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Linkages Between Self-Efficacy And Misinformation Susceptibility In Using English As A Second Language Among Secondary-Level Students

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Abstract: *This paper focused in finding linkages between self-efficacy and misinformation susceptibility by investigating the correlation of general aptitude of the students in using English as a second language. Using a descriptive-correlational approach, the researchers have examined the self-efficacy of secondary level students in using social media for various purposes. Overall, there were 134 respondents who are tested and selected via purposive sampling. Results reveal that the average score per student in every component of the test are the following: 11.7 out of 22 for Parts of Speech with a standard deviation of 3.67; 11.3 out of 28 for Grammar; 3 out 5 for Reading Comprehension, and 26.1 out of 55 for the General Aptitude. It can be noticed that per component, the students almost scored a half of the total score for the Parts of Speech. Next, the students failed to a have a passing score for the Grammar test, and they have an optimal score for the Reading Comprehension part. Lastly, the average score in the General Aptitude was close to the passing score by a 2-point margin, which is 26.1. Overall, the student sample was not able to have an average aptitude in the English Language. Lastly, the correlation of the self-efficacy of the students and their general aptitude in using English as a second language. Upon running the test, the researchers set the margin of error to 0.10, therefore giving the test a 90% confidence level. The Pearson r was recorded to be -.164, which is negligible for a correlation test. However, since the p-value of the test is recorded at 0.058, the researchers could conclude in favor of the negative correlation between the self-efficacy and general aptitude. Implications discussed how self-efficacy helps in identifying which individuals need improvement, especially in schools. With the help of improving the aptitude of the students, they could have increased resistance and lower susceptibility to misinformation.*

Keywords—misinformation, self-efficacy, general aptitude in English language

1. INTRODUCTION

The 21st century has introduced social networking through the medium called the internet, and so far, it has been the main source of information around the world. Unlike before, several analog sources are available to the public – newspapers for the latest events, magazines for item sales and products, posters for job postings, and the television for drama, live events, and sports events, let alone entertainment. Ever since this revolution of media began, it has been going on for some time until recently, the country was exposed to the World Wide Web.

Additionally, since these media catered the people for a very long time, the spectacle of the internet was well-observed – how the once snail mails became obsolete because the existence of the e-mail, the short messaging service (SMS) transformed to chats and finally, interactive video 5chats, smartphones that are more powerful than the computers of the yesteryears and so on. Everything, and every single human who had access to the web had their lives changed forever because of the convenience that the internet has brought.

To note, people became more dependent on smartphones. In fact, research from China gathered data through a survey of 527 urban Chinese workers. According to its regression analysis, individuals' job performance is unaffected by their reliance on smartphones for comprehension and communication at work. Only their reliance on smartphones for orientation was related with a favorable correlation with their job performance. The use of cellphones for communication has a positive correlation with employees' social capital at work. Most intriguingly, the authors discovered that while reliance on cellphones for comprehension and orientation was positively associated with smartphone addiction, reliance on smartphones for communication had no effect (Li & Lin, 2018). This addiction mentioned by the authors led to the sudden dependence of the people on the internet for reliable news. This problem sparked many problems on the succeeding years for it introduced a fearsome destroyer of knowledge: misinformation.

Starting from conspiracy theories, the social media has contributed a lot to spread lots of outrageous claims of things. Recent research reports that numerous studies have discovered correlations between social media use and belief in conspiracy theories and misinformation.

While these data are frequently interpreted as proof that social media increases conspiracy ideas causally, Enders et al. (2021) hypothesized that this link is contingent upon other individual-level predispositions. Moreover, the authors have analyzed the association between conspiracy theories and media use in two studies and discover that persons who acquire their news from social media and who use social media regularly indicate a higher level of belief in certain forms of conspiracy theories and disinformation. However, they

discovered that these correlations are conditional on conspiracy thinking—the tendency to perceive significant events as the result of conspiracies—and that social media use becomes more strongly related with conspiracy beliefs as conspiracy thinking grows more intense. This tendency, which they detected across a variety of views in two investigations, sheds light on the relationship between social media use and beliefs in problematic concepts.

Fast forward today, the main problem that arises from these given instances is when students make use of their skill of using English as a second language to perceive misinformation across the social media. Not only this could spell a spectacle of maleducation, but also it can render the academic truth they learned in school useless. As educators, the researchers sought to study the influence of the students' self-efficacy towards their susceptibility to misinformation, while using English as a second language.

The end goal of this research is to create a program that will aid not only the students but also the future educators of the country in maintaining a healthy academic institution free of misinformation. Moreover, this study could promote the use of English as a second language to make the students understand misinformation better – when not to believe certain articles and become perceptive on its application. Thus, not only the students become better speakers of the English language, but they also become vigilant and educated speakers.

