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The Relationships between Web-Based Information Credibility Judgment, Critical Thinking, and Learning Styles of Iranian EFL University Students

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Abstract: The advent of Web 2 tools and their features have allowed Internet users not only to seek information but also to generate and edit online information. However, excessive reliance of students, particularly EFL students, on the Internet has raised the issue of information credibility or quality of the information found online. This study sought to investigate the relationships between Iranian EFL university students' credibility judgment and their learning styles and critical thinking. It also intended to examine the extent to which the learners employ credibility judgment strategies to verify web-based information. To this end, 212 Iranian EFL students, 165 female(s) and 47 male(s) received three questionnaires: Honey's (2004) Critical Thinking Questionnaire, Kolb's (1984) Learning Style Inventory, and the adapted version of Credibility Judgment Questionnaire originally developed by Metzger, Flanagin, and Zwarun (2003). The results of descriptive statistics, as well as bivariate and multivariate correlation analyses, revealed that, first, Iranian EFL students employed credibility judgment strategies at a moderate level, and second, critical thinking was a better predictor for credibility judgment behavior of EFL students than the learning style. Moreover, three learning styles were significantly related to the currency sub-scale of credibility judgment. The findings can assist curriculum planners, policymakers, and instructors to develop plans for empowering EFL students with the skills they need to evaluate online information for accuracy, objectivity, authority, and currency.

Keywords: Credibility Judgment, Learning Styles, Critical Thinking, Regression Analysis.

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Introduction

The increasing popularity and widespread use of the Internet as a source of information have provided learners and educators, among others, opportunities to have information at their fingertips. With the advent of Web 2, however, the Internet is no longer one-way media. The software and tools have induced massive shifts in how knowledge is sought, disseminated, and learned (Metzger & Flanagin, 2015). The tools have empowered learners to generate, edit, and "transform the resources according to their personal, social, cognitive, and affective needs and interests" (Fuchs, Hauck & Muller-Hartmann, 2012, p. 83). In the same vein, the exponential growth of applying the Web 2.0 tools and environments such as wikis and blogs has offered unlimited opportunities for language learners not only to seek information but also to be involved in information creation and interaction in an authentic context (Chang, Pearman, & Farha, 2012; Guth & Helm, 2010). The massive shift in information seeking and dissemination, in turn, can contribute to learner autonomy as identified in the second language acquisition literature (Toffol & Perrot, 2019), where learners are equipped with skill sets (Stefanou, Perencevich, Dicintio & Turner, 2004) to learn effectively on their own.

The introduction of the Internet, however, has caused concern for educators since one consequence of this evolution is that it is imperative, more than ever, for learners and, specifically English language learners, to be able to evaluate the validity and credibility of the obtained information, and to be responsibly and reflectively able to communicate information (Metzger & Flanagin, 2015). Rather than passively absorbing materials, they are expected to critically "evaluate, analyze and synthesize digital resources" and construct new knowledge (Martin, 2006, p. 155). According to Flanagin and Metzger (2007):

> Compared to more traditional sources, the credibility of web-based information may be less reliable due to the structural and editorial features of the web environment. Web-based information suffers from a relative lack of professional gatekeepers to monitor content, faces a convergence of information genres, such as the blending of advertising and information, lacks established reputations for many information sites, and is particularly prone to alteration (p. 320).

As such, the credibility of web-based information suggests that it is a subjective perception where individual differences influence their scope of information evaluation. Nobody would

question that individual differences are linked to the process of information seeking and information evaluation. Given that individual differences play a prominent role in the way information seekers approach information sources and evaluate their trustworthiness, and since critical thinking and learning style are two dimensions of individual differences discussed at length in the literature on research into individual differences in language learning, the present study intended to investigate the relationship among critical thinking, learning style, and credibility judgment of web-based information in English as a Foreign Language (EFL, henceforth) university students. To this end, the following research questions were postulated:

1. To what extent do Iranian EFL university students judge the credibility of web-based information?
2. Is there any significant relationship among critical thinking, learning style, and credibility judgment of Iranian EFL university students?

