A Study of Relationship between Thinking Style, Attitude towards ICT and Computer Confidence among Student Teachers

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Abstract

Thinking, a very convoluted process is the mental phenomenon that is most difficult to elucidate or express in terms of complexity. Each individual's unique way of taking in and processing the information they encounter is their "thinking style." The present research study examines the relationship between student teachers' thinking styles, attitudes towards ICT and computer confidence among student teachers. The researcher in this study attempts to identify the thinking variables that may directly or indirectly affect students' attitudes towards ICT and computer confidence. Samples for this study have been taken from student teachers enrolled in Bachelor of Education in Mumbai region, Maharashtra, India. Information and communication technology are crucial in this knowledge era, especially regarding the educational journey. The capacity to think critically helps teachers use technology in the classroom for information creation, management, and distribution. The Thinking Style Inventory, established and standardized by Robert J. Sternberg in 1997, was used in this study to gather data on the thinking pattern of student teachers. The standardized questionnaire was developed by Nash, John B., and Moroz, Pauline A. (1997) to assess student teachers' attitudes towards ICT and computer confidence. The quantitative data were analyzed with the SPSS program. The findings indicate that a favorable attitude towards ICT may be attributed to enhanced computer confidence and the promotion open and creative thinking abilities. Student educators should gain positive technological experience.

Keywords: Attitude towards ICT, Computer Confidence, Student Teachers, Thinking Styles

Introduction

Humans are defined by their unique capacity for abstract thought. Thinking is described as a process that exercises the faculties of judgement, conceptualization, or inference in the intransitive sense (Miriam Webster, 2006). A person's thinking style is the preferred approach in which they use the qualities they possess. When managing activities, an individual chooses the style with which we are most comfortable (Sternberg, 1997). A thinking style is a way that style is used in diverse contexts. Sternberg argued that styles are considered separate from skills and entail non-conscious choices in utilizing whatever talents one has. Thinking, a very convoluted process is the mental phenomenon that is most difficult to elucidate or express in terms of complexity. Each individual's unique way of taking in and processing the information they encounter is their "thinking style." This concept includes a

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person's means of learning, thinking, generating ideas, applying values, resolving problems, creating tactics, expressing oneself, and connecting with others (Chen, R.-S., & Ji, C.-H. 2015). Individual differences are primarily the result of one's unique way of thinking (Belousova & Mochalova, 2020). It allows people to distinguish themselves from others with excellent outcomes. Everyone has a distinct way of thinking. Students put their knowledge and abilities to use in a variety of contexts. Thus, how a person is innately inclined to absorb information in their thinking style. While much study has been done in this area, much more still needs to be done to explain specific elements. There are thinking style inventories developed by psychologists to identify the thinking styles of an individual. (Sternberg, Grigorenko, & Zhang, 2008; Sternberg, Thinking Styles, 1997; Gregorc, 2017). Thus, individual preferences about using one's abilities and skills are called thinking styles. The thinking styles of an individual influence their perception and activity towards any task. Intelligence is what a person can do, but the thinking style is what a person prefers to do.

Thinking styles may be changed via training and practice. Education and training is the fundamental process that assists people in developing their thinking abilities. By receiving an education, one may cultivate the required knowledge, understanding, attitudes, and thinking abilities (Chen, R.-S., & Ji, C.-H. 2015). Chen & Ji. (2015) also investigated the connection between a student's way of thinking and the extent of their usage of personal electronic gadgets. The study by Mustafa, Y. (2016) investigates the link between the various modes of thinking that preservice teachers from the Department of Computer Education and Instructional Technology are obliged to utilize and their attitudes towards information and communication technology (ICT). The concept of mental self-government that Robert J. Sternberg presented in 1997 became the basis for developing the Thinking Style Inventory (TSI). According to this theory, individual thought processes may be described in terms of government functions, forms, levels, scope, and orientations. Individuals are not limited to a single thinking style but have preferences across various jobs and settings.

