

The Relationships between Reading Attitude, Metacognitive Awareness of Reading Strategies and Reading Motivation of L2 Learners: A Mediation Analysis

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ABSTRACT

The present study aimed to explore the relationship between reading attitude, motivation, and the metacognitive awareness of reading strategies (MARS) of adult English as a Foreign Language (EFL) learners. Ninety-seven Iranian intermediate EFL learners participated in the study after a multi-stage sampling. The initial analysis suggested high correlations between the variables of attitude, motivation, and the metacognitive awareness of reading strategies. A mediation analysis using structural equation modeling was conducted to examine the intervening effect of MARS on the effect of attitude on motivation. The proposed model confirmed the mediational hypothesis with a good fit. The findings bear notable implications which are discussed in light of the study outcomes.

Keywords: attitude; foreign language; metacognitive strategies; reading; motivation; second language

INTRODUCTION

Research evidence has revealed notable differences between first language and second language (L2) reading in the areas of lexical processing, metacognitive awareness interlanguage interference, and linguistic differences across languages (Cook, 2016; Grabe, 2008). Hence, reading in L2 poses extra challenges for non-native readers (Grabe, 2008). The results of numerous studies show that reading comprehension is a multi-dimensional and strategic process (e.g., Cohen, 2014; Margolis, & McCabe, 2006). In order to comprehend a written text fluently and efficiently, L2 learners must have a good command of proper strategies when needed (Cohen, 2014).

Recent research has focused on metacognition, (Alsheikh & Mokhtari, 2011; Shamsi Nejad & Mahmoodi-Shahrehabaki, 2015) in pursuit of identifying the interactions between metacognitive awareness of reading strategy use and comprehension in an exploration of potential relations among metacognitive awareness, strategy use, and reading comprehension (Schraw & Gutierrez, 2015). Metacognitive awareness of reading strategies is the appreciation of various reading strategies and how to use the strategies efficiently to comprehend a text more accurately (Alsheikh & Mokhtari, 2011; Mokhtari & Reichard, 2002).

There is strong evidence of the significant effects of *affective filters* on reading comprehension (Binfet et al., 2016; Hidi, 2001; Lin, Chao, & Huang, 2015). Two predominant affective filters, which have been shown to affect reading comprehension significantly are attitude (Mahmoodi-Shahrehabaki & Yaghoubi-Notash, 2015; Rachmajanti & Musthofiyah, 2017), and motivation (Lau, 2016; Meniado, 2016). As Siegel (2003) contends, motivation for learning L2 is profoundly influenced by the attitude toward the L2 culture and L2 native speakers. Following, we will discuss the theoretical contributions to reading attitude and motivation.

LITERATURE REVIEW

Reading Attitude and Motivation

Attitude toward reading simply means how an individual usually feels about engaging in reading and how they value the act of reading (Yamashita, 2013). Attitude toward reading affects the quality and mechanism of reading comprehension to a great extent (Khalid, 2016). Research substantiates the significant role of attitude in the ease and pace of L2 acquisition (Brophy, 1999; Razmjoo & Movahed, 2009). Gardner (2010) rightly noted, “motivation has attitudinal components and attitudes have motivational implications” (p. 164). These claims are compatible with the flow theory in motivational studies.

Correspondingly, flow theory posits that motivation does not come naturally and needs an initial mindset to overcome reluctance (Csikszentmihalyi & Rathunde, 1991). Jacobs et al. (2002) found that L1 young readers' attitudes affect their motivation and reading persistence. Gardner, Masgoret, and Tremblay (1999) reported similar findings in their investigation of the effect of attitude on motivation in Canadian bilinguals.

Several studies have shown that attitude significantly impacts the reading comprehension of L2 learners and is highly correlated with reading motivation (Conradi, Jang & McKenna, 2014; Long & Szabo, 2016; Merisuo-Storm, 2007; Polychroni, Koukoura & Anagnostou, 2006; Yamashita, 2013). A positive attitude towards an English language skill or component is crucial for L2 learners' engagement (Yang & Kim, 2014). Fluency in reading is achieved when L2 learners are motivated to read extensively. The evidence indicates that participants' attitudes significantly predicted their motivation to read. Wang (2017) explored the associations between motivation, attitudes toward learning situations, and Chinese achievement in 223 international students learning a foreign language. The motivational measures were adapted from the international Attitude and Motivation test battery (Gardner, 2004). The achievement measures involved a reading test from HSK (Hanyu Shuiping Kaoshi) or the Chinese Proficiency Test, as well as students' final grades. The outcome of structural equation modeling (SEM) demonstrated that students' attitudes toward the learning situation predicted their motivation. Besides, the author reported that motivation significantly predicted students' final grades; however, their motivation did not have a significant effect on their performance on the HSK tests.

