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THE DETERMINANTS OF THE ICT- BASED O/DL PROGRAM TO ENCOURAGE AND SUPPORT THE COUNTRY'S ECONOMY

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Abstract: This research question is formulated as follows: 1). How is the success rate of Satya Wacana Christian University ICT-based O/DL program to encourage and support the country's economy? 2). what are the factors that determine (determinant) the success of ICT-based ODL program to encourage and support the country's economy? This study was conducted on the basis of the ITEP alumni assessment. The data sources are 52 ITEP graduates; Data were collected through a self-rating scale consisting of 30 items that have been proven valid and reliable; Data analysis used descriptive analysis and stepwise multiple regression models with SPSS for windows version 20. The performance the Satya Wacana Christian University ICT-based ITEP support and encourage the country's economy is at the high and very high level. There are three determinants of the success of the performance of the ITEP: 1) Lecturer Professionalism, Curriculum Development, and the Metacognitive, giving the influence variable of 78.30%. Other variables, namely, Leadership, Achievement Class, Networked Systems, Adoption of ICT into Teaching Learning Processes and Active, Creative, Joy Full and *Effective* Learning/ACJEL which are supported by the data do not affect the performance and success of conducting ITEP Distance Learning in the attempts to support and encourage the country's economy. Therefore, the development of distance learning should be focused on the lecturer; promoting lecturer is a more critical factor and it should be professionally based, such as curriculum developers and actors of teaching-learning process.

Keywords: ICT-based O/DL Program, Country's Economy, Lecturer Professionalism, Curriculum Development, Metacognitive.

1. INTRODUCTION

The Bachelor of Education Program for the In-service Teachers which was conducted by distance education is deemed worthy of yielding S-1graduates equivalent to that of the regular on-campus programs. The In-service Teacher Education Program (ITEP) is principally an acceleration program to enhance teachers' academic qualifications up to the Bachelor Degree (S-1). In Indonesia this type of program has been carried out by many universities: since 2009 by 55 universities. One governmental support for the acceleration in achieving increased academic qualifications for the in-service teachers is the issuance of the Decree of the Ministry of Education Num. 58, 2008 on the Implementation of the Bachelor of Education Program for the In-service Teachers.

To upgrade the primary school teachers' academic qualifications through the Bachelor of Primary School Teacher Education Program (S-1), distance education system known as ICT-based ITEP is used. The ITEP is an education program that is specifically designed for the in-service permanent teachers who do not yet have a Bachelor's Degree (S-1). The program offered in this S-1 education makes it possible for the teachers to have a bigger opportunity without interfering with their duties and responsibilities (Permendiknas Nomor 58 Tahun 2008). Furthermore, this program is expected to bring into reality the teacher education system that is efficient, effective, and accountable while offering access to wider educational services without sacrificing quality. The completion of the ITEP is arranged and decided by the university involved in accordance with the regulations and academic manual. Students who have completed the program are entitled to hold a Bachelor's Degree and a certificate from the organizing university.

According to the recent development, based on the Presidential Decree Num. 8, 2012 on the Indonesian National Qualifications Framework (Peraturan Presiden No. 8 tahun 2012), the Bachelor's Degree (S-1) is categorized as a technician or analyst position (not categorized as an expert), which is at level 6 with the following qualifications: 1) able to

ISSN: 2502-4124

apply and utilize their specific expertise in the field of science and technology in solving problems and able to adjust to the situation at hand; 2) mastering general theoretical concepts of a particular field of knowledge and theoretical concepts in a specific section of the knowledge in-depth, and being able to formulate a solution of a procedural problem; 3) able to make accurate decisions based on the analysis of available information and data, and to set up criteria in selecting from a range of alternative solutions independently and in groups; 4) responsible in his own work and can be given responsibility of accomplishing organization's work. Considering the provisions of the Indonesian National Qualifications Framework, it is apparent that a bachelor's degree holder has a relatively high position in the structure of Indonesian society given his scientific capacity and competence (Akhmadsudrajat, 2012).

A number of advantages given by the ICT to a nation (Lemhannas RI. 2013) are among others, a) increasing the people's quality of life and prosperity, b) increasing the nation's competing power, c) enhancing national unity and integrity, d) creating government transparency, and e) improving the nation's identity at an international scale. It is, therefore, undeniable to say that the development of the ICT offers significant advantages to the nation's progress, prosperity, and fame (Lemhanas RI, 2003). For this purpose, one of the recommendations of Lemhanas (2003) to the RI government is to make the activities of mastering, utilizing, and advancing the ICT a national movement for all stake holders. The strategy to be adopted is to increase the competency of the manpower in the field of ICT. In this strategy education has a significant role.

