# Resistance to Change, Perceived Value, Self Efficacy and Attitude Towards Use of Information Technology for Teaching among Primary School Teachers in Ilorin, Nigeria

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**Abstracts**
The study examined factors influencing primary school teachers' intention to use information technology for teaching. The study was a survey type and the sample comprises of 125 primary school teachers in Ilorin. The instrument used for data collection was adapted and modified and subjected to validity and reliability check. A reliability check on each of the five constructs of the study showed an alpha of .76, .92, .96, .93, and .82 respectively. The research questions were subjected to descriptive statistic while the hypotheses of the study were subjected to regression analysis. The findings of the study revealed that all the four independent variable statistically influence intention toward use with the following effect size, Perceived value (β= .63, P<.05), Computer self efficacy ((β= .73, P<.05), Attitude (β= .70, P<.05), Resistance to change (β= .49, P<.05), and computer self efficacy stood to be the strongest factor. Based on these findings, the study recommends among other that the teacher should be given training on pedagogical use of computer for teaching function in order to increase their self efficacy which will in turn influence adoption of information technology.

**Keyword:** Information technology, resistance to change, intention to use, perceived value, Computer self efficacy and attitude

## Introduction

The significance of Information Technology (IT) as an instrument to support new way of teaching and learning cannot be under-estimated. The realization of this fact has necessitated the increasing demand on educational institutions at all levels to use IT for implementing teaching and learning function. Nyambane and Nzuki (2014) reported that computer started finding its way into schools since early 1980s and research findings have revealed that IT will continue to remain a vital tool for teaching 21 century learners. Supporting this view, Bingimlas (2011); Lefebvre, Deaudelin and Loiselle (2006) opined that the modern technology will provide a greater mean of improving education at primary, secondary and higher institution of learning.

The deployment of technology for teaching keeps on evolving over the past decades. Highlighting the importance of technology in learning, Zalman, Shaman and Clement (2011) reported that when Information and Communication Technology (ICT) is used appropriately, it can strengthen education and improve the quality of knowledge acquired by the student. Similarly, Webber (2003) had earlier reported that technology is a critical issue in education and that its use can create a powerful learning environment; it can transform teaching and learning process; it can enable the student to deal with knowledge in an active, self directed and by way of taking control of their learning. To Drent and Meelisen (2007), technology should be deployed as a tool, not to replace teacher, but to be use to support educational objectives, such as skills for searching and assessing information, collaboration, forming community of learners, problem solving which are crucial for the preparation of children for the present world of work.

There is growing emphasize on the need for deployment of IT in education, because its integration attracts so many benefit, it reduce teacher workload if it is used for lesson preparation, writing of student report and individual educational plan, collating and analyzing attendance and disciplinary information as well as maintaining link between the school and students' parent so as to ensure parent involvement in school activities (British Educational Communication and Technology Agency, BETA, 2004; Tolorunleke, 2012).

As important as integration of ICT is to education, yet, its use for teaching and learning in Nigeria school system especially primary school need more to be desired, not only because there is no correlation between its use and the financial commitment towards provision of these facilities in our school system, but there is equally paucity of empirical study on factors militating against adoption of IT for teaching and learning in Nigeria. For instance, Nwanju, Obi and Ogwu (2014) opined that, despite the effort of the Federal Government of Nigeria toward promotion of IT in education, the attainment of the objective of IT use in our school system is still far from being realized.

Empirical evidence has shown that what influence usage of an innovation is more than the availability or absence of a single factor, but rather it's a dynamic process that involves a lot of interrelated factors. Hence this study is conducted to understand the underline reasons behind primary school teachers' acceptance/resistance to adoption of IT for teaching in some selected primary schools in Ilorin Local Government Area of Kwara State.

The issue of resistance to change keep on reoccurring as new innovation is introduced into the art of teaching and general administration of educational institutions all over the world. As a result, studies are carried out to know what really influence teachers' resistance to new innovative way of performing their role to the society. Teachers are known to be the gate keeper when talking about technology use for teaching and learning, though the teacher needs to be well skilled in IT use for executing their duty, in other to adequately prepare the young one in their care to be functional members of the knowledge society. The role of teachers to the society explains why several studies were conducted to determine how teachers are faring at integration of technology for teaching. For instance, studies have been conducted on how technology can improve learning. Some studies look at technological infrastructures and access as affecting integration of IT adoption among teachers (Jaffee & Miller, 2009; Neyland, 2011; Gavender & Gavender, 2011).

