The relationship between social studies teachers’ attitudes towards technology and their perceptions of competency needed for implementing technology in their classrooms in Jordan

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Abstract

This study used a cross-sectional survey design to examine the relationship between the attitudes of seventh to twelfth-grade social studies teachers and their perceptions of the competency needed toward implementing technology into their classrooms. Also, it investigated the extent to which the combination of teaching experience, grade-level taught and gender, predict teachers’ attitudes toward implementing technology into their classrooms. Furthermore, this study explored the extent to which the combination of teachers’ attitude, teaching experience, grade level taught and gender predict teachers’ perceptions of the competency needed toward implementing technology into their classroom. The convenience sample of Jordanian social studies teachers (n = 221) was a blend of male (n = 135) and female teachers (n = 86). The results showed that teachers with relatively high positive attitudes toward implementing technology were far more likely to have high perceptions of competency needed for implementing technology in social studies classrooms. The results also showed that the combination of teaching experience, grade-level taught, and gender variables were a statistically significant predictor of attitudes. Meanwhile, the combination of teaching experience, grade-level taught, gender, and attitude variables predicted about eighty percent of teachers’ perceptions of competency scores, which is extremely high.

Keywords: technology implementation and competency, elementary social studies, teachers’ attitudes, Jordan

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1. Introduction

Teachers’ attitudes and perceptions concerning technology implementation cover a considerable amount of the literature on education technology. The literature points out that a wide range of variables, such as the teachers’ pedagogical approach, confidence and comfort using the technology, and available technical support, to name a few, impact their attitudes and perceptions.

A quantitative and qualitative study that Palak and Walls (2009) conducted in the United States examined the attitudes and beliefs of teachers concerning technology. They designed the study to answer these two questions: (a) How do teachers’ beliefs relate to their instructional technology practices? (b) How do factors other than beliefs relate to teachers’ instructional technology practices? The study consisted of only teachers who were currently using technology in their classroom and who taught in technology-rich schools. They chose this sampling to limit the influences of barriers such as lack of equipment, support, and teacher comfort levels with technology. They selected 138 teachers for the survey. Sixty percent of those participating represented pre-K through sixth-grade teachers. Forty percent represented seventh through twelfth-grade teachers.

Findings showed that teachers had a positive attitude about educational technology. However, the extent to which they use the technology varies. Educational practice beliefs influence this level of use. Teachers who were more in line with teacher-centered learning did not view technology as having as much impact on student learning as those who had student-centered learning beliefs. Teacher participants were comfortable with the technology and felt they had support from the administration. They felt they had good support if they had questions or needed assistance with hardware or software (Palak & Walls, 2009).

Another study conducted by King (1999), examined teachers’ levels of computer and information technology competencies and their attitudes toward technology, and connected the teachers’ competencies and attitudes toward computers to their gender, age, school type and geographic location. The sample of the study included 380 teachers in 31 schools in school district in Western Newfoundland, Canada. The in-service teachers’ ages ranged from twenty to over fifty, their teaching experience ranged between two and twenty-five years, teaching at different school types, and were fairly evenly represented by gender and urban and rural location.

The results showed significant differences in the views of male and female teachers with respect to their technology competency; younger teachers were more competent in the use of technology than older teachers, and elementary teachers were less technologically competent than high school teachers. Also, the study indicated that teachers’ attitudes toward computer technology are generally positive, with little differences between teachers’ gender, age, and urban and rural teachers. Also, his study indicated a strong positive correlation between positive attitudes toward computers and teacher competency level.

Sa’ari, Luan, and Roslan (2005), examined teachers’ attitudes and perceived competency towards information technology with a sample of 160 secondary teachers (64 males; 96 females) from three selected schools in Malaysia. The results showed that most teachers who had teaching experience ranging between nine to fourteen years had positive attitudes towards information technology. Moreover, the results indicated that teachers had moderate levels of information technology competency. Also, they lacked suitable IT skills to integrate the technology.