1. REVIEW OF RELATED LITERATURE

Most of the research focused on determining how different ways of thinking affected the individual's overall effectiveness on tasks requiring specific information management or computer processes. However, a limited number of studies focused on the relationship between the thinking style of individuals and their attitude towards ICT and computer confidence levels. According to the results of the search for relevant literature, a substantial amount of research has been done on the ways of thinking and the use of ICT. Several investigations have examined how different factors affect teachers' and preservice teachers' thinking styles, including social skills, pedagogy, content understanding, and lab attitudes. (Duman and Elik, 2011; Yldz, 2012). However, fewer studies examine the relationship between student teachers' thinking patterns, ICT attitudes, and computer confidence.

The present research study examines the relationship between student teachers' thinking styles, attitudes towards ICT and computer confidence among student teachers. The researcher in this study attempts to identify the thinking variables that may directly or indirectly affect students' attitudes towards ICT and computer confidence. It was shown that cognitive and non-cognitive elements and individual and contextual factors influence students' attitudes towards information and communication technology (ICT) and their computer confidence. The primary purpose of this research was to investigate the degree to which different ways of thinking may accurately predict how student teachers would feel about using information technology and how confident they will be using computers.

III. STATEMENT OF THE PROBLEM

In this study, the researcher focused on whether the thinking styles of the student teachers alter their attitudes towards ICT and computer confidence. The problem is 'A Study of Relationships between
Thinking Style, Attitude towards ICT and Computer Confidence among Student Teachers.

The research questions of this research study are:

a) What are the different thinking styles of student teachers?
b) What are the computer confidence level and Attitude of the student teachers towards ICT?
c) Do student teachers' attitudes towards ICT and computer confidence levels concerning their thinking style differ?

IV. SIGNIFICANCE OF THE STUDY

The ability to think fast and creatively about new ways to use technology is essential for teachers in today's classrooms. Information and communication technology are crucial in this knowledge era, especially regarding the educational journey. The capacity to think critically helps teachers use technology in the classroom for information creation, management, and distribution. In this context, it is of the utmost importance to study the link between the thinking patterns of student teachers, their Attitude towards ICT and computer confidence.

V. OBJECTIVES OF THE STUDY

1. To study the overall Attitude towards ICT among student teachers
2. To study the computer confidence level among student teachers
3. To study the significant differences in the Attitude of student teachers towards ICT with respect to
   i. Forms of Thinking Style
   ii. Functions of Thinking Style
   iii. Level of Thinking Style
   iv. Scope ofThinking Styles
   v. Leanings of Thinking Styles
4. To study the significant differences in computer confidence levels with respect to
   i. Forms of Thinking Style
   ii. Functions of Thinking Style
   iii. Level of Thinking Style
   iv. Scope of Thinking Styles
   v. Leanings of Thinking Styles
5. To ascertain the correlation between the Attitude towards ICT and computer confidence among student teachers.

VI. HYPOTHESIS OF THE STUDY

1. There are no significant differences in the Attitude of student teachers towards ICT with respect to
   i. Forms of Thinking Style
   ii. Functions of Thinking Style
   iii. Level of Thinking Style
   iv. Scope of Thinking Styles
   v. Leanings of Thinking Styles
2. There are no significant differences in computer confidence levels with respect to
   i. Forms of Thinking Style
   ii. Functions of Thinking Style
iii. Level of Thinking Style
iv. Scope of Thinking Styles
v. Leanings of Thinking Styles

3. There is no significant correlation between the Attitude towards ICT and computer confidence among student teachers.

4. There is no statistically significant relationship between the predictor variable, thinking style, and the response variable, Attitude towards ICT.

5. There is no statistically significant relationship between the predictor variable, thinking style, and the response variable, Computer Confidence.

VII. RESEARCH METHODOLOGY

Methodology
For this research investigation, a quantitative research paradigm was used. The descriptive method of the causal-comparative has been chosen as the appropriate research approach for this study. Correlation and Regression analysis was used to predict the influence of thinking styles on Attitude towards ICT and Computer confidence among student teachers. This design prioritized quantitative data collection and analysis.