Aside technological factors, a number of factors have been identified to have influenced educators' resistance to use, or under-utilize of IT in their teaching. Some of the reasons advanced by Mumtaz (2000); Grainger and Tolhurst (2005) are lack of access to resources, quality of software, ease of use, incentive to change, support in their school, school policies, commitment to professional learning and background in formal training. Also, technological phobia, lack of capabilities and self confidence in using IT was equally identified as a strong hindrance to IT uptake for teaching ( Pelgrum, 2001; Becta 2003).

Premkumar and Bhattacherjee (2006) theoretical model suggested that the use of IT is a key dependent variable in IT system research, and that intention to use has been consistently found to predict actual use of IT. Supporting this view, Greer and Murtoza (2003) reported that intention is considered as the predictor of actual behavior. In a study of primary school teacher use and perception on ICT usage for teaching in Turkey by Gulbahar and Guven (2008) showed a strong positive correlation between teachers' attitude and ICT usage. Davis (1989) once submits that any factor affecting the use of IT is indirectly influenced through intention to use.

Another pronounced factor identify militating against quick uptake of IT in the literature also border on resistance to change. According to Giangreco (2002) in Firdaous (2008) resistance to change "is a form of organization dissent to a change process or practice that the individual considers unpleasant or disagreeable or inconvenient with on the basis of personal and group evaluation" (P.14). Similarly, Markus (1983) defined resistance to change as behavior intended to prevent the Implementation or use of an IT system.

Much of the research on factor militating against the use of IT in education have duel more on

issue relating to resistance to change. To Bingimlas (2009) resistance to change by itself is not a barrier, but that it is an indication that something is wrong. In other word, people advance reasons why they resist change. For instance, Schoepp's (2005) study reported that teachers felt that there are more technology provided in their school but they did not believe that they were being supported, guided, or rewarded in the integration of it into their teaching, this alone give justification to reason for resisting change. Similarly, Empirica (2006) was of the position that teachers who are not using new technology for classroom teaching are still of the opinion that the use of IT has no benefits or unclear benefits.

Earle (2002) highlighting some of the reasons why teacher resist using technology to include lack of technical support, expertise or time for planning. Korte and Husing (2007) stated that only few European teacher oppose the use of IT for teaching, and these few one in their opinion belief that computer does not provide learning benefit to pupils. Mathipa and Mukhari (2014) study of teachers factor influencing the use of IT in teaching and learning in South Africa schools reported that factors impeding the integration of IT are insufficient number of computers, lacks of application program, teacher generation gap, inadequate teacher training, lack of IT skill, lack of confidence in using IT, teacher belief, poor school leadership and lack of public support.

Another factor identified as inhibiting acceptance and use of IT for teaching is perceive value of IT by the user. According to Zeithanil (1988) in Firdaous (2008) perceived value of a product "is the individual overall assessment of the utility of a product based on perception of what is received and what is given" (pg82). Chu and Lu (2007) considered perceived value as one of the strongest indicator of intention to use IT. In line with that, Dodds and Monroe (1985) was of the opinion that value-intention result to willingness of an individual to perform certain behavior. According to Becaudry and Pinsonneault (2005) acceptance of IT depends on perceive consequences of use of IT. Similarly, Compeau and Higgin (1995) were of the opinion that individual would use IT if they observe that there would be positive value associated with such use. Their study also revealed that computer self efficacy significantly influence users intention towards information technology use. Davis (1989) concluded that individual would use a technology only if they think it will enhanced their job performance or they will benefit from technology use. Perceived usefulness as postulated by Davis shares the same psychological construct with perceived value.

Thus, Kim (2007) refers perceived usefulness as the total value that individuals perceive from using Information Technology. Arising from the literature review, this study specifically seeks to understand the influence of the following endogenous variables (perceived value, Computer self-efficacy, Attitude, and Resistance to change) on the exogenous variable (Intention to use).