Several psychological theories have been proposed as to the interactions between attitude and motivation. The prime examples are the attribution theory (Weiner, 1992) and the theory of reasoned action (Ajzen, 1985). One common assertion in these theories is the emphasis on the positive effect of attitude on the reinforcement of motivation (Brophy, 1999; Dörnyei, 2001). A positive attitude toward L2 is an elemental factor for successful language learning since learners' attitudes contribute to their appraisal of a foreign language even before they start learning that language (Gardner, 2010; Grabe, 2008).

Metacognitive Awareness of Reading Strategies

It has been recognized that the types of strategies readers use influence their reading motivation (Lau & Chan, 2003; Mokhtari & Reichard, 2002; Wigfield, Gladstone & Turci, 2016). These notions follow the tenets of expectancy theory, introduced by Vroom (1964), holding that individuals choose how to behave based on the end result they envision as a consequence of their behavior (Baumann & Bonner, 2016; Vroom, 1964). In other words, expectancy is the presumption that

one's effort will result in one's wanted goal (Earnst, 2014; Wigfield & Eccles, 2000).

Effective reading requires not only cognitive and metacognitive strategies but also motivation and a positive attitude (Guthrie et al., 2007). Motivation is a complex developmental process influenced by cognitive and metacognitive factors (Dörnyei, 2001, 2003). While cognitive strategies are largely automatic, metacognitive strategies involve deliberate self-monitoring and regulation (Grabe, 2008; Hong-Nam & Leavell, 2011). Metacognitive awareness enables readers to optimize their cognitive resources during reading (Grabe, 2008). It is well understood that successful comprehension is entwined with the efficient use of metacognitive strategies (Lau & Chan, 2003; McGeown et al., 2015). Metacognitive awareness of reading strategies has been a much-attended topic in recent research about L2 reading comprehension (Schraw & Gutierrez, 2015; Zhang, Goh & Kunnan, 2014). Kagan-Keskin (2013) found the implementation of metacognitive strategies strongly affects both general and academic reading attitudes and motivation. The participants of this study were 371, 5th, 6th, 7th, and 8th-grade Turkish students. The outcome of factor analyses and structural equation modeling revealed that the use of metacognitive reading strategies in reading is strongly associated with reading attitude. Plus, Kagan-Keshin (2013) reported that reading attitude and metacognitive reading strategies strongly affect academic achievement. In accordance with Kagan-Keskin's (2013) report, Kirmizi (2011) documented that reading attitude significantly predicts the level of reading comprehension strategies used by Turkish elementary students.

Metacognitive strategies help students set reading goals and become independent readers (Kagan-Keskin, 2013). They also influence how learners reflect on and learn from experiences (Barlow, 2016). Cornoldi (2010) introduced the concept of metacognitive attitude, linking positive self-beliefs to effective cognitive regulation (Özönder, 2015). Pinto (2009) found a correlation between high metacognitive awareness and strong reading motivation.

Baker (2016) argues that motivation influences MARS development, with positive correlations observed in longitudinal studies. However, the relationship between these variables primarily relies on correlational research, necessitating further longitudinal investigations. While not considering the awareness of metacognitive reading strategies, Pinto (2009) undertook an intervention study to examine if the "instruction" of metacognitive reading strategies increases motivation for reading among American 7th graders. The sample of 71 participants was administered Standardized reading assessments before and after the study intervention. In addition, interviews, and metacognitive strategies survey were used for triangulation purposes. The findings of both qualitative and quantitative studies, including pre and post-test, *t*-test, and narrative analysis of interviews, suggested that increased use of MARS is strongly related to reading motivation.

