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# Modeling the Factor Constructs Affecting the Integration of Technology in Classroom Instruction

**VICTOR V. HAFALLA JR.**
ORCID NO. 0000-0002-8806-9824
vicwin123@yahoo.com

University of Baguio
Baguio City, Philippines

## ABSTRACT

Researchers in educational technology integration for teaching demonstrate that teachers often use technology to motivate students and as an alternative mode of lesson delivery. The present study aimed to find the underlying factor constructs on the reasons of teachers on why they would integrate technology into their teaching practices. Results of the study using exploratory factor analysis generated nine factors representing 69.45% of the total variability of the data with a mean communality value of 0.7025, KMO of 0.910 and Bartlett's test of sphericity of $p<0.001$, indicative of a good model fit and high discriminant validity of the subscales. Internal consistency measures also indicated good to excellent alpha levels demonstrating high reliability and convergent validity of the subscales. Results of the study found that the teachers' reasons for adopting technology are more complex and differentiated than what previous researchers have thought contradicting earlier theorists of the phenomenon. Results also showed that the derived factor constructs imply the teachers' pragmatic preferences for using technology.

***Keywords***: modeling, teaching with technology, exploratory factor analysis, Cronbach's alpha, factor constructs

## INTRODUCTION

Recent changes in tertiary education emphasized the use of computing devices, digital technologies, and handheld portable devices. Educational technologies, especially computers, symbolize a noticeable change in the character of schools. Technology has taken a pivotal role in the educational system in most classrooms as well. Because of this, Bransford, Brown, and Cocking (2000) identified the roles of technology in classroom teaching, as follows: (1) being able to bring the real-world experiences into the classroom, (2) providing the scaffolding that allows learners to participate in complex cognitive tasks, (3) increasing opportunities to receive sophisticated and individualized feedback, (4) building communities of interaction between teachers, students, parents, and other interested groups, and (5) expanding opportunities for teacher development. Furthermore, Bruce and Levin (2001) suggested that technology can be helpful in classroom teaching by (1) encouraging inquiry, (2) helping communication, (3) constructing teaching products, and (4) assisting students' self-expression. Despite these advantages, the use of educational technologies for teaching is, however, limited and inconsistent (O'Dwyer, Russell, & Bebell, 2005; Park & Ertmer, 2007; Levin & Wadmany, 2008).

Though technology integration in the classroom is a good undertaking, many educators, however, find it fraught with difficulties. Numerous researchers attest to the challenges teachers must face when implementing technology in their teaching such as: the assumption that reform accompanies implementing new technologies and the notion that technology integration improves student test scores with significantly less emphasis given to improving teaching pedagogy for understanding (Zhao & Conway, 2001); inadequate infrastructure (Mehlinger & Powers, 2002; Pelgrum, 2001; Rossberg & Bitter, 1988), lack of training and personal expertise (Jacobson & Weller, 1988; Schrum, 1999; Strudler & Wetzel, 1999; Willis, Thompson, & Sadera, 1999), and weak technical support (NetDay Survey, 2001; Schrum, 1995). Also, Bucci et al. (2003) found that technology integration in the classroom must fit the resources, program demands, and theoretical framework of the curriculum for it to be successful. Furthermore, Parker (1997) also found that lack of time, lack of knowledge of available information technology resources, unavailability of computer labs and computer lab technicians, believing that changes are too fast to keep current, and not thinking information technology will enhance the subject area prevents tertiary educators from integrating technology.

Technology integration in the classroom is a debatable topic. However, its benefits, in the long run, outweigh its cons. For example, Pea (1986) found that computers enhance student's knowledge of Mathematics which focuses on its ability to go above and beyond with what pencil and paper can do alone. Further, Lajoie (1993) found that there are many potential benefits of using technological tools for instruction in an educational setting. He cited that technological tools help to support cognitive processes by reducing the memory load of a student, by encouraging awareness of the problem-solving process, by reducing the time that students spend on computation through cognitive load sharing, by engaging students in Mathematics that would otherwise be out of reach which stretches students' opportunities, and by supporting logical reasoning and hypothesis testing by allowing students to test conjectures easily.

