Examination of Articles Published about Self-Regulated Learning in Selected Journals of Instructional Technologies Field from 2011 to 2016

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Abstract

The aim of this study is to examine the articles on self-regulated learning published between the years 2011-2016 leading international 6 journals in the field of instructional technologies within Social Sciences Citation Index (SSCI). Examined articles contain the words "self-regulated learning" or "self-regulation" in the title, abstract or keywords of the Australasian Journal of Educational Technology (AJET), British Journal of Educational Technology (BJET), Computers & Education (C&E), Educational Technology Research & Development (ETR&D), Educational Technology & Society (ET&S) and Journal of Computer Assisted Learning (JCAL). In the study, data collection tool as called "Article Review Form" have been used. The title, abstract, or keywords of the selected journals include 56 articles containing the words "self-regulated learning" or "self- regulation" examined using content analysis method in terms of research method, sample method, sample level, sample size, sample type, data collection tool, data collection method and data analysis method. When the results of the research are examined, the most "quantitative method" as a method, the most "survey" as a data collection tool, the most "online/computer supported" as a data collection method, the most "random" as a sampling choice, the most "31- 100 interval" as the sampling size, the most "undergraduate level" as sample level, except of science, mathematics and social the most "other" as the sample type and it has been seen that the most "predictive analysis" method is preferred to the data analysis method.

Key words: Self-regulated learning, instructional technologies, research trends

Introduction

Researches in the fields of education, psychology and technology reveal different views on the changing learning needs, different learning styles, strategies and methods used. In today's world where become more important 21st century skills and lifelong learning, the revision of all sub-systems related to education such as education systems and training

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programs, learning theories, teaching methods and techniques and updating them for the changing needs are recommended (Çağlar & Reis, 2007). Different environments are used to create rich and meaningful learning outcomes such as face to face learning, online and mobile learning environments and researches are made on components of self-regulated learning that can be used in these environments. Also variables associated with self-regulated learning in these environments are often examined (Shea & Bidjerano, 2010; Tsai, Shen & Tsai, 2011; Wang, Peng, Cheng, Zhou, & Liu, 2011; Tsai, Shen & Fan, 2013). Self-regulated learning one of the issues to be researched in terms of study helping to learn and increasing performance of the creation of appropriate technological processes and resources, utilization and management and in terms of educational technology as seen field of application (Seels & Richey, 1997; Ley &Young, 2001; Huh & Reigeluth, 2016). According to their own learning objectives put forward by individuals, self-regulated learning that emphasis on internal factors which have to achieve the learning objectives of the individual represents effective and a constructivist process that individuals attempt to set the behaviors, metacognitive competence and motivation level and that limit their goals by directing according to the environmental impacts (Pintrich, 2000). Researchers working on self-regulated learning reveal a variety of models to improve and measure self-regulated learning skills. Theory, model and researches on self-regulated learning are seen important by educators for dealing with learning difficulties, providing rich learning experiences and raising individuals with lifelong learning skills (Ifenthaler, 2012).

It is indicated that a study which allows a specific area to show the big picture created by the synthesis of international studies and to make scientific generalizations will provide important contributions to the identification of research trends in that area and will be a guide to determine what kind of new research is needed. It is emphasized that the presentation of the relevant studies in different dimensions is also important for the researchers interested in the subject to follow the topics that are frequently studied on the field (Göktaş et al., 2012). When literature is examined, there is no study that examines self-regulated learning research from the viewpoint of journals that publish in the field of instructional technology.

The aim of the study in this context is to examine the self-regulated learning related articles published in the leading international journals in the field of instructional technologies within the Social Sciences Citations Index (SSCI) between 2011-2016 by content analysis. In order to realize this aim, the answer to the following research question has been sought.

The articles on self-regulated learning in the reviewed journals, how is it distributed according to their methods, data collection tools, data collection methods, sampling methods, sample levels, sample size, samples types and data analysis methods?