Sample of the Study
For the study, 92 student teachers were selected. Students and teachers from various categories of gender, subject disciplines, and levels of the B.Ed. Programme

Tools used for the study
The Thinking Style Inventory, established and standardized by Robert J. Sternberg in 1997, was used in this study to gather data on the thinking pattern of student teachers. It evaluates the five aspects of mental self-government: functions, form, scope, level, and leanings. It then individually calculates a score for each of the thirteen thinking styles. The standardized questionnaire was developed by Nash, John B., and Moroz, Pauline A. (1997) to assess student teachers' attitudes towards ICT and computer confidence.

VIII. ANALYSIS OF DATA

8.1. To study the overall Computer confidence and Attitude towards ICT among student teachers.

From Table 1a., it is revealed that the mean score of overall attitudes of student teachers towards ICT is 114.86, and the SD is 13.04. The skewness of the overall Attitude of student teachers towards ICT is -0.440, and the corresponding standard error is 0.251. The skewness of the distribution scores is negative. The distribution has a kurtosis of 0.302 and a standard error of 0.498. The values of skewness and kurtosis, as well as the differences between the mean, median, and mode, are all within the acceptable range of variability. A normal distribution of student-teacher attitudes towards ICT attitude was found. The Kolmogorov-Smirnov test analysis showed that the test statistic's value (0.126) is not significant at the 0.05 level. It shows that the data is normally distributed (Fig.1.a).

Table 1.b. further shows the mean score of computer confidence of student teachers. The mean score of computer confidence is 38.43, and the SD is 6.54. The skewness of student teachers' computer confidence is -0.029, and the corresponding standard error is 0.251%. The scores on the distributions have a negative skewness in their distributions. The kurtosis of the distribution is measured at 0.288,
and the standard error that corresponds to it is measured at 0.498. The difference between the mean, median, and mode and the skewness and kurtosis values are all within an acceptable range. The distribution of overall scores of student teachers' computer confidence is normal. According to the Kolmogorov-Smirnov Test results, the test statistic's value (0.070) does not meet the criteria for statistical significance at the 0.05 level. It indicates that the data follows a normal distribution (Fig. 1.b).

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Computer Confidence</th>
<th>Overall Attitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>38.43</td>
<td>114.86</td>
</tr>
<tr>
<td>Median</td>
<td>38.00</td>
<td>117.00</td>
</tr>
<tr>
<td>Mode</td>
<td>37</td>
<td>114^a</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>6.549</td>
<td>13.042</td>
</tr>
<tr>
<td>Skewness</td>
<td>-0.029</td>
<td>-0.440</td>
</tr>
<tr>
<td>Std. Error of Skewness</td>
<td>0.251</td>
<td>0.251</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>-0.288</td>
<td>0.302</td>
</tr>
<tr>
<td>Std. Error of Kurtosis</td>
<td>0.498</td>
<td>0.498</td>
</tr>
</tbody>
</table>

^a. Multiple modes exist. The smallest value is shown

As it can be comprehended from the descriptive analysis, student teachers, with respect to forms of thinking style, displayed the highest frequency score with hierarchic (32%) and the lowest frequency score with anarchic (13%). Based on the finding, it is possible to conclude that student teachers, with respect to functions of thinking style, prefer the executive style (38%), and the least prefer the judicial style (30%). Regarding the level of thinking style, 41% of student teachers belong to global-level thinking, and 59% belong to local-level thinking. Descriptive analysis with respect to the scope of thinking styles shows that 71% of the student teachers are based on an external level thinking style, and 29% of the student teachers are based on an internal level thinking style. According to their leanings in thinking style, most student teachers (71%) belong to the conservative level of thinking, while 29% belong to the liberal level.
8.2. Hypotheses - There is no significant difference in the Attitude towards ICT among student teachers with respect to Forms of Thinking Style.

<table>
<thead>
<tr>
<th>Forms of Thinking Style</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F Value</th>
<th>p</th>
<th>Critical F-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hierarchic</td>
<td>30</td>
<td>116.67</td>
<td>7.685</td>
<td>37.38</td>
<td>P&lt;0.01</td>
<td>2.71</td>
</tr>
<tr>
<td>Monarchic</td>
<td>26</td>
<td>100.35</td>
<td>10.375</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oligarchic</td>
<td>24</td>
<td>122.17</td>
<td>8.014</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anarchic</td>
<td>12</td>
<td>127.17</td>
<td>8.632</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>92</td>
<td>114.86</td>
<td>13.042</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From Table 2.a., it is revealed that the mean score of Attitude towards ICT with respect to hierarchic, monarchic, oligarchic, and anarchic thinking styles is 116.67, 100.35, 122.17, and 127.17, respectively. The value of the ANOVA test is 37.38, and that was statistically significant at 0.01. Therefore, the null hypothesis was rejected.

