Technology Literacy, and Human Literacy (Lase, 2019).

The reality described above is a challenge, as well as the potential for universities as educational management units to implement ICT in learning activities in the classroom because the 4.0 industrial revolution is an era that must be passed. This has been supported by UNESCO, which compiles ICT competencies specifically for teachers with a strategic role in moulding future human beings (Midoro, 2013). Information and communication technology (ICT) is a technology that makes information a processed commodity (Tsvetkova, 2016). Implementing Education in the form of learning in schools or colleges is full of information that must be processed by students and instructors so that it becomes something meaningful—viewed by the students how big, how important and how interesting the information can be absorbed into something meaningful (Riandi & Si, 2013). Judging from the instructor, how information is presented or conveyed so students can easily accept it. This is where information technology will play a vital role in processing teaching materials as a form of information so that it is attractive, readily accepted, and each Student has the same opportunity to get it. Therefore, every element of Education related to students, educators, interactions between educators and the environment, and educational infrastructure must be considered so that educational goals are achieved (Bararah, 2020).

One of the challenges of Education in the modern era is to equip the generation with 21st-century skills (Ahluwalia et al., 2016). One of the skills that must be possessed is communication skills using information and communication technology (ICT). In improving the quality of learning, ICT applications are developed that can facilitate student-centred learning and run multi-directions, teach critical thinking, can make decisions, familiarize collaborative work and exchange information, active learning, shape planned action, real-world context so that in the end, Student graduation is not only determined by the completion of the curriculum but rather on the achievement of standard competencies. Now in the era of ICT-based Education, the teacher's role is not only as a teacher but also as a facilitator, collaborator, guide, mentor, director and learning partner for students. Therefore, teachers can provide choices and significant responsibility for students to experience learning events. With the teacher's role as intended, the student's role changes from passive participant to active participant who produces and shares knowledge/skills and participates as much as possible as an expert. On the other hand, students can also study individually and collaborate with other students. They are supporting the process of integrating ICT into learning.

Universities with quality human resources can develop knowledge and contribute to national development. Lecturers are instrumental in determining the success of the educational process because lecturers act as direct implementations in learning, as well as being a motivator, facilitators and evaluators for students in obtaining and processing knowledge to meet the requirements for themselves and the nation (Ishaq, 2015). Significant changes due to the development of ICT in the world of Education occur in the delivery paradigm of educational information delivery (Asmawi et al., 2019). In the old concept, the model of information delivery was developed in the form of educators (teachers) who acted as experts who conveyed information to students (students). Through the use of communication and computer technology, this paradigm then shifts towards a student-centred model.

One way to use ICT in learning is to integrate it into subjects taught by teachers by using e-learning both online and offline (Samsinar, 2021). As a result of the information delivery paradigm that emphasizes students' approaches to finding and processing their knowledge indirectly

contributes to changing the paradigm of learning management systems and methods from conventional systems to modern ICT-based systems. Integrating ICT into the scope of learning at the University is very important, primarily referring to government policy on university education, which expects teaching based on ICT. One important subject is a research course. Research is a component or an essential part of the development of science and technology. Because with this research and experimentation, scientific and verifiable findings (innovations) will be emulated. So from this research and experiment, scientists can answer and provide the right solution in providing the correct answers and solutions for the various problems facing humanity on this earth.

According to research from the British Association for Vedic Astrology (BHAVA) in the United States (Rusman, 2018, p.95) that: "If a teacher or educator who teaches only uses verbal symbols, the material absorbed is only 13% and not that will last a long time, while those who use multimedia can reach 64% to 84% and longer. "Learning activities require a reduction in the lecture method and are replaced with much media use. In addition, in current learning activities that emphasize process skills and active learning, the role of instructional media is becoming increasingly important. As the function of instructional media, the media is a tool to make learning more effective, accelerate the learning process, improve the quality of the learning process, and concrete the abstract to reduce verbalism.

As educational providers, universities are expected to become a place for skills training for their students. The campus can be developed into a modern institution that can understand future needs and is expected to be a place to equip students with 21st-century skills. Therefore, the quality of learning needs to be improved. One strategy to improve the quality of learning that needs to be optimized by modern campuses is to conduct ICT-based learning. ICT-based learning is learning that integrates ICT into its management. Therefore, we need a model for implementing ICT-based learning activities at the University. Therefore, integrating ICT competencies into the course syllabus is an essential and strategic matter in incorporating ICT into learning activities.

