

# The Role of Self-Efficacy Beliefs in Reading Comprehension Performance: A Systematic Review of the Literature

Muhammad Waleed Shehzad<sup>a</sup>, \*Mohd Hilmi bin Hamzah<sup>b</sup>, Khaled Ali Alkurtehe<sup>c</sup>, Rafizah Mohd Rawian<sup>d</sup>, <sup>a,c</sup>PhD Scholar, School of Languages, Civilization, and Philosophy, Universiti Utara Malaysia, <sup>b,d</sup>Senior Lecturer, School of Languages, Civilization, and Philosophy, Universiti Utara Malaysia.  
<sup>a</sup>[waleedshahzad@yahoo.com](mailto:waleedshahzad@yahoo.com), <sup>\*b</sup>[hilmihamzah@uum.edu.my](mailto:hilmihamzah@uum.edu.my) (Corresponding Author)  
<sup>c</sup>[khaled\\_alil@ahsg.uum.edu.my](mailto:khaled_alil@ahsg.uum.edu.my), <sup>d</sup>[rafizah@uum.edu.my](mailto:rafizah@uum.edu.my)

Self-efficacy has been a well-researched topic for the past few decades. The role of self-efficacy in reading comprehension performance has been explored extensively. The basic objective of this literature review paper is to draw attention to studies conducted in the last twelve years regarding the role of self-efficacy in reading comprehension achievement. Previous reviews have focused on the relationships between self-efficacy and a diverse range of academic achievements. However, there is a dearth of reviews on the relationship between self-efficacy and reading performance. A total of thirty four studies were reviewed based on two key aspects, firstly, ‘variables’ and secondly, ‘research design’. Variables included context of studies, gender, grade level, socio-economic status, and ethnicity, whereas, research design included research approaches, longitudinal studies, pre-test and post-test research design, and mediation effect of self-efficacy and other variables. This study also provides recommendations for future research regarding self-efficacy and reading comprehension performance, including conducting more research by using qualitative methods. Further, more longitudinal studies need to be completed. Lastly, further investigation is warranted in some countries where there is paucity of research regarding self-efficacy and reading performance. It is the aim that potential researchers would benefit from this paper’s analysis of’ the current research trends regarding reading self-efficacy.

**Key words:** *Self-efficacy, reading comprehension performance, systematic review.*

## Introduction

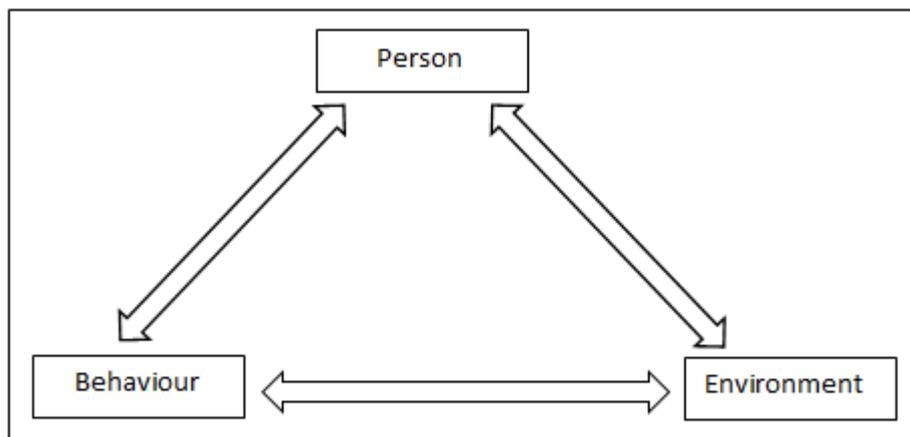
### *Self-efficacy Beliefs*

Self-efficacy was defined by Bandura (1986) as people's assessment of their abilities to manage and implement a series of actions needed to achieve specified kinds of accomplishment. Similarly, Jinks and Morgan (1999) have considered self-efficacy as a perception of confidence related to the accomplishment of particular tasks. In the same way, Ferrara (2005) defines reading self-efficacy as one's evaluation of the extent to which one believes one can complete a specific task of reading. This evaluation of one's ability depends upon one's past performance on similar tasks. It also depends upon the positive or negative response and support obtained from other people. This definition of self-efficacy is more suitable to the current topic as it deals purely with reading tasks.

The concept of self-efficacy has emerged from the 'social cognitive theory' (SCT) presented by Albert Bandura in 1986. This theory is quite different as compared to earlier theories. Old theories are of the view that the behaviour of a person is a reaction of environmental provocations (Bandura, 2001; Dierker, et.al 2018). Whereas, SCT focuses on the association between a person, their behaviour, and environment around him/her (Herz, Schunk & Zehnder, 2014). The association between these three elements of SCT is shown in the model of triadic reciprocity in Figure 1.1 below.

Self-efficacy beliefs strengthen the degree of association between a person and their behaviour. Additionally, these beliefs can be fostered in an environment which, as a result, is positively associated with the accomplishment of a person (Bandura, 1997). There are numerous sources from which self-efficacy beliefs originate (Bandura, 1997; Dörnyei & Ushioda, 2011; Herz et al., 2014). These four sources are mastery experience, vicarious experiences, verbal persuasion and emotional or physiological states (Bandura, 1997).

**Figure 1.1.** Model of triadic reciprocity (adopted from Bandura, 1986).





### ***Reading Comprehension***

There are many definitions of reading comprehension posed by different authors. Anderson (1985) has defined reading comprehension as the procedure of creating a sense from written texts. This specific complicated skill requires the synchronisation of several interconnected information sources. Similarly, according to Wixson, Peters, Weber, and Roeber (1987), reading comprehension is a method of formation of meaning with the help of a forceful collaboration between a reader's past knowledge about the content, information presented in the text, and the background of the reading situation. Likewise, Smith (1973) is of the viewpoint that reading comprehension is like a communication process which consists of the transmission of a message from an informer to a receiver.

The language experts have tried to explain the reading process in many ways. Several theories and models regarding reading comprehension have been presented. To date, several reading researchers (e.g., Anderson & Pearson, 1988; Goodman, 1967; Gouch, 1972; Grabe & Stoller, 2002; Stanovich, 1980) have tried to construct a model to represent an authentic reading process. These models are known as process models (Urquhart & Weir, 1998). The three most famous models of reading are known as bottom-up, top-down, and interactive process models. A bottom-up model considers text as a series of words in which the reader is supposed to decode each word separately. This model lays stress on knowledge related to word identification and phonics (Hardin, 2001; Davidovitch, 2018). A bottom-up model has been used generally by foreign language learners who were taught Grammar Translation Method (GTM) for reading comprehension (Sidek, 2012). On the other hand, a top-down model is opposite to the bottom-up model, in which a reader needs to activate schemata (i.e., background knowledge) about content, structure and their own experience. The interpretation of the content depends upon the schemata of a reader (Alderson, 2000). The third model, i.e., an interactive model is a combination of both bottom-up and top-down models. In this model, a reader needs to decode every word separately as well as use the background knowledge to comprehend the text successfully (Bensoussan & Kreindler, 1990; Ghanney, 2018).

In addition to these models, there are three major theories related to reading comprehension. The name of the first theory is 'schema theory'. Three main components can be found in this theory. Firstly, linguistic schemata, which deals with the construction of sounds and alphabets to make the coding of words possible. Secondly, formal schemata, which deals with the sentence structure to make the process of reading faster. Thirdly, content schemata, which helps a reader to associate past knowledge with the content presented in the text for a successful comprehension (Carrell, 1983). The second theory related to reading comprehension is known as 'information processing theory'. According to this theory, the human mind is similar to a computer in which information is handled by breaking it into pieces, which are primarily kept



in short-term memory, and eventually in long-term memory (Maftoon & Esfandiari, 2015). Lastly, there is a theory named 'transactional theory' which is of the view that reading activity is a two-way transaction between a reader and the text (Rosenblatt et al., 1988).

Self-efficacy is considered an important construct. It has been found from the meta-analysis of more than 100 research studies which were carried out in the time span of last twenty years that self-efficacy is the strongest forecaster of learners achievement and accomplishment (Artino, 2012; Goldshmidt, 2018). Due to the vital importance of self-efficacy in academic achievement, many authors have conducted systematic literature reviews of self-efficacy with several academic outcomes including academic achievement, writing achievement, science achievement (e.g., Honicke & Broadbent, 2016; Klassen & Tze, 2014; Pajares, 2003; Valentine, DuBois, & Cooper, 2004). However, little attention was given to reading achievement. Therefore, considering the importance of the self-efficacy variable, the current paper will present a systematic review of the literature involving self-efficacy beliefs and reading comprehension performance.

## **Research Questions**

Precisely, the current systematic literature review sought to address the subsequent research questions:

Research Question 1: What do the outcomes of the previous studies indicate regarding the association between self-efficacy and reading achievement?

Research Question 2: What is the role of other variables (i.e., gender, grade level, socio-economic status, and ethnicity) regarding the association between self-efficacy and reading achievement?

