

# A Systematic Literature Review of Research on Writing across the Curriculum (WAC)

Ahn, Sanghee Korea University (1st Author)

Lee, Changhee The University of Rhode Island (Corresponding Author)



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## I. Introduction

Recently, the need for writing education in college has been emphasized, with the interest in this area also increasing in South Korea. As a result, many universities have developed writing curricula, and established writing courses. At the same time, however, the criticism of writing education in college has also grown. One of the criticisms is that college writing education has been operated in the form of one-time writing courses in the liberal arts area. According to Won(2009b), the goal of writing education as a liberal arts course at universities in South Korea is too broad and vague. In addition, the writing education does not have the proper contents and teaching methods. Many researchers have questioned whether academic writing ability for a major can be acquired only through a writing course in the liberal arts. Therefore, there is a need for a link between writing education and a student's specific major, rather universities offering a one-fits-all and one-off writing education in the liberal arts.

Then, how can academic writing education programs achieve this goal? This study proposes the concept of *writing across the curriculum (WAC)* as a valid alternative. *WAC* is a writing education program that enables students to use and study writing in various majors and

the liberal arts at the college level (Ahn, 2015). It means that in addition to teaching writing as a liberal arts course, instructors incorporate writing education in lectures for various majors and liberal arts curricula (Bae, 2013; Lee & Kim, 2010; Won, 2009b, 2010). However, in spite of the importance of *WAC*, a relatively small number of studies have been conducted on this approach so far. In addition, the definition of *WAC* in the existing research is not clear and various translations have been used for the term, *WAC* in Korean.

This study thus examines the research that has been conducted on *WAC* in South Korea by using a systematic approach. Systematic literature review includes systematic approaches to literature searching, a quality assessment, a synthesis of the literature available, an analysis and a presentation of the review findings (Booth, Sutton, & Papaioannou, 2016). In addition, systematic approaches are used to reduce the potential for bias within a review. A systematic literature review on *WAC* helps to provide basic data on the contents and the teaching methods of writing education currently offered in South Korea. The research questions of this study are as follows:

- 1) What are the characteristics (trend, method, school, and major) of studies on *WAC* conducted in South Korea so far?
- 2) How do the studies define the concept of *WAC*?

## II. Background

In the 1970s, criticism on college writing education emerged in the United States as it was being conducted in the form of a one-time lecture in the liberal arts. At that time, college writing education in the United States combined literary texts with skill-based writing instruction (Russell, Lea, Parker, Street, & Donahue, 2009). However, there was a growing controversy that this skill-based approach was not very helpful in improving the academic writing ability of college students.

In this context, *WAC* appeared as an alternative to traditional writing education in the United States in the 1970s. *WAC* is a writing education program that is based on the idea that writing should be used and learned in various majors and liberal arts curricula. According to Ahn (2015), the *WAC* program has three distinct characteristics. First, the purpose of the *WAC* program is to include both 'writing to learn' and 'learning to write' approaches at the same time. Second, *WAC* is not a program that simply adds writing to different majors or the liberal arts curricula, but uses writing to transform the curricula of these majors and the liberal arts. Third, the *WAC* program pursues an active learner-centered teaching-learning method.

*WAC* has been implemented in many American universities since it was first introduced. In South Korea, similar concerns as in the United States in the 1970s have recently been raised in the area of college writing education and the necessity of *WAC* has now been emphasized. Although some universities have already implemented a *WAC*-based education, there are few example cases of *WAC* being applied to major curricula at universities in South Korea. This is because institutions have to bear the financial burden of the implementation of *WAC*, and the active cooperation of lecturers who teach major courses is also essential for the program. In addition, if the numbers of students in one class is too high, it is difficult to implement *WAC* without the help of a writing center (Kim, 2018).

How does *WAC* apply to writing education in college? The *WAC* program is usually implemented in two ways for writing education at universities in the United States. First, a writing intensive (WI) class can be offered. A WI class focuses on writing education in major curricula or liberal arts curricula. Second, a writing course and a major course are combined in a one-to-one manner (Thaiss & Porter, 2010). In this case, it is very important to present integrated writing tasks in both classes, and to provide students with immediate feedback (Watts & Burnett, 2012).