Current Study

Within the context of L2, Gardner's socio-educational model (1985) is the much-quoted theory conceptualizing the role of attitude and motivation in L2 learning. The socio-educational model was proposed based on the findings of a series of studies conducted by Gardner and his associates in the 1970s. These researchers investigated the relationship between the attitude and motivation of English L1 speakers to learn French as an L2 language in the bilingual setting of Quebec, Canada. After synthesizing the findings, Gardner (1985) concluded that successful L2 learners start learning with a positive attitude toward the target language.

Additionally, the strength of the learners' attitudes significantly predicted their level of motivation for linguistic acquisition and cultural adaptation in the target language (Gardner, 1985; Gardner & MacIntyre, 1993). Even though Gardner's socio-educational model has affected our understanding of the role of attitude and motivation in L2 learning, it may not have adequate external validity. The criticism is based on the account of previous findings, which have noted the socio-psychological differences between learning a second language and learning a foreign language (Dörnyei, 1998).

Gardner (2000, 2010, 2014) reviewed multiple studies undertaken in different settings and concluded that attitudinal aspects of L2 learning boost motivational strength. Along the same line, Gardner, Tremblay, and Masgoret, (1997) conducted a large-scale study in pursuit of providing a full model of second language learning. They conducted an exploratory factor analysis on the results of several large-scale studies to recognize the individual differences that significantly contribute to L2 achievement. The main factors that emerged from the data were motivation, learning strategies, attitude, self-confidence, and aptitude. Furthermore, the results of their structural equation modeling confirmed the mediational role of strategy use on the effects of attitude on reading achievement. Other studies have also reported that L2 learners with more positive attitudes become more involved in metacognitive processing (Nunes, Nunes & Davis, 2003; Tosun & Senocak, 2013). A recent study undertaken by Akbari et al. (2017) in Iran attested that L2 reading attitude significantly predicts reading comprehension achievement. The participants of his study were 230 Iranian male and female L2 learners. The outcome of regression analysis indicated that L2 reading attitude significantly predicts reading achievement.

Even though available research findings have suggested the direct effect of MARS and attitude on motivation, the mediating role of MARS on the effects of attitude on motivation, to our knowledge, has not been studied. We regard this omission as concerning, since if MARS mediates the direct effects of attitude on motivation, then it is through adequate, and proper use of MARS that attitude can motivate L2 readers. Besides, given that the variables of attitude, MARS, and motivation have been recognized as significant contributory factors to

comprehension achievement, our research may help to illuminate the interactions between affective and cognitive factors on reading comprehension achievement. The current study aims to bridge the gap in the literature by investigating the effects of attitude on motivation. Additionally, the mediating role of metacognitive awareness between attitude toward reading and motivation for reading is examined.

Hypothesis and Research Questions

The premise for undertaking this study is two-fold. Firstly, while evidence is ample about the significant effects of attitude on metacognitive awareness of reading strategies (MARS) and reading motivation in L1 as well as the positive effect of MARS on L1 reading motivation, investigation of these interactions remains an underdeveloped area in L2. Secondly, the mediating effect of MARS on the effect of attitude on motivation has not been thoroughly investigated in research on reading comprehension.

In our study, the socio-educational model of Gardner (1985) leads our proposed structural model. Outside the context of language acquisition, researchers have found that metacognitive awareness can mediate the effect of attitude on motivation in learning (Mikaillet al., 2017; Tosun Senocak, 2013; Zarra-Nezhad, Shooshtari& Vahdat, 2015; Xu, 2017). For instance, Zarra-Nezhad, Shooshtari, and Vahdat (2015) reported that highly motivated Iranian EFL students at the intermediate level implemented metacognitive strategies more than less motivated EFL learners. That is, by examining the associations between the levels of motivation, attitude, and strategy use, it was shown that motivated students with positive attitudes resorted to their metacognitive reading strategies more than the group with less motivation and negative attitudes.

We have proposed a model for testing two hypotheses.

- A. It is hypothesized that attitude toward reading significantly predicts the motivation for reading. Furthermore,
- B. We hypothesize that metacognitive awareness of reading strategies mediates the effect of reading attitude on reading motivation.

On these grounds, the following research questions feature our study:

- 1. Is there a significant relationship between L2 learners' attitude, motivation, and MARS?
- 2. Does MARS have a mediating effect on the effect of L2 attitude on L2 motivation?