Method

In this study, articles related to self-regulated learning in international journals determined in the field of instructional technologies within the scope of SSCI between 2011-2016 were examined by content analysis method.

Content analysis is a research method consisting of editing of texts, classification, comparison and extraction of theoretical results from texts (Cohen, Manion & Morrison, 2007). Besides these aspects, in this study content analysis was preferred because it transforms the data that are similar to each other into a form that is understandable to the

readers by putting them together on the basis of certain concepts and themes. Making the association between dimensions that determine trends provide an opportunity to researchers in the field of instructional technology to assess the field with different perspectives. In addition, the content analysis study also offers a holistic view of the area. The determination of tendencies to review with a large number of journals contributes to the achievement of more qualified and comprehensive results in future studies (Göktaş et al., 2012).

Sample

Examined 56 articles contain the words "self-regulated learning" or "self-regulation" in the title, abstract or keywords of the Australasian Journal of Educational Technology (AJET), British Journal of Educational Technology (BJET), Computers & Education (C&E), Educational Technology Research & Development (ETR&D), Educational Technology & Society (ET&S) and Journal of Computer Assisted Learning (JCAL). Table 1 shows the distribution of article numbers according to published journals and years.

Table 1. Distribution of the number of articles examined by journals and years

Journals Years	AJET	ET&S	ETR&D	JCAL	BJET	C&E	Total (%)
2011	-	1	1	-	-	1	3 (%5,4)
2012	1	2	-	2	2	1	8 (%14,3)
2013	-	1	-	-	3	6	10 (%17,9)
2014	1	3	2	2	4	4	16 (%28,6)
2015	-	3	1	2	1	3	10 (%17,9)
2016	-	4	-	2	1	2	9 (%16,1)
Total (%)	2 (%3,6)	14 (%25)	4 (%7,1)	8 (%14,3)	11 (%19,6)	17 (%30,4)	56 (%100)

According to Table 1, in the six journals in the SSCI, which published in the field of instructional technologies between 2011 and 2016, C&E is the journal with the most articles on self-regulated learning and the journal which the article was published at least, is AJET (%3.6). When the distribution of publications in the journals according to years is examined, it is seen that the most published articles are published in 2014 (28.6%) and the least articles are published in 2011 (5.4%).

Data Collection Tool

In the study, Article Review Form, which was first developed by Göktaş et al. (2012) who used the studies of Sözbilir and Kutu (2008), Masood (2004), Reeves (1995); and then was revised by Kılıç Çakmak et al. (2013), will be used as data collection tool in the article with the name of "Educational Technology Publications Classification Form". In this way, identifying information of the articles will be collected such as research methods of the article, sampling method, sample level, sample size, sample type, data collection tool, data collection method, data analysis method, details of the subject and the subject classification and publication title, journal, author, university of author, research aim, dependent-

independent variables. According to these criteria, collected data were analyzed by content analysis method.

Analysis of Data

The data obtained from the articles analyzed by content analysis within the scope of the research were analyzed using descriptive statistical methods (percentage and frequency). With regard to the data stored in the Excel file, the frequencies of the data and the percentage ratios depending on these frequencies are calculated, corresponding to the response of each research question. The resulting quantitative data are presented and interpreted in tabular form.

Findings

Data collected using data collection tool was analyzed based on research questions. The findings of the analyzes are presented below in parallel with the research questions.