In this study, the systematic approach was used to examine what

kind of research on *WAC* has been conducted in South Korea.

### III. Methods

This study used the systematic literature review method to review how the term *writing across the curriculum* (*WAC*) has been used in recent decades of research. A systematic literature review can provide a trustworthy answer to a specific question, identify gaps in our knowledge that require further research, and help us determine whether findings are consistent across multiple studies (Booth et al., 2016). The steps of a systematic literature review are defining the question, defining the scope, literature search, appraising the included studies, synthesizing the studies, and analyzing review findings' robustness and validity (Booth et al., 2016).

#### 1. Data sources

After establishing the study's scope to use the term *writing across the curriculum* (*WAC*), researchers conducted a systematic search of the relevant literature by using the keywords *writing across the curriculum* and *WAC*.<sup>1</sup> This study used the database *Research Information Sharing Service* (*RiSS*, [www.riss.kr](http://www.riss.kr)), which provides a large set of data covering other databases, such as *KISS* and *DBpia*. The search results of *RiSS* are therefore comprehensive and provided a good choice of database for this particular study. As a result, sixty-eight articles were found in the first stage.

After obtaining the initial search results ( $N = 68$ ), the researchers established the criteria that all had to be met for the inclusion in the literature review: 1. a study including *writing across the curriculum*

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1 We also searched for keywords such as '범교과(적) (글)쓰기', '전공 연계 (글)쓰기', and '교과 연계 (글)쓰기', which are the Korean translations of *WAC*.

or *WAC* in the title (in Korean or English) and the keywords, 2. a study published in the literacy research field, 3. a study published in a peer-reviewed journal that is listed in the Korea Citation Index (KCI), 4. a study published in any given year, since the total number of papers was not large, and 5. duplicate studies were excluded.

Based on these criteria, of the sixty-eight studies resulting from the initial search, twenty-five studies were deemed suitable for inclusion by the researchers.

## 2. Data analysis

Each study was coded in an Excel spreadsheet based on the following categories: 1. author, 2. year of publication, 3. journal title, 4. research methods, 5. school levels, 6. a major, 7. translation of *WAC*, 8. conceptual clarity of *WAC*, and 9. definition of *WAC*.

In the case of research methods, whether the study was empirical or nonempirical (literature review) was coded first. In addition, we coded empirical studies as either quantitative or qualitative and examined which specific research methods were used. Regarding the major, studies were classified by whether or not a major was specified and, if the studies specified a major, we coded the type of major and its frequency.

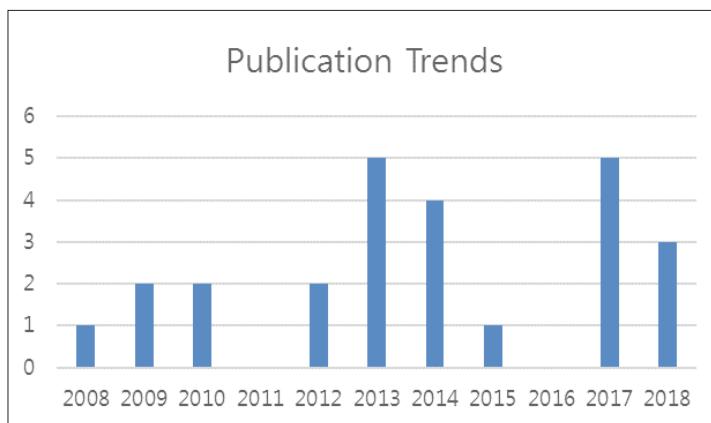
We adopted Conradi, Jang, & McKenna's (2014) coding scheme for conceptual clarity. Clarity of definition consists of three types: 'explicit', 'implicit' and 'not defined'. In addition, we analyzed how the concept of *WAC* was defined in the studies. All coding was double-checked, with more than 90% of the coding being consistent between the two coders. A compromise was reached for the remaining 10% in follow-up meetings.