It has been well established that the availability of technology creates the possibility of effective technology integration (Norris, Sullivan, & Poirot, 2003). But, to realize the full potential of teaching technologies to improve learning and instruction, knowledge pertinent to pedagogy and content are essential components (Koehler et al., 2012; Koehler et al., 2011; Koehler & Mishra, 2009; Koehler, Mishra, & Yahya, 2007; Mishra & Koehler, 2006). However, the acquisition of technology and knowledge does not always lead to effective technology integration (Polly, Mims, Shepherd, & Inan, 2010). Additionally, the results of studies by Firek (2003) and Becker (1999) found that beginning teachers still do not have the necessary skills needed to integrate technology into the curriculum successfully, teacher's pre-service training contributes to his or her reluctance to adopt technological solutions and in-service teachers also apparently lack adequate support for technology use. A more recent study by Buckenmeyer (2010) further suggested that the availability of technological resources and support was not significantly related to its adoption or use by the teachers.

What then are the factors that teachers want to adopt technology into their teaching? According to Baek, Jung, and Kim (2008), the factors affecting the use of technology by the teachers are complicated and may not be what previous researchers initially assumed. They also indicated that teachers use technology in their classrooms independent of their current knowledge, skill sets (or self-efficacy) and the curriculum. The findings in the literature further hints that teachers often first concentrate their attention on their students and try to determine the impact that technology integration brings on their learning outcomes (Higgins & Moseley, 2001). Because of this, the proponent deduced that it is much more important to investigate which factors influence a teachers' decision to adopt technology, since, generally, teachers have been characterized as gatekeepers since they decide which educational technologies they will use in their classes and how such technologies can be utilized (Cuban, 1986; Lei, 2009; Noble, 1996). In line with this idea, the proponent chose to view teachers as reflective, rational practitioners whose technology adoption decisions results from thoughtfully considering the consequences, social support, and resources available to them (Sugar, Crawley, & Fine, 2004). The theory of planned behavior by Ajzen (1985) and value-expectancy theory offers a useful framework for viewing technology adoption as a change in the teachers' everyday instructional behaviors in the practical, real-world context of classrooms and schools today.

## FRAMEWORK

Previous researches on the teachers' reasons for technology integration points to varied factors in their results. Earlier theoretical concepts indicate that teachers most often use technology to motivate students, to offer a different mode of course presentation, and to use it as an instructional tool to enhance the students' learning (Lam, 2000). Also, Baek, Jung, and Kim (2008) identified the following six factors for teachers' technology integration reasons which do not correspond to the common sense theory of technology use: (1) adapting to external requests and others' expectations, (2) deriving attention, (3) using the basic functions of technology, (4) relieving physical fatigue, (5) class preparation and management, and 6. using the enhanced functions of technology. They deduced that these factors "do not correspond to the common sense theory of instructional technology". From their analysis, they established that although most teachers will lean towards using technology as a support for teaching and learning, the more experienced teachers will use them differently (ie. external factors such as institutional policies) than the less experienced ones.

Furthermore, Buckenmeyer (2010) found that professional development and available resources were significantly related to technology adoption though availability of technology was not a strong indicator for its adoption.

On the other hand, successful technology adoption in the classrooms was found to be dependent upon school administrators providing an individualized, differentiated process of training and implementation according to Gray (2001). Hence, strong technological self-efficacy among the teachers was found to be a significant factor for technology adoption (Chia-Pin & Chin-Chung, 2009).

With these varied factors in the research literature, confusion arises as to their applicability in the local educational landscape. Because of this, the present study determines the factors affecting the teachers' decisions to integrate technology into their teaching (Figure 1) using a sample from the Philippine setting and assesses the reliability and validity of the derived factor constructs using exploratory factor analysis. The results of the study will then validate previous results that might lead to the universality of previously held constructs.