In the field of education, technology has developed considerably entering classrooms without passing through social, political, and moral controls; starting to create a thought of what should be included into or excluded from the curriculum; and a thought about developing the educational curriculum in conformation with the global development, ICT, and needs (Amat Jaedun, 2009). Facing the global era with its fast acceleration, the field of education will encounter a heavy challenge in particular in preparing graduates as future manpower by providing capability not only to work in their own field but also in owning ability to face and make use of changes creatively.

In developmentalistic view, each new discovery in science and technology will be utilized to solve various kinds of problems in order to improve the quality of man's life; while the development of ICT in Indonesia follows their assumption, that is, it is believed that the ICT will encourage a democratic government to take place, while in the economic side, it will expedite the growth of economy (Budi Santoso, 2012) [Var Y]. Why is it that the ICT enables economic growth of a nation? In education, the internet can also be used as a source of scientific exploration as well as a means to publicize information and products (Cepi Riyana, 2015).

To know and to measure the feasibility and success of the ICT-based ITEP, monitoring and evaluation activities had also been carried out in 2010, 2011, 2012 and 2013. One of the results of the monitoring and evaluation is that the increase of the number of participants is not significant. During the five years of operation, the program has produced as many as 76,605 graduates out of the program participants of 86,454 teachers (Kemendiknas 2013). That is why, there was no doubt over the recognition of the program in completing its objective, i.e., to upgrade teachers' academic qualification into the Bachelor's Degree, which in turn may encourage the nation's economic growth.

Several factors which influence the adoption and integration of ICT into education have been identified by researchers. Stockdill and Moreshouse (1992) identified user characteristics, content characteristics, technological considerations, and organizational capacity as factors influencing ICT adoption and integration into teaching. Balanskat, Blamire & Kefalla (2007) identified the factors as teacher-level, school-level and system-level. Teachers' integration of ICT into teaching is also influenced by organizational factors, attitudes towards technology and other factors (Chen, 2008; Neyland, 2011) such as institutional support as well as micro factors

ISSN: 2502-4124

such as teacher capability influencing the use of online learning in high schools in Sydney. Studies Shazia Mumtaz (2000) reveal a number of factors which influence teachers' decisions to use ICT in the classroom: access to resources, quality of software and hardware, ease of use, incentives to change, support and collegiality in their school, school and national polices, commitment to professional learning and background in formal computer training. Shazia Mumtaz (2000) highlights the role of pedagogy and suggests that teachers' beliefs about teaching and learning with ICT are central to integration. It is suggested that the successful implementation of ICT needs to address three interlocking frameworks for change: the teacher, the school and policy makers.

2. RELATED LITERATURE

ICT integration programs benefit from a strong association with system-wide changes, such as improved service delivery, curriculum changes**,** or new quality assurance and production processes in business (Neil Butcher and Associates, 2011). Furthermore, related to teaching advanced skills, **"**Begin with Expert Thinking"– the ability to solve problems that, unlike algebra, lack explicit rule-based solutions. These problems must be solved through some form of pattern recognition. Rule-based solutions must still be part of a curriculum – i.e. students still need to know subjects like algebra. But a curriculum must recognize that a rule-based solution is usually the second part of a two-part problem solving process. The first part of the process – the part that retains labor market value - is the ability to recognize which rule-based solution applies in a particular case. Understanding consists of seeing a pattern. Learning this kind of pattern recognition takes practice. In particular, it requires going beyond traditional assignments where a student knows that the problems at the end of a chapter on long division can all be solved using long division – no need to think about which rules apply. In subjects like history or literature, the equivalent of rule-based solutions is a focus on narrow facts – e.g. dates and names and little more. In this case, going beyond rules-based solutions means teaching the underlying relationships among narrow facts. The skill of Complex Communication – making effective oral and written arguments, eliciting information from others – can similarly be taught using existing subject matter. But teaching this skill requires both a change in emphasis and additional time - the time needed to review and grade oral presentations and frequent student essays. Perhaps the biggest potential obstacle to increasing students' mastery of Expert Thinking and Complex Communication are tests (assessments) that emphasize recall of facts rather than these critical skills.

