CHAPTER III

RESEARCH METHOD

3.1 Research Design

This research concerns on developing the ICT competence-Integrated practical key teaching competence assessment instrument for ELESP. The assessment instrument of practical key teaching competence encompasses in designing the ICT competence integrated assessment instrument of lesson planning course, teaching practicum and classroom management as the content subject of ELESP in practical key teaching competence. Design and Development Research is used as the research design of this study. Design and Development Research Project is based on the concept that the practice of design and development is empirical by nature (Richey, Klein, 2007). It emphasizes that instructional design process is similar to scientific problem-solving processes. In such a project the researcher develops innovative interventions to provide possible solutions to practical problems (Thomas & Rothman, 1994). Besides, it is described as a way to establish new procedures, techniques and tools based on specific needs analysis (Richey & Klein, 2007).

According to Harun (2016), DDR in the world of education is responsible for product development and monitoring the quality of products that have been used in the world of education to meet the needs of consumers who generally are educational institutions. The products produced can help and ensure the sustainability of all quality systems that are carried out and monitor process alignment. DDR methods can be interpreted as scientific ways to research, design, produce and test the validity of products that have been produced (Sugiyono, 2015).

Richey dan Klein (2009) state that the scope of design and development research are to study of the process and impact of specific design and development effort and to study of the design and development process as whole, or of particular process component. Wang and Hannafin (2005) define it as a systematic but flexible methodology aimed to improve educational practices through iterative analysis, design, development, and implementation, based on collaboration among researchers and practitioners in real-world settings, and leading to contextually-sensitive design principles and theories.

Richey and Klein (2009) state that the focus of a design and development study can be on front-end analysis, planning, production and/or evaluation. According to Richey and Klein (2007) the basics of design and development knowledge have six main components. These six components direct the focus on the different elements of the design and development effort: (a) students and how they learn, (b) the context of learning and performance that appears, (c) the nature of the content of learning and how it is sorted, (d) learning strategies and activities implemented, (e) the media and delivery system used, and finally (f) the designer itself and the process they follow. Furthermore, Richey and Klein (2007) stated there are four steps to build and construct research and development, 1) Analyze, 2) Design, 3) Prototype, and 4) evaluate. Thus this research followed the Design and Development Research model by Richey and Klein (2007) which consist of 4 stages that have been mentioned before.

3.2 Subjects of the Study

The subject of study was the existing assessment instruments of practical key teaching competences course which consist of 3 courses namely: Lesson Course Planning, Instruction, Management and Monitoring and Teaching Practice. The data of assessment instruments which consisted of 11 assessment instruments from 7 Universities of lesson course planning, Instruction, Management and Monitoring and Teaching Practice from S1 English study program in Indonesia.

3.1 Data, Data Source and Instruments

Data , data source and instrument are formulated based on the table below:

Table 3.1 Data, Data Source and Instrument

Data	Data Sources	Instrument
• The component of assessment instrument of planning subject, micro teaching and instruction, management and monitoring • The description theory in subject content of the practical key teaching competence; lesson course planning, micro teaching and	• Assessment instruments of Middle and Final semester of ELESP of University • ICT framework based on UNESCO.	• The indicators designed based on point of view of lesson planning course, teaching practicum and interaction, management and monitoring. • The indicators of ICT-integrated assessment

classroom management. • The theory of the ICT framework.		instruments Indicator that formulated based on UNESCO Framework.

3.4 Data Collection Procedure

In the process of conducting the study, the library research is as the procedures in collecting the data. It is used to gather and explore theories about related theories with the research, finding the existed assessment instrument from some universities of undergraduate ELESP. The existing assessment instrument of lesson planning course, teaching practicum and interaction, management and monitoring used in analysing the assessment instrument components integrated ICT based on UNESCO Framework. European Profiling Grid (EPG) used in description of key teaching competence specifically on practical key teaching competence. They are as the reference or standard in designing an assessment instrument of practical key teaching competence in lesson planning course subject, teaching practicum subject and interaction, management and monitoring subject integrated ICT.