Theoretical Foundation and Literature Review

Web-based Information Credibility Judgment

Credibility judgment is not a new concept. It dates back to Aristotle's concept of 'ethos' and 'speaker credibility' (Rieh & Danielson, 2007). Yet, recent digitalized technologies have given cause for concern about web-based information credibility, which in turn stems from information seekers' undue dependence on the Internet for information. Source credibility judgment, known as Web credibility (Fogg, Soohoo, Danielson, Marable, Stanford, & Trauber, 2003), refers to the believability of web-based information and its source. Believability or credibility of information is associated with a list of features that information should have to be considered credible, that is, believable. Some properties in the list are related to the receiver of the message, some to the information, and some to the message source (Kriscautzky & Ferreiro, 2014). Although the literature shows that in credibility research, most of the researchers have focused on the source's characteristics, features of the message have also received some attention. Research has indicated that the credibility of web-based information "is a receiver-based judgment which involves both objective judgments of information quality or accuracy as well as subjective perceptions of the source's trustworthiness, expertise, and attractiveness (Freeman & Spyridakis, 2004, as cited in Metzger, 2007, p. 2078).

Many of the efforts to establish criteria for web-based information credibility were in line with the digital literacy movement (Metzger, 2007), aiming at assisting Internet information seekers to develop the required skills for critically evaluating online information. Overall, the

literature demonstrates web-based information seekers should use five general credibility criteria to assess the credibility of the online information content, namely accuracy, authority, objectivity, currency, and coverage (Metzger *et al.*, 2003; Metzger, 2007). Accuracy denotes the extent to which the message is free from error, is verifiable offline, and is reliable. The authority criterion refers to noting who produced the information and whether his/her contact information, information on his/her credentials, qualifications, and affiliation is available. Currency refers to the up-to-datedness of information, and finally, coverage indicates how comprehensive the online information is.

Investigating the extent to which students employ verification strategies to evaluate online information has received some attention from scholars in the last two decades. Metzger *et al.*, (2003), for example, compared the verification strategies used by American college students and non-students. They found students reported a high level of web-based information credibility and used currency of information and completeness of information as the most frequent verification strategies for checking the online information.

Kriscautzky and Ferreiro (2014) compared the stated criteria used by Mexican students for assessing the credibility of online information with the actual criteria they use for verifying the messages. The authors found that the stated criteria did not match those used when selecting websites for information. They also concluded that younger students employ strategies that verify the textual information. In comparison, older students rely on other features such as the date and authorship, which are paratextual information provided for online information.

Keshavarz (2020) explored how Iranian university students judge the credibility of online information. The results confirmed the use of eight criteria by university students, namely usability, interaction, accuracy, website appearance, writing style, professional information, ethics, and website identity. Despite the widespread use of online sources by EFL learners, no research was conducted, to the best of our knowledge, to investigate this group of learners' credibility judgment behavior when seeking web-based information. Two studies that can be reported are only marginally related to the primary concern of this study, that is, credibility judgment of web-based information. EFL learners' information literacy experience was investigated by Johnston, Partridge, and Hughes (2014). The results showed information literacy is experienced by EFL students in terms of process, quality, language, and knowledge. It was also revealed that language-related issues and barriers influence their experience to find, read, understand, evaluate, and use information. Another partially related study was conducted by Dashtestani and Hojatpanah (2020), who explored the extent to which Iranian EFL teachers'

and students' have digital literacy. They found their digital literacy level to be low, although both teachers and students believed the students' level of digital literacy was acceptable.

Individual Differences: Critical Thinking, Learning Style, and Online Information Seeking

Language learners' characteristics, known as individual differences, have received ample attention in second language studies so that no one would doubt the contribution of factors such as motivation, learning styles and strategies, and critical thinking, to name a few (Dörnyei, 2008), in second language learning. The existing literature on the way individual difference variables interact with the second language learning process is extensive. Similarly, scholars in technology and social media use for information (e.g., Kim, Sin, & Tsai, 2014) paid meticulous attention to individual differences of web-based information seekers. However, EFL learners' academic use of the Internet is not confined to seeking online information. Both strong and poor language proficiency students use web-based information as a language-learning tool that addresses their language and communication needs (Hughes, 2013). Overall, online information seeking and evaluation is "a subjective perception on the part of the information receiver, individual differences naturally impact users' credibility evaluations" (Metzger & Flanagin, 2015, p. 453). Various individual differences have been discussed in the literature, ranging from age, gender, past experience, to mental dispositions (e.g., Flanagin & Metzger, 2010). There are fewer studies, however, on how other cognitive characteristics such as critical thinking and learning style may influence the evaluation strategies of information seekers. In this regard, Del Giudice (2010) argues that it seems some personal traits such as field dependence/independence, evaluation apprehension, and orientation may affect a person's approach to find and use the information found on the Internet.

