

Utilizing the Internet to Fulfill Teachers' Needs to Conduct Quality Research

Durri Andriani

Universitas Terbuka

Author Note

Durri Andriani, Department of Economic & Cooperative Education, Universitas Terbuka

Correspondence concerning this article should be addressed to Durri Andriani, Department of
Economic & Cooperative Education, Universitas Terbuka

Contact: durri@ut.ac.id

Abstract

This paper describes the benefits that can be provided by the internet to assist teachers who experience difficulties in improving the competence to do research. Teachers, like other professions, requiring the development and improvement of competence continuously. One of the competency of teachers needs to be improved is the ability to do research, especially research related to improving the quality of the learning process. Research conducted to examine the need for teachers to be able to carry out quality research found several obstacles that make teachers experienced difficulties in planning, conducting and reporting research results. On the other hand, the current Internet provides a variety of information, some of which can be used to address the constraints faced by teachers in doing research. In terms of information on conducting and reporting research, the Internet provides theory, practical, and examples on how to plan, carry out, and report research. Browsing using search-engine resulted in thousands of those sources. However, teachers need to determine the right keywords and take times to sort and select the sources that match their needs.

Keywords: competence, internet utilization, research, teacher

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Introduction

Society and government expect teachers to be competent and professional. Teachers' rights and duties are regulated in Government Regulation Number 14 Year 2005 on Teacher and Lecturer and Ministry Decree Number 16 Year 2009 on Teachers' Functional Position and Credit Point. One of many aspects which reflected teachers' competences is conducting research to enhance students' learning process. On one hand, many teachers find difficulties to conduct research (Andriani, Jovanka, & Sukinairti, 2013). On the other hand, the Internet provide numerous materials on how to conduct research.

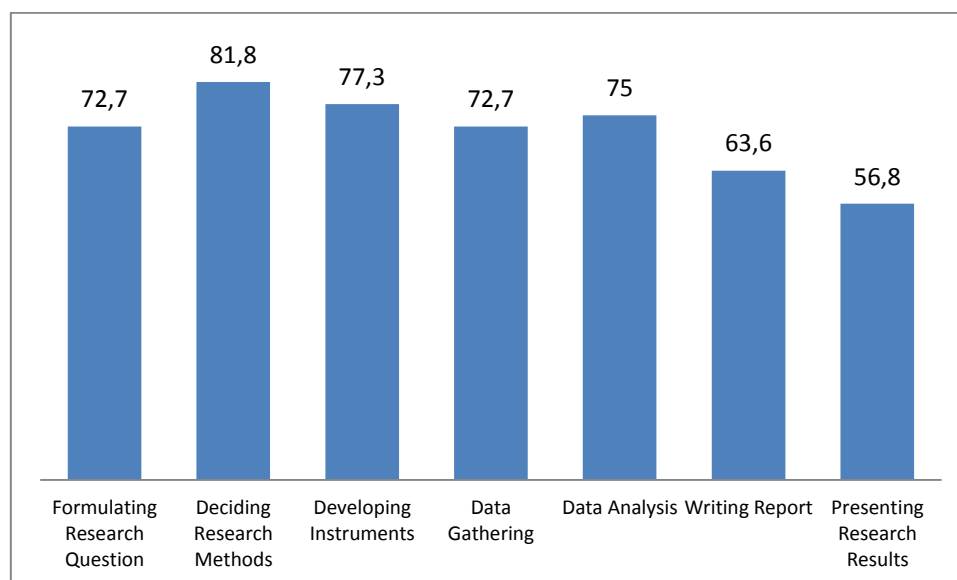
Some teachers have already used the Internet to enrich their teaching (Andriani et al, 2014) but smaller numbers of teachers use the Internet to increase their knowledge and skills in planning and conducting research. This is unfortunate given the rapid increase of Internet users in Indonesia. The Jakarta Post (2015, mentioned that the number of Internet users in Indonesia reached 73 million this year or equal to some 29 percent of the population. Other source states that the penetration of the Internet in Indonesia is increasing from 36% in 2015 to close to 40% in 2016 (Vserv, 2015). This condition should ideally be used to make the Internet as a source of OER. The William and Flora Hewlett Foundation defines OER "teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge". Furthermore, UNESCO (n.d.) defines OERs as "... any type of educational materials that are in the public domain or introduced with an open license. The nature of these open materials means that anyone can legally and freely copy, use, adapt and re-share them. OERs range from textbooks to curricula, syllabi, lecture notes,

assignments, tests, projects, audio, video and animation.”. In addition, UNESCO (n.d.) “acknowledges the potential of the Internet for fostering sustainable human development and building more democratic societies, and also for enhancing the free flow of information and ideas throughout the world.” And that “For teachers, ministries of education and governments, OERs provide free and legal access to some of the world’s best courses. Educators can then adapt them to local languages and cultures and use them as a basis for innovation.”.

However powerful the Internet is, not all information in the Internet is valid or appropriate. Therefore, people need to know how to how to maximize the Internet’s potential while protecting themselves from potential abuse.

The Use of the Internet to Fulfill Teachers’ Needs of Conducting Research

Andriani et al (2013), in their research on teachers’ needs to conduct research, found out that only 43% of Elementary-school teachers conducted research in the last five years. Reasons on why only limited numbers teachers conduct research is depicted in Graph 1.



Graph. Skills Needed by Elementary–school Teachers to Conduct Research (N=28)

Source: D. Andriani, Triyono; D.R. Jovanka, & Sukiniarti. (2013).

Teachers’ needs to conduct research: A comparison between pre-school and elementary-school teachers. Paper presented at ICERI 2013, Yogyakarta.