Post hoc Test

The Bonferroni post hoc test (Table 2.b.) revealed that the pair-wise group comparisons of hierarchic and anarchic, hierarchic and monarchic, anarchic and monarchic, and oligarchic monarchic all have a p-value less than 0.05. Based on the data that is available, it is likely that each of these groups is significantly different from the others pair-wise.
8.3. Hypotheses - There is no significant difference in computer confidence among student teachers with respect to Forms of Thinking Style.

Table 2.c. Computer Confidence with respect to Forms of Thinking Style

<table>
<thead>
<tr>
<th>Forms of Thinking Style</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F Value</th>
<th>p</th>
<th>Critical F-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hierarchic</td>
<td>30</td>
<td>37.17</td>
<td>3.435</td>
<td>38.37</td>
<td>P&lt;0.01</td>
<td>2.71</td>
</tr>
<tr>
<td>Monarchic</td>
<td>26</td>
<td>32.27</td>
<td>5.024</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oligarchic</td>
<td>24</td>
<td>42.88</td>
<td>3.993</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anarchic</td>
<td>12</td>
<td>46.08</td>
<td>5.648</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>92</td>
<td>38.43</td>
<td>6.549</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2.d. Post Hoc Test – Computer Confidence by Forms of Thinking Style

<table>
<thead>
<tr>
<th>Forms of Thinking Style – Pair-wise Comparison</th>
<th>Mean diff.</th>
<th>Std. Error</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hierarchic - Anarchic</td>
<td>-8.92</td>
<td>1.497</td>
<td>P&lt;0.01</td>
</tr>
<tr>
<td>Hierarchic - Oligarchic</td>
<td>-5.71</td>
<td>1.2</td>
<td>P&lt;0.01</td>
</tr>
<tr>
<td>Hierarchic - Monarchic</td>
<td>4.9</td>
<td>1.175</td>
<td>P&lt;0.01</td>
</tr>
<tr>
<td>Anarchic - Oligarchic</td>
<td>3.21</td>
<td>1.55</td>
<td>P&gt;0.05</td>
</tr>
<tr>
<td>Anarchic - Monarchic</td>
<td>13.81</td>
<td>1.53</td>
<td>P&lt;0.01</td>
</tr>
<tr>
<td>Oligarchic - Monarchic</td>
<td>10.61</td>
<td>1.241</td>
<td>P&lt;0.01</td>
</tr>
</tbody>
</table>

Table 2.c. reveals that the mean score of computer confidence among student teachers is 38.43, and the SD is 6.54. It indicates that the mean score of computer confidence with respect to hierarchic, monarchic, oligarchic, and anarchic thinking styles is 37.17, 32.27, 42.88, and 46.08, respectively. The value of the ANOVA test is 38.37, and that was statistically significant at 0.01. Therefore, the null hypothesis was rejected.

Post hoc Test

The Bonferroni post hoc test (Table 2.d) revealed that the pair-wise group comparisons of Hierarchic - Anarchic, Hierarchic - Oligarchic, Hierarchic - Monarchic, Anarchic - Monarchic, and Oligarchic - Monarchic have a p-value less than 0.05. Thus, based on the available data, these categories have significant pair-wise differences.

8.4. Hypotheses – There is no significant difference in the Attitude towards computers among student teachers with respect to Functions of Thinking Style.