Concerning the contribution of critical thinking to online information evaluation, Wallace and Jefferson (2013) examined the effectiveness of developing essential critical thinking skills for information-seeking success. Seventy-six undergraduate students participated in their study. One group received a workbook in which they could find some strategies that helped them think clearly and critically and solve problems skillfully by focusing on the information and processing it to remember information better. Another group did not receive any treatment. At the end of the semester, both groups took a critical thinking test with real-time, simulated, scenario-based items that measured their ability to navigate, evaluate, and make sense of web-based information. The authors found the experimental group did significantly better on the

test than the control group.

YektaKooshali, Ramezani, PourNajafi, and Esmaeilpour BandBoni (2017), in an analytic cross-sectional study on undergraduate students of medical science, examined the correlation between information literacy and critical thinking. There was no significant relationship between the overall scores of information literacy and critical thinking; however, the ability to understand, access, and evaluate online information, as components of information literacy, was related to the critical thinking of the subjects.

Seraji, Sharifi, Hedayati, and Sharifi (2019) investigated the relationship between information literacy and critical thinking. They found, first, that the levels of the students' information literacy and critical thinking were above average, and second, that there was a direct relationship between information literacy and critical thinking.

Ghaebi and Amiri Pari (2015) investigated the relationship between information-seeking behavior on the Internet and the critical thinking skills of master's students in eight departments of Alzahra University. The authors found no significant relationship between critical thinking and web-based information-seeking behavior in eight departments.

Learning/cognitive style is a crucial feature for learner preferences, which denotes that different people perceive, process, and interpret information in different ways (Simsek & Simsek, 2013) and has attracted the attention of some researchers.

Parsaeian (2012) studied the relationship between learning style and information-seeking behavior of Masters' Degree students of medical sciences. She concluded that, except for the accommodating style, all other learning styles are interrelated with all components of information-seeking behavior. Similarly, Salarian, Ibrahim, and Nemati (2012) examined the relationship between the cognitive style and information-seeking behavior of postgraduate engineering students. They found a relationship between cognitive styles and the information-seeking of the subjects.

The studies mentioned above reveal that, although national and international scholar addressed information literacy and information-seeking behavior of university students and the way individual differences interfere with the variables, little empirical data exist on Iranian university students' credibility judgment experiences, and particularly how EFL learners' differences contribute to their approach to web-based information verification.

Methodology

Research Design

This research study used a descriptive survey-correlational design. The researchers collected data to explore the extent to which Iranian EFL university students verify online information and to find whether there is a significant relationship between predictive variables (critical thinking and learning style) and the criterion variable (credibility judgment). In this study, credibility judgment was defined as "making the decision to accept or reject retrieved information" (Rieh & Danielson, 2007, p. 307). Information for the three variables came from three questionnaires descry

Participants

The convenience sampling method was used in the present study. The population sample consisted of 212 Iranian English university students who were studying in three different majors: English translation (n=90), English teaching (n= 94), and English literature (n= 28) at Sheikh Bahaee University and University of Isfahan. The target number of students who received the questionnaires was 228. The response rate, the proportion of participants who completed the questionnaires among those who received them was 93%, which is an acceptable rate to minimize non-response bias. There were about 165 females and 47 males; their ages varied from 18 to 44 years old, with an average of 21.

Instruments

Three questionnaires made the instruments of the present study: Peter Honey's (2004) Critical Thinking Questionnaire, Kolb's (1984) Learning Style Inventory, and the adapted Credibility Judgment Questionnaire developed by Metzger *et al*. (2003).