The syllabus, also known as the lesson plan, provides information and technical guidance for teachers to carry out the teaching and learning process that will occur in the classroom. Designing the syllabus is part of the routine activities of the teacher/lecturer because the syllabus needs to be improved all the time; as students, the context around the situation, as well as the demand for student skills, is constantly changing. In other words, designing or revising the current syllabus to direct students to be more effective in learning subject matter is very much needed. In the syllabus, several intellectual, scientific, cognitive, and linguistic resources are subject to discussion and exchange in the teaching and learning process (Iskandar, 2018). This is also supported by the educational paradigm that has changed from teaching to learning by the Law on the National Education System (Law on the National Education System) No. 20. 2003 for the amendment of Law No. 2 of 1989. These changes occurred explicitly and implicitly, strengthening educators' skills requirements. This aims to realize learning in line with the times in realizing the goals of National Education. The development of science and technology now has influenced various aspects of human life, one of which is the field of Education. Education is a human and conscious effort relating to students, educators, educational interactions, and the environment and educational infrastructure (Dwi Siswoyo, 2011, p. 61).

The Indonesian government has made government policy in the Republic of Indonesia Government Regulation No. 74 of 2008 concerning teachers. This policy is stated in Article 3, which outlines four competencies that must be possessed by a teacher, namely pedagogical competence, personal competence, social competence, and professional competence. The same thing is stated in Permendiknas No. 16 of 2017; based on ministerial regulations, teacher competency standards in utilizing ICT in the classroom are pedagogical and professional competencies. Pedagogical competence at No.5 states utilizing information and communication technology for learning, while Professional Competence at No.24 states utilizing information and communication technology to communicate and develop themselves. In the world of Education, the Ministry of Education and Culture has placed ICT as one of the prominent supporters of the availability of educational services. The provision of competent educators operating throughout Indonesia has been declared one of the strategic objectives in implementing national Education. Providing educators who master ICT competencies is urgently needed to achieve this goal. (Regulation of the Minister of National Education of the Republic of Indonesia Number 16 Year 2007 concerning Academic Qualification Standards and Teacher Competencies.

Information and communication technology can be used as a solution to problems in the learning process. It can also be an innovation in the world of Education. Teachers must be able to use Information and Communication Technology media in the learning process in class. Teacher mastery in information and communication technology greatly influences mastery in instructional media (Wachida, 2017). Because many ICT-based learning media are being developed, teachers' ability to use ICT tools is essential. There are undoubtedly many ICT media that teachers can use in learning, not just presentation media. Teachers can use many online and offline media, software and hardware as learning media.

Research methodology and English Language Research Methodology are essential parts of other learning materials at the University (Meerah et al., 2012), especially in the Department of English Language Education which cannot be separated from the effects of ICT development because the process of data collection and retrieval, searching scientific journals and books that can be produced from modern devices, with a very varied shape and packaging. Research methodology is an essential lesson in preparing students to conduct research which will be used as the final requirement for graduation at the undergraduate and postgraduate levels. Therefore, studying research methodology using Information and Communication Technology (ICT) is expected to be one solution to enhance further teachers' and students' understanding and motivation about learning material and recognize and understand related modern technologies. To avoid implementing learning that still uses the lecture method, learning is less varied, interesting, or enjoyable for students. Using ICT tools can help students to become able and quickly understand the material being taught. A syllabus is a learning plan for a particular subject and group/theme that includes competency standards, essential competencies, subject matter/learning, learning activities, indicators of achievement of competencies for assessment, assessment, time allocation, and learning resources. Syllabus Development Foundation: Government Regulation of the Republic of Indonesia Number 19 of 2005 concerning National Education Standards article 17 paragraph (2) and Government Regulation of the Republic of Indonesia Number 19 of 2005 concerning National Education Standards article 20.

In discussing the outline of the study program design in the research methodology, the researcher has yet to find any relevant previous research to strengthen the research to be conducted by the author. However, the authors raised several studies as references in enriching study material in the author's research. The following is a previous study in the form of several journals relating to research conducted by the author. The first research was conducted by (Melor Md Yunus et al., 2013). This study discusses using ICT to teach ESL writing skills in Malaysian secondary schools. This study reports one part of the findings obtained from a large project carried out in Malaysian secondary schools in five regions of Malaysia. This study focuses on data collected from four English teachers in secondary schools in Kuala Lumpur whom researchers interviewed. This study revealed that using ICT in teaching ESL writing was shallow. The benefits of using ICTs are reported to attract students' attention, facilitate student learning, help improve student vocabulary and promote meaningful learning. This study discusses Information Communication Technology (ICT) used in modern Education to help teachers perform administrative tasks and students learn more effectively.

In analyzing the data, this study also used the European Profiling Grid (EPG) standard in preparing ICT competencies. That is because, according to (Nugroho, 2017), his research results show that the competencies in the current syllabus must meet the competency standards of EPG-based key teaching competencies. The main teaching competencies are included in one European Profiling Grid (EPG) category. In this study, researchers have pointed to the methodology: knowledge and skills as one of the competencies to be the object of syllabus design. The problem is that descriptors are only covered in some subjects. The EPG standard is used in professional conduct and administration (North et al., 2013).