Kusano et al. (2013) conducted a comparison study that investigated the effects of the ICT environment on teachers’ attitudes and technology integration in Japan and U.S. elementary schools. The purpose of their research was to find what factors affect teachers’ attitudes toward the use of technology and how they vary between the two countries. The study sample contained 99 elementary teachers in the U.S. Teachers’ attitudes were connected to their age and teaching experience of 11 male teachers and 88 female teachers in the U.S. and 67 elementary teachers in Japan with 32 male and 35 female teachers. The results showed that the Japanese teachers’ gender significantly predicted
teachers’ perceived ease of use and usability, perceived usefulness, and attitudes toward using technology, while the U.S. teachers’ gender did not. Male teachers were predicted to have higher perceived ease of use and usability, perceived usefulness and attitudes toward using technology in both countries. Also, the results showed that the U.S. teachers’ age significantly predicted perceived ease of use and usability. Younger teachers were predicted to have more positive perceived ease of use and usability.

Adodo (2012) examined the combined contribution of computer self-concept, interest/attitude, and gender of Nigerian Universities pre-service teachers towards Interactive Computer Technology (ICT). The sample consisted of 240 pre-service teachers from five universities in Nigeria. Results showed a significant difference between the male and female pre-service teachers towards computer skills. Also, Nigerian pre-service teachers had high interest and positive attitudes towards ICT. The relationship between interest/attitude and competency was low, positive, but significant, as well as the relationship between gender and competency was significant.

Albirini (2006) examined the attitudes of high school English as Foreign Language (EFL) teachers in Syria toward ICT. The study investigated the relationship between computer attitudes and computer attributes, cultural perceptions, computer competence, computer access, and personal characteristics. Findings showed that teachers have positive attitudes toward Interactive Computer Technology (ICT) in Education. Computer attributes, cultural perceptions and computer competence were the best predictors of attitudes towards ICT.

Wang (2007) examined the attitudes of faculty members toward technology and their perceptions of the competencies needed for effective integration of technology in Taiwan. The sample was 336 faculty members in 62 college education programs. The results showed significant differences between faculty members based on age. The results also revealed that faculty members had positive attitudes toward technology and see themselves as competent to integrate technology.

In summary, teachers had positive attitudes about educational technology and positive perceptions of technology use regarding their competency. Teachers’ perceptions and beliefs were influenced by their level of technology use. Also younger teachers are more competent and have more positive attitudes than older teachers. Furthermore, computer attributes, cultural perceptions and computer competence were best predictors of attitudes towards technology.

However, research is not conclusive as far as technology use and the extent to which social studies teachers implement technology, or their attitudes toward the integration of technology in teaching. As previous literature points out, there is a need to further examine the extent to which social studies teachers integrate technology into their teaching. In the current study, it is important to find out the extent to which social studies teachers integrate technology in their classrooms and their perceptions toward the integration of technology. Studies such as this are useful for examining how social studies teachers are currently using technology in their classrooms.

2. Methodology

The primary purpose of this study was to examine the relationship between the attitudes of seventh to twelfth-grade social studies teachers and their perceptions of the competency needed toward implementing technology into their classrooms. Also, this study investigated the extent to which the combination of teaching experience, grade-level taught and gender, predict teachers’ attitudes toward implementing technology into their classrooms and the extent to which the combination of teachers’ attitude, teaching experience, grade level taught and gender predict teachers’ perceptions of the competency needed toward implementing technology into their classroom.
2.1 Research design

This was a quantitative study utilizing a cross-sectional survey design, meaning that the researcher collected data at one point in time with an interest in describing relationships among variables (Tate, 1998). Additionally, this study was largely exploratory in nature. Few researchers have conducted studies on the use of technology by social studies teachers in the Arab world in general, and in Jordan in particular. The goal of this research study was to examine the relationship between the attitudes of seventh to twelfth-grade social studies teachers and their perceptions of the competency needed toward implementing technology into their classrooms. Also, it examined the extent to which the combination of teaching experience, grade-level taught and gender, predict teachers’ attitudes toward implementing technology into their classrooms. Furthermore, this study examined the extent to which the combination of teachers’ attitude, teaching experience, grade level taught and gender predict teachers’ perceptions of the competency needed toward implementing technology into their classroom.

2.2 Research questions

The specific research questions for the study included the following:

Q 1: Is there an association between the attitudes of seventh to twelfth-grade social studies teachers and their perceptions of the competency needed toward implementing technology into their classrooms?