Peter Honey's (2004) Critical Thinking Questionnaire was used to measure the participants' skills to analyze, infer, evaluate, and inductively and deductively reason. This questionnaire includes 30 statements, which try to define what a person does or does not in different situations that need critical thinking. Every statement is followed by five options that measure the participants' extent of answer. The participants were required to choose only one alternative for each statement. To calculate the value of the result, a five-point Likert scale of agreement was considered for each alternative, where 5= always, 4= often, 3= usually, 2= sometimes, and 1= never. The reliability of the questionnaire, calculated via Cronbach's alpha, was found to be 0.8. As highlighted in the literature, the instrument is a reliable, valid, and practical measure of critical thinking (Sheybani & Miri, 2019).

Kolb's Learning Style Inventory is based on his experiential learning theory. This questionnaire includes 12 items. In Kolb's model, learning style is defined based on perception and process scales. A person perceives information as either concrete experience or abstract conceptualization. People's information process is through either active experimentation or reflective observation. Kolb (1984) describes the process of experiential learning as a cycle that involves four adaptive learning modes: Concrete Experience (CE), Reflective Observation (RO), Abstract Conceptualization (AC), and Active Experimentation (AE). Kolb (1984) also identifies four learning style groups based on the learning modes: divergent, assimilator, convergent, and accommodator.

To calculate the value of the result, a five-point Likert scale of agreement was considered for each alternative, where 5= always, 4= often, 3= usually, 2= sometimes, and 1= never. The reliability of the questionnaire was calculated using Cronbach's alpha (0.77). The validity of Kolb's Learning Style Inventory has been demonstrated repeatedly (e.g., Manolis, Burns, Assudani, & Chinta, 2013)

The Credibility Judgment of Internet-based information was operationalized by an adapted version of the questionnaire developed by Metzger *et al*. (2003) to examine the verification behavior of information seekers when using databases for academic searches. The original version of the Credibility Judgment Questionnaire consisted of 9 items that measure five sub-constructs of credibility judgment of academic sources, namely: objectivity, authority, accuracy, currency, and coverage. Three questions were added to the questionnaire to check if EFL university students pay attention to the usefulness of the information and correct use of English (Table 1). All categories of this part were designed on a five-point Likert scale of agreement, where 5= always, 4= often, 3= usually, 2= sometimes, and 1= never. The range of score was within 12 to 60, the reliability of the questionnaire was calculated using Cronbach's alpha (0.863).

Table 1. *The Adapted Version of the Credibility Judgment Questionnaire*

When I use the Web for academic purposes, I check …….
1. to find if the information is correct
2. to find if there is any misspelling or grammatical mistake

3. to see if the information is helpful for me
4. to see if the information is up-to-date
5. to find if the information is complete
6. to see what are represented are facts or opinions
7. to find other sources to validate the information online
8.to find the author's goals/objectives for posting information
9. to find who the author is
10. for a stamp of approval or recommendation
11. if contact information is provided for the author
12. to verify the author's qualifications or credentials

As for the construct validity of the instrument, the 12 items were subjected to principal componential analysis, using SPSS (version 21). The result of the factor analysis is presented in Tables 2 and 3.

Table 2. *The Percentage of Variance Explained by Factors of the Credibility Judgment Questionnaire and α Values.*

Instrument	factors	Items	Range Of scores	Mean of scores	Standard deviation	Percent of variance	α(0.05)
The credibility of information sources	1	4	4-20	9.31	3.38	40.85	0.81
	2	3	3-15	4.91	1.81	11.19	0.70
	3	2	2-10	5.54	2.37	9.99	0.70
	4	2	2-10	5.89	1.61	7.16	0.72

Table 3. *Analyzing Subscales of the Credibility Judgment Instrument*

Questions	Objectivity	Accuracy	Authority	Currency

1	0.783*			
2	0.694			
3	0.687			
4	0.498			
5	0.822	0.822		
6	0.715	0.715		
7	0.689	0.689		
8	0.867		0.867	
9	0.703		0.703	
10	0.878			0.878
11	0.748			0.748

Varimax rotation was performed, with the eigenvalues exceeding 1 as the criterion. After the factor analysis was run, four factors were recognized that explained 69.20 percent of variance on the credibility of information, and one item was omitted from the final analysis due to the low factor load in the exploratory factor analysis. The KMO value was 0.860, exceeding the recommended correlation among items for doing factor validity. Bartlett's Test of Sphericity reached statistical significance *($x^2(66) = 1020.097;\ p < 0.0001$)*, indicating the accuracy of the factor analysis. Moreover, the reliability of each subscale of objectivity, authority, accuracy, and currency of information was calculated. The indexes of reliability were (0.72, 0.70, 0.70, and 0.81) for objectivity, accuracy, authority, and currency, respectively.