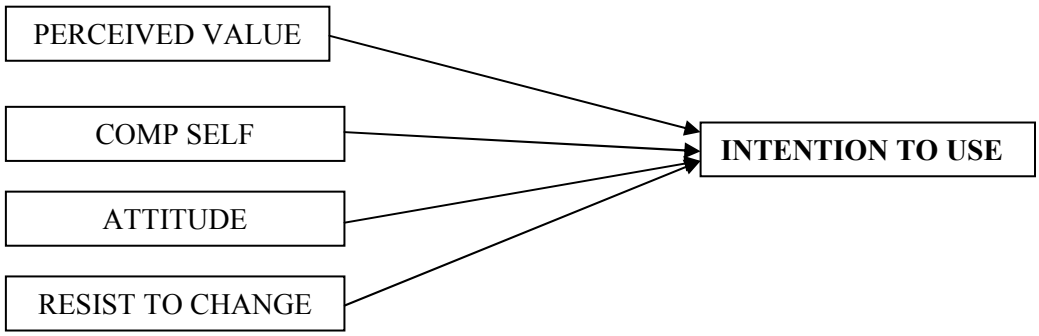


**Figure 1: Conceptual framework of the Study**

The conceptual framework of this study was developed based on empirical evidence which revealed the influence that the psychological construct used has on users' intention towards

adoption of information system. Based on the conceptual framework of the study, the following research questions and correspondence hypotheses were tested at 0.05 level of significance

**Research Questions:**

1. Will perceived value positively influence primary school teacher intention to use IT for teaching?
2. Will computer self-efficacy positively influence primary school teacher intention to use IT for teaching?
3. Will primary school teachers' attitude positively influence their intention to use IT for teaching?
4. Will teachers' resistance to change positively influence their intention to use IT for teaching?
5. What are the influences of independent variables on the dependent variable?

**Research Hypotheses**

The following hypotheses were formulated and tested at 0.05 level of significance

H1: Perceived value will positively influence primary school teacher intention to use IT for teaching

H2: Computer self-efficacy will positively influence primary school teacher intention to use IT for teaching

H3: Primary school teachers' attitude will positively influence their intention to use IT for teaching

H4: Resistance to change will positively influence primary school teachers' intention to use IT for teaching

H5: The entire endogenous variable will strongly influence teachers' intention to use IT for teaching

**Methodology**

The study employed quantitative approach. A survey instrument was administered on primary school teachers in the sample population of the study. The instrument of the study was adapted and modified for the purpose of the study. The instrument was subjected to validation and it reliability was equally ascertained. A reliability check on the five construct of the study yield an alpha value of .71, .92, .96, .93, and .82 respectively. In a Principal Component Analysis (PCA) procedure conducted to ascertain the sampling adequacy of the study, Varimax rotation was used for extraction. The Kaiser-Mayer-Olkin (KMO) measure of sampling adequacy was .71, this indicates that the sample size is relative to the number of questionnaire items of the instrument. The Barlett's test of Spericity was statistically significant ($x^2$=6.187, 820, P=.000). The overall correlations within the matrix were acceptable at 0.5. The entire five factor variance extracted of each of the construct are 40%, 47%, 54%, 59%, and 64% respectively. The participants of the study were the primary school teachers in Ilorin West, East, and South Local Governments Area of Kwara State which constitute the population of the study. The sample used was purposively extracted within the primary school teachers in the selected schools. Overall, one hundred and twenty-five (125) teachers participated in the study. Out of these participants, 64 teachers representing 51.2% were female, while 61 among them representing 48.8% were male. In terms of their academic qualification, teachers with Nigerian certificate of education (NCE) were 57 representing 45.6%, teachers with Bachelor of Education (BED) were 27 representing 21.6%, and teachers with (BSC) were 23 representing 18.4%, while the teachers with (MED) were 15 representing 12.0% respectively. On their years of experience, teachers with 1-5years on the job were 16 they represent12.8%, teachers with 5-10years on the job were 53 representing 42.4%, teachers with 10-15years experience on the job were 21 representing 16.8%, teachers with 15-20years teaching experience were 22 representing 17.6%, while those with 20years and above teaching experience were 13 representing 10.4%.

**Method of Analysis**

In analyzing the data collected, principal component analysis (PCA) was conducted, after reestablishing the validity and reliability of the instrument. Mean, Standard Deviation, Skewness and Kuertois was also carried-out to inspect the normality of the data collected; Regression analysis was finally computed to address the hypotheses.