Q 2: How well does the combination of teaching experience, grade-level taught and gender, predict teachers’ attitudes toward implementing technology into their classrooms?

Q 3: How well does the combination of teachers’ attitude, teaching experience, grade level taught and gender predict teachers’ perceptions of the competency needed toward implementing technology into their classroom?

2.3 Limitations of the study

There are two main limitations to this study. First, the sample was limited to seventh to twelfth grade social studies teachers in Amman, Jordan. This limits the generalization of the research findings to other populations. Second, the survey information is self-reported data. Therefore, the results might be affected by the teachers’ social desirability to provide desired information rather than accurate information.

2.4 Delimitations of the study

This study was confined to seventh to twelfth-grade social studies teachers at public schools in Amman, Jordan. The study was delimited to those teachers who were available from the Fifth Directorate. The Fifth Educational Directorate was chosen for the availability to use professionals who were able to deliver the survey packets and retrieve them after they were completed.

2.5 Instrumentation

The instrument for this study was a survey developed by Kelly (2003) called the Technology in Education Survey (TIES). Due to the cultural context of the study, the researcher used an Arabic-language version of the survey used by Al Ghazo (2008). Al Ghazo used the TIES to examine technology integration in education of university teachers in Jordan. Permission from Kelly and Al Ghazo was sought and granted for use of the instrument.
The instrument was selected for several reasons. First, the instrument’s purpose was highly relevant to the researcher’s purpose and had a high reported internal consistency (Kelly, 2003). Second, the TIES had already been translated into the Arabic language. Third, the Arabic version already had established validity and reliability from Al Ghazo’s study. Additionally, Wang (2007) successfully used the TIES survey internationally for examining technology integration in Taiwan.

The survey was a structured questionnaire. The survey was divided into three sections: ‘Personal and Situational Data’, ‘Attitudes toward Using Technology’, and ‘Competency for Using Technology’. The sections were comprehensive and aided in determining social studies teachers’ attitudes toward the implementing of technology into the classroom and the perceptions that these teachers had regarding the competency needed for implementing technology into the classroom.

The ‘Personal and Situational Data section’ contained four demographic factors: age, gender, teaching experience, and grade level taught. The ‘Attitude toward Using Technology’ section contained eleven items. Each of these items utilized a five-point Likert-type scale (1 = very important, 2 = somewhat important, 3 = important, 4 = somewhat not important, 5 = not important). The ‘Competency for Using Technology’ section also contained eleven items that used a five-point Likert-type scale (1 = very competent, 2 = somewhat competent, 3 = competent, 4 = somewhat not competent, 5 = not competent) (Kelly, 2003). For the purpose of the current study, the researcher modified the scale to be a ten-point Likert-type that ranged from 1 = not important or not competent and 10 = very important or very competent. These modifications were based on committee recommendations. Thus, responses to all of these 22 items utilized a ten-point Likert-type scale in which each item had a score ranging from 1-10, with 1 being the lowest score, indicating not important or not competent, and 10 being the highest score, indicating very important or very competent.

2.6 Reliability and validity of the instrument

Reliability refers to the consistency and accuracy of the measurement (Seliger & Shohamy, 1989). While validity refers to the extent to which an instrument measures what it is designed to measure (Brown, 1996). According to Wyckoff (1998), “A valid instrument measures what the researcher claims to measure; a reliable instrument measures the data in a consistent and accurate manner rather than randomly” (p. 48).

Kelly’s original TIES survey reported a Cronbach Coefficient Alpha of .78 for the ‘Attitudes Toward Using Technology’ section, and .91 for the ‘Competency for Using Technology’ section. Kelly established content validity by using a panel of five professors of educational technology employed at Mississippi University (Kelly, 2003). Al Ghazo (2008) established face and content validity for the Arabic version of his instrument with the help of a panel of experts consisting of five university professors who were content experts; three were from the English Language department and two were from the Arabic Language department at Mu’tah University. The expert panel evaluated the instrument, both before and after it was used, and necessary modifications were made. This current study tested internal consistency using Cronbach Coefficient for the ‘Attitudes toward Using Technology’ section and found a coefficient of .80, and .90 for the ‘Competency for Using Technology’ section, which indicate a very strong reliability.