Tabel 1. The Words Used in Google Search Engine to Obtain Sources Related to Teachers' Needs Related to Conducting Research

Skills Needed	Words used for searching at Google.com
Formulating Research Question	developing research questions
	formulating research questions ppt
	formulating research questions and hypotheses
	strong research questions
	research question examples
	research question format
	define research question
	what makes a good research question
Deciding Research Methods	why choose qualitative research methods
	the research methods that psychologist choose to use are
	the research methods that psychologists choose to use are quizlet
	how to choose qualitative or quantitative research methods
	how to select research method
	different methods of research
	research methods examples
	list of research methods
Developing Instruments	types of research instruments
	research instrument definition
	research instrument in thesis
	research instruments for data collection
	research instrument sample paragraph
	research instruments in research methodology
	research instrument questionnaire
	research instruments in qualitative research
	types of research instruments
Data Gathering	data gathering in research paper
	methods of data gathering in research
	example of data gathering in research paper
	data gathering techniques
	data gathering techniques and design methods
	data gathering techniques ppt
	data gathering techniques in statistics
	primary data collection techniques
Data Analysis	primary data analysis definition
	primary data analysis methods
	teaching data analysis to elementary students
	importance of data collection in education
	importance of data analysis in schools
	data analysis in education
	primary data analysis
	educational research
	how to present data analysis
	how to present data creatively

Skills Needed	Words used for searching at Google.com
	how to present data visually
	presenting data effectively communicating your findings for maximum impact
	presenting data effectively communicating your findings for maximum impact pdf
	how to present effectively with powerpoint
	how to effectively present information
Writing Report	how to write a research paper for elementary students
	elementary school research paper template
	elementary research paper example
	elementary research paper outline template
	research paper topics for elementary students
	research paper lesson plans for high school
	research report for elementary students
	research paper lesson plans middle school
Presenting Research Results	ways present data
	how to present data analysis
	how to present data creatively
	how to present data visually
	presenting data effectively communicating your findings for maximum impact
	presenting data effectively communicating your findings for maximum impact pdf
	how to present effectively with powerpoint
	how to effectively present information

By using the Google search engine, thousands of books, journal articles, sole-articles, and other information related to the teachers's difficulties were found. Tabel 4 showed some of key words used to find related sources for each of the teachers' difficulties. Thousands of sources appeared with those words. In general, the sources can be divided into three categories, namely theoretical, practical, and examples. In Table 2, some of the sources that fall into those three categories are presented. This sources could be useful to increase and enhance teachers knowledge and skills. However, there is no instructional objectives, learning sequence, structured exercise, and assessment of learning outcomes. Therefore, teachers should prepare themselves to develop their target and control the learning process.

Table 2. Examples of Sources for Fulfilling Teachers' Needs to Conduct Research

Skills Needed	Theoretical	Practical	Example
Formulating Research Question	Formulating your research question	Research problem: 5 ways to formulate them	What makes a good research question
	The research problem/question	How to decide your research question and define key terms	Writing research questions: Purpose & examples
	Research question	A practical guide formulating research question	Coming up with a research question
Deciding Research Methods	Writing the methodology – Quantitative approach	Practical activities for research methods	Different research methods
	Different research methods	Choosing a sampling method	Choosing appropriate research methodologies
	Research methods: An overview	3 Ways to select the perfect method for your research	Research methods – How to do your research project
Developing Instruments	Instrument, validity, reliability	Classroom environment instruments	Summaries of tools, instruments, & questionnaires
	Research instrument	Tips for developing and testing questionnaires/instruments	How to develop research instruments
	Develop the instrument	Developing reliable and valid measurement instruments	Sample surveys
Data Gathering	Methods of data collection	Practical view on data collection using electronic equipment	Examples of data gathering procedure in research paper
	Coherence between data gathering technique and data analysis	Practical data gathering	Gathering Data Surveys tutorial
	Data collection and analysis	Automated data gathering	Example of data gathering procedure in research
Data Analysis	Theories of data analysis	Step-by-step guide to data analysis	Analyzing quantitative data
	Grounded theory – Data analysis	Practical data analysis	Data analysis examples
	Data analysis	Qualitative data analysis: A practical examples	Data analysis: Examples of qualitative interview analysis

Skills Needed	Theoretical	Practical	Example
Writing Report	Writing research paper	Step-by-step explanation of how to write a research paper	How to write a research paper for elementary-school teacher
	Writing the report	How to write a report	Example of a well-written report
	Introduction to writing report	Written report guideline	Examples of reeport wrritings
Presenting Research Results	Data presentation theory of change handout	Practical principle of presenting data in charts	50 Great examples of data visualization
	Data presentation	Graphic presentation	Presenting data in graphic form
	Presenting qualitative data	Discovering, analyzing, visualizing, and presenting data	Presentation of muliatybut data

Notwithstanding, there are some sources which include a complete package on how to conduct rearch, such as A Practical guide to academic reserach and The research question – A user's guide. Mirafior II (n.d) mentioned the necessity to develop coding skills because The web is rich with online resources in almost all programming languages. He also mentioned that one can earn a lot of different things but be be certain not to use false "science" pages. In addition, Rheingold (2012) warned the Internet users to assess source credibility before blindly use the sources. If necessary, he also asked to download a free copy of Publish or Perish software, which analyzes scientific citations from Google Scholar according to multiple criteria.

Reccomendations

Teachers should be encouraged to utilized the Internet to increase the teachers' knowledge and skills to conduct research which is important to support their profession. In order to do so, some examples could be provided so that teachers could taste the benefit of the Internet. The Internet provides abundant sources and teachers need to be trained in order to be able to pick and choose useful source from the Internet.

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