**Data Analysis**

**Descriptive Analysis**

**Table 1: Summary of the Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Resistance to change | 125 | 8.00 | 68.00 | 24.1920 | 8.65625 |
| Perceived value | 125 | 15.00 | 43.00 | 32.1840 | 8.18376 |
| Computer self efficacy | 125 | 25.00 | 56.00 | 42.0000 | 9.20992 |
| Attitude | 125 | 17.00 | 43.00 | 33.4240 | 7.72017 |
| Intention to use | 125 | 10.00 | 30.00 | 22.4000 | 5.08794 |
| Valid N (listwise) | 125 | | | | |

The result in Table 1 above showed the descriptive statistic which was used to answer the research question raised for the study. The mean and standard deviation computed revealed that resistance to change on the primary school teachers' intention toward information technology use revealed a mean and standard deviation of (M=24.19, SD=8.66). An examination of the influence of perceived value on primary school teacher revealed a value of (M=32.18, SD=8.18). Similarly, the influence of computer self efficacy on intention revealed a value of (M=42.00, SD=9.21), while the teachers attitude toward information technology use showed (M=33.42, SD=7.72). A collective check on all the variable show that they positively influence primary teachers intention toward information technology use for teaching.

In other to test the hypotheses of the study using standard simultaneous regression analysis procedure, several underline assumptions underpin the use of regression were computed for, so as to determine the behaviour of the data for the analysis. Among this was the computation for ascertaining the normality of the data, multicollinearity, homoscedasticity diagnosis and checking for outlier. In doing this, mean, standard deviation, skewness and kurtosis were check in Table 1, from the items, two outlier (items1,and 18) was observe and removed before going further to compute regression analysis.

**Table 2**: Computation of Mean, Standard Deviation, Skewness and Kurtosis for checking the Normality of the data

| INDICATORS | MEAN | STANDARD DEVIATION | SKEWNESS | KURTOSIS |
|---|---|---|---|---|
| item2 | 3.1280 | 1.56564 | -.164 | -1.581 |
| item3 | 3.8000 | 3.92469 | 8.740 | 90.152 |
| item4 | 3.6000 | 1.34404 | -.612 | -.958 |
| item5 | 3.3680 | 1.52154 | -.463 | -1.347 |
| item6 | 3.4800 | 1.37137 | -.539 | -1.019 |
| item7 | 3.9200 | 1.25467 | -1.067 | .035 |
| item8 | 3.7440 | 1.16331 | -.828 | -.270 |
| item9 | 3.2400 | 1.51018 | -.303 | -1.391 |
| item10 | 3.3440 | 1.19882 | -.552 | -.925 |
| item11 | 3.4800 | 1.34164 | -.690 | -.778 |
| item12 | 3.6880 | 1.19418 | -.643 | -.719 |
| item13 | 3.7760 | 1.31899 | -.906 | -.318 |
| item14 | 3.5760 | 1.30917 | -.596 | -.927 |
| item15 | 3.7760 | 1.24993 | -.849 | -.425 |

| | | | | |
|---|---|---|---|---|
| item16 | 3.5600 | 1.23393 | -.677 | -.694 |
| item17 | 3.1760 | 1.25122 | -.340 | -.992 |
| item19 | 3.6400 | .99515 | -.221 | -.975 |
| item20 | 3.7200 | 1.16120 | -.564 | -.835 |
| item21 | 3.5840 | 1.22596 | -.464 | -.852 |
| item22 | 3.5520 | 1.18087 | -.500 | -.894 |
| item23 | 3.5360 | 1.23487 | -.593 | -.581 |
| item24 | 3.8560 | 1.18936 | -.974 | .196 |
| item25 | 3.0880 | 1.43131 | -.224 | -1.317 |
| item26 | 3.3280 | 1.23638 | -.286 | -.996 |
| item27 | 3.3520 | 1.18632 | -.303 | -1.017 |
| item28 | 3.9360 | .93104 | -.663 | -.318 |
| item29 | 3.8160 | 1.07301 | -.699 | -.595 |
| item30 | 3.7680 | 1.08610 | -.714 | -.216 |
| item31 | 3.6480 | 1.00206 | -.660 | -.124 |
| item32 | 3.6880 | 1.04276 | -.426 | -.801 |
| item33 | 3.6480 | 1.21984 | -.811 | -.414 |
| item34 | 3.7520 | 1.03687 | -.720 | -.129 |
| item35 | 3.7840 | 1.08942 | -.814 | -.114 |
| item36 | 3.8000 | 1.05494 | -.720 | -.182 |
| item37 | 3.5200 | 1.22211 | -.572 | -.636 |
| item38 | 3.5520 | 1.31036 | -.716 | -.673 |
| item39 | 3.7280 | 1.00303 | -.891 | .393 |
| item40 | 3.8080 | .94780 | -.529 | -.546 |
| item41 | 3.9920 | .81810 | -.614 | .056 |