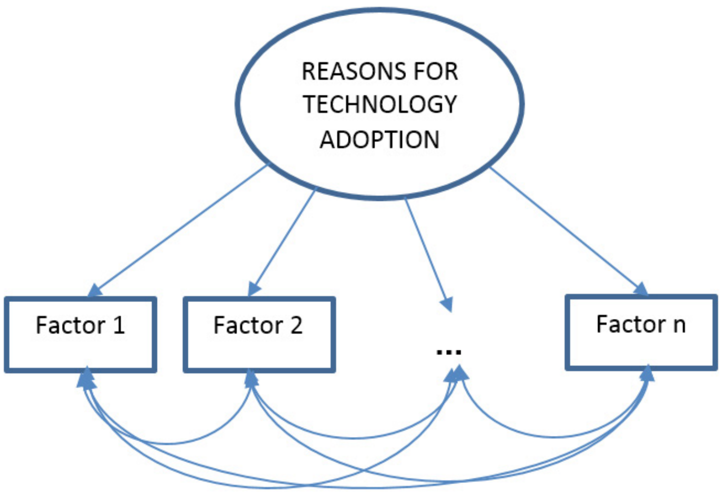


*Figure 1*. Paradigm and Proposed Statistical Model for the study

## OBJECTIVES OF THE STUDY

In line with this reasoning, the study examined the underlying factor constructs of the teachers' reasons to integrate technology into their teaching. The study also assessed the reliability and convergent validity of the derived factor constructs and their correlations.

## METHODS

The study used exploratory factor analysis (EFA) to extract the different factor constructs from a set of teachers' reasons for adopting technology in classroom teaching using a five-point Likert-type survey questionnaire. The instrument was developed from the compiled comments of teachers' technology integration reasons. EFA using principal component analysis was used to classify the reasons into interpretable factors while Cronbach's alpha was used to estimate the reliability and convergent validity of the latent factors (Hair et al., 2010). Pearson's product moment correlation assessed the bivariate correlation between the extracted factors and between the factors and their indicators using Cohen's (1988) convention for interpretation. The sample comprised 139 respondents from the Cordillera Autonomous Region (CAR) which were directly surveyed during the second semester of SY 2016-2017 using simple random sampling. Simple random sampling was used in order to randomize the teachers' responses on the survey. A KMO test statistic of 0.910 and a highly significant result of Bartlett's test of sphericity ($y^2(2628)=9458.66$, $p<0.001$) suggested that the sample was adequate and satisfied the psychometric criteria to conduct factor analysis.

## RESULTS AND DISCUSSION

**Preliminary Analysis, Total Variance, Factor Constructs, and their Loadings**

Preliminary analysis of the data necessitated that four indicators should be removed because they did not meet the necessary minimum KMO values of 0.5 as indicated in the anti-image correlation matrix. Subsequently, variables which exhibited communalities less than 0.6 were also removed (MacCallum, Widaman, Zhang, & Hong, 1999). The result of the above-mentioned exclusions presented a manageable mean communality value of 0.7025. The communalities reflect the common variance associated with the specific variable. Before extraction this variance is one (1) but after the factors have been extracted this declines in value because the retained factors cannot explain all of the variability present in the data (Field, 2000). Principal component analysis using Kaiser's criterion (eigenvalues>1) and the Scree plot criterion were used to extract the optimum number of factors (Gorsuch, 1983; Zwick & Velicer, 1986; Velicer, Eaton, & Fava, 2000). Preliminary results produced 12 extracted factor constructs which explained approximately 74.738% of the variability of the data (Table 1).