1.1 Statement of the Problem

The general aim of this study is to measure the association between the self-efficacy of the students and their general aptitude in using English as a second language, which in turn, will determine how susceptible they are towards misinformation.

Specifically, the study sought to answer the following questions:

1. What is the demographic profile of the respondents in terms of the following criteria:
   1.1. Age;
   1.2. Sex; and
   1.3. Grade level?
2. How can the general aptitude of the respondents in using English as a second language be measured on the following domains:
   2.1. Parts of speech;
   2.2. Grammatical expertise; and
   2.3. Comprehension in discerning misinformation?
3. How can the self-efficacy of the respondents in using social media be measured in terms of the following dimensions:
   3.1. Academic;
   3.2. Socialization;
   3.3. Entertainment;
   3.4. Informativeness; and
   3.5. Constraints?
4. Is there a significant difference in the self-efficacy of the respondents when grouped according to their demographic profile?
5. Is there a significant correlation between the students' level of self-efficacy towards their general aptitude on the English language?

2. METHODS

2.1 Research Design

This study employed a quantitative design. This design is centered around data collection and analysis. As Lind et al. (2017) points out, statistical techniques are focused with organizing, analyzing, interpreting, and presenting numerical data.

It has examined the self-efficacy and aptitude in using English as a second language. The data will be gathered using a quantitative statistical test. The study will collect data using a descriptive-correlational approach. As Lans, Marchal, and Wathen (2002) noted, descriptive research is intended to provide a snapshot of the current situation, whereas correlational research is intended to uncover correlations between variables and to enable future event prediction based on current knowledge.

2.2 Research Instrument

The study shall incorporate a self-made questionnaire (See Appendix). The evaluation instrument was used on students. As for this study, most of its parts shall be adapted to properly assess the self-efficacy and the general aptitude of the respondents. However, the researchers shall conduct a pilot test to use the results for validity and reliability testing. The measure that will be used is Cronbach's alpha. The research adviser shall guide the researchers during this process and will make sure that the questionnaire is properly validated before administering it to the students. Also, the researchers shall take care of the Google Form containing the statements in the questionnaire to guide the students remotely. The researchers used an adapted questionnaire in social media self-efficacy which contained five (5) dimensions, namely: academic (items 1-7), socialization (items 8-13), entertainment (items 14-17), informativeness (items 18-20), and constraints (items 21-24).

3. RESULTS

3.1 Demographic Profile of the Respondents

The first objective of the study was to profile each of the respondents' demographic data. The rationale of the researchers in doing this matter is related on the required tests on the next sections of this study.

Using frequency distributions, the researchers were able to classify the respondents according to their age, sex, and grade level. A total of 134 respondents were included in the study.

Age. In terms of age, the researchers were able to obtain four (4) groups. 56% of the respondents are aged 17, 35.8% are aged 18, and the miniscule percentages belong to ages 16

(7.5%) and 19 (0.7%). Having said that, most of the respondents are already in the advent of their adult age, ending the adolescent phase.

Table 1
Respondents' Profile in terms of Age

Age	Frequency	Percent
16	10	7.5
17	75	56
18	48	35.8
19	1	0.7
Total	**134**	**100**

Sex. Both male and female share the equal number of percentages, with each having 67 respondents each.

Table 2
Respondents' Profile in terms of Sex

Sex	Frequency	Percent
Male	67	50
Female	67	50
Total	**134**	**100**

Grade Level. Similar to the sex criterion in the demographic profile, the researchers have a record of 67 respondents on both grades 11 and 12, respectively.

Table 3
Respondents' Profile in terms of Grade Level

Grade Level	Frequency	Percent
11	67	50
12	67	50
Total	**134**	**100**

3.2 General Aptitude of the Respondents in using English as a Second Language

Following the results in the demographic profile, the researchers conducted a general aptitude test with the aim of measuring three aspects of the students' capabilities in terms of basic English language proficiency (parts of speech and grammar) as well as a short reading comprehension test. The researchers were guided by the host school in facilitating the examination. After conducting the examination, the researchers have collated the answers for item analysis.

Below are the individual reports for the results of the test conducted. Using grouped frequency distributions, the researchers were successful in identifying the percentage of the students who obtained high and low scores.

Parts of Speech. The first part of the examination was involving the applications of the parts of speech, with 22 total items. The table below shows the distribution of the scores in detail. A closer look in the table reveals that most of the students scored low in the test, which puts a concern to the current learning curve of the respondents in the English language. This evidence is shown in the table wherein 41 students or 30.6% of the examiners scored 9 and below. Next, there are 26 students who scored 10 to 11 (19.4%); 27 students scored 12 to 13 (20.1%); 18 students scored 14 to 15 (13.4). Lastly, there are 22 students who have scored 16 and above (16.4).