RESEARCH METHOD

Study Design

The current study has used a structural equation modeling analysis to examine the relations and mediating effects among reading attitude, motivation, and MARS. Specifically, our analysis examined whether attitude predicts motivation, and the role MARS plays in mediating the effect of attitude on motivation. Structural Equation Modeling (SEM) can test the mediating effects and relations among variables, which goes beyond simple regression (Baron & Kenny, 1986). We used SPSS AMOS (version 23) for the analysis of our proposed mediational model with the maximum likelihood estimation method.

Participants and Data Collection

The participants of this study were 97 Iranian English as a Foreign Language (EFL) learners whose ages ranged from 18 to 27 ($M = 22.93$, $SD = 3.07$). The participants were students at the intermediate level at a major learning academy in Iran. The sample included a balanced gender distribution with 46 males (47.5%) and 51 females (52.5 %). We used two stages of sampling, the first used simple random sampling, and the second used disproportionate stratified sampling. Our initial sample included more females than males (roughly 80% female). Because prior studies have shown that females can have higher attitude scores compared to males (Marinak & Gambrell, 2010), we conducted a second round of sampling with gender as the strata. In the second stage, males were over-sampled in order for the final sample to be roughly proportional between males and females, which approximated the proportions of students in the academy. Within the gender stratum, individuals were randomly sampled.

All participants had passed the Cambridge English: Preliminary for Schools (PET) exam and were preparing for Cambridge English: First (FCE) after their semester the data was gathered. These tests demonstrate a level of English obtained in order to read the administered measures in English and are commonly accepted as quality indicators of English proficiency. Because of their achieved English proficiency, measures were administered in English. The data were gathered by the administration of self-report surveys to the participants.

Instruments

Metacognitive awareness of reading strategies. The 30-item Metacognitive Awareness of Reading Strategies Inventory (MARS; Mokhtari & Reichard, 2002) was used to gauge the participants' metacognitive awareness. The MARS is a measurement of metacognitive awareness of reading strategies using three

subscales (i.e., support strategies, global strategies, and problem-solving). We considered the three subscales as the indicators of the MARS as the latent variable. According to the authors, a higher score is considered a higher MARS level. The MARS included 5-point Likert scale items from 1 (*I never or almost never do this*) to 5 (*I always or almost always do this*). The Cronbach alpha, a measure of internal consistency, was reported to be .93 by the developers.

The developers explain that the overall score, which is the sum of the scores in the three subscales, is indicative of the overall MARS. In order to increase the construct validity and nomological validity, we considered the nomological network of MARS. That is, we considered these subscales as the observed variables constituting the latent variable of metacognitive awareness. As maintained by Peter (1981), nomological validity influences construct validity for the operationalization of latent concepts used in an empirical study. He further adds that the role of nomological validity is noteworthy in mediational analyses within which there are complex interrelationships between multiple variables.

Reading motivation. The Adult Motivation for Reading Scale (AMRS) was used to measure participants reading motivation. The AMRS was developed by (Schutte & Malouff, 2007). Their findings demonstrated that the internal consistency analysis of the 21 items was a Cronbach's alpha of .85, suggesting good internal consistency (Schutte & Malouff, 2007). An example of the items included is "I like reading material with difficult vocabulary" (p. 489). Participants chose items rated from a 1 to 5 scale with number 1 signified "*strongly disagree*" and number 5 signified "*strongly agree*."

Reading attitude. The short form of the Adult Attitude Toward Reading Scale developed by Tunnell, Calder, and Justen (1988) was administered for the measurement of the attitude of the participants toward L2 reading comprehension. The researcher found the internal consistency of this 18-item survey to be .88, which suggests a satisfactory reliability index. The items were 5-point Likert scales from 1 (*strongly disagree*) to 5 (*strongly agree*). A higher score is considered a better attitude toward reading. An example of items included is "Reading is a fun way of learning".

Results

The descriptive statistics and correlations between the variables are provided in Table 1. The correlations among all the variables are positive and statistically significant. The largest correlation was between motivation and MARS ($r=.80, p<.05$) and the lowest correlation was between attitude and motivation ($r=.69, p<.05$).