Research Question 3: What are the specific research designs employed by the past studies in determining the association between self-efficacy and reading achievement?

## **Methods**

### ***Eligibility Criteria and Selection***

The eligibility criteria regarding the insertion of studies in this review was limited to only those studies which are published, refereed journal articles and doctoral dissertations between a time frame of twelve years, i.e. 2008 to 2019. The reason for selecting refereed journal articles and doctoral dissertations was that they are more reliable as compared to non-refereed journal articles and masters dissertations. A time frame of twelve years was selected because it involves more current research that has been carried out regarding self-efficacy and reading performance and pinpoints the general research tendencies in the existing literature. Out of 44 studies, ten were rejected: eight were non-refereed journal articles, one was a conference paper and one was a Masters dissertation. The remaining 34 studies included 30 refereed journal articles and

four doctoral dissertations. Within 30 refereed journal articles, 21 were Scopus-indexed journal articles. The authors used ULRICHSWEB to differentiate between refereed and non-refereed journal articles. The Scopus website was used to determine Scopus-indexed journal articles. A complete list of excluded articles can be found in the Supplementary File 1 along with the reasons for their elimination.

Regarding the methodology of the studies, no limitations were applied. The current review tended to include all the studies irrespective of any specific method used in the reviewed studies, i.e. quantitative, qualitative or mixed-methods. Also, no restrictions regarding sample were applied. Therefore, a diverse range of participants was achieved including, teachers, incarcerated adults and kindergarten students to university level students. Similarly, no participants were excluded on the basis age, gender, ethnicity and socio-economic status.

### ***Search Strategy***

To determine the studies, a systematic review of the electronic databases was conducted by the authors. The search terms used while searching the studies include, ‘academic self-efficacy’, ‘reading self-efficacy’, ‘reading comprehension performance’, ‘reading achievement’, ‘relationship between self-efficacy and reading achievement’, ‘relationship between self-efficacy and reading accomplishment’. These search terms were inserted in databases including Science Direct, Scopus and Web of Science, ERIC, which employed Ebsco platforms. Also, for thesis abstraction, ProQuest database was utilised. A final search was performed on February 11, 2019. Figure 2.1 below illustrates the full strategy employed while searching.

**Figure 2.1.** Example of a full search strategy.

**Databases:** ScienceDirect, Scopus & Web of Science, ERIC, ProQuest.

**Search terms:**

“Self-efficacy” OR “academic self-efficacy” OR “reading Self-efficacy”

AND “reading performance” OR “reading comprehension performance” OR “reading achievement”

AND “relationship between self-efficacy and reading performance” OR “relationship between self-efficacy and reading accomplishment”

Limiters: All in English, 2008 to 2019.

### ***Data Abstraction***

To summarise the key elements of research studies, a data abstraction table was employed by many studies (Honicke & Broadbent, 2016; Klassen & Tze, 2014; Van Dinther, Dochy & Segers, 2011). Hence, after review of the above mentioned studies, it was decided that this research would use a data abstraction table for the current research article and a data abstraction table was created to show the related information of the review in a systematic and summarized way. All gathered data was organized and integrated manually. For the purpose of information abstraction, the following factors were considered in completion of the data abstraction table: country in which study was performed, sample attributes (containing sample size, gender and average age), predictor instruments, outcome instruments, research approach, and important findings.

### **Literature Review**

The review of the literature referenced in this article includes 34 studies (see Table 1 for an overview of the studies). The review has been presented on the basis of two main aspects, i.e., variables and research design. Variables include, context of studies, gender, grade level, socio-economic status, and ethnicity, whereas, research design consists of research approaches, longitudinal studies, studies involving pre-test and post-test design, and mediation effect of self-efficacy variable.

### ***Variables***

#### ***Context of studies***

In this literature review, out of 34 research studies, eleven were conducted in USA, three in Iran, two in Turkey, Taiwan, and Hong Kong, and one in each of the following countries: Norway, Sweden, Singapore, Indonesia, Canada, England, New Zealand, Kyrgyzstan, Saudi Arabia, Oman, South Korea, Finland, Poland, and Germany. Of eleven studies conducted in USA, nine studies indicated that there was a significant correlation between self-efficacy and reading performance (Coddington & Guthrie, 2009; Galla et al., 2014; Guthrie, Klauda, & Ho, 2013; Lee & Johnson-Reid, 2016; Liew, McTigue, Barrois & Hughes, 2008; McGirt, 2017; Mucherah & Yoder, 2008; Nevill, 2008; Piercey, 2013). Conversely, one study indicated an insignificant relationship between self-efficacy and reading performance (Booth, Abercrombie & Frey, 2017). There was also one study, i.e., Guthrie, Coddington, and Wigfield (2009) which did not check the correlation between variables. However, the results revealed that perceived difficulty explained more variance in reading performance as compared to self-efficacy.

A total of three studies were conducted in Iran. Only one study indicated that there was a significant correlation between self-efficacy and reading performance (Tabrizi & Jafari, 2015). Conversely, one study revealed that there was a negative correlation between self-efficacy and reading performance (Eslami & Fatahi, 2008; Hossain, 2018). On the other hand, there was one study which did not examine the correlation; it indicated that experimental group outperformed control group in terms of both self-efficacy and reading performance (Khajavi & Ketabi, 2012). Further, two studies were conducted in Turkey. Yilmaz (2011) indicated an insignificant relationship between self-efficacy and reading performance. Whereas, Epcacan and Epcacan (2010) examined the effect of eight socio-economic factors (gender, library at home, buying newspaper and journals, living quarters, number of siblings, family's occupation, income level, and reading habits) on reading comprehension and self-efficacy beliefs.

Similarly, two studies were performed in Taiwan. Both of the studies showed a positive significant correlation between self-efficacy and reading performance (Shang, 2010; Su & Wang, 2012). In Hong Kong also, two studies were conducted however neither examined the correlation between self-efficacy and reading performance. Lau (2009a) revealed that students belonging to high achieving schools had higher reading self-efficacy. Also, it was found that younger students had higher reading self-efficacy as compared to older students. In the second study, Lau (2009b) made two important findings, firstly that reading self-efficacy did not predict reading amount and secondly that junior high school students had higher self-efficacy than high school students.

Further, three studies were conducted in Scandinavian countries including Norway, Sweden and Finland. Jones, Varberg, Manger, Eikeland, and Asbjørnsen (2012) conducted a study in Norway and concluded that there was a positive and significant correlation between reading self-efficacy and reading comprehension performance. Also, Solheim (2011) conducted a study in Sweden and concluded that reading self-efficacy was significantly correlated to reading performance. Moreover, Aro et al. (2018) performed a study on 82 elementary school students in Finland and found positive and significant association between reading self-efficacy and reading fluency. All three aforementioned studies conducted research on Scandinavian countries and revealed the same results. However, the nature of the sample was different in each study. Jones et al. (2012) conducted a study on imprisoned adults, whereas Solheim's (2011) and Aro's et al. (2018) sample included primary school students.

Wilson and Kim (2016) conducted a study in South Korea and found that self-efficacy and reading comprehension achievement were not significantly correlated with each other. Similarly, Liem, Lau and Nie (2008) conducted a study on Grade 9 students in Singapore. Findings revealed a significant positive relationship between self-efficacy and reading achievement. Conversely, Tobing (2013) conducted a study in Indonesia and revealed that

there was a significant positive relationship between self-efficacy and reading performance. Some studies conducted in middle-eastern countries including Oman and Saudi Arabia. Osman, Al Khamisi, Al Barwani and Al Mekhlafi (2016) found a positive significant correlation between self-efficacy and reading achievement. Similarly, Al Ghraibeh (2014) conducted a study on the relationship between self-efficacy and meta-comprehension among university level students in Saudi Arabia. A significant correlation was found between the two variables.

In the same way, Klassen (2010) examined the relationship between self-efficacy and reading achievement in Canada and found a significant positive relationship between self-efficacy and reading achievement. Also, Carroll and Fox (2017) conducted a study in England and results indicated a significant positive correlation between self-efficacy and reading comprehension achievement. Both studies yielded similar findings. However, their samples were different. Klassen's (2010) sample consisted of grade 8 and 9 students who were sub-divided into learning disabilities (LD) and (NLD) non-learning disabilities group. Whereas, Carroll and Fox (2017) took a sample of elementary school students.

Furthermore, Yogurtcu (2013) conducted a study in Kyrgyzstan and found that students having high self-efficacy showed a significant correlation between self-efficacy and reading skills. Conversely, no correlation between self-efficacy and reading skills was found among students having low self-efficacy. Niemiec & Lachowicz-Tabaczek (2015) conducted a study on university students in Poland and found a significant and positive association between reading self-efficacy beliefs and reading comprehension performance. In addition, Smith, Smith, Gilmore, and Jameson (2012) performed a study in New Zealand and revealed that there was a weak correlation between self-efficacy and reading achievement among grade 4 students. However, among grade 8 students, the relationship between self-efficacy and reading achievement was moderate. Schöber, Schütte, Köller, McElvany, and Gebauer (2018) piloted a study on school students in Germany. Findings of the longitudinal study indicated that reading achievement at T1 significantly impacted the reading self-efficacy at T2. Conversely, reading self-efficacy at T1 did not influence reading achievement at T2.