2.7 Data analysis

After receiving completed questionnaires, the researcher coded the participants’ responses and entered them into the Statistical Package for Social Science (SPSS) program version 20.0. The data was double checked for accuracy.

The study utilized descriptive (e.g. mean and standard deviations) and inferential statistics; t-tests, ANOVA, and multiple regression were used to analyze the results. Specifically, the researcher used
descriptive statistics such as measures of central tendency and variability, and frequencies to calculate teachers’ responses based on demographic data.

2.8 Analysis of associational questions

This study analyzed the associations between teachers’ attitudes and their perceptions of competency needed for implementing technology. For this, Pearson’s product-moment correlations were utilized. Assumptions for the Pearson correlation were: (a) the two variables have a linear relationship, (b) scores on one variable are approximately normally distributed for each value of the other variable and vice versa, and (c) outliers can have a big effect (Morgan, Leech, Gloeckner, & Barret, 2007).

2.9 Analysis of complex associational questions

The researcher utilized multiple regression to investigate the best predictors of teachers’ attitude scores toward technology in social studies classrooms and their perceptions of competency needed for implementing technology. Pearson correlations do not tell the larger story of how the two variables may combine to predict possible outcomes. Accordingly, multiple regression was desirable because it made it possible to combine independent variables to produce predictions of a dependent variable and because it helped to separate the effects of those independent variables (Allison, 1999). Specifically, the predictor variables (teaching experience, grade-level taught, and gender) were evaluated and combined to produce the best prediction of teachers’ attitudes and their perceptions of competency needed. Accordingly, the study’s research questions were answered and used the following inferential statistics tests below:

The first research question, “Is there an association between the attitudes of seventh to twelfth-grade social studies teachers and their perceptions of the competency needed toward implementing technology into their classrooms?”, was answered by calculating the Pearson’s product-moment correlation to examine the strength and direction of the relationship between the two dependent variables: attitudes of seventh to twelfth-grade social studies teachers regarding the implementation of technology into their classrooms, and their perceptions concerning the competencies needed for implementing technology into their classrooms.

The second research question, “How well does the combination of teaching experience, grade-level taught and gender predict teachers’ attitudes toward technology into their classroom?” was answered by computing multiple regression.

The third research question, “How well does the combination of teachers’ attitude, teaching experience, grade level taught and gender predict teachers’ perceptions of the competency needed toward technology into their classroom?”, was answered by computing multiple regression.

3. Results

The overarching research question examined the relationship between the attitudes of seventh to twelfth-grade social studies teachers and their perceptions of the competency needed toward implementing technology into their classrooms. Participants were asked to respond to 22 items, on ten-point Likert-type statements dealing with teachers’ attitudes and their perceptions of competency.

Once the responses were computed, the total mean scores of teachers’ attitudes were extracted 78.8, while total mean scores of teachers’ perceptions of competency was also found 64.1 (Table 1). A high score on the attitude section and the teachers’ perceptions of competency section indicated generally positive attitudes and high perceptions of competency. In this current study, teachers’
responses in regards to their attitudes fell between 7 and 8, which is considered a high positive attitude. Teachers’ responses in regards to their perceptions of competency needed fell between 5 and 6, which indicated they considered moderate competency was needed.

3.1 Research question one

Research question one asked is there an association between the attitudes of seventh to twelfth-grade social studies teachers and their perceptions of the competency needed toward implementing technology into their classrooms? Pearson’s Correlation Coefficient test was used to answer the third research question. Results showed (see Table 1) that the two variables were significantly correlated with a very strong positive correlation ($r (221) = .79, p < 0.01$). This means that teachers who had relatively high positive attitudes toward technology were far more likely to have high positive perceptions of the competency needed to implement technology. According to Cohen (1988), this result is much larger than typical effect sizes, indicating the strength of the relationship between the teachers’ attitudes and their perception of the competency.