Table 1

*Total variance explained*

| Extracted Factors | Initial Eigenvalues | | Extraction Sums of Squared Loadings | | Rotation Sums of Squared Loadings |
|---|---|---|---|---|---|
| | Total | Cumulative % | Total | Cumulative % | Total |
| 1 | 32.495 | 44.514 | 32.495 | 44.514 | 15.737 |
| 2 | 5.378 | 51.881 | 5.378 | 51.881 | 12.29 |
| 3 | 2.749 | 55.646 | 2.749 | 55.646 | 7.283 |
| 4 | 2.326 | 58.832 | 2.326 | 58.832 | 13.288 |
| 5 | 2.124 | 61.741 | 2.124 | 61.741 | 9.677 |
| 6 | 1.848 | 64.273 | 1.848 | 64.273 | 13.232 |
| 7* | 1.601 | 66.467 | 1.601 | 66.467 | 14.333 |
| 8 | 1.526 | 68.558 | 1.526 | 68.558 | 13.373 |
| 9* | 1.236 | 70.251 | 1.236 | 70.251 | 8.035 |
| 10 | 1.184 | 71.873 | 1.184 | 71.873 | 7.104 |
| 11 | 1.07 | 73.339 | 1.07 | 73.339 | 11.689 |
| 12* | 1.022 | 74.738 | 1.022 | 74.738 | 9.642 |

*Excluded from the final factor composition

However, factors with less than three variables loading unto them were excluded in the final factor composition (factors 7, 9, and 12) (Costello & Osborne, 2005). These exclusions reduced the total variability explained by the factor constructs to only 69.45%, the number of factors to only 9 and the number of variates included in the final factor structure to only 41 variates. Table 2 gives the pattern matrix of the final factor structure with their labels, variables included and factor loadings using oblique rotation (DIRECT OBLIMIN, delta=0).

Table 2

*Pattern matrix of the different factor constructs*

| Factor Constructs and Variables | Factor Loadings* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| ***Factor 1. Facilitative use of educational technologies for learning (FTL)*** | | | | | | | | | |
| 1. Technology facilitates students' self-directed learning | 0.68 | | | | | | | | |
| 2. It is effective for helping students concentrate on a lecture | 0.66 | | | | | | | | |
| 3. When I teach unfamiliar contents, technology helps me in understanding them | 0.54 | | | | | | | | |
| 4. A lot of educational software is available for free on the internet | 0.51 | | | | | | | | |
| 5. Prepared lecture materials using technology can be reused again and again in the future | 0.50 | | | | | | | | |
| 6. Using technological manipulatives make the students more interested in class | 0.48 | | | | | | | | |
| 7. Technology delivers the course content clearly to the students | 0.46 | | | | | | | | |
| ***Factor 2. Students perception of teachers (SP)*** | | | | | | | | | |
| 1. Students believe that I am an expert in the topic when I use technology | | 0.71 | | | | | | | |
| 2. Students believe that I am a professional teacher when I use technology in class | | 0.70 | | | | | | | |
| 3. Students believe that I prepared well for the class when I use technology | | 0.69 | | | | | | | |
| 4. Students regard teachers who use technology as "cool teachers" | | 0.51 | | | | | | | |
| 5. It is a common perception that good teachers use technology well | | 0.48 | | | | | | | |
| 6. Students regard teachers who use technology as "serious" teachers | | 0.46 | | | | | | | |
| ***Factor 3. Use of technology in experimentation and simulation (ES)*** | | | | | | | | | |
| 1. Using technology in class provides a feedback mechanism for the teaching and learning experience | | | 0.57 | | | | | | |
| 2. It is possible to do experiments that are too difficult to do in the regular classroom | | | 0.55 | | | | | | |
| 3. Technology provides safety to students experiments | | | 0.53 | | | | | | |