Data Collection and Research Procedure

The required data were collected in November and December 2018. Initially, the second author of the present study won the approval of six faculty members at Foreign Language Departments at Sheikhbahaee and University of Isfahan for distributing the questionnaires. The author attended the faculty members' classes as a researcher and handed the questionnaires in person. The first questionnaire handed to the subjects was Honey's critical thinking, the second one was Kolb's learning style, and the last one was the Credibility Judgment Questionnaire. The participants were given 50 minutes to complete them. The researchers did not explain the study's purpose since it could interfere with their performance on the questionnaires. To avoid misinterpretations, the questionnaires were translated into Persian and piloted to a similar group of learners to establish their ease of comprehension.

Data Analysis

To answer the first research question, that is, the extent to which Iranian EFL university students judge the credibility of web-based information, the mean rank and standard deviation were calculated. To examine the relationship between the students' credibility of web-based information, their critical thinking, and learning style, first, two Pearson-moment correlations were run to discover if there was any relationship between the total scores on the predictive variables or their sub-scales, and the dependent one, that is, credibility judgment. To find out which variable(s), critical thinking or the learning style, or even other demographic variables, might have more predictive power in predicting the students' credibility of information, the enter regression analysis was run by the SPSS software (version 21).

Results

The researchers initially were required to test the data for the normal distribution since the employed statistical techniques assumed the normality of data distribution. To this end, a one-sample Kolmogorov-Smirnov Test of Normality was run for the dependent variable (Table 4).

Table 4. *The Results of the Test of Normality of Dependent Variable and its Subscales*

variable	Sig.	Error	confirm hypothesis	result
Accuracy	0.131	0.05	H0	normal
Objectivity	0.053	0.05	H0	normal
Authority	0.101	0.05	H0	normal
Currency	0.605	0.05	H0	normal
Credibility judgment (dependent variable)	0.505	0.05	H0	normal

As shown in the table, the non-significant results (sig values of more than 0.05) indicated that this variable of the study and its components are distributed normally, and the parametric statistics could be applied for the sample.

To determine the extent to which EFL learners judge the credibility of web information, the average level of credibility judgment was calculated. The mean rank was higher than the midpoint on a scale of 1 to 5 (M=2.79, SD= 0.86).

To answer the second research question of the study, first, the variables were explained in terms of their bivariate relationships. A Pearson product-moment correlation was conducted to investigate the relationship between critical thinking and credibility judgment of the EFL learners (Table 5).

Table 5. *Pearson Correlation between Critical Thinking and Credibility Judgment*

	Information credibility(total)	**Dimensions of Dependent variable**				**Mean**	***std.* deviation**
		Objectivity	**Accuracy**	**Authority**	**Currency**		
Critical thinking	0.410	**0.347	**0.242	**0.323	**0.341	64.25	7.03

** Correlation is significant at the 0.01 level (2-tailed).

The result of the bivariate relationship between critical thinking and credibility judgment revealed that there was a significant positive relationship between these two variables (r(212) = .0.41, p< .001). Moreover, the analysis revealed there were significant positive relationships between critical thinking and subscales of credibility judgment. As shown in Table 5, the strongest association was detected between critical thinking and objectivity (r=0.35, p<0.05). The next strong relationship was found between critical thinking and currency of information as another subscale of credibility judgment (r= 0.34, p<0.05).

Another set of Pearson product-moment correlations was run to investigate the relationship between learning style and credibility judgment (Table 6).

Table 6. *Results of Pearson Correlation between Learning Styles and Credibility Judgment*

		Dimensions of Dependent variable					
	Information credibility(total)	**Objectivity**	**Accuracy**	**Authority**	**Currency**	**Mean**	***std.* deviation**
Divergent	0.108	0.066	0.105	0.008	0.171*	59.20	10.86
assimilator	0.119	0.088	0.055	0.042	0.205**	60.11	11.87
convergent	0.101	0.078	0.093	0.039	0.139*	64.79	13.78
Accommodator	0.091	0.059	0.107	0.010	0.108	63.89	12.61

** .Correlation is significant at the 0.01 level (2-tailed).

* .Correlation is significant at the 0.05 level (2-tailed).