It can be observed in the aforementioned studies that the majority of the research regarding self-efficacy and reading comprehension was done in the USA and Iran and that only one or two studies were found from other countries. Therefore, there is a need to conduct more research in countries where less studies have been made regarding self-efficacy and reading comprehension.

### ***Gender***

The role of gender in students' self-efficacy and reading comprehension performance has been highlighted in many empirical studies. Smith et al. (2012) conducted a study in New Zealand to determine the correlation between reading self-efficacy and reading accomplishment among boys and girls of grade 4 and grade 8. Findings revealed that girls outperformed boys in reading self-efficacy as well as reading achievement in both grades. Similarly, Osman et al. (2016) also conducted a study in Oman among male and female sample of two grades, i.e., grade 4 and 10. The results showed that, just like Smith et al. (2012), the female sample outperformed the male sample in both grades in terms of self-efficacy and reading achievement. Similarly, Mucherah and Yoder (2008) inspected the relationship between reading self-efficacy and reading achievement of both male and female students of the sixth and eighth grades. Findings indicated that girls outperformed boys in self-efficacy as well as reading achievement in both grades. The findings of the three studies mentioned above regarding self-efficacy and reading comprehension are similar, in favour of female students.

Su and Wang's (2012) study showed that girls performed better than boys in terms of English reading self-efficacy. However, regarding the relationship between reading self-efficacy and reading achievement, gender made no difference. Likewise, Epçaçan and Epçaçan (2010) found that girls outperformed boys regarding self-efficacy beliefs in reading comprehension. Klassen (2010) conducted a study to find the correlation between reading self-efficacy and reading performance among two groups. The students with learning disabilities (LD) were placed in an experimental group and the students with non-learning disabilities (NLD) were placed in a control group. Findings indicate that girls had higher self-regulatory efficacy than boys in both LD and NLD groups. Alternatively, there is one study which revealed results in favour of male students where for example, Solheim (2011) found that boys had higher reading self-efficacy as compared to girls.

There were some studies which showed that gender made no difference regarding the relationship between self-efficacy and reading accomplishment. Nevill (2008) examined the influence of reading self-efficacy beliefs on reading achievement. It was found that gender had no effect on reading self-efficacy beliefs among the students. However, in terms of reading achievement, the girls outperformed the boys. Liew et al. (2008) study was akin with Nevill (2008) in terms of findings. Liew et al. (2008) conducted a longitudinal study across three years. They found that gender had no effect on academic self-efficacy across all three periods. However, female students outperformed their male counterparts in reading achievement across all periods. In the same way, Carroll and Fox (2017) found that both boys and girls displayed almost the same degree of achievement in terms of self-efficacy and reading comprehension achievement. However, there was no significant relationship between reading self-efficacy and

reading comprehension achievement including both male and female samples. Piercey's (2013) study on early adolescents found that there was a significant relationship between reading self-efficacy and reading accomplishment among both boys and girls.

Coddington and Guthrie (2009) conducted a study to examine the relationship between students' reading self-efficacy and reading performance by considering the perceptions of teachers and students. The results revealed that the correlation between both male and female students' reading self-efficacy and reading performance was significant according to teachers' perceptions. Likewise, according to students' perceptions, the correlation between reading self-efficacy and reading performance was significant when analysis was run that included both male and female samples. However, when both gender groups were analysed separately, it was found that reading self-efficacy of male sample was significantly correlated to reading performance. Whereas, there was no correlation between reading self-efficacy of the female sample and their reading performance.

### ***Grade level***

It was found in the literature that the grade level had a significant effect on reading self-efficacy and reading comprehension achievement. There were many studies that compared the grade level and the majority of them found that lower-grade students outperformed higher-grade students. Lee and Jonson-Reid (2016) conducted a study to determine the relationship between self-efficacy beliefs and reading comprehension achievement. The sample of the study was 881 elementary school students of grades 1, 2 and 3. Regarding the grade level, it was found that grade 1 students showed greater reading achievement as compared to grade 2 and 3 students. Similarly, Piercey (2013) conducted a study to determine the relationship between reading self-efficacy and reading achievement among early adolescents. The sample of the study consisted of 364 students of grade 4, 5 and 6. It was found that elementary school students' reading self-efficacy was higher as compared to middle school students.

In the same way, Osman et al. (2016) conducted a study to determine the influence of reading self-efficacy beliefs and gender on EFL reading achievement. The sample of the study consisted of 636 Omani school students from grade 4 and 10. Grade 4 students outperformed grade 10 students in terms of reading self-efficacy beliefs regarding their reading achievement. Also, Smith et al. (2012) found that grade 4 students had a higher level of reading self-efficacy than grade 8 students. However, the relationship between self-efficacy and reading achievement was rather weak among grade 4 students as compared to grade 8 students. Lau (2009a) conducted a study to know the level of reading motivational constructs including reading self-efficacy among grades 4 to 11. The sample included 1794 of grades 4 to 11 including primary, junior secondary, and senior secondary school students. Regarding the grade level, it was found that older students reported lower reading self-efficacy than younger

students. Lau (2009b) conducted a study to determine whether the reading amount was affected by self-efficacy in relation to grade differences. The sample included 1146 junior high school and senior high school students. Regarding the grade level, it was revealed that junior high school students had higher reading self-efficacy than senior high school students.

On the other hand, there were some studies that favoured higher-grade students in terms of self-efficacy and reading achievement. For instance, Mucherah and Yoder (2008) inspected the relationship between reading self-efficacy and reading achievement. The sample of the study included 388 sixth and eighth grade public school students. It was found that that grade 8 students had higher reading self-efficacy than grade 6 students. In the same way, Smith et al. (2012) compared grade 4 and grade 8 students in terms of reading self-efficacy and reading achievement. Grade 8 students outperformed grade 4 students in terms of reading achievement. Also, the correlation between self-efficacy and reading achievement was stronger among grade 8 students as compared to grade 4 students. Regarding the grade level, it was found that lower-grade students outperformed higher-grade students in terms of self-efficacy and reading performance in the majority of the studies. Lastly, Aro et al. (2018) found that higher grade students outclassed lower grade students in terms of reading fluency achievement.

### ***Socio-economic status***

The review of the literature proved that socio-economic status (SES) also affects self-efficacy and reading performance. Liew et al. (2008) conducted a study that found a correlation between self-efficacy and reading achievement in that students without economic adversity had outperformed students with economic adversity in reading achievement. Yet, economic adversity had no impact on academic self-efficacy. Similarly, Mucherah and Yoder's (2008) study revealed that high-income students outperformed low-income students in reading comprehension achievement. However, the income level made no difference in terms of self-efficacy beliefs of the students.

Paternal education is another socio-economic variable that was studied in relation with self-efficacy and reading achievement in various studies. For example, Nevill (2008) conducted a study in which he checked the relationship of SES including paternal education with reading achievement among elementary level school students. It was revealed that paternal education was an important factor in predicting self-efficacy beliefs of the students. Also, SES as a whole was positively and significantly related to reading accomplishment. Similarly, Klassen (2010) also conducted a study to find the correlation between reading self-efficacy and reading performance. Paternal education's relationship was also investigated with the self-efficacy beliefs of the students. It was found that students' parents with low educational achievement had a lower level of self-regulatory efficacy and vice versa. Furthermore, Smith et al. (2012)

conducted a study to determine the correlation of the SES of grade 4 and grade 8 students with their reading self-efficacy and reading accomplishment. It was found regarding SES that grade 4 and 8 student exhibited the same results. It was also revealed that SES was moderately correlated to reading achievement. However, SES was not correlated with reading self-efficacy.

Epçaçan and Epçaçan (2010) conducted a quantitative study to find the effect of some of the cultural and socio-economic factors on self-efficacy regarding reading comprehension among 365 fifth-grade students in Turkey. Seven socio-economic factors were examined in relation to reading comprehension self-efficacy. Firstly, it was found that there was no noticeable difference in self-efficacy between those students who have a library at home and those who do not have it. Secondly, those students whose families buy newspaper and journals have higher reading comprehension self-efficacy than those whose families do not buy them. Thirdly, students who live in rented houses have higher self-efficacy in reading comprehension as compared to those who live in their own houses. Fourthly, students who have more than five siblings have lower reading comprehension self-efficacy than those who have less than five siblings. Fifthly, students whose family's occupation is a business have lower reading comprehension self-efficacy than the students whose family's occupation is other than in business, i.e., doctors, engineers, security guards. Sixthly, those students whose family income is less than 1000 Turkish Lira (TL) have lower self-efficacy as compared to those whose family income is higher than 1000 TL. Lastly, it was found that those students who have reported that they read seldom/ sometimes have lower reading comprehension self-efficacy than those who always read.