Table 4
Test Scores in the Parts of Speech Section

Parts of Speech	Frequency	Percent
9 and below	41	30.6
10.00 - 11.00	26	19.4
12.00 - 13.00	27	20.1
14.00 - 15.00	18	13.4
16 and above	22	16.4
Total	**134**	**100**

Grammar. The second part of the examination is involving the proper use of grammar. In totality, this part contains 28 items. Looking closer, there is a low passing score among students. Individually, there are 28 students who scored 8 and below (20.9%). Next, there are 35 students who scored 9 to 10 (26.1%) which is the peak of the distribution of the scores among the students. Then, there are 21 students who scored 11 to 12 (15.7%); students scored 13 to 15 are tallied at 28 (20.9%). Lastly, there are 22 students who have scored 16 and above in the test.

Table 5
Test Scores in the Grammar Section

Grammar	Frequency	Percent
8 and below	28	20.9
9.00 - 10.00	35	26.1
11.00 - 12.00	21	15.7
13.00 - 15.00	28	20.9
16 and above	22	16.4
Total	**134**	**100**

Reading Comprehension. The last part of the test is a 5-point exam wherein the students are tasked to read two articles, by which one is false by default. The students then are scored based on the article they think that is true and is correct. The table below shows the scored reading comprehension of the students.

It is shown below that 35 students (26%) scored a low score of 1 to 2. Moreover, there are 59 students (44%) who scored an optimal score of 3. The number of students in this score level contains the largest frequency. The last remaining scores were 4 and 5, which composes of 31 and 9 students, respectively.

Table 6
Test Scores in the Reading Comprehension Section

Reading Comprehension	Frequency	Percent
1 – 2	35	26.1
3	59	44
4	31	23.1
5	9	6.7
Total	**134**	**100**

General Aptitude. Below is the summary of the general aptitude of the students. The scores in this part are obtained by adding all the previous components, which sums up to 55. Results show that there is a total of 27 students who scored 20 and below (20.1%). Next, 31 students scored 21 to 24, or 23.1% of the total sample. Then, 25 of the students scored 25 to 27 (18.7%); 31 students scored 28 to 33 (23.1%). Lastly, students scored 34 and above have a percent of 14.9 (20 students).

Table 7
Test Scores in the General Aptitude in using English as a Second Language

General Aptitude	Frequency	Percent
20 and below	27	20.1
21.00 - 24.00	31	23.1
25.00 - 27.00	25	18.7
28.00 - 33.00	31	23.1
34 and above	20	14.9
Total	**134**	**100**

Summary Statistics. The last part of this section contains the descriptive or summary statistics of the scores per category and in general. Results show that the minimum scores are the following: the lowest score in the Parts of Speech section was 4 out of 22; Grammar was 2 out of 28; 1 out of 5 for Reading Comprehension, and 12 out of 55 items.

For the maximum scores, Parts of Speech has a 21 out of 22 items; 22 out of 28 for Grammar; 5 out 5 for Reading Comprehension, and 43 out of 55 for the General Aptitude.

Furthermore, the average score per student in every component of the test are the following: 11.7 out of 22 for Parts of Speech with a standard deviation of 3.67; 11.3 out of 28 for Grammar; 3 out 5 for Reading Comprehension, and 26.1 out of 55 for the General Aptitude. It can be noticed that per component, the students almost scored a half of the total score for the Parts of Speech. Next, the students failed to a have a passing score for the Grammar test, and they have an optimal score for the Reading Comprehension part. Lastly, the average score in the General Aptitude was close to the passing score by a 2-point margin, which is 26.1. Overall, the student sample was not able to have an average aptitude in the English Language.

3.3 Self-Efficacy of the Respondents in Using Social Media

After getting the General Aptitude of the students, the researchers proceeded in measuring their self-efficacy in using social media on different aspects or dimensions. The researchers used weighted mean to properly analyze the weights of each component, as well as the individual items. In a scale of 1 to 5, the respondents answered in a level of agreement or disagreement on each item which defined their self-efficacy.

Academic. Overall, a weighted mean of 3.96 was recorded in the academic domain. On average, this means that the students perceive that they have high efficacy in using the platform when using it for academic purposes. Particularly, some of the items that involve research (4.13) and academic discussion (4.02) have high self-rating. Furthermore, the students rated themselves high since they think that they are capable to understand what is being shown in the platform, including information that may be not true or correct.