Table 2. Distribution of research methods used in the articles

			AJET	ET&S	ETR&D	JCAL	BJET	C&E	n	%
Quantitative	Experim ental	Experimental	-	2	1	3	1	1	8	14,0
		Quasi-experimental	1	7	1	-	4	5	18	31,6
	Non-experim ental	Causal	-	1	-	-	3	-	4	7,0
		Relational	1	2	-	3	2	8	15	26,3
		Survey		1	1	-	-	-	3	5,3
Qualitative			-	-	-	-	-	2	2	3,5
Literature compilation	Meta-analysis		-	1	-	-	-	-	1	1,8
	Literature review		-	1	1	2	1	-	5	8,8
Other			-	-	-	-	-	1	1	1,8
Total									57	100

The distribution of research methods used in self-regulated learning-related articles is shown in Table 2. When the methods of the articles are examined in order; Quantitative (84.2%), literature review (10.6%), qualitative (3.5%) and other (1.8%) methods are used. The most experimental methods (45.6%) were used for quantitative methods. The most experimental methods (45.6%) were used for quantitative methods. Experimental methods were mostly quasi-experimental methods (31.6%). The most relational method (26.3%) was used for non-experimental methods. In the compilation of the literature, the method of survey the literature was used (8.8%).

Table 3. Distribution of data collection tools used in the articles

	AJET	ET&S	ETR&D	JCAL	BJET	C&E	n	%
Observation	-	-	-	-	-	1	2	2,0
Interview / focus group interview	-	4	-	-	1	3	8	7,8
Achievement tests	1	7	2	3	3	5	21	20,6
Attitude, perception or ability tests	-	3	-	-	-	1	4	3,9

Survey (Scale)	2	10	2	6	9	11	40	39,2
Document review	-	2	1	2	-	2	7	6,9
Alternative tools	1	5	2	2	5	4	19	18,6
Other	-	-	-	-	1	-	1	1,0
Total							102	

The distribution of data collection tools used in self-regulated learning-related articles is shown in Table 3. A total of 102 data collection tools were used in the articles in the selected journals. When the data collection tools used in the journals are examined; Survey (39.2%) were the most commonly used tools for data collection, the least used data collection tool is other tools (1.0%) used other than the specified data collection tools. Apart from these, the use of data collection tools is as follows: achievement tests (20.6%), alternative tools (18.6%), interview/focus group interview (7.8%), document review (6.9%), attitude/perception/personality (3.9%) and observation (2.0%).

Table 4. Distribution of data collection methods used in articles

	AJET	ET&S	ETR&D	JCAL	BJET	C&E	n	%
Classical	-	5	-	-	2	11	18	35,3
Online/Computer supported	2	7	3	6	7	5	30	58,8
Mixed	-	-	-	-	1	2	3	5,9
Total							51	100

Table 4 shows the distribution of data collection methods used in self-regulated learning-related articles. Data collection methods are examined in three groups; classical, online/computer supported and mixed. In some studies, there is no information about data collection method. For this reason, these studies have not been included in the study. When the data collection method used in all journals is examined; It is seen that the most used data collection method is the online/computer supported data collection method (58.8%). It is seen that the least used data collection method is the mixed data collection method (5.9%). Classical data collection method using paper-pencil was used in 18 articles (35.3%). In some articles (n=5) data collection method is not specified.

Table 5. Distribution of sampling methods used in the articles

	AJET	ET&S	ETR&D	JCAL	BJET	C&E	n	%
Random	-	5	1	3	10	14	33	66
Convenience	2	5	1	1	-	2	11	22
Purposive	-	1	1	2	-	1	5	10
Complete	-	1	-	-	-	-	1	2
Total							50	100

When Table 5 is examined, it is seen that the selection of random samples (66%) is higher than the other sampling methods. Convenience sample selection, representing the easily accessible sample group, appears to be used in 11 articles (22%). The least used sampling method is the complete sample (2%) which requires reaching the whole of the research universe.

Table 6. Distribution of the sampling levels used in the articles

	AJET	ET&S	ETR&D	JCAL	BJET	C&E	n	%

							n	%
Primary (1-5)	-	-	-	-	1	1	2	3,8
Primary (6-8)	1	2	-	-	-	2	5	9,4
Secondary (9-11)	1	-	-	1	2	3	7	13,2
Undergraduate	-	9	3	5	5	8	30	56,6
Postgraduate	-	-	-	2	-	1	3	5,7
Teachers	-	-	-	-	-	1	1	1,9
Other	-	1	-	1	2	1	5	9,4
Total							53	100

Table 6 shows that participants in the most self-regulated learning-related subjects were included in sampling (56.6%). Teachers (1.9%) are the least common sample level in all articles in journals. It was observed that most of the students in the secondary education (9-11) level (13.2%) included the sampling in 14 articles (26.4%) were included in sampling of primary and secondary school students.