3.5 Procedure of Data Analysis

The data analysis procedures follow the four phases of the design research proposed by Richey and Klein (2007). The details of each phases can be seen as follows:

a. Analysing

In this phase the researcher, the writer formulating a table of analysis of the ICT competences in the existing assessment instruments of practical key teaching competences. The researcher use assessment instruments component provided by brown (2004) and Russell & Airasian, (2012). The table of analysis of the assessment components can be seen below:

Table 3.2 Analysis of The Existing Assessment Instruments' Componnets of Practical Key Teaching Competences Course

No.	Components of Test	Indicators	Meet The Standards		Remarks
			Yes	No	
1	Course Information				
2	Time Allocation				
3	Instruction				
4	Test Format				
5	Topics				
6	Test Items				
7	Marks				
8	Administration				

After analysing the components of the assessment instrument, the existing assement instrument were analysed their ICT competences to answer the first research question. The ICT competences indicator based on several sources such as (UNESCO, 2011a), (European Union, 2011), (Healey, 2008), (ISTE, 2008) and (Tomei, 2005) is used on the next analysis to measure the extent of ICT competences in the technology literacy, knowledge deepening and knowledge creation frameworks. The table of analysis of ICT Competences in the existing assessment instrument can be seen below:

Table 3.3 Analysis of Analysis of ICT Competences in The Existing Assessment Instrument

No.	Components of Test	ICT Competences Found on the Existing Assessment Instrument			
		University A		University B	
		Mid Test	Final Test	Mid Test	Final Project
1	Course Information				
2	Time Allocation				
3	Instruction				
4	Test Format				
5	Topics				
6	Test Items				
7	Marks				
8	Administration				

For the detailed list of ICT competences indicator used to analyse the assessment components can be seen as follows:

Table 3.4 The List of ICT Competences Indicator of Practical Key Teaching Competences Course

ICT Competencies Indicators		Source
Technology Literacy	Use the search engines in computer devices.	(UNESCO, 2011)
	Use ICT resources to enhance their productivity.	(UNESCO, 2011)
	Use presentation software and digital resources to support instruction,	(UNESCO, 2011
	Integrate the use of a computer laboratory into ongoing teaching activities.	(UNESCO, 2011)
	Use word-processing software to write a worksheet, following standard conventions.	EUROPEAN UNION
	Search for potential teaching material on the internet.	UROPEAN UNION
	Download resources from websites.	(Healey, 2008)
	Language teachers use evaluation tools to analyze the appropriateness of specific technology options	(Healey, 2008)
	facilitate the appropriate ICT tools in giving fast feedback to students' error.	(Dilek Cakiki, 2006)
Knowledge Deepening	Engage students in exploring real-world issues and solving authentic problems using digital tools and resources	(ISTE, 2008)
	Demonstrate the integration of the technology in innovative ways	Healey, 2008)

	Language teachers exercise appropriate caution when using online sources and when engaging in electronic communication	Healey, 2008)
	Evaluate students' works that are posted in blogs, social medias, or electronic mails.	Healey, 2008)
	Evaluate technology environments for alignment with the goals of the class.	Healey, 2008)
	Language teachers use computer-based diagnostic, formative, and summative testing where feasible.	Healey, 2008)
	Language teachers use appropriate procedures for evaluating student use of technology (e.g., rubrics, checklists, matrices—which may evaluate enjoyment).	Healey, 2008)
Knowledge Creation	Design or adapt relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity	(ISTE, 2008)
	Provide students with multiple and varied formative and summative assessments aligned with content and technology standards and use resulting data to inform learning and teaching	(ISTE, 2008)
	Decide and design relevant materials to test students' achievement in all skills and look for the appropriate ICT that can be used.	Dilek Cakiki, 2016)
	Prepare ICT tools in practicing the students' performance (Cognitive Domain).	(Tomei, 2005)
	Help students develop both knowledge- and performance-based rubrics and apply them to assess their own understanding of key subject matter and ICT skills. Help students to use these rubrics to assess other students' work.	(UNESCO, 2011)
	Design online materials and activities that engage students in collaborative problem-solving, research or creating art.	(UNESCO, 2011)
	Use a network and appropriate software to manage, monitor, and assess progress of various student projects.	(UNESCO, 2011)

detailed the result of the analysis see chapter IV from page 76 until page 107. The result of the analysis will be presented along with the description of each component.