Table 1

<i>Descriptive Statistics and Pearson's Correlations</i>				
	Attitude	Motivation	Mean	SD
Attitude			48.81	17.84
Motivation	.69**		61.97	22.49
MARS	.77**	.80**	86.18	30.32

Note. $N=97$. MARS= Metacognitive Awareness of Reading Strategies.

** $p < .05$

We first analyzed the direct effect of reading attitude (exogenous variable) on reading motivation (endogenous variable) before analyzing the mediating effect of MARS. We report standardized regression weights because they indicate the effect of the predictor in standard deviation units, which makes them comparable to other studies and measures. The results revealed that the standardized regression weight for attitude was statistically significant, which indicates that attitude predicts motivation ($\beta = .70, p < .001$). When conducting our mediation analysis, we followed the guidelines provided by Baron and Kenny (1986).

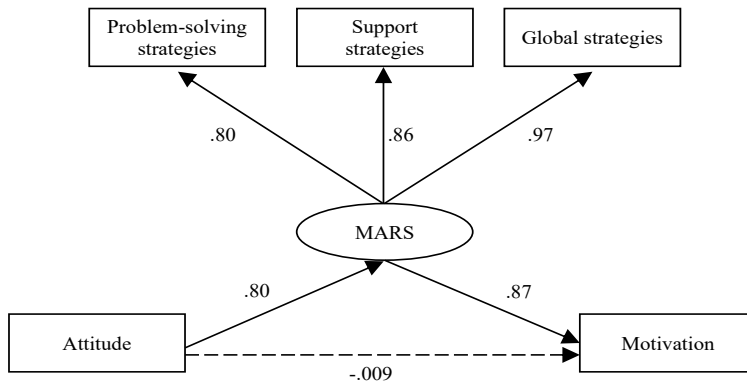


Figure 1. Mediation model being tested. MARS= Metacognitive Awareness of Reading Strategies. The dotted line indicates a statistically non-significant correlation.

Figure 1 depicts the mediational model, along with the standardized Beta weights. As the paths in the model indicate, attitude is the predictor, MARS is the mediator, and motivation is the outcome. The goodness of fit indices suggested a good fit to the data ($df= 3$, $\chi^2= 3.60$, $p = .002$; GFI=.99, CFI=.99, TLI= .99, RMSEA= .04). Although the chi-square test was statistically significant, which can suggest poor fit, the other fit indices support good fit. In the mediation model, the direct effect of attitude on MARS ($\beta = .80$, $p< .01$) and the direct effect of MARS on motivation ($\beta = .87$, $p< .01$) were both statistically significant. Additionally, the direct effect of attitude on motivation became statistically non-significant ($\beta= .009$, $SE= .13$, $p=.92$).

The results affirm that the inclusion of MARS as the mediator variable completely mediated the effect of attitude on motivation, which lends support to the mediational hypothesis. The indirect effect of attitude on motivation through MARS was calculated by multiplying the direct effect of attitude on MARS by the direct effect of MARS on motivation ($.87 \times .80 = .70$). The total effect of attitude on motivation was .69 and computed by summing the indirect effect of attitude on motivation through MARS ($\beta= .70$) and the direct effect of attitude on motivation ($\beta = -.009$). The measurement model for our latent variable was just identified, which means the fit statistics indicated perfect fit (i.e., CFI = 1.00, RMSEA = .00). Table 2 shows the direct, indirect, and total effects of attitude and MARS on motivation.

Table 2

<i>Standardized direct, indirect, and total effects on motivation</i>			
	Direct	Indirect	Total
Attitude	-.009	.70	.69
MARS	.87		.87

Note. MARS= Metacognitive Awareness of Reading Strategies

DISCUSSION AND CONCLUSIONS

This study examined the mediating role of metacognitive awareness of reading strategies (MARS) in the relationship between L2 learners’ attitudes and motivation. Addressing a gap in the literature, we hypothesized that MARS would mediate this relationship. Our findings supported this hypothesis, demonstrating a significant association between attitude, MARS, and motivation.

These results align with previous research linking MARS, attitude, and motivation (Conradi, Jang, & McKenna, 2014; Polychroni, Koukoura, & Anagnostou, 2006; Zarra-Nezhad, Shooshtari, & Vahdat, 2015). Moreover, our findings offer empirical support for the socio-educational model of L2 learning and expectancy theory by demonstrating a direct impact of attitude on motivation.