Table 3.a. Attitude towards ICT with respect to Functions of Thinking Style

<table>
<thead>
<tr>
<th>Functions of Thinking Style</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F Value</th>
<th>p</th>
<th>Critical F-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legislative</td>
<td>29</td>
<td>115.41</td>
<td>11.444</td>
<td>22.054</td>
<td>P&lt;0.01</td>
<td>3.1</td>
</tr>
</tbody>
</table>
Table 3.1 indicates that the mean score of attitudes towards ICT with respect to legislative, executive, and judicial functions of thinking styles is 115.41, 106.54, and 124.68, respectively. The value of the ANOVA test is 22.05, and that was statistically significant at 0.01. Therefore, the null hypothesis was rejected.

**Post-hoc-Tests**

The Bonferroni post hoc test (Table 3.2) revealed that the pair-wise group comparisons of Judicial-Legislative, Judicial-Executive, and Legislative-Executive have a p-value less than 0.05. Thus, based on the available data, these groups are each significantly different pair-wise.

8.5. **Hypotheses - There is no significant difference in computer confidence among student teachers with respect to Functions of thinking styles.**

Table 3.3 indicates that the mean score of computer confidence with respect to legislative, executive, and judicial functions of thinking styles is 39.03, 33.14, and 44.43, respectively. The value of the ANOVA test is 46.61, and that was statistically significant at 0.01. Therefore, the null hypothesis was rejected.
Table 3. c reveals that the mean score of computer confidence among student teachers is 38.43, and the SD is 6.54. It indicates that the mean score of computer confidence with respect to legislative, executive, and judicial functions of thinking styles is 39.03, 33.14, and 44.43, respectively. The value of the ANOVA test is 46.61, and that was statistically significant at 0.01. Therefore, the null hypothesis was rejected.

Post hoc Test
The ANOVA showed that there was a significant difference. A Bonferroni post hoc test was used to compare the groups in pairs to determine which was significantly different. The Bonferroni post hoc test revealed that the pair-wise group comparisons of judicial and legislative, judicial and executive, and legislative and executive have a p-value less than 0.05. Thus, based on the available data, these groups are each significantly different pair-wise.

8.6. Hypotheses- There is no significant difference in the Attitude towards computers among student teachers with respect to the Level of Thinking Style.

<table>
<thead>
<tr>
<th>Functions of Thinking Style– Pair-wise Comparison</th>
<th>Mean diff.</th>
<th>Std. Error</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Judicial Legislative</td>
<td>5.39</td>
<td>1.226</td>
<td>P&lt;0.01</td>
</tr>
<tr>
<td>Judicial Executive</td>
<td>11.29</td>
<td>1.173</td>
<td>P&lt;0.01</td>
</tr>
<tr>
<td>Legislative Executive</td>
<td>5.89</td>
<td>1.162</td>
<td>P&lt;0.01</td>
</tr>
</tbody>
</table>

Table 4.a. reveals that the mean score of attitudes towards ICT among student teachers is 114.86, and the SD is 13.04. It indicates that the mean scores of attitudes towards ICT with respect to global thinking and local thinking are 121.82 and 109.96, respectively. The value of the t-test is 4.779, which was statistically significant at 0.01. Therefore, the null hypothesis was rejected.

Figure 4. Overall Attitude towards ICT by Level of Thinking Style

8.7. Hypotheses- There is no significant difference in computer confidence among student teachers with respect to the Level of Thinking Style.
Table 4.b. reveals that the mean score of attitudes towards ICT among student teachers is 38.43, and the SD is 6.54. It indicates that the mean score of attitudes towards ICT with respect to global thinking and local thinking is 43.21 and 35.07, respectively. The value of the t-test is 7.40, which was statistically significant at 0.01. Therefore, the null hypothesis was rejected.

8.8. Hypotheses- There is no significant difference in the Attitude towards computers among student teachers with respect to the Scope of Thinking Styles.

Table 5.a. indicates that the mean scores of attitudes towards ICT with respect to external and internal thinking are 118.82 and 105.33, respectively. The results of the descriptive statistics show that the internal group has lower values for the dependent variable overall Attitude (M = 105.33, SD = 12.407) than the external group (M = 118.82, SD = 11.18). The value of the t-test is 5.09, which was statistically significant at 0.01. Therefore, the null hypothesis was rejected.

8.9. Hypotheses- There is no significant difference in computer confidence among student teachers with respect to the Scope of Thinking Styles.