Table 7. Distribution of sampling size used in articles

	AJET	ET&S	ETR&D	JCAL	BJET	C&E	n	%
<=10	-	-	-	-	-	-	0	0
11-30	-	4	1	2	-	2	9	18
31-100	-	6	1	1	4	8	20	40
101-300	1	2	1	1	5	5	15	30
301-1000	1	-	-	2	-	2	5	10
1000+	-	-	-	-	1	-	1	2
Total							50	100

When Table 7 is examined, it is seen that 31-100 (40%) of the samples in which the sample size is the most in all journals include sampling. Later, 15 (30%) articles were found to have sample size between 101 and 300. There is no research that has sample size smaller than 10.

Table 8. Distribution of discipline types used in articles

	AJET	ET&S	ETR&D	JCAL	BJET	C&E	n	%
Science	1	-	1	-	1	2	5	10,6
Social	-	1	1	-	-	1	3	6,4
Math	-	1	-	1	1	1	4	8,5
Other	-	9	1	5	8	13	35	74,5
Total							47	100

According to Table 8, in the majority of self-regulated learning-related articles it is seen that there are studies belonging to the other sample group (74.5%). Other sample types include foreign language teaching, programming instruction, health sciences, and information technology teaching. This is followed by studies with a sampling sample of science (10.6%). The distribution of sample-type science research is the least in all journals (6.4%).

Table 9. Distribution of data analysis methods used in the articles

	AJET	ET&S	ETR&D	JCAL	BJET	C&E	n	%
Quantitative data analysis	**4**	**27**	**7**	**19**	**40**	**59**	**156**	**95,1**
1. Descriptive	**1**	**12**	**2**	**7**	**22**	**28**	**72**	**43,9**

Frequency, percentage	-	3	-	-	11	13	27	16,5
Mean, standard deviation	1	6	2	5	9	14	37	22,6
Graphical representation	-	3	-	2	2	1	8	4,9
2. Predictive	**3**	**15**	**5**	**12**	**18**	**31**	**84**	**51,2**
Correlation	-	5	1	1	4	9	20	12,2
T-test		5	1	4	3	8	21	12,8
ANOVA / ANCOVA	1	3	1	1	3	7	16	9,8
MANOVA / MANCOVA	1	-	1	2	4	-	8	4,9
Factor analysis	-	-	-	-	1	-	1	0,6
Regression	-	-	1	1	3	5	10	6,1
Nonparametric tests	-	1	-	-	-	1	2	1,2
Structural equation model	1	1	-	3	-	1	6	3,7
Qualitative data analysis	**1**	**2**	**-**	**-**	**1**	**4**	**8**	**4,9**
Content analysis	-	-	-	-	-	1	1	0,6
Descriptive analysis	1	2	-	-	1	3	7	4,3
Total							164	100,0

When Table 9 is examined, it is seen that the quantitative data analysis methods (95.1%) are much more preferred than the qualitative data analysis methods (4.9%). From the quantitative data analysis methods according to Table 9; Descriptive analysis methods (43.9%) and predictive analysis methods (51.2%) seem to be used more in self-regulated learning researches. At the same time, mean and standard deviation calculations (22.6%) were the most used among the descriptive analysis methods, t-test (12.8%) and correlation coefficient (12.2%) were used more among the predictive analysis methods than others.