On the school level, factors such as support, funding, training and facilities influence teachers' adoption and integration of technologies into their classrooms. Teachers' professional development is a key factor to successful integration of computers into classroom teaching. ICT related training programs develop teachers' competences in computer use (Bauer & Kenton, 2005; Franklin, 2007), influencing teachers' attitudes towards computers (Keengwe and Onchwari, 2008) and assisting teachers reorganize the task of technology and how new technology tools are significant in student learning. From Cassandra Rowand (2000) survey, three factors emerge as having an important influence on the extent to which teachers use ICTs to teach. They are 1) Experience—which is probably a proxy for age, 2) School poverty level. In schools with the fewest poor children, teachers were much more likely to use computers for everything from administration to creating teaching materials, and to assign students work that called for computer use, and 3) Professional development. Teachers who had received more than 32 hours of professional training in the use of computers and the internet in the previous three years were more likely to use computers both for tasks around the lesson and for teaching students. In addition, training had a marked impact on teachers' confidence. Therefore, in the future, the development of teacher's professionalism becomes an important element for investment in providing ICT [Var. X_2].

An important characteristic of the metacognitive approach is that, rather than specific objectives or outcomes being

ISSN: 2502-4124

'imposed' on learners, participants are encouraged to identify, articulate and pursue personally relevant goals, including those related to skills, attitudes, confidence, values and understandings, integration and school leadership (Renata Phelps, Anne Graham. 2004) [Var. X_3].

According to Flavell, Miller & Miller, 'Metacognition' refers to knowledge concerning one's own cognitive processes, and the active monitoring and consequent regulation of these processes in the pursuit of goals or objectives (Renata Phelps, Anne Graham. 2004). There are two dimensions of metacognition: 'self-appraisal' and 'self-management'. Self-appraisal refers to reflections about one's knowledge state and abilities, including what you know, how you think, and when and why to apply knowledge and strategies. Cognitive self-management refers to 'metacognitions in action', or the ability of the individual to plan and implement appropriate strategies and to monitor, adjust and 'trouble shoot' their performance.

Though infrastructure support is imperative, school technology leadership is a stronger predictor of teachers' use of computer technology in teaching (Anderson & Dexter, 2005). These factors were ICT resources, ICT teaching, ICT leadership, general teaching and general school leadership. Yuen, Law & Chan (2003) conducted a case study of 18 schools in Hong Kong. They found that in catalytic integration model schools, the school principal is the key change agent, exhibiting visionary leadership, staff development and involvement while in cultural innovation model schools, multiple leadership is exhibited where the school principal is not necessarily involved in ICT leadership, teachers are free to implement new ideas in supportive and enhancing culture. Also studies have shown that various levels of leadership such as principal, administrative leadership and technology leadership influence successful use of ICT in schools (Anderson & Dexter, 2005). This aspect of leadership will help the principal to share tasks with subordinates while focusing on the adoption and integration of technology in the school [Var. X_4].

Institutions which are exemplified by executive involvement and decision-making, strengthened by ICT plan, can effectively adopt ICT integration curriculum. This way, the application of ICT in education is also one of the means to achieve program objectives on the basis of the curriculum in effect [Var. X_5].

Investment in ICT in education has also been motivated by the promise of ICT capabilities to make education more efficient. In the United Kingdom (UK), the use of computerized systems for school has improved communication with parents, reduced paper work, and increased teamwork through networked systems (Vijay Sonty, 2006) [Var. X6].

Global investment in ICT to improve teaching and learning in schools have been initiated by many governments. Despite all these investments on ICT infrastructure, equipment and professional development to improve education in many countries, ICT adoption and integration in teaching and learning have been limited (Charles Buabeng-Andoh, 2012). On a personal level, there are numerous factors that influence teachers' use of ICT. Teachers' feelings, knowledge and attitudes influence their use of ICT in teaching. Research has shown that teachers' attitudes towards technology influence their acceptance of the usefulness of technology and its integration into teaching (Huang & Liaw, 2005) (Huang, H. M., & Liaw, S. S. (2005). If teachers' attitudes are positive toward the use of educational technology then they can easily provide useful insight about the adoption and integration of ICT into teaching and learning processes.