Table 8
Weighted Mean of the Academic Domain

Indicator	Weighted Mean	Verbal Interpretation
I use social media sites to solve my academic problems.	3.94	Agree
I use social media sites to do research works.	4.13	Agree
I use social media sites for online academic group discussion.	4.02	Agree
I communicate with my friends via social networking sites for preparation of exams.	3.97	Agree
I use social networking sites for collaborative learning.	3.86	Agree
I use social networking sites to learn about my curricular aspects.	3.78	Agree
I use social networking sites to seek help from my teachers.	4.04	Agree
Overall	3.96	Agree

Socialization. This component focuses on the self-rated ability of the students in terms of their socialization skill in the social media platform. A weighted mean of 3.66 was obtained in the domain of Socialization, which means that students

agree that they were able to socialize in the different platforms available in social media. On aspects such as training to become more sociable (3.87) and establishing identity (3.52), it can be seen that they have high self-rated efficacy that social media helps them to shape themselves, regardless of the contents they have been seeing inside the platforms.

Table 9
Weighted Mean of the Socialization Domain

Indicator	Weighted Mean	Verbal Interpretation
I use social media networking sites to become more sociable.	3.87	Agree
I use social media networking sites to create my social identity.	3.52	Agree
I prefer using social media networking sites to attending social gathering.	3.38	Moderately Agree
I use social media networking sites strengthening interpersonal relationship.	3.61	Agree
I use social media networking sites to keep in touch with my relatives.	3.70	Agree
I use social networking sites to get information regarding the current social events.	3.87	Agree
Overall	**3.66**	**Agree**

Entertainment. As a testament of the high self-efficacy in this component, the researchers have recorded a 3.97 weighted mean. Students often look for funny videos (4.15) and watch movies (4.19) on the platforms of social media for their own entertainment. The rating also mean that students have high confidence that they are using social media precisely for the purpose of humor, self-serving satisfaction, as well as leisure.

Table 10
Weighted Mean of the Entertainment Domain

Indicator	Weighted Mean	Verbal Interpretation
I use social networking sites for sharing my pictures.	3.69	Agree
I use social networking sites to look at funny videos.	4.15	Agree
I use social networking sites for watching movies.	4.19	Agree
I use social networking sites to get relief from academic stress.	3.87	Agree
Overall	3.97	Agree

Informativeness. This component deals with the information presented in the social media. The information presented may be in form of misinformation, or other misleading thought. Overall, the students report that they have a high self-efficacy on using social media in terms of being informed, with a weighted mean of 3.97. Another evidence is the high rating of 4.08 by which the information presented is used in finding jobs. Other uses include sharing new ideas (3.94) and reading news (3.90).

Table 11
Weighted Mean of the Informativeness Domain

Indicator	Weighted Mean	Verbal Interpretation
I use social networking sites for reading news.	3.90	Agree
I use social networking sites to share new ideas.	3.94	Agree
I use social networking sites for getting job related information.	4.08	Agree
Overall	3.97	Agree

Constraints. The last component of the self-efficacy in social media include the constraints or the difficulties faced in the platforms themselves. Overall, the recorded weighted mean in this component is 3.78, which translates to *Agree.*

Individually, the respondents report that they face difficulty in finding exact information for academic via social networking sites (3.80). They also suffer from a compulsive usage of social networking sites (4.04) which is a problematic issue. However, the respondents agree moderately on prioritizing social media over academic tasks (3.39). Lastly, the students find it hard to concentrate on studies (3.90).

Table 12
Weighted Mean of the Constraints Domain

Indicator	Weighted Mean	Verbal Interpretation
I face difficulty in finding exact information for academic via social networking sites.	3.80	Agree
Compulsive usage of social networking sites is a problematic issue.	4.04	Agree
I usually postpone my academic task for spending more time on social networking sites.	3.39	Moderately Agree
While using social networking sites, it is difficult for me to	3.90	Agree

concentrate on my studies.		
Overall	3.78	Agree

Summary. The following table below summarizes the self-efficacy of the students in using social media. The individual means presented indicate that the students have high self-efficacy in using the different social media platforms. It is further supported by the overall mean of 3.87 of the components of self-efficacy.

Table 13
Self-efficacy in Using Social Media among Students

Factor	Weighted Mean	Verbal Interpretation
Academic	3.96	Agree
Socialization	3.66	Agree
Entertainment	3.97	Agree
Informativeness	3.97	Agree
Constraints	3.78	Agree
Grand Mean	**3.87**	**Agree**

3.4 Differences in Self-efficacy per Demographic Profile

In order to record the differences in the observed self-efficacy among respondents, the researchers grouped the responses according to the demographic characteristics of the respondents. After that, the researchers proceeded in using an Analysis of Variance test and Independent Samples t-test to test the differences of the self-efficacy levels of the respondents.