**Table 3:** R Square, Adjustment R square, Standard Error of the estimate of the Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .859[a] | .738 | .729 | 2.64879 |

a. Predictors: (Constant), attitude, Resistchange, Compseficacy, Pervalue

b. Dependent Variable: Intouse

**Table 4:** Summary of Sum of Square, degree of freedom, Mean Square, F.test and Significant of ANOVA analysis

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 2368.070 | 4 | 592.017 | 84.380 | .000[a] |
| | Residual | 841.930 | 120 | 7.016 | | |
| | Total | 3210.000 | 124 | | | |

a. Predictors: (Constant), attitude, Resistchange, Compseficacy, Pervalue

b. Dependent Variable: Intouse

**Table 5:** Unstandardized and Standardized, Beta, t.cal, Significant of coefficient analysis

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | 2.190 | 1.168 | | 1.875 | .063 |
| | RC | .024 | .038 | .499 | .633 | .028 |
| | PV | -.108 | .053 | .631 | -2.047 | .043 |
| | CSE | .179 | .041 | .739 | 4.331 | .000 |
| | ATT | .466 | .053 | .707 | 8.812 | .000 |

a. Dependent Variable: Intouse

As shown in Table 3, 4 and 5, the intention to use IT for teaching is a function of teachers attitude, perceived value, resistance and their self-efficacy. Overall predictor showed $R^2$ = .729, f(df=4,120) = 84.380, P< .000. The finding value of adjusted $R^2$ in this study showed that independent variable account for 73% of the accumulated variance. H1: Perceived value will positively influence primary school teacher intention to use IT for teaching. The analyze result indicated that R= .398, $R^2$= .372, (β=.631, P<.05), the independent variable account for 37.2% variance, with this result, the hypothesis stand validated. H2: Computer self-efficacy will positively influence primary school teacher intention to use IT for teaching. The result analysis indicated that R= .546, $R^2$= .542, (β=.734, P<.05), the independent variable account for 54.2% variance, with this result the hypothesis also stand validated. H3: Primary school teachers' attitude will positively influence their intention to use IT for teaching. The result analysis indicated that R= .690, $R^2$= .372, (β=.707, P<.05), the independent variable account for 68.7% variance, with this result, the hypothesis equally stand validated. H4: Resistance to change will positively influence primary school teachers' intention to use IT for teaching. The result of the analysis indicated that R= .249, $R^2$= .243, (β=.499, P<.05), the independent variable account for 24.3% variance, with this result, the hypothesis stand validated.

**Discussion and Conclusion**

The study has addressed factors behind the deployment of information technology for teaching among primary schools teachers in Nigeria. The study revealed the degree of influence of each of the independent constructs of the study (self-efficacy, attitude, perceived value and resistance to change) on teachers intention to use information technology for teaching function. The finding of the research questions raised showed that all the independent variable positively influence teachers' intention toward information technology use. The finding of the study related to teachers attitude to IT use showed that the teachers attitude positively influence their intention to IT use. In fact, the effect size stands to be one of the strongest factor, this finding support the finding of Davis (1989) study that reported how significant an attitude to intention and actual use of computer system. Another strong factor in this study, has to do with the influence of computer self efficacy on teachers intention to use IT for teaching. The finding was consisted with Mathipa and Mukhari (2014) finding that reported lack of skill and lack of confidence in using IT among many other reasons influencing teachers' use of IT for teaching in South Africa schools. Another finding was that perceived value statistically influence primary teacher intention toward IT use. This finding supported the finding of Chu and Lu (2007) who considered perceives value as one of the strongest indicator of intention to use IT. The finding also supported what Dodds and Monroe (1985) reported on the significant of perceive value as a determinant of intention to use IT. Compeau and Higgin (1995) study also supported the finding that intention to use of IT to greater extent depends on positive value associated with its use.

Another interesting finding of this study is that resistance to change statistically influence primary school teachers intention toward use of IT for teaching. The finding is line with Empirica (2006) finding that teacher resist change when they form opinion that IT use does not attract any benefit. The finding was equally supported pelgrum (2001) finding as to what inform teachers to resist using IT in teaching are among other include technological phobia, lack of capabilities and self confidence in using IT. Consistent with previous study of Compeau and Higgin (1995) that reported the significant influence of computer self efficacy on intention, the finding of the present study provide an empirical support of the significant influence of computer self efficacy toward intention. In fact the construct stand to be the strongest determinant of primary school teacher intention towards the deployment of IT resources for teaching.

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