On the technological level, for successful adoption and integration of ICT into teaching, teachers must perceive the technology as better than previous practice; consistent with their existing values, past experiences and needs; ease to use, can be experimented with on a limited basis before making a decision to adopt and finally the results of the innovation are visible to others. Many teachers are hesitant to change an existing program to something they only know through discussion and reading and not through observation. These three

ISSN: 2502-4124

characteristics or attributes of teachers' adoption and integration of ICT into teaching provide information of factors supporting their use of technology as well as barriers to ICT integration. The key factor in the studies is teachers' attitudes toward technology or intentions to use technology in their classrooms. If teachers have negative attitudes toward technology, providing them with excellent ICT facilities may not influence them to use it in their teaching. Therefore, teachers need to be assured that technology can make their teaching interesting, easier, more fun for them and students, more motivating and more enjoyable. ICT helps to make classes more interesting, easier, varied, and enjoyable for [Var. X_8].

3. RESEARCH QUESTIONS

The research questions are stated as follows:

1. At what level of success will the ICT-based ITEP encourage and support the nation's economy?
2. What factors serve as determinants for the success of the ICT-based ITEP in encouraging and supporting the nation's economy?

The factors mentioned above are limited to (1) curriculum development, (2) professionalism of the lecturers/teachers, (3) meta-cognitive aspect, (4) leadership, (5) achievement of objectives, (6) communication with parents (networked systems), (7) adoption and integration of ICT into teaching and learning processes, (8) interesting, easier, more fun, more motivating and more enjoyable way of teaching.

4. RESEARCH METHODS

This study was conducted on the basis of the ITEP alumni assessment. The data sources are 52 ITEP graduates as SWCU alumni from Batang District, 2015. Data were collected through a self-rating scale consisting of 30 items that have been proven valid and reliable; Score validity is 0.192 to 0.502, with a reliability index by Cronbach's Alpha = 0.721. Data analysis used descriptive analysis and stepwise multiple regression models with SPSS for windows version 20.

5. RESULTS

After the data were collected, the result of the descriptive analysis on each variable is as follows:

Table 1. The results of the descriptive analysis on all variables under study

	Mean	Median	Std. Deviation	Minimum	Maximum
X_1 Curriculum Development	2,6818	3,0000	,71623	0,00	3,00
X_2 Lecturer Professionalism	2,7727	3,0000	,52841	2,00	4,00
X_3 Metacognitive	2,6364	3,0000	,58109	2,00	4,00
X_4 Leadership	2,1364	2,0000	,77432	1,00	4,00
X_5 Achievement Class	2,7273	3,0000	,55048	2,00	4,00
X_6 Networked Systems	3,2727	3,0000	,55048	2,00	4,00
X_7 Adoption of ICT into TL Processes	3,0909	3,0000	,42640	2,00	4,00
X_8 ACJEL	3,3182	3,0000	,56790	2,00	4,00
Y Encourages the State Economy	2,7727	3,0000	,61193	2,00	4,00

Based on the analysis presented in Table 1 above, it turns out the average value of success variables: Y (Encourages the State Economy), X_1 (Curriculum Development), X_2 (Lecturer Professionalism), X_3 (Metacognitive), X_4 (Leadership), X_5 (Achievement Class), is smaller than the figure the median. This means that the spread of each related variable has a tendency toward higher point; while the average value of variables: X_6 (Networked Systems), X_7 (Adoption of ICT into Teaching Learning Processes), X_8 (Active, Creative, Joy Full and Effective Learning/ACJEL) is larger than the median, this means deployment of

ISSN: 2502-4124

each variable in question has a tendency towards lower.

To know how high the level of the ICT-based ITEP has encouraged and supported the nation's economy (Research problem #1), a descriptive analysis of the variables gives the following result as shown in Table 2.

Tabel 2. Distribusi frekuensi keberhasilan PJJ berbasis ICT dalam encourages the State Economy (Y)

Valid	Frequency	Percent	Cumulative Percent
Low	0	0	0
Moderate	15	28,84	28,84
High	32	61,54	90,38
Very High	5	9,62	100,0
Total	52	100,0	

The results of the analysis presented in Table 2 above shows that the success rate of the ICT-based ITEP in encouraging and supporting the nation's economy is at the very high level (9.62%), high (61.54%), and moderate (28.84%). None was at the low level.

After testing for normality and homogeneity, the stepwise multiple regression analysis models were performed on the effect of 8 independent variables X to the performance of the ITEP. The result of which is shown in the following Table 3.

