

Motivation as a Principle of Trust for the Incorporation of Educational Projects. The Particular Case of Bolivia.

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Abstract

The world is currently immersed in a “technological revolution” (Castells, 2001). The New Information and Communication Technologies are therefore necessary to build a new educational frame in order to introduce young students into this new age. Most countries have already incorporate the NICT’s in the educational system. Others, like the case of Bolivia are still a step behind.

The purpose of this paper is, twofold. From a conceptual viewpoint, it posits an explanatory model capable of analyzing the main variables which influence teachers commitment to the development of efficient educational strategies by incorporating de NICT’s to the students curricula, by first achieving their trust. With this article we are contributing to the creation of a yet inexistent theory about motivation as a principle of trust and at the same time both variables as deciding factors for commitment.

From a managerial point of view, the conclusions obtained here will provide a new framework for educators and government to encourage them to carry out innovative educational projects because by doing it they will obtain a double output: Better trained students to compete professionally in a technological society and motivated and committed educators.

Key words: education, information and communication technologies, teaching strategies.

Introduction

During the last quarter of the 20th Century many authors (Castells, 2000-2001; Adell, 1997) disseminated a technological revolution, centered around information, which once it reaches its maximum value becomes knowledge, and so it is also known as “society of knowledge” (Majo and Marqués, 2002), “technological society” and “digital society” (Castells, 2001) among other names. This society means a great challenge for the education system as it is the main base for introducing the individual into this new age. The challenge is in the re-structuring of the educational curriculum to avoid a new type of illiteracy – the technological kind.

However, despite their effort to integrate these new needs, educational institutions have not yet managed to keep up with the pace of this society. The majority of investigations have focused on studying further into the use and results of the New Information and Communication Technologies (From now on: NICT's) in the educational curriculum (Reyes and Guevara, 2009; Domínguez, 2008). The majority of the authors conclude that there is a certain negative feeling from the teachers on incorporating the NICT's, and there is no way forward if they do not second the initiatives for such an incorporation (Rando and Marco, 1999; Area et al., 2008; Carnoy, 2004; Alba, 2002; Rubio et al., 1994; Gargallo et al., 2003; Roa and Stipcich, 2009). But few empirical studies have explained the reasons for this negativity.

This investigation arises from the posing of the following questions: How is it possible to integrate a pedagogical proposal in the educational curriculum?, What can be done to obtain the commitment from teachers to the incorporation of innovative projects? What are the reasons why teachers do not second initiatives to incorporate NICT's into the area of education? These are the important questions which have not been tackled from the area of marketing.

In this sense, we have gone in-depth into the study of the reasons which could lead teachers to accept innovative projects and be committed to them; taking into account that there are countries in which the incorporation of technologies is still slow, as is the particular case of Bolivia in Latin America.

The objective we pursue with the present research is to deepen into the analysis of the variables which lead to the commitment of teachers towards the incorporation of NICT's in the educational curriculum, through the approach of an explanatory model in which the variables, motivation, participation, trust and commitment of educators are considered.

With this investigation we assume the task of contributing answers, concepts and solutions to some of the problems, prioritizing our study on the teachers.

Hypotheses and proposed model

The starting variables which will be taken into account are motivation, participation and trust as the base for achieving commitment.

Motivation

Today this variable is analyzed more and more frequently as the right key which opens the door which leads to the commitment from individuals to the objectives placed by companies or institutions (Woolfolk, 1996).

Motivation is a concept which is used to describe the forces which act upon, or within, an organism, to initiate or lead its action. It is an internal state which activates, leads and maintains conduct (Palmero, 1997; Woolfolk, 1996).

On the subject of education, among the different investigations which consider motivation, we would highlight that of Kelley (1999), who directs her attention to the motivation among teachers. She studies the motivating impact of the awards for performance in the school. The author bases her analysis with reference to three theories used in the educational area focusing her observation on the teachers. These theories are: the hope theory, the goal theory and the

systems theory; in which rewards, clear objectives and the alienation of resources are also evaluated.

