

Educational Technologies, Social Skills and Decision Making in University Students

Tecnologías educativas, habilidades sociales y la toma de decisiones en estudiantes universitarios

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Summary

The objective of this research was to determine the relationship between educational technologies, social skills and decision making in university students of the Industrial Engineering School from a private university in Lima. This study was basic, its design was non-experimental and cross-sectional. The population was composed of 80 students. The survey was used as a technique and the questionnaire was used as its instrument. The questionnaire had Likert Scale questions. The results allowed determining that there is a significant relationship between educational technologies, social skills and decision making, with a significance lower than .05.

Keywords: Educational Technologies; Social Skills; Decision Making; University Students; University

Resumen

La presente investigación tuvo como objetivo determinar la relación que existe entre las tecnologías educativas, habilidades sociales y la toma de decisiones en estudiantes universitarios de la facultad de Ingeniería Industrial de una universidad privada de Lima. Este estudio fue de tipo básica, diseño no experimental-transversal. La población estuvo constituida por 80 alumnos. Se utilizó la técnica de la encuesta y su instrumento el cuestionario, con preguntas tipo escala de likert. Los resultados permitieron determinar que existe una relación significativa entre las tecnologías educativas, habilidades sociales y la toma de decisiones, con una significancia menor a .05.

Palabras clave: Tecnologías educativas; Habilidades sociales; Toma de decisiones; Estudiantes universitarios; Universidad.

Introduction

Since the 70's, the importance of Educational Technology has been confirmed. The U.S. Agency for International Development (1972) defines it as a systematic way of perfecting the learning and instruction process through research works in order to obtain more effective results. UNESCO, in 1978, established that Educational Technology is understood as “[...] the application of a scientific and systematic approach with the information related to the improvement of education, in its manifested variants and several levels.” The same entity, in 1984, defined the same term as “[...] the systematic way of conceiving, applying and evaluating the set of teaching and learning processes taking into account also the technical and human resources and the interactions between them, as a way of obtaining a more effective education” (Area, 2009, p. 10).

On the other hand, social skills have been defined as a “set of skills that allows the organization of cognitions and behaviors in an effective manner, in order to achieve the interpersonal and social goals, which are carried out in a culturally acceptable way” (Ladd & Mize, 1983; Migueláñez, & Conde, 2011). Current research works on the topic have included new variables in this construct, such as the attention skills, the teamwork skills, organizational skills and asking for help skills in case of need (Jacob, 2002, p. 589).

Additionally, in the Report of the Profile of the Graduate of the Industrial Engineering School at the César Vallejo University - 2015, low level in the skills Decision Making based on the validated information of the graduates of this school was found.

Regarding the context of this research, Rivera (2009) presented the usefulness of the WebQuest, as a didactic resource in higher education, the need for teachers' training for the curricular integration of the ICTs and WebQuest as a didactic tool for the development of skills. The pre- and post-test data of the research showed that WebQuest, designed by teachers, facilitates the learning of university students. Trained teachers use it as a didactic tool in their teaching practice and finally, he showed that their use is satisfactorily valued by students and increases the performance in the course.

Ruiz and Ruiz-Tapia (2010), in their research work, conducted an analysis of the use of a business simulator as a learning tool to develop the decision-making skills and teamwork skills in students studying Accounting and Administration at the Autonomous University of Mexico State. It concluded that the tool allows students to face similar situations to those face in an organization and they must learn to solve them, so that when these situations arise, they can count on reference elements for their decision making, with the development of creativity, thinking strategies, observation and analysis.

Educational Technologies

Martínez (1996, cited in Cabero, 1996) defined as new technologies all those ways of communication and information processing, which arise from the union of the advances of the electronic technology and concept tools (p. 53).

In addition, he said that in opposition to audiovisual and information technologies, which have previously been part of the education and learning world (such as cinema, radio, programmed learning, TV or video), about which we can say that they do not show themselves as opposed to the traditional education system usually based on teaching in the classroom, governed by space and time variables, the new advances based on the new information and communications technologies show themselves as true opponents to it. This takes place by promoting the interaction and learning outside the usual barriers of space and time, occurring in a place called cyberspace (p. 56). Likewise, Salinas (cited in Cabero, 1998) indicated that digitation and the new electronic supports are giving rise to new ways of saving and presenting information. Multimedia tutorials, online databases, electronic libraries and hypertexts distributed respond to new ways of presenting and accessing knowledge. Such tools are better, in certain contexts, than traditional ways of oral explanation, the blackboard, notes and the manual. It is not necessary to explain the benefits of the process simulations, graphic representation, integration of text, image and sound or hypertext navigation. In the future, this support will be more used in the educational levels. (p. 33).

Social Skills

According to Caballo (2007), social skills:

Are a set of behaviors emitted by an individual within an interpersonal context who expresses his feelings, attitudes, desires, opinions or rights in an appropriate manner according to the situation, respecting those others' behaviors and who, generally, resolves the problems of the situation immediately while he minimizes the probability of future problems (p. 6).