Table 1: Bivariate Correlations Among Teachers’ Attitudes and Their Perceptions of Competency Scores

<table>
<thead>
<tr>
<th>Variables</th>
<th>r</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Attitudes</td>
<td>.78</td>
<td>78.77</td>
<td>15.79</td>
</tr>
<tr>
<td>2. Competency</td>
<td>.80</td>
<td>64.14</td>
<td>19.32</td>
</tr>
</tbody>
</table>

$p < .05$

3.2 Research question two

Research question two asked: How well does the combination of teaching experience, grade-level taught and gender, predict teachers’ attitudes toward implementing technology into their classroom? The researcher ran preliminary tests (Pearson correlation tests) to examine the association between age and teaching experience before addressing the sixth and seventh research questions. Findings showed that the two variables were highly correlated $r = .98$. (see Figure 1). In other words, age and teaching experience were highly correlated as demonstrated in the earlier ANOVA runs. A specific treatment was used with research questions 6 and 7 by excluding age from these questions, the researcher then used teaching experience as a continuous variable rather than a categorical variable.

Figure 1: Correlation of teaching experience with teacher age.
To address question six, descriptive statistics and multiple regressions were computed to answer, “How well does the combination of teaching experience, grade-level taught and gender predict teachers’ attitudes toward implementing technology into their classroom?” As shown in Table 2, the independent/predictor variable of teaching experience is moderately correlated with teacher attitudes. Furthermore, a multiple regression test was computed to investigate the best predictors of teachers’ attitude scores toward implementing technology in social studies classrooms. Results show (see Table 3) that the combination of variables (teaching experience, grade-level taught, and gender) was a statistically significant predictor ($F (3, 217) = 22.08, p < .05$). The beta coefficients and the $p$-value showed that teaching experience, grade level taught and gender significantly predicted teacher attitudes. Thus, the above variables are significantly contributing to the equation. $R^2$ explained about 22 percent of the variance ($R= .47$), which is nearly a large effect, and this means that the difference among participants has practical importance.

Table 2: Means, Standard Deviations, and Intercorrelations for Teachers’ Attitudes and Predictor Variables (N=221)

<table>
<thead>
<tr>
<th>Variable</th>
<th>$M$</th>
<th>$SD$</th>
<th>$Teaching EX$</th>
<th>$Grade L.T$</th>
<th>$Gender$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher Attitudes</td>
<td>78.77</td>
<td>78.77</td>
<td></td>
<td>.39*</td>
<td></td>
</tr>
<tr>
<td>Predictor variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Experience</td>
<td>12.75</td>
<td>6.85</td>
<td></td>
<td>.10</td>
<td>.22*</td>
</tr>
<tr>
<td>2. Grade Taught</td>
<td>1.42</td>
<td>.50</td>
<td></td>
<td></td>
<td>.22</td>
</tr>
<tr>
<td>3. Gender</td>
<td>1.39</td>
<td>.49</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Multiple Regression Summary for Teaching Experience, Grade Taught and Gender on Predicting Teachers’ Attitudes (N=221).

<table>
<thead>
<tr>
<th>Variable</th>
<th>$B$</th>
<th>$SEB$</th>
<th>$\beta$</th>
<th>sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience</td>
<td>.98</td>
<td>.138</td>
<td>.43*</td>
<td>.000</td>
</tr>
<tr>
<td>Experience</td>
<td>4.38</td>
<td>1.91</td>
<td>.14*</td>
<td>.023</td>
</tr>
<tr>
<td>Gender</td>
<td>8.09</td>
<td>1.93</td>
<td>.25*</td>
<td>.000</td>
</tr>
<tr>
<td>Constant</td>
<td>108.75</td>
<td>4.45</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* $p < .05$

3.3 Research question three

Research question seven asked: How well does the combination of teaching experience, grade level taught, gender and attitudes predict teachers’ perceptions concerning competency needed toward implementing technology into their classroom? Descriptive statistics and multiple regressions were computed to answer the question. As shown in Table 4, the independent/predictor variables of teaching experience and teachers’ attitudes were highly correlated with teachers’ perceptions of competency needed. Furthermore, multiple regression was computed to investigate the best predictors of teachers’ perceived competency scores toward implementing technology in social studies classrooms. Results (see Table 5) showed that the combination of variables (teaching experience, grade level taught, gender, and attitudes) was statistically significant to predict teachers’ perception of competency needed ($F (4, 216) = 215.25, p < .05$). The beta coefficients and the $p$-value
showed that teacher gender, teaching experience and attitudes toward technology significantly predict teachers' perceptions of competency ratings. However, grade taught was not a significant predictor of teachers' competency. R squared explained about .80 percent of the variance (R= .89) which is much larger than typical. Thus, teacher gender, teaching experience and attitudes are significantly contributing to the above equation. Specifically, teaching experience needs to be included to obtain this result.