The result of the bivariate correlation analysis showed significant positive correlations between divergent, assimilator, and convergent learning styles and currency as a subscale of credibility judgment. As the indexes relating to the divergent, assimilator, and convergent styles increase, the level of credibility judgment on the currency subscale increases. As shown, there was a positive relationship between learning style and objectivity, accuracy, and authority; however, the relationships were not significant. As a whole, there was a positive, though non-significant, relationship between learning style and credibility judgment.

To find the answer to the second research question, which asked about the relationship between critical thinking, learning style, and credibility judgment, the enter method regression analysis was run. An examination of correlations revealed that no independent variables were highly correlated. Moreover, the collinearity statistics (i.e., Tolerance and VIF) were all within acceptable limits. The result of the analysis is presented in Table 7.

Table 7. *Multivariate Regression with the Enter Method between Independent and Dependent Variables*

Variables		Standardized coefficients Beta	Sig.	R	R^2
Constant		3.226	.506		
Gender (female)		.062	.387		
Major (translation)		-.128	.128		
Major (literature)		-.108	.166		
Age		.086	.198		
Semester		-.019	.811		
Critical thinking		.417	**.000**		
Divergent		.015	.918	0.452	0.204
Assimilator		.078	.494		
Accommodator		-.106	.351		
F= 5.39	**0.000**				

As can be seen in Table 7, the most effective/predictive variable that can either affect or predict the credibility judgment behavior of the subjects was critical thinking. This is evident from the positive value of Beta standardized coefficients. In other words, the more critical thinkers the subjects are, the more judgmentally they behave in their verification of online sources. The regression model, based on the ANOVA, was linear and significant since the magnitude of F value was 5.39(p= 000). The result shows that about 20.4% of the variation in the credibility judgment can be explained by critical thinking (R2= 0.204). Other demographic and independent variables were found to have no prediction power in the regression model.

Conclusions

Two issues were explored in the present study. First, descriptive statistics revealed that Iranian EFL university students verify the web-based information searched for academic purposes a little above a moderate level. Secondly, it was also found that critical thinking was a predictor of credibility judgment of web-based information.

As far as credibility judgment of Iranian EFL university students is concerned, the study results confirm Dashtestani and Hojatpanah's (2020) findings in that Iranian EFL university students, similar to high school students, have a low to moderate level of digital literacy. This implies that they cannot evaluate the information they obtain on the Internet in terms of source and content credibility. The results are also aligned with what Metzger *et al*., (2003) reported

for college students who make minimal information verification effort implying that they find web-based information credible.

The correlational analyses confirmed a significant positive relationship between four subscales of credibility judgment which shows individuals' way of analyzing and interpreting information is tightly connected to the way they judge credibility, by evaluating the authenticity, accuracy, objectivity, and currency of information. In other words, as soon as an individual perceives a need for information, s/he is cognitively involved in an evaluation process that continues through the following steps: judging how to implement the search for information, deciding how to use and synthesize the information, and eventually evaluating the effectiveness of the information. Moreover, the results indicate that not only features of information, for instance, its objectivity and accuracy, but also authority that denotes the credibility of information sources require critical thinking on the part of information seekers. The results are in line with Seraji *et al.*'s (2019) findings that revealed a direct relationship between media literacy, which requires evaluating reliability and relevance of information, and critical thinking of undergraduate students. Wallace and Jefferson's (2013) conclusion is also confirmed by the findings of the present study. The results also partially confirmed what Yektakooshali *et al*. (2018) discovered in their study on the relationship between information literacy and critical thinking of undergraduate medical students. Although the authors did not find a significant relationship between critical thinking and information literacy, the ability to critically evaluate online information and resources was found to be significantly related to critical thinking.