### ***Ethnicity***

Ethnicity is also one of the factors that affect self-efficacy and reading accomplishment. Piercey (2013) conducted a study to determine the relationship between reading self-efficacy and reading achievement among early adolescents. The sample included 364 European American, African American, Latino, and Asian American students. It was discovered that no differences were found among students on the basis of ethnicity regarding self-efficacy and reading achievement. Booth et al. (2017) conducted a mixed-methods study to examine the relationship between ethnic identity, academic self-efficacy and reading achievement. The study sample included a total of 874 American students having different ethnic identities, i.e., African American, White, Hispanic and multi-racial. Quantitative findings indicated that ethnic status of the students does not affect academic self-efficacy. With the help of interviews, it was discovered that most of the Hispanic students provided positive comments regarding academic self-efficacy. Whereas, most of the African American students provided negative comments about academic self-efficacy.

Guthrie et al. (2009) conducted a study to determine profiles of reading self-efficacy among Caucasian and African American students. The sample included 245 Caucasian and African American students. It was found that Caucasian students had higher reading achievement than African American students, but no differences were found in self-efficacy based on ethnicity. Similarly, Mucherah and Yoder (2008) inspected the relationship of ethnicity with reading self-efficacy and reading achievement. The sample of the study included 388 school students of varying ethnicities. The ethnic distribution of the sample is as follows: 71% White, 20% African American, 3% Asian, 1% Hispanic, and 5% other. It was found that minority students outperformed white students in self-efficacy. Yet, white students performed better in reading comprehension achievement than minority students. Liew et al. (2008) conducted a longitudinal study across three years regarding self-efficacy, reading achievement, and ethnicity. The sample of the study was 733 school students. The ethnic distribution of sample is as follows: 37% White Hispanic, 34% White non-Hispanic, 23% African American, 4% Asian or Pacific Islander, and 2% others. The results indicated that non-white students had higher academic self-efficacy at Wave 1 than white students. By Wave 2, ethnicity made no difference in predicting self-efficacy.

An interesting pattern regarding ethnicity is that only American studies considered ethnicity. Therefore, there is a need to conduct more studies in other countries regarding the relationship of ethnicity variable with self-efficacy and reading comprehension.

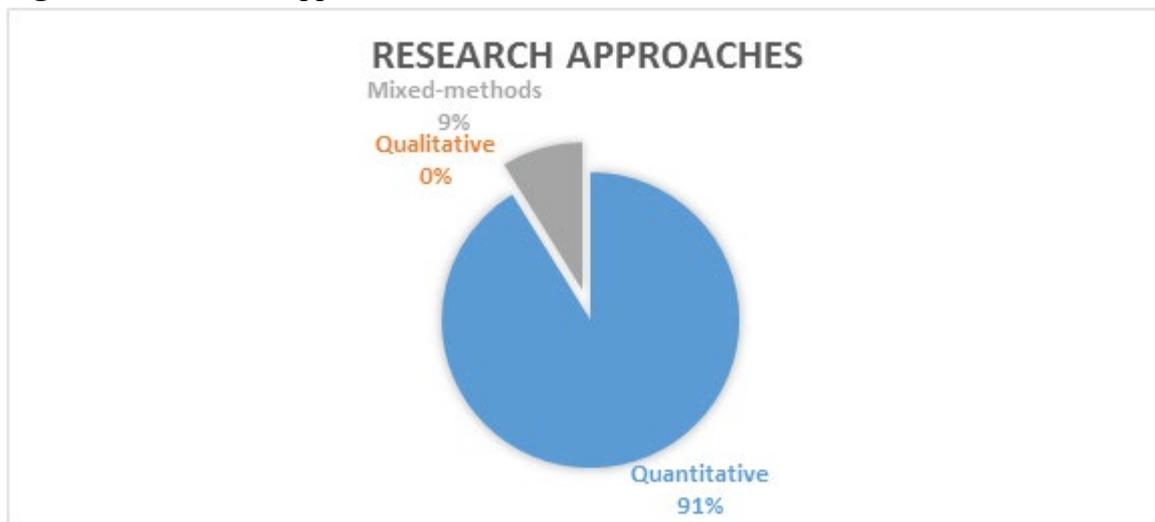
### ***Research design***

Regarding research design, several important aspects were highlighted during the review of the studies, i.e., research approaches adopted in different studies, studies which are longitudinal in nature, studies which involve pre-test and post-test research designs, and studies involving self-efficacy as a mediator.

### ***Research approaches***

After the review of the literature it was found that the majority of the studies adopted a quantitative research approach. Out of 34 studies reviewed, 31 studies employed a quantitative approach. However, three studies adopted a mixed-methods research approach. An interesting finding was found that out of 34 studies, not a single study adopted a pure qualitative approach. In other words, 91% studies were quantitative in nature and only 9% have employed mixed-methods research approach as shown in Figure 2.1 below.

**Figure 2.1.** Research approaches



### ***Longitudinal studies***

Regarding the relationship between self-efficacy and reading achievement, there is a lack of longitudinal study. In the current review of the literature, only four studies were found which are longitudinal in nature (i.e., Booth et al., 2017; Galla et al., 2014; Liew et al., 2008; Schöber et al., 2018). Liew et al. (2008) conducted a longitudinal study across three years to determine the correlation between three variables including academic self-efficacy, adaptive/effortful control, and reading achievement. As it was a longitudinal study, results were presented with respect to different waves, i.e., wave 1 and 2. The findings disclosed that academic self-efficacy was positively correlated with reading achievement at wave 1 and 2.

Booth et al. (2017) conducted a four-year longitudinal study to examine the relationship between ethnic identity, academic self-efficacy and reading achievement on 874 American junior and senior high school students. There were two main quantitative findings. Firstly, there was no significant relationship between academic self-efficacy and reading achievement. However, according to qualitative findings, academic self-efficacy is related to reading accomplishment.

Galla et al. (2014); Singh, (2018) conducted a study to determine the relationship between academic self-efficacy and reading achievement. The study was a longitudinal in nature and data was gathered over a time span of three years. Data was collected after every year. Consequently, there were three waves. Findings indicated that academic self-efficacy was significantly correlated with reading performance across all the three waves.

Schöber et al. (2018) performed a one-year longitudinal study. Data was collected at two times (i.e., start and end of school year). The outcomes revealed that reading achievement at T1 showed a significant effect on reading self-efficacy at T2. However, reading self-efficacy at T1 showed insignificant influence on reading achievement at T2.

### ***Pre-test and post-test research designs***

After reviewing 31 studies presented in the current literature review, it was found that only seven studies used a pre-test and post-test research design. Wilson and Kim (2016) and Khajavi and Ketabi (2012) employed a randomized controlled pre-test and post-test group design to determine the relationship between academic self-efficacy, concept mapping strategy, and reading comprehension accomplishment. In both studies, the experimental group was exposed to concept mapping strategies training, whereas, the control group was not exposed to it. Wilson and Kim (2016) exposed the experimental group to concept mapping strategy training for only 10 minutes. In contrast, Khajavi and Ketabi (2012) conducted an extensive intervention of concept mapping for 10 weeks. The findings of both studies revealed that the experimental group outperformed the control group in terms of self-efficacy. Whereas, in terms of reading comprehension, Wilson and Kim (2016) found that reading comprehension performance decreased among both experimental and control groups from pre-test to post-test. However, Khajavi and Ketabi (2012) found that the experimental group outperformed the control group in terms of reading performance.

Likewise, Guthrie et al. (2013) conducted a study to determine the relationship of several motivational constructs including self-efficacy with reading achievement. Results indicated that self-efficacy was positively correlated to reading comprehension in both traditional and intervention language arts classrooms. Additionally, the level of self-efficacy increased from pre to post-intervention phase. Moreover, Aro et al. (2018) performed a study involving a pre-test and post-test research design. They divided the sample into two groups, i.e., ‘SE-rf group’ and ‘SKILL group’. Both groups were exposed to an intervention program of 12 weeks. ‘SE-rf group’ were targeted with self-efficacy sources intervention whereas, ‘SKILL group’ were provided with reading fluency drills. The outcomes indicated that ‘SE-rf’ group outclassed the other group in terms of both reading self-efficacy and reading fluency. Niemiec & Lachowicz-Tabaczek’s (2015) study comprised three groups (i.e., two experimental groups and one control group). The outcomes revealed the positive and significant impact of reading self-efficacy on reading comprehension.

Few studies used a pre-test and post-test research design involving only one group (Lee & Jonson-Reid, 2016; McGirt, 2017). Results of both studies revealed that the students improved in terms of self-efficacy and reading comprehension achievement from pre-test to post-test.

### ***Mediation effect***

There were several studies in which self-efficacy was used as a mediator between predictor and criterion variables. For instance, Liew et al. (2008) conducted a study regarding the correlation of academic self-efficacy, adaptive/effortful control, and reading achievement. The findings disclosed that academic self-efficacy did not mediate the correlation between adaptive/effortful control and reading achievement. However, academic self-efficacy was positively correlated with reading achievement. Similarly, Wilson and Kim (2016) conducted a study to determine the mediating role of academic self-efficacy between a concept mapping strategy and reading comprehension accomplishment. The results of the study indicated that there was no significant correlation between academic self-efficacy beliefs and reading comprehension. Additionally, it was found that academic self-efficacy beliefs did not mediate the correlation between concept mapping strategies and reading comprehension accomplishment.