Table 2 continued

| Factor Constructs and Variables | Factor Loadings* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 4. Technology provides simulations before the actual experiment or activity | | | 0.50 | | | | | | |
| ***Factor 4. Use of technology for visualization and observation (VO)*** | | | | | | | | | |
| 1. Through video recording, students have opportunities to reflect on their behavior during their activities | | | | 0.80 | | | | | |
| 2. Through video recording, students have opportunities to observe themselves during their activities | | | | 0.74 | | | | | |
| 3. Through video recording, students have opportunities to revisit and re-evaluate their procedures during their activities | | | | 0.72 | | | | | |
| 4. Routine work such as reporting a student's demographic information or managing results of evaluation are done using the computers | | | | 0.54 | | | | | |
| ***Factor 5. Overcoming difficulties in teaching (ODT)*** | | | | | | | | | |
| 1. Technology is effective for explaining complicated theories or solving difficult problems | | | | | 0.68 | | | | |
| 2. Technology is most useful when very complicated subjects are taught | | | | | 0.66 | | | | |
| 3. Technology can compensate for my shortcomings in teaching | | | | | 0.61 | | | | |
| 4. Technology provides various evaluation methods for student work | | | | | 0.53 | | | | |
| ***Factor 6. School requirement (SR)*** | | | | | | | | | |
| 1. It is required by the subject | | | | | | 0.88 | | | |
| 2. It is required by the syllabus/curriculum | | | | | | 0.83 | | | |
| 3. My school head/s encourages the use of technology | | | | | | 0.51 | | | |
| 4. It is required by the guide-book/manual/textbook | | | | | | 0.50 | | | |
| ***Factor7. For teachers convenience in teaching(TC)*** | | | | | | | | | |
| 1. Technology increases communication between teachers and students or parents through the school website and internet community | | | | | | | -0.69 | | |

Table 2 continued

| Factor Constructs and Variables | Factor Loadings* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 2. Using technology facilitates difficult and time-consuming computations | | | | | | | -0.55 | | |
| 3. Many teaching aids use software or other technology | | | | | | | -0.48 | | |
| 4. It simplifies my searching and preparing for the subject's material | | | | | | | -0.45 | | |
| ***Factor 8. For good evaluation of teachers (GE)*** | | | | | | | | | |
| 1. My school head requests using technology to get good evaluations | | | | | | | | 0.59 | |
| 2. It is required in the evaluation of teachers by the students | | | | | | | | 0.55 | |
| 3. Students demand the use of technology to get good evaluations in class | | | | | | | | 0.50 | |
| ***Factor 9. For class organization and management (COM)*** | | | | | | | | | |
| 1. It is a convenient way to organize lecture content or material | | | | | | | | | 0.64 |
| 2. It is easier to share information or files with other teachers | | | | | | | | | 0.63 |
| 3. It makes reusing of the organized lecture content or material possible | | | | | | | | | 0.62 |
| 4. It makes sharing of pictures, movie-clips or other files with students easier | | | | | | | | | 0.61 |
| 5. It saves time when students reports or other requirements are submitted through email or web-board | | | | | | | | | 0.48 |

*Rotation converged in 50 iterations.

From the different factors extracted in Table 2, results show that teachers most often use technology in their class in a variety of ways to overcome their difficulties and shortcomings in teaching, to enhance the teaching and learning experience and to conform to expectations of the students and mandates by the insitution. The results suggest that teachers most often adopt technology in their class first and foremost for facilitating learning and the least is for class organization and management (based on the percent of total variance, Table 2). Parallel results from research literature also indicate that factors such as organizational factors and attitude towards technology influences why teachers decide to integrate technology (ICT) into their teaching (ie. Chen, 2008; Tondeur, van Braak, &

Valcke, 2008; Lim & Chai, 2008; Clausen, 2007). This result further coincides with Lam's (2000) study where he indicated that more confident teachers use technology as a tool for instruction "to enhance students' learning." However, the findings also contradict earlier theorists of technology integration/adoption teacher attributes of time commitment to teaching, openness to change, and professional development opportunities (Vannatta & Fordham, 2004); for active learning and higher order thinking skills (Jonassen, 1999); ICT for cooperative learning and reflection (Susman, 1998), and ICT as a tool for curriculum differentiation, student adoption to the demands of the curriculum, and for feedback mechanism (Mooji, 2007).