On the other hand, regarding the relationship between learning styles and critical thinking of EFL students, the results of the present study showed that all learning styles, except accommodator, are correlated with the currency aspect of credibility judgment. With other subscales of credibility, however, no learning style was associated. This may be attributed to two reasons. On the one hand, for language learners, who mostly do not have sufficient mastery of the English language, the surface features of the message, including its up-to-datedness, outweigh the quality of the message. In other words, they resort to the Internet not only as an information source but also as a support for their language and communication needs. On the other, although EFL university students, like others, have extensive experience with the Internet, since they have not received enough instruction to ensure the quality of information they obtain online, they opt for the easiest recognizable way to evaluate the information, i.e., the date, rather than judge the information subjectively for objectivity, accuracy, and authority.

Even disregarding their need for language support, any other results would have been unjustifiable considering the significance of newness of information for the purposes they use information, i.e., reading about current events, recent statistics, and trends to pacify their hunger or satisfy their instructors' expectations. However, what they do not know is that publication dates and information are questionable on the Internet.

As to the relationship between learning styles and credibility judgment, it seems more to the point to discuss the findings by reference to the characteristics of the accommodators who were found not to take care of currency of information as a subscale of credibility. Accommodation is the ultimate level of learning style development. Accommodators, according to Sutliff and Balswin (2001), are activists; they are feel-and-do people. They handle challenging activities easily; and more interestingly, they look for original rather than up-to-date information. They seek relevance rather than currency. Other learning styles, that is, divergers as reflectors, assimilators as theorists, and convergers as pragmatists, apply some degrees of reflection to think about how recently published information is, for example. The results are partially in line with what Parsaeian (2016) reported on the relationship between learning style and information-seeking behavior of medical science students. She found positive and significant relationships between all the components of information-seeking behavior, namely starting, chaining, browsing, differentiating, monitoring, and extracting, and four learning styles. However, the relationship between accommodating style and the starting component of information-seeking behavior was significantly negative, implying that since accommodators have already developed their mental structures, they do not see any need to check for the currency of information.

In sum, it could be argued that, as indicated by the findings of this study, the credibility judgment ability of Iranian EFL university students can be better predicted by their critical thinking skills as a set of high-order thinking skills. It can also be concluded that one of the ways of promoting the university students' ability to verify online information is to improve their critical thinking skills.

Conclusion, Pedagogical Implications, and Limitations of the Study

The present study was aimed at examining the extent to which Iranian university students majoring in English evaluate the web-based information found for academic purpose, and investigating the relationship among credibility judgment, critical thinking, and learning styles

of the target population. It yielded several findings, as discussed in the previous section. In brief, the students perceive the online information to be almost credible because they employ various strategies to a moderate level. Moreover, among learning styles and critical thinking, the latter can be a better predictor for evaluating the information they find on the Internet.

The study's findings indicate that Iranian EFL students have remained uninformed about the fact that not all web-based information is reliable. Considering the moderate level of EFL learners' credibility judgment and its relationship with their critical thinking, and also considering the contribution of the online sources in fostering autonomous language learners who can extend their language learning experiences beyond the classroom walls, it appears that attention should be directed toward preparing critical thinkers who can judge the quality of sources, as well as that of information content found on the Internet. The results imply that there is cause to be concerned about EFL students' lack of credibility judgment ability if we can foresee their web-based information-seeking behavior when they graduate and move into the workplace. With the advent of Web resources in educational contexts for university students, in general, and EFL learners in particular, the traditional information-seeking activities are no longer efficient. This state of affairs requires new information-seeking skills for learners to cope with invalid information sources. The findings of the present study indicated that critical thinking was a stronger predictor of credibility judgment skills. However, a low level of critical thinking may suggest that learners lack the ability to critique the validity of online information. The moderate level of credibility judgment of Web-based information calls for actions to be taken for empowering EFL learners. The findings emphasize the need to train Iranian EFL learners in a planned and methodical manner. In addition, the findings can also assist policymakers to develop the necessary types of digital literacy required for students in institutions of higher learning.

Some limitations were encountered in the implementation of the present study. First, the research instrument that intended to measure the credibility judgment of EFL learners did not contain questions about their non-academic web-based information evaluation. This is important for EFL learners because even exposure to English materials might contribute to their language learning. Second, the researchers did not check the results of the credibility judgment questionnaire against the subjects' actual behavior when surfing the Internet for information.

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