## IV. Results

### 1. Overall Trends in Current Research on WAC

#### 1) Publication Trends

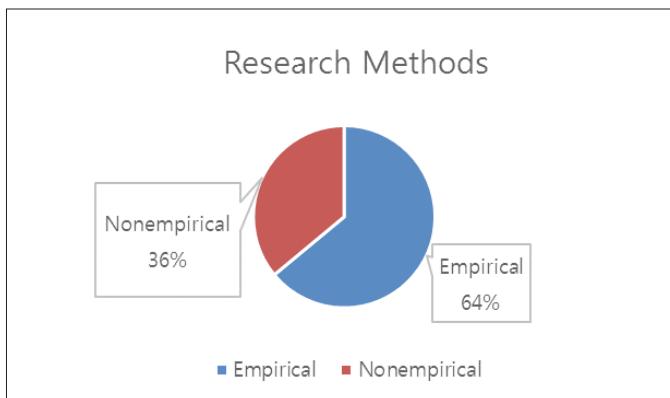
Twenty-five studies were conducted on *WAC* in South Korea, which is very small number. It is notable that prior to 2008, there was little or no research on *WAC*, a lack that can be explained by the relatively recent interest in writing education at college level. As interest grew, the number of studies began to increase from 2013 onward, with especially many being conducted in 2013, 2014, 2017 and 2018.



**Figure 1.** Publication trends

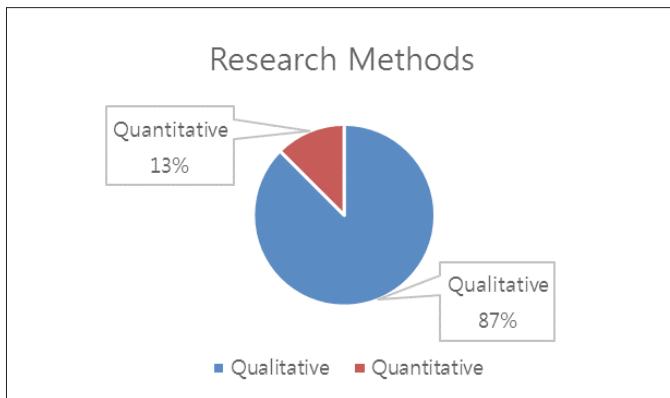
In recent years, however, there has been a great need for interest in college writing education and for education that links college writing education with a major. On the other hand, research on *WAC*, a program that actually applies the linked education to real college education, has been very limited and more such research on *WAC* is needed in the future.

## 2) Research Methods



**Figure 2.** Research methods

Among the twenty-five studies on *WAC*, sixteen studies (64%) were empirical studies and nine studies (36%) were nonempirical studies. Most of the nonempirical studies suggested future directions for writing education based on literature reviews. Although the number of empirical studies was higher than that of nonempirical ones, more empirical research based on data still needs to be done so that a more sophisticated and practical *WAC* program can be developed.



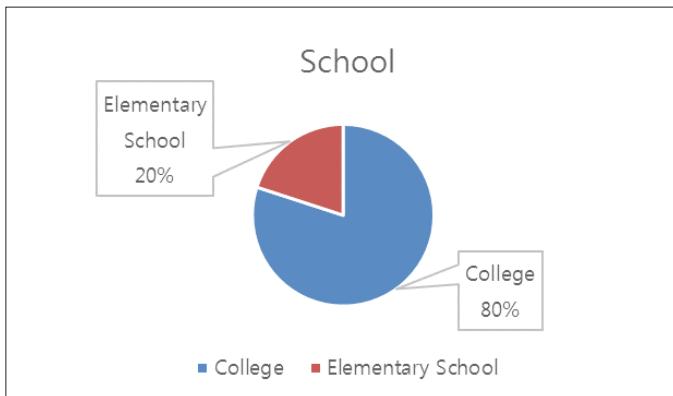
**Figure 3.** Research Methods (among empirical studies)

Among empirical studies, there were fourteen articles (87%) using qualitative methods and two articles using quantitative methods (13%). Among qualitative methods, ten case studies were conducted and four studies analyzed text (either students' writings or textbooks used for writing instruction). It is notable that among the studies on *WAC*, the percentage of case studies was high. Most of the researchers of these case studies developed their own *WAC* program, applied it to a lecture and analyzed the case presented. *WAC* studies performed via quantitative methods meanwhile verified the effectiveness of the *WAC* program statistically.