Result and Discussion

In this study, 56 articles related to self-regulated learning published in leading international 6 journals in the field of instructional technology within the scope of SSCI between 2011 and 2016 were examined by content analysis method. Thus, the trends and tendencies in research on self-regulated learning in instructional technology journals have been tried to be determined. It has been found out how the published studies are distributed according to the methods of the published articles, data collection tools, data collection methods, sampling methods, sampling levels, sample size, sampling types and data analysis methods.

In 2011-2016, the journal C&E published the most articles in the titles of instructional technology related to self-regulated learning, and at least published the journal AJET. In terms of the research method used in the examined articles, quantitative methods seem to be the forerunner. Later, in order literature compilation and qualitative research methods were used. Quasi-experimental and relational research methods have been found to be the most used methods among quantitative research methods. Tsai, Shen and Fan (2013) stated that most quantitative methods were used in the research that they reviewed the articles published between 2003 and 2012 on online self-regulated learning. It is also seen that quantitative researches have been intensively used in the researches on the articles published in the journals on instructional technology (Hannafin & Young, 2008; Şimşek et al., 2008; Gülbahar & Alper, 2009; Şimşek et al., 2009; Göktaş et al., 2012; Kılıç Çakmak et al., 2013; Kılıç Çakmak et al. 2015; Kılıç Çakmak et al., 2016;).

It was determined that the most used survey was used as the data collection tool in the examined articles and at least the observation was used. It has also been observed that logs are used extensively in the context of alternative data collection tools. The fact that the survey is an effective data collection tool consisting of a large number of samples and used to collect data in a short period of time for different quality issues can be a very important factor. Similar results can be seen in terms of the data collection tool used in the literature (Alper & Gülbahar, 2009; Şimşek et al., 2009; Göktaş et al.,2012; Kılıç Çakmak et al., 2013; Küçük et al., 2013; Kılıç Çakmak et al., 2015; Kılıç Çakmak et al., 2016). It has been determined that the most used of the online or computer-supported media is used to obtain data in the examined articles. This may be due to the fact that the edited journals are publishing in the field of instructional technology. Because it has been observed that self-regulated learning variable or other variables with this variable were examined in the articles with learning environments of computer-based, web-based, online, electronic etc.

The most commonly used method of sampling is random sampling. This is inconsistent with the results of the literature review of studies in the field of educational technology. It is stated that more convenience sampling method is used in the literature (Göktaş et al., 2012; Kılıç Çakmak et al., 2013; Kılıç Çakmak et al. 2015; Kılıç Çakmak et al., 2016). It is believed that about 45% of the articles examined in this study are complete or quasi-experimental methods, making the random sampling method more useful. Following the random sampling method, convenience and purposive sampling methods were used in order.

It is seen that more than half of the examined articles were conducted on the undergraduate students and that the sample size in the articles increased between 31 and 100. It was determined that there were no articles with fewer than 11 samples and that the sample size with more than 1000 samples was very low. It is believed that the investigations using similar or random sampling methods using similar or quasi-experimental methods are effective in the emergence of this situation. The vast majority of the articles examined were found to have sample models from areas outside of science, social and mathematics areas (information technology, programming and foreign language learning). This situation is consistent with the literature (Tsai, Shen & Fan, 2013).

Despite the fact that there are many journals published about the field of instructional technology, the results of this research are limited to 56 articles in 6 journals examined. This research is thought to help researchers in designing research on self-regulated learning and to reveal trends and tendencies in research that examine self-regulated learning variables from a viewpoint of instructional technologies. Investigating the study on self-regulated learning in other journals that are surveyed in different field indices may provide a broader and clearer perspective. In addition, the examination of research using experimental methods in terms of effect size with meta-analysis research may be effective in revealing the relation of self-regulated learning variable with other variables. In particular, it is thought that the discovery of variables handled with self-regulated learning may contribute to better understanding of self-regulated learning. Qualitative research methods have rarely been used in articles examined for self-regulated learning. In particular, the use of qualitative and mixed methods can lead to an in-depth study of self-regulated learning.

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