Table 5. b reveals that the mean score of computer confidence among student teachers is 38.43, and the SD is
6.54. It indicates that the mean scores of computer confidence with respect to external and internal thinking are 40.65 and 33.11, respectively. The results of the descriptive statistics show that the internal group has lower values for the dependent variable computer confidence ($M = 33.11, SD = 4.96$) than the external group ($M = 40.65, SD = 5.83$). The value of the t-test is 5.88, which was statistically significant at 0.01. Therefore, the null hypothesis was rejected.

8.10. Hypotheses- There is no significant difference between Attitudes towards computers among student teachers with respect to Leanings of Thinking Styles.

<table>
<thead>
<tr>
<th>Leanings of Thinking Styles</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>t value</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conservative Thinking Style</td>
<td>65</td>
<td>111.11</td>
<td>12.480</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liberal Thinking Style</td>
<td>27</td>
<td>123.89</td>
<td>9.597</td>
<td>4.763</td>
<td>P&lt;0.01</td>
</tr>
<tr>
<td>Total</td>
<td>92</td>
<td>114.86</td>
<td>13.042</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6.a. reveals that the Mean score of attitudes towards ICT among student teachers is 114.86, and the SD is 13.04. It indicates that the mean scores of attitudes towards ICT with respect to conservative and liberal thinking are 111.11 and 123.89, respectively. The results of the descriptive statistics show that the Liberal group has higher values for the dependent variable overall Attitude ($M = 123.89, SD = 9.59$) than the Conservative group ($M = 111.11, SD = 12.48$). The value of the t-test is 4.763, which was statistically significant at 0.01. Therefore, the null hypothesis is rejected.

8.11. Hypotheses- There is no significant difference between computer confidence among student teachers with respect to the Leanings of Thinking Styles.

<table>
<thead>
<tr>
<th>Leanings of Thinking Styles</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>t value</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conservative Thinking Style</td>
<td>65</td>
<td>36.05</td>
<td>5.334</td>
<td>6.565</td>
<td>P&lt;0.01</td>
</tr>
<tr>
<td>Liberal Thinking Style</td>
<td>27</td>
<td>44.19</td>
<td>5.609</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>92</td>
<td>38.43</td>
<td>6.549</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 6.b. reveals that the mean score of computer confidence among student teachers is 38.43, and the SD is 6.54. It indicates that the mean scores of computer confidence with respect to conservative and liberal thinking are 36.05 and 44.19, respectively. The results of the descriptive statistics show that the Liberal group has higher values for the dependent variable computer confidence (M = 44.19, SD = 5.60) than the Conservative group (M = 36.05, SD = 5.33). The value of the t-test is 6.56, which was statistically significant at 0.01. Therefore, the null hypothesis is rejected.

8.12. Hypotheses: There is no association between Computer Confidence and Overall Attitude
The result of the Pearson correlation (Table 7.a.) showed that there was a significant association between computer confidence and overall Attitude: r(90) = 0.67, p<0.01. A high, positive correlation (r = 0.67) exists between computer confidence variables and overall Attitude towards ICT.

Table 7.a. Correlation between Computer Confidence and Attitude towards ICT

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Statistics</th>
<th>Overall Attitude</th>
<th>Computer Confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Attitude</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>0.66**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
<td>P&lt;0.01</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td></td>
<td>92</td>
</tr>
<tr>
<td>Computer Confidence</td>
<td>Pearson Correlation</td>
<td>0.66**</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
<td>P&lt;0.01</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td></td>
<td>92</td>
</tr>
</tbody>
</table>

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

8.13. Hypothesis - There is no statistically significant relationship between the predictor variable, thinking style, and the response variable, Attitude towards ICT

Regression Analysis
The influence of the variables Forms of Thinking Style, Functions of Thinking Style, Level of Thinking Style, Scope of Thinking Styles, and Leanings of Thinking Styles on the variable Overall Attitude was examined using multiple linear regression analysis.