It is worth noting that not all the theories are relevant for the development of the hypothesis proposed further on; therefore, we have selected the hope theory which will allow us to solve the hypothetical relationships which we propose.

The hope theory, as well as establishing that teachers must know the way and the results of the effort made (Vroom, 1964), refers to professional development, evaluation and reward. Rewards come in the form of extrinsic and intrinsic prizes. The intrinsic prizes, are “mainly interior and intangible”, and the extrinsic prizes are “mainly external and material” (Johnson, 1986). Other authors, not necessarily linked to the area of education such as Venkatesh et al. (2001), focus their investigation on the hope theory directed towards sales. They suggest that the estimations of sales and, consequently, the motivation, depend on the perception which the seller has of the relationship of the link between the work and the reward. Moreover, the Market Orientation seems to be very closely linked with the rewards system (Jaworski and Kohli, 1993).

In the search for information we have come up against an absence of investigations which analyze motivation as the root of trust. However, Day (1999) speaks of certain conditions which characterize the most successful processes of change, among which the most notable are the incentives as actions which contribute towards the successful outcome of the process of change. For this reason, it is crucial that sellers are equipped to know the interpersonal behaviors and to discover the needs of adaptation and response which establish trust (Doney et al., 2007).

Therefore, we raise that:

Hypothesis 1a. The greater the *Motivation* of the teachers, the greater their *Trust* when it comes to accepting any innovation in the school curriculum.

Participation

The challenge of public and private institutions to achieve the active participation of the individual has brought forth numerous investigations which go into detail on this subject. Although it is true that there is no consensus on its meaning, on the other hand there is a consensus on its positive influence.

There are those authors, like Sujana et al. (1994), who call participation “intelligent work”, because it supposes the intervention in the planning to determine the idealness of sales and activity behaviors. There are others such as (Anderson and Narus, 1990; Morgan and Hunt, 1994) who make reference to cooperation, which comes from the Latin *co*, which means “together”, and *operari*, “to work”, to refer to situations in which the parties work together to achieve common objectives.

According to the focus of our investigation, we went in depth into the reading of studies which have orientated their hypotheses to the public sector. In 1969, in his investigation, Redford highlighted the American politics theory to facilitate public participation as the foundation of legitimate democracy (Redford, 1969) and the theory of Contemporary public administration mentions that this participation improves the quality of the decision-making and sensitivity (Denhardt and Denhardt, 2003) and is essential for building efficient states (The World Bank, 1997).

In his study, Brudney (1990) proposes coproduction as the best form of participation. He defines it as a co-participant relationship between the government and the citizens, for the provision of public services. He maintains that it brings a series of advantages, among them,

the promotion of “citizenism” which supposes a greater trust and understanding with the government.

Therefore, we raise that:

Hypothesis 1b. A greater level of *Participation* in the incorporation of innovative projects in the school curriculum will have a positive influence on *Trust* at the time of their incorporation.

Trust

Trust as the firm’s hope in someone or something, is the key to relational marketing. Once it is achieved the consequent results obtained are loyalty and commitment (Hewett and Bearden, 2001).

Research developed in recent years has lead to different and various conclusions. Some of them are: trust is an essential ingredient for successful relationships and interpersonal relationships (Moorman et al., 1993; Morgan and Hunt, 1994; Garbarino, 1999); it facilitates constructive and cooperative dialogue for solving problems (Parkhe, 1991; Downes et al., 2002), and therefore it is important for the relational exchange. Spekman (1988) indicates that it is the “cornerstone of strategical association”.

With regard to public institutions on a world scale, due to their nature they are entities in which the citizens have no or hardly any trust, and if they do gain trust for different reasons they easily lose it. In this sense, some investigators disagree as to whether these organizations can be trusted. However, a large movement places emphasis on the belief that trust can be developed in public as well as private institutions (Lewis and Weigert, 1985; Morgan and Hunt, 1994; Doney et al., 2007). Anderson and Weitz (1989), found evidence that trust is the key to maintain continuity in the channel of conventional relationships. However, it is very difficult to introduce changes relating to productivity when people do not trust the company, as tends to happen in large and impersonal institutions (Lovelock, 2004).