One study verified the effectiveness of *WAC* by applying it to the liberal arts course. The other study applied the *WAC*-based teaching method to the lecture and quantitatively examined students' self-directed learning ability, change of learning participation, and satisfaction with the class.

### 3) School Level

Of the twenty-five articles, twenty studies (80%) were conducted on *WAC* at college level and five studies (20%) were on *WAC* at elementary school level. In the United States, the *WAC* program began at college level in the 1970s in the United States (Russell et al., 2009) and was organized through a plan prepared by both professional groups and university administrators (Mahala, 1991). The discussion about *WAC* started to involve a critical view on the limitations of college writing education, which was being conducted in the form of liberal arts lectures. Advocates of *WAC* however argued that writing education in college should be taught not only in writing classes, but also in classes for various majors and in liberal arts classes. Therefore, it is not surprising that most of the research on *WAC* was conducted at the college level, although some research on *WAC* in elementary school is also available. Research on *WAC* in middle and high schools, meanwhile, is nonexistent.



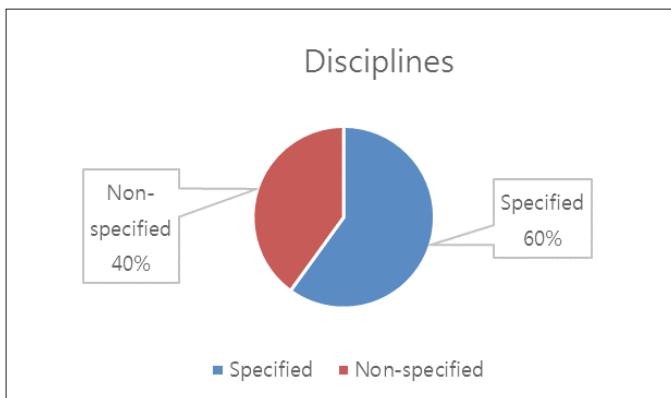
**Figure 4.** School level

The reason for conducting a study on *WAC* in elementary schools rather than middle or high schools can be inferred for the following reasons. In middle and high schools in South Korea, individual teachers are in charge of each subject. For example, mathematics teachers are in charge of all of a school's mathematics classes. In elementary, however, a single homeroom teacher is in charge of multiple subjects for his or her class. Therefore, the concept of *WAC* is adopted relatively easily at this level.

At college level, meanwhile, one of the most difficult reasons for applying *WAC* is the challenge to link writing classes with the classes on majors. This link should be provided systematically by university headquarters, with administrative and financial support also being essential. On the other hand, it can be assumed that research on *WAC* at the elementary school level has been conducted as it is relatively easy to connect these elements.

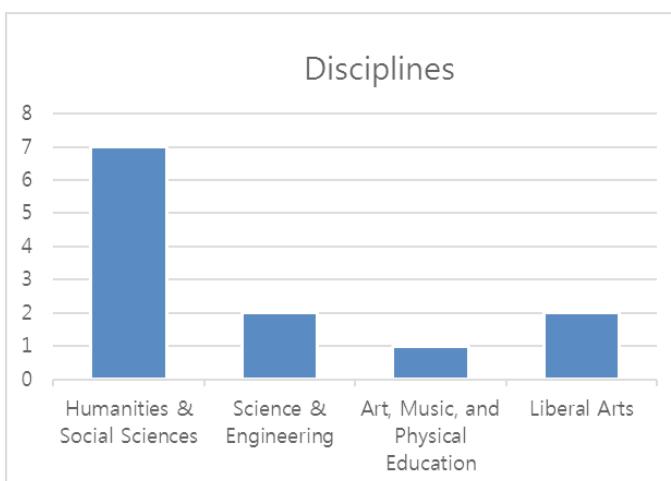
#### 4) Disciplines

Fifteen of the twenty-five studies specified the discipline or major and ten researches didn't specify discipline or major when the study was conducted. In case of non-specified disciplines or majors, the studies discussed general features of the *WAC* program.