Also, several studies found that not only self-efficacy was used as a mediator but also that other variables were used as mediators to determine the relationship between self-efficacy and reading achievement. For example, Galla et al., (2014) conducted a study to determine the relationship of effortful engagement and academic self-efficacy with reading achievement. Several findings regarding mediation effect were gathered. Firstly, academic self-efficacy was significantly correlated to reading performance. Secondly, academic self-efficacy mediated the relationship between effortful engagement and reading performance. Lastly, between-person effect of effortful engagement has successfully mediated the correlation between academic self-efficacy and reading performance. As, within-person effect did not mediate the correlation between academic self-efficacy and reading performance, following suit, Lee and Jonson-Reid (2016) conducted a study to determine the relationship between self-efficacy beliefs and reading comprehension achievement. Results revealed that self-efficacy was significantly correlated to reading achievement. Furthermore, it was found that motivation has mediated the relationship between self-efficacy and reading achievement.

### **Conclusion**

After systematic review of the literature, important findings and vital conclusions have been drawn. The majority of the studies found a positive and significant association between self-efficacy and reading achievement (Al Ghraibeh, 2014; Aro et al., 2018; Coddington & Guthrie 2009; Galla et al., 2014; Guthrie et al., 2013; Jones et al., 2012; Klassen, 2010; Lee & Jonson-Reid, 2016; Liem et al., 2008; Liew et al., 2008; McGirt, 2017; Mucherah & Yoder, 2008; Nevill, 2008; Niemiec & Lachowicz-Tabaczek, 2015; Osman et al., 2016; Piercey, 2013; Shang, 2010; Smith et al., 2012; Solheim, 2011; Su & Wang, 2012; Tabrizi & Jafari, 2015;

Tobing, 2013). However, a few studies indicated an insignificant association between the two variables (Booth et al., 2017; Carroll & Fox, 2017; Eslami & Fatahi, 2008; Lau, 2009b; Wilson & Kim, 2016; Yilmaz, 2011). Regarding the location in which these 34 studies were conducted, it was found that researchers have given much more attention to the USA: 11 studies were conducted in the USA. Iran was second with three studies and there were two studies conducted in each of the following countries: Turkey, Taiwan, and Hong Kong. Lastly, one study was conducted in each of: Norway, Sweden, Singapore, Indonesia, Canada, England, New Zealand, Kyrgyzstan, Saudi Arabia, Oman, South Korea, Finland, Poland, and Germany. The review clearly indicates that more research is necessary in some countries where the research regarding self-efficacy and reading comprehension is scarce. More particularly, more research needs to be conducted in EFL countries.

Regarding the gender of the sample, a noteworthy finding was found in favour of female samples. In majority of the studies, girls outperformed boys (Epeçan & Epeçan, 2010; Klassen, 2010; Mucherah & Yoder 2008; Osman et al., 2016; Smith et al., 2012; Su & Wang, 2012). Conversely, only one study found that boys outperformed girls (Solheim, 2011). Considering grade level, it was found in majority of the studies that lower-grade students surpassed higher-grade students (Lau, 2009a; Lau, 2009b; Lee & Jonson-Reid, 2016; Osman et al., 2016; Piercey, 2013; Smith et al., 2012). Contrary to this, Mucherah and Yoder (2008) found that higher-grade students outperformed lower-grade students.

Similarly, important findings regarding the impact of the socio-economic status and ethnicity on self-efficacy and reading performance were found. For instance, it was found that only American studies considered an ethnicity variable. Therefore, it is recommended that more research needs to be completed in other countries regarding the relationship of the ethnicity variable with self-efficacy and reading performance. It was also revealed after reviewing the literature that out of 34 studies, 31 studies were quantitative in nature. Whereas, only three adopted mixed-methods research. It was interesting to observe that not even a single study was conducted by using a qualitative method. Therefore, it is recommended to the future researchers that they conduct research on reading self-efficacy and reading performance by using qualitative methods to understand the phenomena in greater depth.

Additionally, there was a lack of longitudinal studies. Only four studies were longitudinal in nature. Therefore, there is a need to conduct more longitudinal studies to understand the relationship between self-efficacy beliefs and reading performance over a defined period of time. It was discovered that the self-efficacy variable was used as a mediator in two studies (Galla et al., 2014; Liew et al., 2008; Wilson & Kim, 2016). Therefore, it can be said that self-efficacy can be used as a mediating variable to explain the relationship between other variables. On the other hand, Lee and Jonson-Reid (2016) found that motivation has successfully



mediated the relationship between self-efficacy and reading performance. Of note, only seven studies were conducted in which a pre-test and post-test research design was employed. Therefore, more research needs to be done by using a pre-test and post-test research design.



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**Table 1:** Summary of Included Studies within the Systematic Review in Alphabetical Order

Author	Title of Article	Participants and location of the study	Study design, Predictor measure and Outcome measure	Findings
Al Ghraibeh (2014)	Academic self-efficacy in reading as a predictor of meta-comprehension among Arabic nonnative speakers	63 university level students in Saudi university. *Location=Saudi Arabia.	QUAN <b>S.E measure:</b> Academic self-efficacy test based on (Wang, 2007; Wong, 2005; Henk & Melnick, 1995). <b>Reading achievement measure:</b> Reading achievement test (Moore, Zabrocky & Commander, 1997).	<b>1)</b> Positive and significant correlation between reading self-efficacy and meta-comprehension. <b>2)</b> Overall, level of reading self-efficacy was high. <b>3)</b> Largely, level of meta-comprehension was high <b>4) Age:</b> Level of reading self-efficacy increases with the increase in age.
Aro et al. (2018)	<b>Can reading fluency and self-efficacy of reading fluency be enhanced with an intervention targeting the sources of self-efficacy?</b>	82 primary school students. *Location=Finland	QUAN <b>S.E measure:</b> Self-efficacy of reading fluency questionnaire (Developed by author) <b>Reading achievement measure: 1.</b> Word-	Significant and positive relationship between 'reading fluency self-efficacy' and 'reading fluency'.



			Chain Test, ALLU (Lindeman, 1998). <b>2.</b> Sentence Verification Task, LUKSU (Salmi, Eklund, Järvisalo, & Aro, 2011). <b>3.</b> Reading-aloud test (Salmi et al., 2011).	
Booth et al. (2017)	Contradictions of adolescent self-construal: examining the interaction of ethnic identity, self-efficacy and academic achievement.	874 American students (Black, White, Hispanic and multi-racial). M & F from grades 8,9,10 & 11. *Location: USA	*MIXED-METHODS (questionnaires & interviews) *Longitudinal study of one year. <b>S.E measure:</b> Author developed scale based on School Attitude Scale (Marjoribanks, 2002). <b>Reading achievement measure:</b> (a) Ohio Achievement Test (OAT) (b) Ohio Graduation Test (OGT)	<b>QUAN:</b> Insig. Corr. Btw Reading ach. & ASE. <b>2) Ethnicity:</b> Ethnic status doesn't affect ASE. <b>QUAL:</b> +ve comments regarding RA & ASE. <b>2)</b> Hispanic students had most +ve comments on ASE. Black students had most -ve comments about ASE.
Carroll and Fox (2017)	Reading self-efficacy predicts word reading	179 primary school children from grade 4, 5 & 6 (M & F).	QUAN <b>(S.E measure:</b> Author has developed reading	<b>1)</b> Both boys and girls were same in terms of reading self-efficacy



	but not comprehension in both girls and boys.	*Age: 8 to 11 years. *Location: England	self-efficacy questionnaire <b>Reading achievement measure:</b> (a) Vernon-Warden Reading Test (Hedderly, 1996) (b) TOWRE (Torgeson et al., 1997).	and reading comprehension achievement. <b>2)</b> No significant relationship between reading self-efficacy and reading comprehension achievement including both male and female. <b>3)</b> Sig. relationship btw reading S.E & word reading including both male and female. <b>4)</b> <b>Age:</b> Older students had higher reading S.E as compared to younger ones.
Coddington and Guthrie (2009)	Teacher and student perceptions of boys' and girls' reading motivation.	84 students including both male and female, of grade 1 from two elementary schools and 8 female teachers of grade 1. *Location: USA	QUAN <b>S.E measure:</b> <b>(a)</b> YRMQ reading self-efficacy subscale <b>(b)</b> T-YRMQ self-efficacy subscale <b>Reading achievement measure:</b> Woodcock-Johnson Letter-Word	<b>1)</b> According to teachers' perceptions the correlation between both male and female students' reading S.E and reading performance was significant. <b>2)</b> According to students'