Table 4: Means, Standard Deviations, and Intercorrelations for Teachers’ Perceptions of the Competency and Predictor Variables (N=221).

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>T. Experience</th>
<th>Grade L.T</th>
<th>Gender</th>
<th>attitudes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher Competency</td>
<td>64.14</td>
<td>19.32</td>
<td>.57*</td>
<td>.09</td>
<td>.17*</td>
<td>.79*</td>
</tr>
</tbody>
</table>

Predictor variable
1. Experience 12.25 6.85  --  .12*  .09  .39*  
2. Grade Taught 1.42 .50  --  .05  .10  
3. Gender 1.39 .49  --  .22*  
4. Attitudes 78.77 15.79  

* p < .05

Table 5: Multiple Regression Summary for Teaching Experience, Grade Taught, Gender and Attitudes on Predicting Teachers’ Perceptions of Competency (N=221)

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience</td>
<td>.74</td>
<td>.10</td>
<td>.26*</td>
<td>.000</td>
</tr>
<tr>
<td>Grade Taught</td>
<td>2.25</td>
<td>1.21</td>
<td>.06</td>
<td>.065</td>
</tr>
<tr>
<td>Gender</td>
<td>12.36</td>
<td>1.26</td>
<td>.31*</td>
<td>.000</td>
</tr>
<tr>
<td>Attitudes</td>
<td>.92</td>
<td>.04</td>
<td>.75*</td>
<td>.000</td>
</tr>
<tr>
<td>Constant</td>
<td>12.66</td>
<td>5.41</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .05

In conclusion, a number of statistically significant results were found in this study. A brief summary of these results follows. Teachers with relatively high positive attitudes toward implementing technology were far more likely to have high perceptions of competency needed for implementing technology in social studies classrooms.

The combination of teaching experience, grade-level taught, and gender variables was a statistically significant predictor of attitudes. Meanwhile, the combination of teaching experience, grade-level taught, gender, and attitude variables predicted about eighty percent of teachers’ perceptions of competency scores, which is extremely high.
4. Discussion

4.1 Research question three

Is there an association between the attitudes of seventh to twelfth-grade social studies teachers’ and their perceptions of the competency needed toward implementing technology into their classroom?. Results showed that the teachers’ attitudes and their perceptions of the competency needed toward technology had a very strong positive correlation ($r = .79$). This means that teachers who had relatively high positive attitudes toward technology were far more likely to have high positive perceptions of competency for implementing technology. This current result is consistent with Sa’ari, Su Luan, and Roslan’s (2005) study that found teachers who are competent in using computers indicate that they find information technology (IT) more useful, and that most teachers have positive attitudes and moderate levels of information technology (IT) competency. Similarly, this is supported by Al Ghazo (2008), Kelly (2003), and King’s (1999) findings that all found a strong positive correlation between positive attitudes toward computers and teacher competency level. Furthermore, Albirini (2006) suggested that teachers who had higher computer competence may foster positive attitudes, and as a result, they use computers effectively within their classrooms.

4.2 Research question two

Does the combination of teaching experience, grade-level taught and gender, predict teachers’ attitudes toward implementing technology into their classroom?. Results showed that the independent predictor variable of teaching experience was moderately correlated with teacher attitudes. Results also showed that the combination of variables (teaching experience, grade-level taught, and gender) was a statistically significant predictor of teacher attitudes toward technology. This result matches Subhi’s (1999) study that showed teaching experience was significantly predictive of teachers’ attitudes. A comparison study conducted by Kusano et al. (2013) showed that Japanese teachers’ gender significantly predicted the perceived ease of use and usability, perceived usefulness, and attitude toward using technology, while the U.S. teachers’ gender did not. Also, the results of the current study are inconsistent with a study conducted by Agbatogun (2010), which showed gender was not significantly predictive of teachers’ attitudes towards interactive computer technology.