Table 3. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,716[a]	,513	,489	,43758
2	,856[b]	,732	,704	,33295
3	,902[c]	,814	,783	,28524

a. Predictors: (Constant), X_2
b. Predictors: (Constant), X_2, X_1
c. Predictors: (Constant), X_2, X_1, X_3

Based on the results of the analysis as presented in Table 3 above, it can be summarized that Lecturer Professionalism (X_2) was the determinant of the success of the performance of the ITEP in encouraging and supporting the nation's economy (Y) at 48.90% (Model 1), which, when followed by the Curriculum Development (X_1), its effect on the performance of the ICT-based ITEP in encouraging and supporting the nation's economy (Y) amounted to 70.40% (model 2), especially in addition to the Metacognitive aspect (X_3). The influence of the third variable to the performance of the ITEP with the distance learning program increased to 78.30% (model 3). This means that only less than 21, 70% is influenced by other variables that are not observed in this model. Other variables, namely, Leadership (X_4), Achievement Class (X_5), Networked Systems (X_6), Adoption of ICT into Teaching Learning Processes (X_7) and Active, Creative, Joy Full and Effective Learning/ACJEL (X_8) which are supported by the data do not affect the performance and success of conducting the ITEP Distance learning. Furthermore, to determine significance of the findings of the above three models, the results of the ANOVA analysis can be examined in the Table 4 below:

Table 4. The results of the analysis ANOVA[d]

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4,034	1	4,034	21,069	,000[a]
	Residual	3,829	20	,191		
	Total	7,864	21			
2	Regression	5,757	2	2,879	25,968	,000[b]
	Residual	2,106	19	,111		
	Total	7,864	21			
3	Regression	6,399	3	2,133	26,217	,000[c]
	Residual	1,465	18	,081		
	Total	7,864	21			

a. Predictors: (Constant), X_2
b. Predictors: (Constant), X_2, X_1
c. Predictors: (Constant), X_2, X_1, X_3
e. Dependent Variable: Y

Based on the results of stepwise multiple regression analysis models as presented in Table 4 above, F = 21,069 was obtained with the significance level of 0.00 (Model 1), F = 25,968 with a significance level of 0.00 (model 2), and F = 26,217 with a significance level of 0.00 (Model 3). This means that the three variables in Model 1 Lecturer Professionalism (X_2), and Model 2 plus Curriculum Development (X_1), and Model 3 along with the Metacognitive (X_3) become determinants of the performance and success of the ICT-based with data support to meet the level of significance.

To build influential equation model of the 3 variables, i.e., Lecturer Professionalism (X_2), Curriculum Development (X_1), and the Metacognitive (X_3) towards the success of the ICT-based ITEP in encouraging and

ISSN: 2502-4124

supporting the nation's economy (Y), observation on the Beta Coefficient (B) ---both standard and non-standard---was performed. The result can be found by utilizing the results of such analysis in Table 5 below.

Table 5 Coefficients influential variables BEITP Determinant performance of ICT .

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,473	,510		,928	,365
	X_2	,829	,181	,716	4,590	,000
2	(Constant)	-,346	,440		-,787	,441
	X_2	,732	,140	,632	5,238	,000
	X_1	,406	,103	,476	3,943	,001
3	(Constant)	-,805	,411		-1,959	,066
	X_2	,619	,126	,534	4,902	,000
	X_1	,378	,089	,442	4,249	,000
	X_3	,322	,115	,306	2,808	,012

a. Dependent Variable: Y

Based on the results of the analysis presented above, it turns out that the success of the ICT based ITEP in encouraging and supporting the nation's economy (Y) is not affected by Leadership (X_4), Achievement Class (X_5), Networked Systems (X_6), Adoption of ICT into Teaching Learning Processes (X_7) and Active, Creative, Joy Full and Effective Learning/ACJEL (X_8), but is determined by the variation of ICT-based: Lecturer Professionalism (X_2), Curriculum Development (X_1), and the Metacognitive (X_3) used in the distance learning.

6. DISCUSSION

The performance the ICT-based ITEP in encouraging and supporting the nation's economy is quite surprising. The results of the analysis showed a very high level (9.62%), high (61.54%), and moderate (28.84%). None was at the low level. The high success was supported by three factors, namely, Lecturer Professionalism, Curriculum Development, and the Metacognitive. The three variables give influence as high as 78.30%.