			Identification subtest (Woodcock, Mather, & Schrank, 2004).	perceptions, the correlation between reading S.E and RP was significant when analysis was run including both male and female sample. However, when analyzed separately, male sample's S.E is correlated to reading performance. Whereas, no correlation between reading S.E of the female sample and their RP.
Epçaçan and Epçaçan (2010)	Socio-economic and cultural factors effecting self-efficacy on reading comprehension	365 Turkish students of 5 <sup>th</sup> grade selected from 9 schools. *Location: Turkey	QUAN <b>S.E measure:</b> Reading comprehension self-efficacy perception scale <b>Reading achievement measure:</b> N/A	Found effect of 8 <b>Socio-economic</b> factors (gender, library at home, buying newspaper & journals, living quarters, no. of siblings, family's occupation, income level, and reading



				habits) on RC self-efficacy.
Eslami and Fatahi (2008)	Teachers' sense of self-efficacy, English proficiency, and instructional strategies: a study of nonnative EFL teachers in Iran.	40 EFL High school Iranian teachers (21 F & 19 M) *Location: Iran	QUAN <b>S.E measure:</b> Teacher Sense of Efficacy Scale based on (Tschannen-Moran & Woolfolk Hoy, 2001). <b>Reading achievement measure:</b> Questionnaire on self-reported proficiency based on Chacón's (2005).	1) No correlation btw S.E & reading proficiency. However, sig. correlation btw S.E & other 3 skills. 2) Out of 4 skills, Iranian teachers are most proficient in reading.
Galla et al., (2014)	A longitudinal multilevel model analysis of the within-person and between person effect of effortful engagement and academic self-efficacy on academic performance.	135 elementary school students btw age of 5 to 12 years (Kindergarten to 6 <sup>th</sup> grade). *Location: USA	*Longitudinal study of 3 years. QUAN <b>S.E measure:</b> Academic self-efficacy questionnaire for children (Muris, 2001). <b>Reading achievement measure:</b> Stanford Achievement Test (SAT).	1) Academic self-efficacy was significantly correlated to reading performance. 2) <b>Mediation:</b> a) ASE has mediated the relationship between effortful engagement and reading performance. b) Between-person effect of effortful



				engagement has mediated the correlation between ASE and reading performance. Whereas, within-person effect did not mediate the correlation between ASE and reading performance.
Guthrie, Coddington and Wigfield (2009)	Profiles of reading motivation among African American and Caucasian student.	245 grade 5 Caucasian and African American students *Location: USA	<p>QUAN</p> <p><b>S.E measure:</b> Reading self-efficacy questionnaire</p> <p><b>Reading achievement measure:</b></p> <p>(a) Gates-MacGinitie Reading Test (b) Woodcock-Johnson III Reading Fluency Test (c) Word recognition assessment (WRA).</p>	<p><b>1) Perceived difficulty</b> explained more of the variance in reading achievement than self-efficacy.</p> <p><b>2) Ethnicity:</b> Caucasian students had higher achievement, but no differences were found in self-efficacy based on ethnicity.</p>



Guthrie et al. (2013)	Modeling the relationships among reading instruction, motivation, engagement, and achievement for adolescents.	1159 students in Grade 7. *Location: USA	QUAN (Pre & post-test) <b>S.E measure:</b> Motivations for Reading Information Books in School (MRIB-S) questionnaire. <b>Reading achievement measure:</b> Reading comprehension test.	<b>1)</b> Self-efficacy was positively correlated to reading comprehension in both the classrooms i.e. traditional and intervention language arts classrooms. <b>2)</b> Self-efficacy had increased from pre to post intervention.
Jones et al. (2012)	Reading and writing self-efficacy of incarcerated adults.	600 male and female imprisoned adults. Average age = 34.35 years. *Location= Norway	QUAN <b>S.E measure:</b> Reading and writing self-efficacy scale (Shell et al., 1995). <b>Reading achievement measure: (a)</b> Reading and spelling test for college and university students (Stromso, Hagtvet, Lyster, & Rygvold, 1997). <b>(b)</b> Reading speed test (Handal, 1964).	<b>1)</b> Significant positive correlation between reading performance and reading self-efficacy. <b>2)</b> Non-verbal reasoning abilities were moderately correlated to reading self-efficacy. <b>3) Education level:</b> Education level had shown low correlation with reading self-efficacy. <b>4)</b> All the five variables have explained 36.9 % of the statistical

				variance in reading self-efficacy.
Khajavi and Ketabi (2012)	Influencing EFL learners' reading comprehension and self-efficacy beliefs: the effect of concept mapping strategy.	60 university students (sophomores) in reading comprehension course. *Age= 19 to 23 *Location= Iran	QUAN (Pre & post-test) <b>S.E measure:</b> Motivated Strategies for Learning Questionnaire (MSLQ) (Pintrich & De Groot, 1990). <b>Reading achievement measure:</b> (a) TOEFL practice tests (b) Readers Digest magazine.	<b>1)</b> Experimental group has outperformed control group in terms of reading comprehension. <b>2)</b> In terms of self-efficacy beliefs, experimental group had higher level of self-efficacy as compared control group.
Klassen (2010)	Confidence to manage learning: the self-efficacy for self-regulated learning of early adolescents with learning disabilities.	146(73 LD & 73 NLD) students of grades 8 and 9 at three high schools. Mean age=13.89 *Location: Canada	QUAN <b>S.E measure: (a)</b> SESRL (Bandura, 1990) <b>(b)</b> Reading self-efficacy scale. <b>Reading achievement measure:</b> Reading test from the Woodcock-Johnson III Tests of Achievement (Woodcock, McGrew, & Mather, 2001).	<b>1)</b> Both self-regulatory efficacy & reading S.E sig. correlated to RC score in both LD & NLD groups. <b>2)</b> LD group had lower self-regulatory efficacy, RSE & RC score than NLD group. <b>3) Gender:</b> Girls had higher self-regulatory efficacy than boys in both LD & NLD group. <b>4) SES:</b> students'



				parents with low educational achievement had lower level of self-regulatory efficacy and vice versa.
Lau (2009a)	Grade differences in reading motivation among Hong Kong primary and secondary students.	1794 of grades 4 to 11 including primary, junior secondary, and senior secondary school students. *Location: Hong Kong.	<p>QUAN</p> <p><b>S.E measure:</b> A Chinese version of Motivation for Reading Questionnaire (CRMQ)</p> <p><b>Reading achievement measure:</b> N/A.</p>	<p><b>1) Students in higher achieving schools had higher reading self-efficacy.</b></p> <p><b>2) Grade level:</b> Regarding grade level, it was found that older students reported lower reading self-efficacy than younger students.</p>
Lau (2009b)	Reading motivation, perceptions of reading instruction and reading amount: a comparison of junior and senior secondary students in Hong Kong.	1146 middle and high school students. *Location: Hong Kong	<p>QUAN</p> <p><b>S.E measure:</b> A Chinese version of Motivation for Reading Questionnaire (CRMQ)</p> <p><b>Reading achievement measure:</b> N/A</p>	<p><b>1) Reading self-efficacy did not predict reading amount.</b></p> <p><b>2) Grade level:</b> Junior high students had higher reading self-efficacy than high school students.</p>



<p>Lee and Jonson-Reid (2016).</p>	<p>The role of self-efficacy in reading achievement of young children in urban schools.</p>	<p>881 elementary school students of grades 1, 2 and 3.        *Location: USA</p>	<p>QUAN (Pre &amp; post-test)  <b>S.E measure:</b> Reading task self-efficacy scale (Pajares, 2002 &amp; Marsh, 1990).  <b>Reading achievement measure: (a)</b> Woodcock Johnson Word Attack (WJ-WA). <b>(b)</b> Woodcock Johnson Pas- sage Comprehension (WJ-PC). <b>(c)</b> Peabody Picture Vocabulary Test III (PPVT-III).</p>	<p><b>1)</b> Self-efficacy was significantly correlated to reading achievement. <b>2) Grade:</b> Grade 1 students showed greater reading achievement as compared to grade 2 &amp; 3 students. <b>3) Mediation:</b> Motivation mediated the relationship between self-efficacy and reading achievement.</p>
<p>Liem et al. (2008)</p>	<p>The role of self-efficacy, task value, and achievement goals in predicting learning strategies, task disengagement, peer relationship, and achievement outcome.</p>	<p>1475 grade 9 students        *Location: Singapore</p>	<p>QUAN  <b>S.E measure:</b> Self-efficacy items extracted from scale named MSLQ (Pintrich et al., 1993).  <b>Reading achievement measure:</b> MCQs reading comprehension test (developed by author).</p>	<p>There was a significant and positive relationship between self-efficacy and reading comprehension achievement.</p>