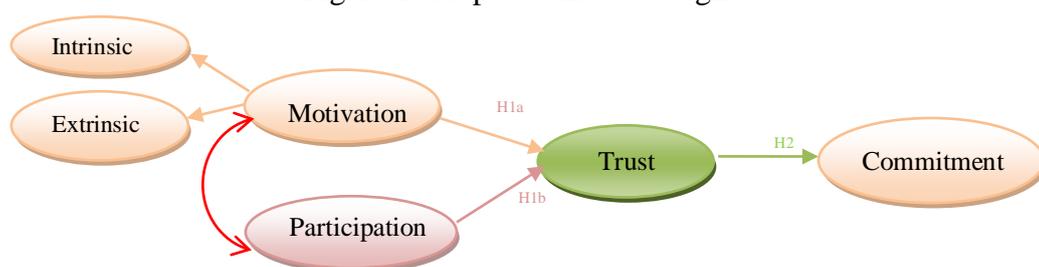
In this sense, Doney and Cannon (1997) have found that trust increases the probability of future interactions between the parties. As well as improving the quality of the interaction and the commitment to these relationships (Hewett and Bearden, 2001), both variables, trust and commitment, lead to the effectiveness, efficiency and productivity of these relationships (Morgan and Hunt, 1994).

Based on the previous rational we raise that:

Hypothesis 2. The greater the *Trust* of the teacher, the greater his/her commitment to the incorporation of innovative projects.

Once the previous hypotheses have been raised, the proposed model is put forward next.

Figure 1. Proposed model design



Motivation- both intrinsic and extrinsic- and teachers participation will lead to commitment from the teacher in the use of New Information and Communication Technologies in a rapid and efficient way, via the generation of trust.

Methodology, sample and variables

Sample consisted of 378 personal surveys to teachers of 47 educational units which met the characteristics required by the investigation. Personal interviews were carried out in the central zone of the city of Cochabamba in Bolivia. The aforementioned educational units had primary and secondary school levels as well as a computer room, incorporated or not by the central Government. The field study was done over three months, from July to October 2009, dates which do not coincide with the winter holidays nor the exam period.

Measurement scales were elected after an exhaustive study carried out on those models which have been validated in preceding investigations.

Table 1 shows the measuring scales used for each latent variable, as well as the reference on which it is based.

Table 1. Measurement scales.

Variable	Reference	Questions
MOTIVATION	Paarlberg, L. E. (2007)	Equal reward
	Kelley, C. (1999)	Extrinsic and intrinsic rewards
	Venkatesh, R.; Challagalla, G. and Kohli, A.K. (2001)	Rewards
PARTICIPATION	Homburg, C.; Jesen, O. and Krohmer, H. (2008)	Team work
TRUST	Rodríguez, C.M. and Wilson, D. T. (2002)	Trust
	Morgan, R.M. and Hunt, S.D. (1994)	Trust
	Doney, P.M., Barry, J.M., Abratt, R. (2007)	Trust
COMMITMENT	Paarlberg, L. E. (2007)	Commitment
	Morgan, R.M. and Hunt, S.D. (1994)	Relationship with commitment
	Rodríguez, C.M. and Wilson, D. T. (2002)	Commitment
	Doney, P.M., Barry, J.M., Abratt, R. (2007)	Commitment

The questionnaire was structured in three different parts; classification questions of the educational unit, teacher classification questions and questions relating to the measurement of the variables of the model. 7-point Likert scales and semantic differential scales were used to assess the items contained in measurement scales. Both turned out to be appropriate to measure the constructs.