Results from Bransford, Brown and Cocking's (2000) study indicated that enhancing the teaching/learning experience in the class makes teachers want to adopt technology in their curriculum. This result is further corroborated by the study of Baek et al. (2008), identifying reasons such as "adapting to external requests and others' expectations" as a factor, which is the same with the factors shown in Table 2: Factor 2, students' perception of teachers (others' expectations); Factor 8, for good evaluation of teachers; and Factor 6, school requirements, as primary reasons for teachers' technology adoption decisions. Furthermore, Baek et al. (2008) found that teachers generally choose to adopt technology to just to satisfy institutional educational policies, expectation of students and parents, and because of the merits of digitalized culture. However, the present study's results suggest a differentiation between school requirements, expectations, and perceptions of students to teachers when they use educational technologies and the use of technology for evaluation purposes which the study of Baek et al. (2008) failed to differentiate. This indicates an alternative view of the teachers' technology integration reasons which might be influenced by school culture and institutional policies. Another analogous result is seen in the findings of the study of Baek et al. (2008) in "using the basic functions of technology" and "using the enhanced functions of technology" which were determined in the results of the present study in Factor 1, facilitative use of educational technologies for learning; Factor 3, use of technology in experimentation and simulation; Factor 4, use of technology for visualization and observation; and Factor 5, overcoming difficulties in teaching.

**Correlations between the Factor Constructs**

Correlation between the different factor constructs has theoretical and academic basis as teaching is integrative in its form. Table 3 indicates the bivariate correlation between the derived factor constructs using Pearson correlation.

Table 3

*Correlation matrix of the different factor constructs*

| Factor Constructs | Factor Constructs 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| 1. FTL | 1 | 0.244** | 0.234** | 0.338** | 0.261** | 0.303** | -0.385** | 0.119 | 0.343** |
| 2. SP | | 1 | 0.163 | 0.24** | 0.211* | 0.312** | -0.214* | 0.33** | 0.079 |
| 3. ES | | | 1 | 0.172* | 0.236** | 0.181* | -0.215* | 0.083 | 0.096 |
| 4. VO | | | | 1 | 0.232** | 0.229** | -0.31** | 0.144 | 0.348** |
| 5. ODT | | | | | 1 | 0.243** | -0.16 | 0.104 | 0.206* |
| 6. SR | | | | | | 1 | -0.31** | 0.277** | 0.255** |
| 7. TC | | | | | | | 1 | -0.152 | -0.339** |
| 8. GE | | | | | | | | 1 | 0.052 |
| 9. COM | | | | | | | | | 1 |

*$p$<0.05 (two-tailed)
**$p$<0.01 (two-tailed)

Results from Table 3 indicate that most of the correlation values ranged from weak (absolute value is about 0.10) to moderate correlation (absolute value is about 0.3) with most of them exhibiting significant ($p$<0.05) to highly significant ($p$<0.01) probabilities. It is notable to mention that the followings factors: 1. FLT, 5. ODT, and 7. TC have the most number of significantly correlated values. These outcomes suggest that the teachers' reasons for adopting technology in their class are complex processes involving integrated decision making processes. For example, Sang, Valcke, van Braak, and Tondeur (2009) indicated that technology (ICT) integration is influenced by the complex of student teachers' constructivist teaching beliefs, teaching self-efficacy, computer attitudes in education, and their computer self-efficacy. On the other hand, Factor 8, GE, has the most number of non-significantly correlated values. This item indicates that when teachers do tend to adopt technology in their class "for good evaluation" has less correlational influence among the other factors for their decisions.

**Reliability and Convergent Validity of the Factor Constructs**

Intercorrelations among survey items are maximized when all items measure the same latent construct. Cronbach's alpha is widely believed to indirectly indicate the degree to which a set of items measures a single unidimensional latent construct. Thus, it can be used to establish reliability and convergent validity of the factors extracted. Because of this, Cronbach's alpha coefficients were computed for each of the subscales (factor constructs) formed (Table 4).