<p>Liew et al. (2008)</p>	<p>Adaptive and effortful control and academic self-efficacy beliefs on achievement: A longitudinal study of 1st through 3rd graders.</p>	<p>733 (lower achieving in literacy) students grade 1 through 3 (three-year longitudinal study)        *Location= USA</p>	<p>QUAN &amp; Longitudinal  <b>S.E measure:</b> Perceived Competence Scale for Children.  <b>Reading achievement measure:</b> Reading portion of Woodcock Johnson-III Tests of Achievement)</p>	<p><b>1)</b> ASE doesn't mediate btw adaptive/effortful control &amp; reading achievement. <b>2)</b> ASE positively correlate with reading achievement across all waves. <b>3)</b> <b>Ethnicity:</b> Non-white students had higher ASE at Wave 1 than white students. By Wave 2, no differences. <b>4) Gender:</b> Gender had no impact on ASE. However, regarding reading achievement, females have outperformed males across all waves. <b>5) Age:</b> Age was -ve correlated to reading achievement. It was +ve correlated to ASE at wave 1 and -ve correlated at wave 2. <b>6) IQ</b> was +ve correlated</p>
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				to reading achievement. Yet, no correlation btw IQ & ASE. <b>7) Socio-economic status (SES):</b> Students without economic adversity (EA) have outperformed students with EA in reading achievement. EA had no impact on ASE.
McGirt (2017)	Improving academic self-efficacy in reading comprehension skills of 8th grade gifted and talented students	15 8 <sup>th</sup> grade students. *Location= USA	QUAN (Pre & post-test) <b>S.E measure</b> Children's Perceived Academic Self-Efficacy subscale.  <b>Reading achievement measure:</b> The 8th grade Reading End-of-Grade Assessment.	Academic self-efficacy is positively and significantly correlated with reading comprehension performance.
Mucherah and Yoder (2008)	Motivation for reading and middle school students' performance on standardized testing in reading.	388 6 <sup>th</sup> & 8 <sup>th</sup> grade public school students of both genders *Location= USA	QUAN <b>S.E measure:</b> MRQ questionnaire	<b>1)</b> S.E is sig. correlated to reading achievement (RA). <b>2) Gender:</b> Girls have outperformed boys in S.E as well as RA. <b>3)</b>



			<b>Reading achievement measure:</b> ISTEP+ reading test	<b>Grade:</b> Grade 8 students had higher S.E than grade 6 students. <b>4) Ethnicity:</b> Minority students have outperformed white students in S.E. Yet, white students performed better in RA than minority students. <b>5) SES:</b> High income students have outperformed low-income students in RA.
Nevill (2008)	The impact of reading self-efficacy and the regulation of cognition on the reading achievement of an intermediate elementary sample.	84 students of grade 4,5 & 6 of both genders *Age= 9 to 12 *Location= USA	QUAN <b>S.E measure:</b> RSPS (Henk & Melnick, 1995). <b>Reading achievement measure:</b> Reading achievement test.	1) S.E is sig. correlated to reading achievement. 2) <b>Gender:</b> a) No sig. relation btw S.E & gender. b) Girls outperformed boys in reading. 3) <b>SES:</b> a) Paternal education is related to S.E. b) SES sig. related to RA. 4) <b>Age:</b> a) No sig. relation



				btw age & S.E. b) + sig. relation btw age & RA.
Niemiec & Lachowicz-Tabaczek (2015)	The moderating role of specific self-efficacy in the impact of positive mood on cognitive performance.	139 university students. *Location= Poland	QUAN (Pre & post-test) <b>S.E measure:</b> Specific self-efficacy questionnaire. <b>Reading achievement measure:</b> MCQs reading comprehension test.	Self-efficacy was significantly and positively correlated with reading comprehension performance.
Osman et al. (2016)	EFL reading achievement: impact of gender and self-efficacy beliefs.	636 Omani school students from grade 4 and 10 (M & F). Location: Oman	QUAN <b>S.E measure:</b> Author has developed reading self-efficacy scale. <b>Reading achievement measure:</b> Reading achievement tests administered by Omani ministry of Education.	<b>1) Gender:</b> (a) Female students of both the grades have outperformed male in reading achievement. (b) Females of both the grades have higher self-efficacy than males. <b>2) Grade:</b> Grade 4 students have outperformed grade 10 students in terms of reading S.E beliefs of their R.A.



				3) Strong correlation has been found between reading S.E beliefs and RA.
Piercey (2013)	Reading self-efficacy in early adolescence: which measure works best?	The sample of the study consisted of 364 students of grade 4, 5 and 6. *Location: USA	QUAN <b>S.E measure: (a)</b> General reading self-efficacy scale (Pajares & Barich, 2005; Pietsch, Walker, & Chapman, 2003). <b>(b)</b> Self-Efficacy for Self-Regulation in Reading Scale based on Children's Self-Efficacy Scale (Bandura, 2006). <b>(c)</b> Reading Skills Self-Efficacy Scale adapted from (Shell et al., 1989). <b>Reading achievement measure:</b> Reading scores of school exam.	1) Reading self-efficacy is significantly correlated to reading performance. 2) <b>Gender and Ethnicity:</b> No differences have been found among students on the basis of gender and ethnicity. 3) Elementary school students have higher reading self-efficacy as compared to middle school students.
Schöber et al. (2018)	Reciprocal effects between self-efficacy and achievement in	1597 secondary school students. *Location: Germany	QUAN (Longitudinal study) <b>S.E measure:</b> Reading self-efficacy scale	1. Reading achievement at T1 influenced reading self-efficacy at T2 significantly.



	mathematics and reading.		(Jerusalem & Satow, 1999 ; Kunter et al., 2002). <b>Reading achievement measure:</b> Standardized reading test.	2. Reading self-efficacy at T1 did not influence reading achievement at T2.
Shang (2010)	Reading strategy use, self-efficacy and EFL reading comprehension.	53 freshmen Taiwanese university students majoring in English (Male & Female) *Location: Taiwan	MIXED-METHODS <b>S.E measure:</b> Self-efficacy questionnaire developed based on Language Self-efficacy Scale (Wong 2005) and MSLQ (Pintrich et al., 1991). <b>Reading achievement measure:</b> TOEFL test	1) Sig. correlation btw S.E & RC.
Smith et al. (2012)	Students' self-perception of reading ability, enjoyment of reading and reading achievement.	960 students i.e. 480 grade 4 students (age= 8 to 9 years) and 480 grade 8 students (age= 12 to 13 years). *Location=New Zealand	QUAN <b>S.E measure:</b> Author has developed reading self-efficacy scale <b>Reading achievement measure:</b> New Zealand's National Education Monitoring	1) Reading achievement has increased from grade 4 to grade 8. 2) Reading self-efficacy has decreased from grade 4 to grade 8. 3) Among grade 4 students, there was



			Project (NEMP) reading tasks.	<p>weak relationship between reading self-efficacy and reading achievement. However, among grade 8 students, reading self-efficacy is moderately correlated to reading achievement. <b>4) Gender:</b> In both grades, girls have outperformed boys in reading self-efficacy as well as reading achievement. <b>5) SES:</b> Socioeconomic status (SES), among grade 4 and 8 students have shown the same results. It has been found that SES was moderately correlated to reading achievement. However, SES was not correlated to reading self-efficacy.</p>
Solheim (2011)	The impact of reading self-efficacy and task	217 school students of the 5 <sup>th</sup> grade.	QUAN	1) Reading self-efficacy was positively and



	value on reading comprehension scores in different item formats.	*Location: Sweden	<b>S.E measure:</b> Author developed a scale based on ‘Motivation for Reading Questionnaire’ (Wigfield & Guthrie, 1997) and ‘Motivation inventory’ (Anmarkrud and Braten, 2009). <b>Reading achievement measure:</b> Reading comprehension test	significantly correlated to both MC and CR reading comprehension scores. 2) <b>Gender:</b> Boys had higher reading self-efficacy as compared to girls.
Su and Wang (2012)	A study of English self-efficacy and English reading proficiency of Taiwanese junior high school students’ beliefs and English reading proficiency.	281 junior high school students (148M & 141F) from grade 7 to grade 9. *Location= Taiwan	QUAN <b>S.E measure:</b> English self-efficacy questionnaire (Chang, 2004). <b>Reading achievement measure:</b> Reading section of CYLE (Cambridge Young Learners English)	1) Students have medium degree of English self-efficacy and English reading proficiency. 2) There were major differences regarding English self-efficacy in favor of female students. 3) <b>Gender:</b> Regarding relationship between self-efficacy and English reading proficiency, no



				substantial difference has been found regarding gender of the students. 4) English self-efficacy is +ve and sig. correlated to English reading proficiency.
Tabrizi and Jafari (2015)	The relationship among critical thinking, self-efficacy, and Iranian EFL learners' reading comprehension ability with different proficiency levels	300 Iranian university students majoring in English Literature. *Location: Iran	QUAN <b>S.E measure:</b> Self-efficacy scale for reading comprehension questionnaire (Ghonsooly & Elahi, 2010). <b>Reading achievement measure:</b> NELSON language proficiency test	1) Significant relationship between self-efficacy and reading comprehension among all proficiency levels. 2) <b>Language proficiency levels:</b> The extent of correlation between self-efficacy and reading comprehension among intermediate proficiency level students was strongest followed by advanced and elementary proficiency



				level students respectively.
Tobing (2013)	The relationship of reading strategies and self-efficacy with the reading comprehension of high school students in Indonesia.	66 High school students of 12 <sup>th</sup> grade. Average age =18 *Location= Indonesia	QUAN <b>S.E measure:</b> ‘English Reading Self-Efficacy questionnaire’ developed by researcher. <b>Reading achievement measure:</b> Reading comprehension test.	1) Self-efficacy is positively and significantly correlated to reading comprehension performance. 2) Self-efficacy has caused 20 % of the prediction to the reading comprehension performance.
Wilson and Kim (2016)	The effects of concept mapping and academic self-efficacy on mastery goals and reading comprehension achievement.	The sample of the study consisted of 42 elementary school students of 5 <sup>th</sup> grade. *Age: 11.95 *Location: S Korea	QUAN (pre & post-test) <b>S.E measure:</b> Academic self-efficacy questionnaire (Muris, 2001). <b>Reading achievement measure:</b> TOSEL jr. test.	<b>1)</b> No significant correlation between academic self-efficacy beliefs and reading comprehension. <b>2)</b> <b>Mediation:</b> Academic self-efficacy beliefs doesn’t mediate the correlation between concept mapping strategies & reading comprehension accomplishment.