### Table 7.b. Model Summary

<table>
<thead>
<tr>
<th>R</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>Standard error of the estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.76</td>
<td>0.58</td>
<td>0.55</td>
<td>8.72</td>
</tr>
</tbody>
</table>

### Table 7.c. ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>5</td>
<td>23.5</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>

**Regression coefficients**

The following regression model is obtained:

\[
\text{Overall Attitude} = 33.71 - 0.12 \cdot \text{Forms of Thinking Style} + 0.39 \cdot \text{Functions of Thinking Style} + 0.36 \cdot \text{Level of Thinking Style} - 0.34 \cdot \text{Scope of Thinking Styles} + 5.11 \cdot \text{Leanings of Thinking Styles}.
\]

When all independent variables are zero, the value of the variable overall Attitude is 33.71.

**Standardized regression coefficients**

In this model, the variable Leanings of Thinking Styles significantly influences the variable Overall Attitude.

### p-value

The Functions of Thinking Style test coefficient is significant at the p=0.23 level. So, the p-value is higher than 0.05, which means that the null hypothesis that the Functions of Thinking Style coefficient is zero in the group is still valid. As a result, it is presumed that the Functions of Thinking Style population coefficient is also zero. The p-value for the level of thinking style coefficient is 0.576. Therefore, the p-value exceeds the significance level of 0.05, and the null hypothesis that the level of thinking style coefficient in the population is zero is maintained. Therefore, it is presumed that the population coefficient for the variable level of thinking style equals zero. The p-value for the Scope of Thinking Styles coefficient is 0.285. The null hypothesis, according to which the population's coefficient of the scope of thinking style is zero, is upheld since the p-value is higher than the significance threshold of 0.05. Therefore, it is presumed that the population coefficient for the variable...
scope of thinking styles equals zero—the p-value for the leanings of thinking styles coefficient is .001. As a result, the p-value is less than the significance threshold of 0.05, and the null hypothesis that the population's coefficient of leanings is zero is rejected. As a result, it is presumed that the population has a coefficient for the variable leanings of thinking styles that are not equal to zero.

8.14 Hypothesis - There is no statistically significant relationship between the predictor variable, thinking style, and the response variable, Computer Confidence.

A multiple linear regression analysis was performed to examine the influence of the variable's Forms of Thinking Style, Functions of Thinking Style, Level of Thinking Style, Scope of Thinking Styles, and Leanings of Thinking Styles on the variable Computer Confidence.

Model Summary
The regression model showed that the variable's Forms of Thinking Style, Functions of Thinking Style, Level of Thinking Style, Scope of Thinking Styles, and Leanings of Thinking Styles explained 66.92% of the variance from the variable Computer Confidence. An ANOVA was used to test whether this value differed significantly from zero. Using the present sample, it was found that the effect was significantly different from zero, $F = 34.8$, $p = < .001$, and $R^2 = 0.67$.

<table>
<thead>
<tr>
<th>Table 8.a. Model Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>$R$</td>
</tr>
<tr>
<td>0.82</td>
</tr>
</tbody>
</table>

Regression coefficients
The following regression model is obtained:
Computer Confidence = 9.4 + 0.01 · Forms of Thinking Style + 0.27 · Functions of Thinking Style - 0.63 · Level of Thinking Style - 0.22 · Scope of Thinking Styles + 2.38 · Leanings of Thinking Styles.

When all independent variables are zero, "Computer Confidence" is 9.4.

<table>
<thead>
<tr>
<th>Table 8.b. ANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>Regression</td>
</tr>
</tbody>
</table>