After the data was analysed, the researcher made conclusion based on phenomena founded that is to what extent do the existing assessment instrument make use of ICT competences to answer the first research questions which can be seen on Chapter IV page 121 on sub chapter 4.1.3.

b. Designing

In this phase Formulate the way to integrate the ICT competences integrated assessment instrument into practical key teaching competence's table of specification to answer sub question 2 (How are the ICT competencies integrated into the table of specification of practical key teaching competences assessment instruments?) which can be seen which can be seen on Chapter IV, sub-chapter 4.2 on page 121 until 138

Design the table of specification of ICT competences integrated assessment instrument in practical key teaching competence assessment instrument course to answer sub question 3 (How are the ICT competences integrated to table of specification of assessment instruments of practical key teaching competences?) .

Design ICT competences integrated test assessment instrument of practical key teaching competences courses to answer sub question 4 (How are the ICT competences integrated test assessment instruments for practical key teaching competences?).

Design ICT competences integrated non test assessment instrument of practical key teaching competences courses to answer sub question 5 (How are the ICT competences integrated non-test assessment instruments of practical key teaching competences?).

c. Prototype

In this phase, the researcher develops the prototypical design of the assessment instruments integrated with ICT competences for Practical key teaching competences for English language study program. The products are ICT competences integrated table of specification which can be seen on Chapter IV on

sub-chapter 4.3 on page 138 until page 142. , ICT competences-integrated assessment instrument test Which can be seen on Chapter IV on sub-chapter 4.4 on page 142 until 144. and non-test assessment instrument on chapter IV sub-chapter 4.5 on page 145 until 147.

d. Evaluate

The evaluating proses is the phase to validating the products of assessment instrument by using expert judgement based on (Brown, 2003). The rubrics for the evaluating procedure can be seen on the table below.

Table 3.5 Table of Validation for ICT Competences-Integrated Assessment Instrument

No.	Components	Scores					Comments
		1	2	3	4	5	
1.	Practically • The test stays within appropriate time constraints, relatively easy to administer, • The test has a scoring/evaluation procedure that is specific and time efficient						
2.	Reliability • The test is consistent and dependable • The test considers number of factors that may contribute to unreliability of a test, such as student-related responsibility that related with physical or psychological factors, rater reliability related to human error, subjectivity, and bias in scoring process						

3.	Validity • The test provides several evident • The test performance matches with the unit of study being tested • the test delivers any theory, hypothesis, or model that attempts to explain observed phenomena in the world's perception, consequential validity which means that the test must concern and focus on accuracy, impact of test takers preparation						
4.	Authenticity • The test conducts the language as natural as possible, • The items are contextualized • The topics are meaningful for the learner • Using thematic organization • Using tasks represent and real-world tasks.						
5.	Washback • The instruction of how students prepare for the test • The effects on assessment on teaching and learning itself. • Formative and Summative test						
6	Learning Objectives • Do the assessment instruments show suitability with the purpose of the						

	assessment instruments?						
7	Course Information • Do the assessment instruments provide course information clearly?						
8.	Instruction • Do the assessment instruments provide instruction clearly and explicitly? • Do the assessment instruments integrate ICT competences?						
9.	Test Format • Do the assessment instruments use suitable test format of course? • Do the assessment instruments integrate ICT competences?						
10.	Topics • Do the assessment instruments use suitable topics of course description? • Do the assessment instruments integrate ICT competences?						
11.	Test Items • Do the test items of assessment instruments suitable of time given? • Do the assessment instruments integrate ICT competences?						
12.	Marking • Do the assessment instruments provide marking of the course?						
13.	Administration • Do the assessment instruments provide						

	administrations clearly? • Do the assessment instruments integrate ICT competences?						
13.	Total						