This corroborates studies by Jacobs et al. (2002), Gardner, Masgoret, and Tremblay (1999), and Kirmizi (2011), linking positive attitudes to increased strategy use and motivation.

As for our second research question regarding the mediating effect of L2 attitude on L2 motivation, our results revealed that MARS fully mediated this effect. This analysis lends empirical support to the metalinguistic hypothesis, which posits that the influence of language learners' attitudes on their motivation is mediated by self-regulation and monitoring mechanisms. When learners successfully regulate and monitor their reading processes, they are more motivated to continue their learning experience.

Our findings align with previous research (Lau & Chan, 2003; Lau, 2006; Merisuo-Strom, 2007; Baker & Wigfield, 1999; McKenna, Kear & Ellsworth, 1995; Wigfield et al., 2016; Özönder, 2015), which links reading task engagement, strategy use, and attitude to reading motivation. This study underscores the importance of affective factors in L2 learning. Negative attitudes, often shaped by media representations, can hinder L2 acquisition compared to L1 (Brown, 2014; Mahmoodi-Shahrehabaki, 2015). Conversely, positive attitudes toward the target language and culture can increase L2 exposure and learning (Cook, 2016). While recognizing the complexity of motivation (Dörnyei, 2001; Cook, 2016), our findings highlight the need to address L2 attitudes in classroom instruction.

Future Directions

Building on the findings of this study, future research could explore several key areas. Longitudinal studies that examine the sustained use of metacognitive awareness of reading strategies (MARS) over time would provide valuable insights into the long-term effects of these strategies on reading motivation. Such research could inform the development of more effective intervention strategies for L2 learners. Additionally, expanding research to diverse linguistic and cultural contexts would help determine whether the relationships observed in this study are consistent across different learning environments, thereby enhancing the generalizability of the findings.

The integration of technology in future studies also presents an exciting opportunity; digital tools that incorporate metacognitive prompts could support better reading strategy habits and foster self-regulation. Lastly, exploring the impact of different instructional approaches, such as explicit strategy instruction

or task-based learning, on reading motivation and attitudes could offer further insights into how best to support L2 learners in various educational settings.

Implications for Practice

The findings of this study offer several practical implications for educators and curriculum developers. First, it is essential for educators to receive training that enables them to teach metacognitive reading strategies explicitly. This training should include methods to guide students in reflecting on and adjusting their reading strategies, promoting a more self-regulated approach to learning. Furthermore, the selection of reading materials plays a crucial role in fostering positive attitudes toward L2 reading. Therefore, educators should prioritize culturally relevant and engaging texts that align with students' interests, as this can enhance their motivation and overall learning experience.

Additionally, customized reading programs that assess students' initial attitudes and provide tailored interventions can address specific motivational needs, encouraging self-directed learning. Finally, the implementation of workshops focused on metacognitive awareness and goal-setting could empower students to become more autonomous and motivated readers, equipping them with the tools necessary for lifelong learning.

Limitations

The study's exclusive reliance on quantitative methods limits its ecological and conclusion validity, potentially affecting the generalizability of findings to real-world contexts. A mixed-methods approach could provide a more comprehensive understanding. Furthermore, the study's focus on Iranian intermediate L2 learners restricts the generalizability of findings to other language contexts and proficiency levels. Future research should replicate the study across diverse populations, employ mixed methodologies, and explore the intricate interplay between L1 and L2 factors, including cultural, linguistic, and individual differences, as highlighted by Schmid and Yilmaz (2018) and Mahmoodi-Shahrebabaki (2018).

Conclusion

L2 learners' attitudes towards language learning and their classroom experiences profoundly impact their motivation for L2 learning (Cook, 2016). Our investigation confirmed that attitude can be an affective influencer, while motivation is an affective response. To develop into skilled readers, foreign language learners need both motivation and effective reading strategies (Lau, 2016; Meniado, 2016). The findings of the current study support the assertion that metacognitive awareness of reading strategies is strongly influenced by the

psychological attributes that readers bring to their reading experiences. Thus, instruction of metacognitive strategies alone may not suffice; educators must also consider the psychological characteristics of learners to foster a comprehensive and effective reading development approach.

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