<p>Yilmaz (2011)</p>	<p>Teachers' perceptions of self-efficacy, English proficiency, and instructional strategies.</p>	<p>54 Turkish EFL teachers including both male and female Turkey</p>	<p>QUAN  <b>S.E measure:</b> Teacher Sense of Efficacy Scale (Tschannen-Moran &amp; Woolfolk Hoy, 2001).  <b>Reading achievement measure:</b> Teachers' self-reported English proficiency scale derived from (Butler, 2004; Chacon, 2005).</p>	<p>1) Out of four English language skills, teachers were most proficient in reading skill. 2) Teachers' self-efficacy is significantly correlated to English proficiency. 3) No significant correlation btw self-efficacy and reading proficiency.</p>
<p>Yoğurtçu (2013)</p>	<p>The impact of self-efficacy perception on reading comprehension on academic achievement.</p>	<p>The sample of the study consisted of 556 university students. The age of the participants ranged from 20 to 22 years.      *Location= Kyrgyzstan</p>	<p>QUAN  <b>S.E measure:</b> Scale of Belief Self-efficiency reading comprehension (SSERC) (Epcacan &amp; Demirel, 2011).  <b>Reading achievement measure:</b> B1 Level Language Portfolio of European Union.</p>	<p>1) +ve significant correlation btw GPA and reading comprehension self-efficacy.      2) For high self-efficacious students, +ve significant correlation btw reading comprehension self-efficacy and all four skills of foreign language.</p>



				3) For low self-efficacious students, reading comprehension self-efficacy was only +ve & significantly correlated to listening skills and not the other three skills.
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**Supplementary File 1:** List of included and excluded studies along with the reasons for exclusion of some studies

Sr. no.	Studies	Journal	Category	Scopus	Selected/Rejected studies	Reason of exclusion of studies
1	Al Ghraibeh (2014)	<i>International Journal of Applied Psychology</i>	<i>Refereed</i>	✗	✓	
2	Aro et al. (2018)	<i>Learning and Individual Differences</i>	<i>Refereed</i>	✓	✓	
3	Booth et al. (2017)	<i>Mid-Western Educational Researcher</i>	<i>Refereed</i>	✗	✓	
4	Carroll and Fox (2017)	<i>Frontiers in Psychology</i>	<i>Refereed</i>	✓	✓	
5	Coddington and Guthrie (2009)	<i>Reading Psychology</i>	<i>Refereed</i>	✓	✓	
6	Epçaçan and Epçaçan (2010)	<i>Procedia: Social and Behavioral Sciences</i>	<i>Refereed</i>	✓	✓	



7	Eslami and Fatahi (2008)	<i>TESL-EJ</i>	<i>Refereed</i>	x	✓	
8	Galla et al. (2014)	<i>Journal of School Psychology</i>	<i>Refereed</i>	✓	✓	
9	Ghabdian and Ghafournia (2016)	<i>English Linguistics Research</i>	<i>Non-refereed</i>	x	x	<i>Journal was non-refereed</i>
10	Ghonsooly (2010)	<i>Journal of English Language Teaching and Learning</i>	<i>Non-refereed</i>	x	x	<i>Journal was non-refereed</i>
11	Guthrie et al. (2009)	<i>Journal of literacy research</i>	<i>Refereed</i>	✓	✓	
12	Guthrie et al. (2013)	<i>Reading Research Quarterly</i>	<i>Refereed</i>	✓	✓	
13	Habibian and Roslan (2014)	<i>Journal of Education and Practice</i>	<i>Non-refereed</i>	x	x	<i>Journal was non-refereed</i>
14	Hager (2017)	<i>Masters Dissertation (University of Montana)</i>	<i>N/A</i>	<i>N/A</i>	x	<i>It was Masters dissertation</i>
15	Hedges and Gable (2016)		<i>Conference paper</i>	x	x	<i>Conference papers were not included</i>
16	Jones et al. (2012)	<i>Learning and Individual Differences</i>	<i>Refereed</i>	✓	✓	
17	Khajavi and Ketabi (2012)	<i>Porta Linguarum</i>	<i>Refereed</i>	✓	✓	
18	Klassen (2010)	<i>Learning Disability Quarterly</i>	<i>Refereed</i>	✓	✓	
19	Lau (2009a)	<i>British Journal of Educational Psychology</i>	<i>Refereed</i>	✓	✓	
20	Lau (2009b)	<i>Journal of Research in Reading</i>	<i>Refereed</i>	✓	✓	



21	Lee and Jonson-Reid (2016)	<i>Child and Adolescent Social Work Journal</i>	<i>Refereed</i>	✓	✓	
22	Liem et al. (2008)	<i>Contemporary Educational Psychology</i>	<i>Refereed</i>	✓	✓	
23	Liew et al. (2008)	<i>Early Childhood Research Quarterly</i>	<i>Refereed</i>	✓	✓	
24	McGirt (2017)	Doctoral Dissertation (Northcentral University)	<i>N/A</i>	<i>N/A</i>	✓	
25	Mucherah and Yoder (2008)	<i>Reading Psychology</i>	<i>Refereed</i>	✓	✓	
26	Naseri and Ghabanchi (2014)	<i>International Journal of Language Learning and Applied Linguistics World</i>	<i>Non-refereed</i>	✗	✗	<i>Journal was non-refereed</i>
27	Naseri and Zaferanieh (2012)	<i>World Journal of Education</i>	<i>Non-refereed</i>	✗	✗	<i>Journal was non-refereed</i>
28	Nevill (2008)	Doctoral Dissertation (Indiana University of Pennsylvania)	<i>N/A</i>	<i>N/A</i>	✓	
29	Niemiec and Lachowicz-Tabaczek (2015)	<i>Motivation and Emotion</i>	<i>Refereed</i>	✓	✓	
30	Osman et al. (2016)	<i>International Journal of Learning, Teaching and Educational Research</i>	<i>Refereed</i>	✗	✓	
31	Piercey (2013)	Doctoral Dissertation (University of Kentucky)	<i>N/A</i>	<i>N/A</i>	✓	
32	Piran (2014)	<i>International Journal of Social Sciences and Education</i>	<i>Non-refereed</i>	✗	✗	<i>Journal was non-refereed</i>



33	Rachmajanti and Musthofiyah (2017)	<i>Journal of English Language, Literature and Teaching</i>	<i>Non-refereed</i>	x	x	<i>Journal was non-refereed</i>
34	Salehi and Khalaji (2014)	<i>International Journal of Educational Investigations</i>	<i>Non-refereed</i>	x	x	<i>Journal was non-refereed</i>
35	Schöber et al. (2018)	<i>Learning and Individual Differences</i>	<i>Refereed</i>	✓	✓	
36	Shang (2010)	<i>Asian EFL Journal</i>	<i>Refereed</i>	x	✓	
37	Smith et al. (2012)	<i>Learning and Individual Differences</i>	<i>Refereed</i>	✓	✓	
38	Solheim (2011)	<i>Reading Psychology</i>	<i>Refereed</i>	✓	✓	
39	Su and Wang (2012)	<i>International Journal of Asian Social Science</i>	<i>Refereed</i>	x	✓	
40	Tabrizi and Jafari (2015)	<i>Academic Research International</i>	<i>Refereed</i>	x	✓	
41	Tobing (2013)	<i>Doctoral Dissertation (University of Kansas)</i>	<i>N/A</i>	<i>N/A</i>	✓	
42	Wilson and Kim (2016)	<i>International Education Studies</i>	<i>Refereed</i>	x	✓	
43	Yilmaz (2011)	<i>Social Behavior and Personalitu</i>	<i>Refereed</i>	✓	✓	
44	Yoğurtçu (2013)	<i>Procedia: Social and Behavioral Sciences</i>	<i>Refereed</i>	x	✓	