A Microsoft Corporation (2007) report on its ICT initiatives in Africa acknowledged that technology alone does not drive development but enables it. In the report, while noting that 300 million Africans live on less than $1 per day, it is asserted that ICTs offer special opportunities to stimulate growth and increase innovation in every local setting, thereby enabling individuals and institutions to interact more productively with the global economy and the wider world. But to realize their potential, technologies must be part of a mix of productive changes and supporting capabilities. Resources must be matched by resourcefulness – combined with other initiatives by local leaders, educators and entrepreneurs to achieve individual and institutional objectives. "ICT 4 Development" is therefore an effort to distinguish the most constructive opportunities to apply technologies for growth and poverty reduction. According to Sara Hennessy and Brown Onguko (2010) used plans on the relevant vision for Rwanda mission strategies which in the case of ICT the third is to: Improve the human resource development capacity of Rwanda to meet the changing demands of the economy.

The performance of Satya Wacana Christian University's ICT-based ITEP to support and encourage the country's economy is determined first by Lecturer Professionalism (X_2). Sara Hennessy and Brown Onguko (2010) note that the implications for change in teacher professional development and other education system elements differ as a country moves from traditional education to (1) technology literacy, (2) knowledge deepening, and (3) knowledge creation. Of the three approaches, the technology literacy approach involves the most basic policy changes. The policy goal of this approach is to prepare students, citizens, and a workforce that is capable of taking up new technologies so as to support social development and improve economic productivity. Furthermore, professional development programs have the goal of developing teachers' technological literacy so as to integrate the use of basic ICT

ISSN: 2502-4124

tools into the standard school curriculum, pedagogy, and classroom structures. Leach and Moon (Sara Hennessy and Brown Onguko, 2010) describe the concepts underlying the process of teachers coming to know how, where, and when (as well as when not) to use technology for classroom activities, for management tasks, and obtaining extra subject materials and also pedagogical knowledge in support of their own professional development.

Venezky's study (2004) found that professional development was one of the most important supports in most schools for ICT integration into teaching, as it has the greatest impact on the beliefs and practice of teachers, and yet professional development time was not budgeted for in many of the schools in the study. The most effective programs utilized local expertise, such as teachers arranging assistance as needed from other teachers who had ICT skills. This creates a secure environment and context for trying to use ICT in teaching. Zhao and Frank (2003) suggest that teacher-level factors are the most significant in promoting change in technology use by teachers and they recommend that instead of spending time and money on external in-service programs and conferences, teachers could be given more time to help each other.

According to UNESCO (2008), educational changes related to the knowledge deepening approach have more impact on learning as they aim to add value to society and the economy by having learners apply the knowledge of school subjects to solve complex problems encountered in real world situations of work and life. Coordinated teacher professional development would provide teachers with the skills to use more sophisticated methodologies and technologies with changes in the curriculum that emphasize depth of understanding and application of knowledge to real world problems and a pedagogy where the teacher serves as a guide and manager of the learning environment and students are engaged in extended, often collaborative project-based learning activities that can go beyond the classroom. The most complex of the three approaches to educational improvement, the knowledge creation approach, aims to increase civic participation, cultural creativity and economic productivity by developing a population that is continuously engaged in and benefits from knowledge creation, innovation, and participation in the learning society. Here, the curriculum goes beyond a focus on knowledge of school subjects to explicitly include the 21st century skills that are needed to create new knowledge and engage in life-long learning—the ability to collaborate, communicate, create, innovate, and think critically. Teacher training coordinates the teachers' sophisticated professional skills with the pervasive use of technology to support students who are creating knowledge products and are engaged in planning and managing their own learning goals in a school that is a continuously improving, learning organization. So, teachers model the learning process for students and serve as model learners through their own ongoing professional development – individually and collaboratively.

7. IMPLICATIONS AND CONTRIBUTIONS

Ongoing professional development also appears to be a critical factor (academia.edu, 2015). In the context of education reform, the tools and teaching strategies are new to many of the teachers; therefore, both the quality of the professional development courses and the presence of ongoing support for teachers in their classrooms are important. Research suggests that teachers must be offered multiple points of entry into practices supporting ICT use and student centered teaching. This allows teachers to begin changing their practice from whatever point their context and current practice requires. Research also highlights two features of the teachers 'professional learning occurring in these schools: the importance of follow-up, and the informal professional communities that needs to exist in schools. Teachers should design their own unit plans which are important as it helps teachers to bridge the gap between the theoretical discussion of a training course and the practical needs of classrooms. Schools that have established a culture of constant improvement and professional learning tend to

ISSN: 2502-4124

be more conducive to ICT for teaching and learning.