4.3 Research question three

Does the combination of teaching experience, grade level taught, gender and attitudes predict teachers’ perceptions of the competency needed toward implementing technology into their classroom?. Results show that the independent/predictor variables of teaching experience and teachers’ attitudes were highly correlated with teachers’ perceptions of competency. Results also showed that the combination of variables (teaching experience, grade level taught, gender, and attitudes) was statistically significant to predict teachers’ perceptions of competency. This finding is consistent with Akcaoglu (2008), who found that gender affected teachers’ technology usage and competency level. Also, Albirini (2006) found that attitudes about computers can be a predictive value for computer attributes, cultural perceptions, and computer competence. This result is also in line with the study of Adodo (2012), which indicated that teacher gender and teacher attitudes predict competency. In contrast with the current result, Goedde (2006) found that teaching experience for pre-service teachers did not predict technology competency. No evidence in the previous literature discussed the combination of the variables addressed in question seven. Also, to the researcher’s knowledge, there is no literature discussing grade-level taught as a predictor of perceptions of competency.
4.4 Limitations of the study

Several limitations existed in this study. First, the study sample was found by convenience and limited to seventh to twelfth-grade social studies teachers employed in public schools in the Fifth Educational Directorate in Amman, Jordan. The sample was not randomly selected, which limits the external validity of the study; therefore, the results of the study can’t be generalized to the larger group of teachers in Jordan. Second, the study used a cross-sectional survey design; consequently it is limited to this specific period of time.

Finally, the survey information depended on self-reported data and the responses of participants provided were based entirely on the attitudes of the teachers and on their perceptions of their competencies; therefore, the results might be affected by the teachers’ social desirability to provide desired information rather than accurate information.

Recommendations for Future Research

After completion of this study, a number of recommendations for future research can be made. These include the following. First, this study could be replicated using the same methodology but in different directorates in Jordan that also have a large number of teachers. This would make the results more generalizable. Another further research project could investigate the perceptions and attitudes of school principals and counselors.

This study was quantitative, but further research could be qualitative by conducting interviews and observations to gain in-depth information that could enrich the findings of this study and create a better understanding of technology usage in Jordan. This study used a cross-sectional design and a short period of time to collect the data. It would be helpful for further research to be a longitudinal study design to obtain more description of the subject and discover the issues of technology.

This study examined factors such as, age, gender, teaching experience and grade-level taught. It is recommended to examine other factors that may affect teachers from integrating technology, such as: school support, technical support, teachers’ academic degree, and training programs.

4.5 Conclusion and summary

This study has contributed to the growing body of knowledge in the field of technology integration and social studies teachers, particularly in Arab countries. To this end, the study investigated the relationship between the attitudes of seventh to twelfth-grade social studies teachers and their perceptions of the competency needed toward implementing technology into their classrooms. Also, it examined the extent to which the combination of teaching experience, grade-level taught and gender, predict teachers’ attitudes toward implementing technology into their classrooms. Furthermore, this study examined the extent to which the combination of teachers’ attitude, teaching experience, grade level taught and gender predict teachers’ perceptions of the competency needed toward implementing technology into their classroom.

The findings of the study affirm past research findings that indicated the positive association of teachers’ attitudes with their perceptions of competency. Furthermore, it did not appear from the current study that teachers differ in their attitudes and perceptions of competency based on the grade level they taught.

Finally, this current study identified predictors of teachers’ attitudes and perceptions of competency to implement technology based on the variables of gender, grade-level taught and teaching experience. These variables are clear in the literature with some other factors that might impact the attitudes toward integrating technology.

This study is a preliminary step in this area and the researcher plans to conduct further investigations into the factors that might affect technology integration in Jordan and other developing...
countries. The researcher also hopes that this study will help principals, administrators, teachers, and parents to understand teachers’ attitudes and perceptions concerning the competency needed to implement technology. This, in turn, will lead to professional development and the improvement of technology resources for teachers.

References