METHOD

Based on the purpose of this study, the research design is Research and Development (R&D). Research and Development (R&D) design was implemented since it is in line with the purpose of the study, which aimed at designing ICT-integrated research subject syllabuses for ELESP.

Design and Development Research (DDR) is included in one of the Design research models. According to (Nurwahida, 2017), design research is a systematic study of designing, developing, and evaluating the educational intervention (such as programs, strategies, materials learning, product and system) as a solution to solving complex problems in educational practice, which also aims to advance our knowledge of the interventions as well as the design development. The study's design was used because it promoted the creation of new knowledge and validation of existing practices.

RESULTS AND DISCUSSION

The Analysis of Existing Syllabuses

This section will explain the first sub-problem of this research, namely, "To what extent are ICT competencies integrated into the existing syllabus component of the Research Program and Professional Administrative Skills syllabus for ELESP". This question is discussed to seek responses to the discussion in the syllabus. Therefore, the analysis of this section is divided into four identification sections: first, describing the syllabus and courses in the syllabus; second, identifying the existing syllabus components; second, identifying Competencies in Research Skills and Professional

Administration and third, identifying ICT competencies. This identification is explained in the following sections in the explanation as follows;

Description of The Existing Syllabus

The findings discussed in this chapter are based on this study's sub-questions and leading questions, as stated in Chapter I of the research question. The syllabus was seven syllabuses from various universities observed in the syllabus of their Research Skills and Professional Administration Courses skills in this study. Each University has the same course name in the research skills course. However, some universities are different in naming courses, including Professional Administration Courses and non-English majors. There are two research skills programs found at University A (Introduction to Research Methodology and ELT Research Methodology) and the Seminar on Professionalization of Educational Administration; there are two research skills programs found at University B (Introduction to Research Methodology and ELT Research Methodology) and Educational Administration, There are two research skills programs found at the university C (Introduction to Research Methodology and ELT Research Methodology), and Profession and Teacher's Personality There are two research skills programs found at universities D (Introduction to Research Methodology and ELT Research Methodology), and Teacher Profession Seminar courses There are two research skills programs found at E universities (Introduction to Research Methodology and ELT Research Methodology), and Seminar courses. Educational Professionals, two research skills programs are found at universities F (Introduction to Research Methodology and ELT Research Methodology), and Education Management, two research skills programs found at University G (Introduction to Research Methodology and ELT Research Methodology), and Professionalization of Educational Administration. In total, the syllabus analyzed in this study was 21 syllabuses.

The Analysis of The Syllabus Component

The components found in the syllabus from several universities will be discussed in this discussion. In the identification and analysis process, some components appeared in the syllabus. The components found are then compared with the syllabus components proposed by experts. It was discussed in the literature review that some experts such as Davis (2009), Altman and Cashin (1992), Wolf, Czekansku and Dillon (2013), and Permendikti (2016) suggested various components be included in the syllabus. From the experts, 15 components were taken, which will be used as an outline to be included in the syllabus, including; *Basic Information Course, Course Description, Learning Outcome, Learning Objective, Schedule, Materials/ Content, Assignments, Time Allocation, Methods, Learning Indicators, Assessment, Learning Activities, Instructor Information, Resources, Policies*. An explanation of the analysis of the syllabus component is attached in **Appendix 4**, while a summary of the analysis results is shown in Table 1. Below:

Table 1. The Component of the syllabus in existing

Syllabus Elements	ITRM	ELERM	PAC
Course Basic Information	7	7	7
Course Description	4	4	7
Course Learning Outcomes	4	7	3
Schedule	5	5	7
Learning Objectives	6	7	7
Content/Materials	7	7	7

Syllabus Elements	ITRM	ELERM	PAC
Teaching Method	4	4	5
Learning Activities	4	5	5
Time allocation	7	7	7
Indicators	3	3	3
Resources	7	7	7
Assessment	6	7	6
Assignment	2	4	0
Course policy	2	1	0
Instructor Information	-	1	0

From the explanation of the table above, the components determined by experts are not fully included in the syllabus of 7 universities. In addition, the syllabus found the composition of the components is different even though there are only two universities with the same components from the same University.

Researchers also found some components in the syllabus that need to be proposed by experts, such as media or tools. As a result, researchers in designing the new syllabus use all of these components and add other components, such as learning media, to be included in the syllabus intended for the Research Skill and Professional Administration Courses.

In addition, researchers also analyzed the content of syllabus components from Syllabuses in various universities. The analysis is carried out to determine whether the contents of the syllabus components are the same and appropriate. The content of the syllabus components is discussed as follows: *Basic Information Course, Course Description, Learning Outcome, Learning Objective, Schedule, Materials/Content, Assignments, Time Allocation, Methods, Learning Indicators, Assessment, Learning Activities, Instructor Information, Resources, Policies*. From the components mentioned above, it is found that the content is almost the same. However, there are differences in the aspects mentioned.