Differences by Age. Since there are more than two age groups identified in the demographic profile of the respondents. The researchers used a One-Way ANOVA test to measure the differences in the self-efficacy levels. Upon testing, the following data was returned which indicated an F-ratio of .567 with a p-value of .638, indicating that there is no significant differences in the self-efficacy levels of the respondents when they are grouped according to their age profile.

Table 14
Differences in Self-efficacy in Using Social Media among Students when grouped by Age

Analysis of Variance		SS	df	Mean Square	F	Sig.
Self-efficacy * Age	Between (Combined) Groups	5.146		31.715	.567	.638
	Within Groups	393.568	130	3.027		
	Total	398.715	133			

Differences by Sex. Next, the differences by sex were measured using an Independent Samples t-test since there were only two groups under this variable. Results in the table below reveal a t-value of 2.054 with a mean difference of .29559 between groups. Since the t-value exceeded the 95% confidence interval (.02254, 1.19196) and the p-value of the test was 0.042 is less than the margin of error of 0.05, the researchers conclude that there is enough evidence to prove that there are significant differences in self-efficacy levels between sexes.

Table 15
Differences in Self-efficacy in Using Social Media among Students when grouped by Sex

t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
2.054	131.857	.042	.60725	.29559

Differences by Grade Level. Lastly, the differences of self-efficacy when grouped by grade levels are also tested. Using the same independent t-test, the researchers computed a t-value of .641 which failed to exceed the 95% confidence interval of (-.40073, .78538) under a p-value of .522. The p-value also exceeded the margin of error, therefore increasing the probability of a Type-I error. Therefore, the researchers report that there is not enough evidence to conclude that there are significant differences in self-efficacy levels of the students when they are grouped according to grade level.

Table 16
Differences in Self-efficacy in Using Social Media among Students when grouped by Grade Level

t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
.641	132	.522	.19232	.29981

3.5 Correlation of Self-efficacy and General Aptitude

The last objective of the study was to assess the correlation of the self-efficacy of the students and their general aptitude in using English as a second language. The correlation is to be established to validate the theory of Dunning and which is a cognitive bias in which individuals with limited knowledge or competence in a particular intellectual or social domain greatly overestimate their own knowledge or competence in that domain in comparison to objective criteria, peer performance, or the performance of the general population (Schlösser et al., 2013; Mazor & Fleming, 2021; Dunning, 2011).

Upon running the test, the researchers set the margin of error to 0.10, therefore giving the test a 90% confidence level. The Pearson r was recorded to be -.164, which is negligible for a correlation test. However, since the p-value of the test is recorded at 0.058, the researchers could conclude in favor of the negative correlation between the self-efficacy and general aptitude.

Further recommendations will be stated in the succeeding sections of this study. Additionally, since the self-efficacy and the general aptitude have negative correlation, it means that individuals who have higher self-efficacy tend to have lower general aptitude in using English as a second language or vice-versa. This result validates the Dunning-Kruger effect, since self-efficacy was self-rated and prone to cognitive bias.

However, it still recommended that the researchers should focus on a bigger sample.

Table 17
Correlation of Self-efficacy and General Aptitude

Variables			
Self-efficacy	*	Pearson Correlation	-.164
General Aptitude		Sig. (2-tailed)	.058
		N	134

4. DISCUSSION

The tests conducted in finding differences in the self-efficacy in the demographic profile of the respondents and the negative correlation of the self-efficacy and the general aptitude of the students implied two important things. First, self-efficacy may vary across sexes and possibly, across genders. This result may be further explored in terms of conflicting philosophies. For example, girl students may find themselves smarter than their male counterparts. Thus, females may have higher self-efficacies than males, or vice-versa, whichever is the case.

Second, the negative correlation on the self-efficacy levels and the general aptitude reveal that confident individuals tend to have lower performances, and vice versa. However, this is not always the case. Dunning (2011) explains that this phenomenon both applies to those with high expertise and high confidence, and to those with low expertise and high confidence. Either one individual may be confidently inadept or confidently expert, whichever the case. Thus, one individual is susceptible to misinformation only when they are confidently inadept. As observed in the tests made, most students lack reading comprehension.

In conclusion, self-efficacy helps in identifying which individuals need improvement, especially in schools. There could be programs that could be made to address these types of problems. Exposure to misinformation is unavoidable, however, with the help of improving the aptitude of the students, they could have increased resistance and lower susceptibility to misinformation.

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