Table 4

*Cronbach's Alpha coefficients for the different factor constructs*

| Subscales | Number of Items (n) | Cronbach's Alpha Coefficient ($\alpha$) | Descriptive Interpretation |
|---|---|---|---|
| 1. FTL | 7 | 0.8990 | Good |
| 2. SP | 6 | 0.9428 | Excellent |
| 3. ES | 4 | 0.8512 | Good |
| 4. VO | 4 | 0.9013 | Excellent |
| 5. ODT | 4 | 0.8710 | Good |
| 6. SR | 4 | 0.8512 | Good |
| 7. TC | 4 | 0.8550 | Good |
| 8. GE | 3 | 0.8392 | Good |
| 9. COM | 5 | 0.9282 | Excellent |

Alpha coefficients as presented in Table 4 ranged from 0.8392 to 0.9428 all indicating "good" to "excellent" internal consistencies of the latent construct. These results are indicative of the high reliability and convergent validity of the different subscales. Also, scrutiny of the results for item exclusion and the changes that the items (or indicators) contribute to the Cronbach's alpha coefficients revealed that there were no items that were influential enough to effect significant change on the alpha levels among each of the subscales. Hence, no items were discarded.

Item total correlation scores are presented in Table 5. This table examines the total correlation between the subscales and their indicators (items).

Table 5

*Item-total correlation scores between items and their subscales*

| Item No. | Subscales (Factor Constructs) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | FTL | SP | ES | VO | ODT | SR | TC | GE | COM |
| 1 | 0.70 | 0.87 | 0.72 | 0.86 | 0.79 | 0.76 | 0.68 | 0.71 | 0.87 |
| 2 | 0.70 | 0.86 | 0.67 | 0.81 | 0.75 | 0.75 | 0.71 | 0.62 | 0.86 |
| 3 | 0.76 | 0.80 | 0.70 | 0.80 | 0.67 | 0.59 | 0.70 | 0.78 | 0.83 |
| 4 | 0.67 | 0.86 | 0.69 | 0.68 | 0.68 | 0.71 | 0.70 | | 0.81 |
| 5 | 0.66 | 0.75 | | | | | | | 0.68 |
| 6 | 0.73 | 0.82 | | | | | | | |
| 7 | 0.72 | | | | | | | | |

*Weak Correlation=about 0.10, Moderate Correlation=about 0.30,
Strong Correlation=about 0.50 or higher, (Source: Cohen, 1988)

Item-total correlation values ranged from 0.62 to 0.87 for the survey items as presented in Table 5. Highly positive and strong relationships are seen between the subscales and their indicators when the correlations between the factor scores are examined. These results propose that the indicators are strongly correlated to the latent construct or subscale where they belong.

## CONCLUSIONS

A total of nine factors were extracted from the teachers' possible reasons for integrating technology into their teaching representing 69.45% of the total variability of data. Alpha coefficients for the different subscales ranged from 0.8392 to 0.9428, all indicating "good" to "excellent" internal consistencies of the latent construct they measure indicating high reliability and convergent validity of the different subscales. Also, item-total correlations ranged from 0.6214 to 0.8713 for the survey items indicative of a strong correlation between the item indicators and the latent construct or subscale they belong. The findings of the study somewhat contradict earlier theorists of technology integration/adoption since the study's results indicated a differentiation between school requirements (SR), expectations and perceptions of students to teachers (SP), and the use of technology for evaluation purposes (GE), which previous studies failed to differentiate. This outcome presents an alternative view of the teachers' technology integration reasons from current research literature. Findings also point to the fact that teachers tend to view technology as a utility tool which can help them in their teaching indicative of their pragmatic approach to using technology. Results further suggest that the teachers' reasons for adopting technology in their class involve complex and integrated decision making processes on their choice to integrate technology.

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