**Figure 5.** Disciplines

In the college cases, most research ( $N = 7$  out of 12) was conducted in the application of *WAC* to the classes of majors in the humanities and social sciences. In addition, relatively low numbers of studies on *WAC* were conducted in the sciences and engineering ( $N = 2$ ), arts/music/ physical education ( $N = 1$ ), and liberal arts classes ( $N = 2$ ). Thus, research on *WAC* across more diverse majors is needed.



**Figure 6.** Disciplines (specified, college level)

In the case of elementary school, only studies on *WAC* that involved a link between language arts and science were conducted. The reason for this result can be explained in the sense of the recent emphasis on writing across the curriculum (or cross-curricular writing) instruction in the revised language arts and science curriculum (Jin, 2018). This evidence can be found in the achievement standards of the 2009 revised and 2015 revised language arts curricula.

### 5) Translation of WAC

The term *WAC* (Writing across the Curriculum) has been translated in diverse ways into Korean, with some researchers describing the reasons behind using a specific translation. The most commonly used translation is ‘**범교과(적) (글)쓰기**’, followed by ‘**전공 연계 (글)쓰기**’. Some research used only the English term without making use of a translated form.

Term	Frequency
범교과(적) (글)쓰기	10
전공 연계 (글)쓰기	6
교과 연계 글쓰기	2
글쓰기 기반 과정	2
번역어 언급 하지 않음	2
기타 (교과기반 글쓰기, 논술중심 전공 교과, 전공 글쓰기)	3
Total	25

**Figure 7.** Translations of WAC

### 6) Conceptual Clarity in Current Research on WAC

In this study, researchers examined whether the concept of *WAC* was defined in the articles that were analyzed. Clarity of definition was adapted from the study of Conradi, Conradi et al. (2014). According to them, clarity of definition is divided into 1) explicit, 2) implicit, and 3) not defined.

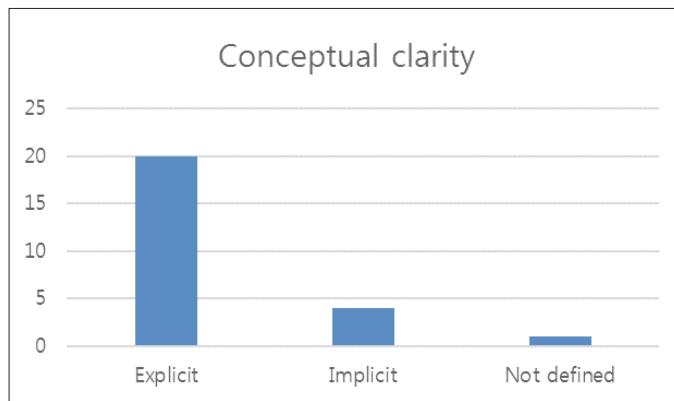
An *explicit* definition means that “a definition is expressly stated

in language written by the author/s or directly specified from a specified source" (Conradi et al., 2014, p. 143).

An *implicit* definition means that "a definition is implied but not expressed" (p. 143). There are three types of implicit definitions: conceptual (there is an allusion to the concept but not a definition), referential (a definition from another source is adopted but not explicitly quoted), and operational (a definition is implied only through the instrument/s used). Finally, *not defined* means that "a term is used but there is no attempt to define it, even implicitly" (p. 143).

Most studies ( $N = 20$ , 80%) attempted to define the concept of *WAC* clearly. In the case of an explicit definition, the researchers quoted the definition of *WAC* from other literature, made a new definition of *WAC* based on the definitions from other sources, or came up with their own definition without citing others. Specifically, how they defined the concept of *WAC* will be discussed in the section below.