Standardized regression coefficients
In this model, the variable leanings of thinking styles significantly influence the variable computer confidence.
p-value
The p-value for the styles of thinking coefficient is 0.95. So, the p-value is greater than 0.05, which means that the null hypothesis that the Forms of Thinking Style coefficient is zero in the group is still valid. As a result, it is assumed that the population coefficient for the variable Forms of Thinking Style is equal to zero. The p-value for the Functions of Thinking Style coefficient is 0.065. Thus, the p-value exceeds the significance level of 0.05, and the null hypothesis that the Functions of the Thinking Style coefficient in the population is zero is maintained. Thus, it is presumed that the population coefficient for the variable functions of thinking style equals zero. The p-value for the Level of Thinking Style coefficient is 0.03. Therefore, the null hypothesis that the population's threshold of the thinking style coefficient is zero is rejected since the p-value is less than the significance threshold of 0.05. So, it is assumed that the population's Level of Thinking Style variable's coefficient is not zero. The p-value for the Scope of Thinking Styles coefficient is 0.119. The null hypothesis, according to which the population's coefficient of the scope of thinking styles is zero, is upheld since the p-value is higher than the significance threshold of 0.05. Therefore, it is presumed that the population coefficient for the variable scope of thinking styles equals zero—the p-value for the leanings of thinking styles coefficient is 0.001. Therefore, the p-value is less than the significance level of 0.05, and the null hypothesis that the population's leanings of thinking styles coefficient is zero is rejected. Therefore, it is presumed that the population coefficient for the variable leanings of thinking styles is not zero.

IX. DISCUSSION AND CONCLUSION
Three goals were sought to be accomplished in this research. The study’s goals were threefold: first, to test the difference between student teachers' attitudes towards ICT and computer confidence in relation to thinking style; second, to determine the relationship between computer confidence and Attitude towards ICT; and third, to further investigate the predictive power of thinking styles and computer confidence on attitudes towards ICT. The differences in student instructors' attitudes towards ICT with regard to thinking styles were summarized based on inferential statistics. According to the results, there are differences in how they feel about ICT based on the forms of thinking styles, the functions of thinking styles, the level of thinking styles, the scope of thinking styles, and the tendencies of thinking styles. Similar findings have been documented in research that studies the influence of cognitive styles on attitudes towards ICT. The impact of cognitive and thinking styles on the performance of computer and information technology users has long been a source of concern in the educational sector. (e.g., Bariff & Lusk, 1977; Benbasat & Taylor, 1978; Driver & Mock, 1975; Mason & Mitroff, 1973). Specifically, the present analysis also revealed the following significant relationship: It was shown that there is a considerable positive correlation between student teachers’ computer confidence and their Attitude towards ICT.
ICT. According to research published in 1997 by T. Levine and S. Donitsa-Schmidt, those with more computer expertise report higher self-confidence and more favourable attitudes towards using computers. The study also postulates that positive attitudes towards and confidence in using computers mutually benefit one another and the motivation to continue learning about computers. Pelham (1991) also explains how the Attitude subject's experiences alter his or her self-competence beliefs, which affect his or her behaviour towards the attitude object. The linear and multiple regression analyses revealed that thinking styles and computer confidence are statistically predictive of ICT attitudes. Kuh (2001) states that thinking abilities significantly predict student teachers' attitudes towards ICT. Additionally, his research revealed that the local thinking style, one of the categories of thinking styles, had an essential effect on the participants' desire to learn more about computers and information technology. According to the study's findings, liberal thinking styles are also the most appropriate thinking disposition for having an attitude towards ICT. It was found that student teachers' attitudes towards ICT are affected by more than just their thinking skills. For example, computer confidence, how easy it is to get to technology, and so on, all play a role. Despite evidence from several studies showing that students' attitudes and anxieties improve with increased computer experience (Lee, 1986; Loyd & Gressarde, 1984), it appears that more work is needed to help students overcome their concerns about using computers, develop their skills, and make the connection between these factors and future success in the workplace.

An individual's Attitude towards ICT significantly influences the learning of the thinking approach. According to Salvi, Cristofori, Grafman, and Beeman (2016), liberals are more adaptable and tolerant of innovation and complexity, while conservatives are more fixed, more resistant to change, and prefer straightforward solutions. When it came to problem-solving, liberals relied far more on insights than they did on methodical, step-by-step analysis. A positive attitude towards information and communications technology (ICT) is intimately tied to adaptability, tolerance of complexity, and openness to new experiences. The liberal way of thinking these future educators show may inspire them to improve their comfort with and appreciation for technology.

The findings indicate that a favourable attitude towards ICT may be attributed to enhanced computer confidence and the promotion open and creative thinking abilities. Student educators should gain positive technological experience. Future research should concentrate on improving the cognitive styles of student instructors.

CONFLICT OF INTEREST
The author declares no conflicts of interest.

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REFERENCES