The performance of Satya Wacana Christian University's ICT-based ITEP to encourage and support the country's economy is determined secondly by Curriculum Development (X_1). According to Linda Darling-Hammond and Charles E Ducommun (2009) it is the Main Aspect of Development for Teachers in the 21st Century Curriculum and Instruction. Researches shows that effective instruction in 21st century needs to take on an integrated approach, helping students understand how to access, evaluate, synthesize, and contribute to information. The focus is on providing opportunities for applying these skills across content areas and for a competency-based approach to learning. The teaching and learning opportunities support innovative pedagogies to integrate the use of technologies, inquiry and problem-based approaches and higher order thinking skills.

Redefining curriculum (Adeyinka Tella and Emmanuel Olusola Adu, 2009) supposes that the curriculum should be designed for both teachers and students to improve their knowledge and skill in ICT. The design supplies four curriculum areas tied with the four stages of teaching and learning: 1) ICT Literacy, 2) Topics include, 3) Application of ICT in Subject Areas, and 4) Integration of ICT across the Curriculum. Integration of ICT across the Curriculum is described to demonstrate the use of ICT to combine subject areas to work on real-world projects and solve real problems. There are some examples to show how within one course ICT can help students to integrate several areas, such as math, science and art. There are also examples to show larger projects that include several courses and several schools integrating ICT in community or global projects.

The performance of Satya Wacana Christian University's ICT-based ITEP to encourage and support the country's economy is determined thirdly by Metacognitive (X_3) that means "students should experience innovative technology-supported learning environments in their teacher education program. In addition, students should see their lecturers engaging in technology to present their subjects and have the opportunity to use such applications" (Resta, 2002). Leach (2003) has pointed out the potential of communication technologies for transforming the models and processes of teacher development in the less developed countries, as ICT offers 1) scaffolding tools, that support teachers' construction and understanding of new professional knowledge; 2) environments and new contexts for learning, enabling teachers to experience new situations, practices and people; 3) communicative tools, facilitating social participation structures between teachers and other educators (e.g. collaborative tasks); and 4) metacognitive tools, enabling teachers to reflect on the learning process, at both individual and group level (e.g. conferencing; joint products such as electronic self-assessment).

The findings of Phelps, R., Graham, A. and Kerr, B. (2004) indicate that the metacognitive approach has broader outcomes and implications than as simply an approach to ICT professional development. Rather, ICT is used as a medium to engage teachers in confronting broader issues about their own, their students' and their fellow teachers' learning. The metacognitive approach also actively fostered the formation of support structures and networks which could support teachers' learning beyond their involvement in the professional development initiative. As such, it becomes a powerful vehicle to support change processes within the school environment.

Down & Hogan (2000) state that promoting more critical and reflective thinking in teacher education programs is fraught with contradictions, tensions and dilemmas. "It is also true that reflection is hard because one must analyse what is transpired and to some degree, make a value judgment about it. It seems to be much safer and secure not to reflect, because I don't have to change that which I don't see as wrong". While involvement in the metacognitive approach was challenging for some teachers, it was also liberating for others, and many participants came to realize the benefits of reflection for their own and their students' learning. The highly diverse ICT background knowledge,

ISSN: 2502-4124

skills and experience of the teachers who participated in this professional development initiate attests on the flexibility of the approach, which productively meets a diversity of teachers' needs and enables everyone to learn at a level and point of readiness appropriate for them.

8. END NOTE

The performance of Satya Wacana Christian University's ICT-based ITEP has encouraged and supported the country's economy at the high and very high level (70%), and none was at the low level. There are three determinants of the success of the performance of the ITEP, i.e., Lecturer Professionalism, Curriculum Development, and the Metacognitive aspect. The influence of the third variable to the performance of the ITEP with the Distance Learning also has encouraged and supported the country's economy at 78.30%. This means that only less than 21.70% is influenced by other variables that are not observed in this model. Other variables, namely, Leadership, Achievement Class, Networked Systems, Adoption of ICT into Teaching Learning Processes and Active, Creative, Joy Full and *Effective* Learning (ACJEL) which are supported by the data do not affect the performance and success of the program. Therefore, the development of distance learning should be focused on the lecturer. Other words, promoting lecturers on professionalism is a more critical factor to function as curriculum developers and teaching learning process actors.

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