There are gaps based on the discussion of the components and contents of the syllabus above. There is additional information found in the syllabus, both in mentioning the terms of the existing components and the contents of one of the components. The above findings, both Gaps and the existence of additional information, form the basis for formulating a new syllabus and proposed by following the integration process of ICT competencies. The new design will be explained in the following process.

The Analysis of Research Skills and Professional Administration Course Competences

Table 2. EPG Level in the existing syllabuses

University	Course Name	Level EPG
A	Introduction to Research	1.2-2.2
	Language education research methodology	1.2-2.2
	Seminar Profesionalisasi Administrasi Pendidikan	1.2
	Research Methodology	1.1-2.2
B	Research in ELT	1.2-2.2
	Administrasi Pendidikan	1.2
	Introduction to Research	1.2-2.1
C	ELT Research Methodology	1.2-2.2
	Profesi dan kepribadian guru	1.2
	Research on ELT	1.2
D	Introduction to research on ELT	1.2-2.2

University	Course Name	Level EPG
E	Profesi Keguruan	1.2
	Research Methodology	1.2-2.2
	Qualitative Research Method in ELT	1.2-2.2
	Profesi Kependidikan,	1.2
F	Introduction to research methods	1.2-2.2
	Language teaching learning research	1.2-2.2
	Manajemen Pendidikan	1.2
G	Introduction to research methods	1.2-2.2
	Metodologi Penelitian Pendidikan Bahasa Inggris	1.2-2.2
	Profesionalisasi Administasi Pendidikan	1.2

The Analysis of ICT Competences

ICT competencies in the existing syllabus from the Research Skills and Professional Administration courses are found in the schedule component's Learning Outcome, Teaching Method, Assessment, and Learning Media components. Future analysis is about the involvement of ICT competencies in the existing speech syllabus. The researcher identifies ICT competencies in the syllabus elements: Material/Content, Learning Objectives, Teaching Methods and Assessment. After identifying competencies, researchers then compare competencies in the existing syllabus with the ideal situation of how ICT can be integrated, as explained in the ICT framework described in Chapter 2, which explains the flow of how ICT is integrated. The analysis found that ICT was mainly mentioned in the Learning Objective among the 15 syllabus elements selected in this study.

The Procedures of Integrating ICT Competences in the Syllabuses of Research Skills and Professional Administration for ELESP.

University teachers who will carry out effective and efficient learning tasks must be distinct from the need to prepare supporters in front of the class. Many things must be done, including making syllabi and semester learning plans (RPS). Designing a syllabus is a systematic writing activity and follows a predetermined procedure; thus, designing a syllabus can be learned as a scientific process in preparing a learning design. The syllabus integrating ICT competencies is a Task-Based Syllabus for Research Skills courses, while for Professional Administration Courses, courses are Content Based Syllabus. Syllabus components integrated into ICT competencies are basic information, course descriptions, learning outcomes, learning objectives, materials, learning indicators, teaching methods, assignments, assessments, time allocation and learning schedules, policies, and references/resources. In designing ICT competencies integrated into the Research Skills and Professional Administration Courses syllabus for ELESP, several steps must be followed.

First, compile the syllabus by the guidance book to compile syllabus in determining appropriate steps by standards (Dikti, 2016); using EPG helps students progress through the level. The EPG is beneficial because it applies the same levels to all carries sub-skills and competence areas. Understanding Research and Professional Administration Courses is included in the professionalism aspect. It looks at the EPG level in the Methodology: Knowledge and Skills and Professionalism aspect at the EPG level 1.1-2.2. This analysis uses the EPG level scale to see ICT competencies integrated into the Research Skills and Professional Administration Courses syllabus. In integrating ICT competencies, the author also considers Tomei's book in chapter 10 on Technology Integration(Nafiati, 2021). Lecturers are professional educators and scientists with the main task of transforming, developing, and disseminating science, technology, and art through Education,

research, and community service. Core steps such as Planning, Implementing, Controlling, Assessing and Evaluating are needed in compiling the syllabus.

CONCLUSION

The use of EPG (European et al.) in designing new Syllabuses in the aspects of professional conduct and administration and adding in the aspect of methodology: Skill and Knowledge have become guidelines for language teaching and have been used as reference points to help improve the quality and effectiveness of language training by providing instruments which will improve competence and help the provision and mobility of language teachers. This is used to encourage learning in language education programs to improve competence in ICT, streamline evaluations and have ongoing qualifications. This framework is standardized to formulate objectives, teaching materials and assessments for courses that include Research Skills and Professional Administration Courses in Syllabuses design. So the procedure that is passed in this stage is through the stages of research Need Analysis, Stating Objectives, Developing Preliminary Syllabuses, Evaluation, and Syllabuses Prototype.

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