In order to contrast the proposed model we used the structural equation modeling technique. According to Hair et al. (2005), SEM allows the investigator to use the theory, previous experience, and the objectives of the investigation to differentiate which independent variables predict each dependent variable. These are models which reveal causal relationships and not only descriptive means of association or correlation between the variables (Bollen, 1989). By using observable variables to evaluate the latent variables it is possible to identify the measuring errors of the variables and of the constructs. Finally, it incorporates in one same procedure the validation of the hypotheses and the validation of the measurements. (Bagozzi and Phillips, 1982).The analysis of the data was carried out using SPSS statistical pack version 16.0 for Windows and AMOS version 18.

Results

A principal component factor analysis with varimax rotation was undertaken. This allowed analyzing the underlying structure of data and determining the structure of a latent variable from the observed variables, valuing the nature of its dimension and the convenience of selected variables (Hair et al., 2005). Subsequently, we carried out a confirmatory factor analysis with the aim of determining if the specified measurement model was consistent with reality. For parameter estimation, we used the maximum likelihood estimation method, since it is the most widely used method in covariance structure models and provides reliable estimations with correct model re-specification (Levy & Varela, 2006).

The casual model achieves a more than acceptable fit. The following table 2 shows the results.

Table 2. Model Fit

Result (Default model) Minimum was achieved		
Chi-square		98.5
Degrees of freedom		48
Probability Level		0.000
Model Fit Summary		
Goodness of fit index (GFI)		0.959
Adjusted goodness of fit index (AGFI)		0.934
Comparative fit index (CFI)		0.976
Root mean square error of approximation (RMSA)		0.053
Normed fit index (NFI)		0.955
Result of the reliability balance		
Variable	No. of items	Crombach Alpha
Motivation	4	0.71
Intrinsic motiv.	2	0.86
Extrinsic motiv.	2	0.74
Participation	2	0.74
Trust	2	0.66
Commitment	4	0.91

Attending to the standardize path coefficients, hypotheses H1a is supported. We can then state that teacher's motivation exerts a positive influence in their trust in the implementation of the NICT's in the educational area. H2 is also supported, meaning that teachers trust in the implementation of the NICT's will influence his/her commitment to it.

However, contrary to our expectations, hypothesis H1b is not supported, so can't state that trust will positively influence commitment. Results are shown in Table 3.

Table 3: Structural Model: Standardized Path Coefficients

Standardized Regression Weights	Estimate
H1 a: Motivation → Trust	0.846
H1 b: Participation → Trust	0.021
H2: Trust → Commitment	0.715
Motivation → Extrinsic	0.604
Motivation → Intrinsic	0.630

Conclusions and discussions

As a first conclusion we can state that **motivation is a considerable influence on the trust** of teachers concerning the incorporation of innovative projects in the educational curriculum.

That is, to gain trust and obtain commitment it is first necessary to manage to motivate them. The motivation, according to the results of the analysis must be proportionated both intrinsically and extrinsically. This conclusion is of vital importance to a developing country as Bolivia. When the financial resources are scarce, as it is the case, then by motivating teachers it is possible to also gain their commitment in the introduction of NTIC's in the scholarship curricula.

We must highlight that trust plays an important role in committing the teacher to support the execution and set up of the New Technologies of Information and Communication, but as long as it is done by providing more information and a demonstration of the functioning of the same. So we can say with assurance that these results have important implications for executing innovative projects quickly and efficiently, not only in the educational area but also in the whole public and private sector. Therefore our contribution is important in the face of little or almost no investigation concerning motivation as a condition for trust.

Limitations and future investigations

Our investigation presents various limitations, First, the difficulty in accessing the teachers, because of bureaucracy. We had to request the corresponding permission from three levels, from the Ministry of Education for it to permit the Service of Departmental Education for it in turn to give the order to the head teachers for the study to be done. Secondly, because the data were collected through a questionnaire only in one main city of the country.

There is still a long way to develop research in Bolivia, both from the teachers perspective and also from the students point of view.

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