There were four studies that had an implicit definition of *WAC*, with the concept in all articles belonging to the 'conceptual' category as classified by Conradi et al. (2014). No clear definition of the concept was presented in the articles, but allusions were made to the concept. In other words, the concept of *WAC* could be inferred by certain explanations.



**Figure 8.** Conceptual clarity of WAC

When examining the concept of *WAC* defined explicitly, there are many studies that established the concept without quoting the definitions from other research. In addition, some studies formulated a new definition of *WAC* based on the definition from other researchers. There was only one study that quoted a definition of *WAC* from other research without making their own. In the case of quotations, definitions of various researchers were given for *WAC*.

As a result of analyzing the definitions for *WAC*, we found that many basically shared the same assumption and premise. They emphasize that writing should be an important element of education in various majors and liberal arts. However, in the papers on *WAC* at college level, what they focused on and how they described *WAC* slightly differs among researchers. This level includes definitions focusing on teaching methods in *WAC*, definitions focusing on a link between writing and majors, and definitions focusing on an integration of 'writing to learn' and 'learning to write'.

In other words, in the study of *WAC* at the college level, *WAC* is defined as 'a teaching method that improves writing ability along with contents learning in majors by including a writing education into a major's course or a liberal arts course', 'a curriculum which is integrated or closely linked to a major and other liberal arts subjects', and 'a writing curriculum which has both characteristics of writing to learn and learning to write'.

However, all five studies on *WAC* at the elementary school level focused on the integration of 'writing to learn' and 'learning to write'. All five studies conducted in elementary school level analyzed *WAC* as an above perspective. In these studies, *WAC* was defined as a program that utilizes writing in the entire curriculum, including the language arts and the integration of 'writing to learn' and 'learning to write'.

## V. Conclusion

Using the systematic approach, we reviewed the characteristics (trend, method, school, and major) of studies on *WAC* conducted in South Korea thus far. In particular, we considered how these studies defined the concept of *WAC*.

In summary, the findings were as follows: the total number of studies conducted on *WAC* in South Korea remains very small ( $N = 25$ ). Among data-based empirical studies, the proportion of articles using qualitative methods is much higher than those relying on quantitative methods. Most studies refer to *WAC* at the college level, but some research at the elementary school level is also available. In addition, most studies applied *WAC* to classes related to the humanities and the social sciences. In Korean, translation the most used term for *WAC* was ‘**범교과적 글쓰기**’, and most articles defined the concept of *WAC* clearly. When the concept is clearly explained, most research defined *WAC* without quoting the definitions of others but devising their own. The definitions of *WAC* differed slightly according to different focuses, but basically emphasized that writing should be an important element of education in various majors and liberal arts curricula. Based on this systematic literature review, we propose the following two discussions.

First, research on *WAC* needs to be conducted on a wider scale, across a broader range of disciplines. The problem is that the number of studies on *WAC* is very small. Many studies also focused on the application of *WAC* to a specific discipline (humanities and social sciences). In order for *WAC* to constitute a suitable alternative for the writing education at domestic universities, various types of experimental studies need to be conducted in multiple academic fields, such as the humanities and social sciences, sciences and engineering, and arts (Kim, 2018).

Second, research on *WAC* needs to employ more diverse research

methods. Empirical studies conducted in South Korea show a high proportion of qualitative research, revealing a tendency to concentrate on the case study method. This trend is because South Korea does not have a particularly long history of needs or interests with regard to *WAC* or writing education at college. Researchers believe that if many studies on *WAC* with various research methods are conducted, the results will contribute to development of the contents and teaching methods of writing education at the college level in South Korea.

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## ABSTRACT

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Using the systematic approach, we reviewed the characteristics (trend, method, school, and major) of studies on *WAC* conducted in South Korea thus far. In particular, we considered how these studies defined the concept of *WAC*.

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**KEYWORDS** Writing across the curriculum, *WAC*, Writing education in college, Systematic approach, Systematic literature review