Traditionally, social skills have been defined as a set of skills that allow the organization of cognitions and behaviors in an effective manner in order to achieve interpersonal and social skills, which are carried out in a culturally acceptable way (Ladd & Mize, 1983; Organista, Silva, Salas, & Lavigne, 2016; Fernández, 2017). Currently, research on the topic has included new variables in this construct, such as the attention skill, teamwork skill, organizational skill and ask for help skill in case of need (Jacob, 2002). According to Kelly (2002), they are behaviors learned people use in interpersonal situations to obtain or maintain the environment strengthening.

Decision Making

According to Betancur (2016), making decisions always starts with choosing between deciding or not. When making a decision, one assumes the commitment to the results one wants to reach, whereas when not deciding, one demonstrates to be interested in things to happen, but without doing nothing to reach the results desired. What leads one thing to another are mental models and for that reason, the decision-making processes must be analyzed based on them.

Usually, one decides to achieve success and decisions are eluded when one wants to avoid failure. According to Sánchez (2014), the institutional decision causes a specific set of activities that have been provoking progressively and gradually the interest of scientists and specialists. Deciding is more than a personal exercise of freedom. In fact, decision is a complex act belonging to a process integrated by several operations, characterized by their political dimension. The institutional leader, acting as such, puts into play the social dimension and the practice of decision (Minnaard, Servetto, Lobo Mirassón, & Pascal, 2015; de Pablos Pons, 2018).

Method

The research work was basic, descriptive and comparative focused on the search for the relationship between educational technologies, social skills and the decision making in students. According to Hernández, Fernández and Baptista (2014), it is basic since it contributes to the scientific knowledge. In this regard, it was found that “within the quantitative approach, the quality of a research is related the degree at which the design is applied as it was preconceived.” (p. 136).

Descriptive studies “seek to specify the properties and profiles of people, groups, communities, processes, objects or any other phenomenon that undergoes an analysis” (Hernández, Fernández & Baptista, 2014, p. 80). Comparative studies have “as a purposes to compare the relationships and the degree of association existing between two or more concepts, categories or verbal in a particular context.” (p. 81).

The design of this work was non-experimental, cross-sectional and descriptive and comparative since variables under study were not manipulated and tested. Non-experimental means “the research that is carried out without manipulating variables deliberately. That is, it is about studies where we do not intentionally change independent variables to see their effect on other variables” (Hernández et al., 2014, p. 149).

It is descriptive and comparative since this designs “allows the collection of relevant information in several samples with respect to the same phenomenon or aspect of interest and

then the characterization of this phenomenon based on the comparison of the collected data” (Sierra, 2007, p. 3).

It is cross-sectional since its purposes is “to describe variables and analyze their incidence and interrelationship at a given time. It is like taking a picture of something that happens” (Hernández et al., 2014, p. 151).

Population and Sample

The population is composed of students in the fifth year of the Industrial Engineering School from a private university of Lima. The sample was census and consequently, the total population was studied. This population was composed of 80 students of the above-mentioned professional school.

Technique

The technique used was the survey. “The survey is an instrument of market research that consists in obtaining information from people surveyed by using questionnaires previously designed in order to obtain the specific information” (Hernández et al., 2014, p.1). The instrument used in research was the questionnaire. Three questionnaires were applied, one for each variable at the same time.

Results

According to the statistical analysis, after the application of the instruments, the following results were found:

Table 1.

Relationship between educational technologies and social skills.

Model	R	R-square	Adjusted R-square	Typ. Error of estimation	Change statistics					
					R-square change	F-square change	gl1	gl2	Sig. Change in F	Durbin-Watson
1	.859 ^a	.739	.735	.366	.739	220.371	1 ^a	78	.000	2.014
Coefficients ^a										
Model	Non-standardized coefficients		Typified coefficients	t	Sig.	Correlations				
	B	Typ. error				Beta	Zero-order	Parti-al	Semi-partial	
(Constant)		.215	.145	1.487	.141					
EDUCATIONAL TECHNOLOGIES (x1) – SOCIAL SKILLS (x2) (grouped)		.891	.060	.859	14.845	.000	.859	.859	.859	.859

Since $R=0.859$, 85.90% of the variables of educational technology and social skills correlate with the decision making variable. The typified coefficient beta 0.859 indicates the percentage that affects the variable that would be 85.90%. The sig value .000 is lower than

significance .05. Therefore, there is a significant relationship between educational technologies, social skills and decision making with a high correlation (0.859).

Table 2.

Relationship between educational technologies and decision making.

Model	R	R-square	Adjusted R-square	Typ. Error of estimation	Change statistics					
					R-square change	F-square change	gl1	gl2	Sig. Change in F	Durbin-Watson
1	.733 ^a	.537	.531	.487	.537	90.336	1 ^a	78	.000	1.576
Coefficients ^a										
Model	Non-standardized coefficients			Typified coefficients		t	Sig.	Correlations		
	B	Typ. error	Beta	Zero order				Parti al	Semi-partial	
(Constant)		.682	.176			3.871	.000			
1 EDUCATIONAL TECHNOLOGIES (x1) (grouped)		.689	.072	.733		9.505	.000	.733	.733	.733

Since R=0.733, 73.30% of the educational technological variables correlate with the decision making variable. The sig value .000 is lower than significance .05. Therefore, there is a significant relationship between educational technologies and decision making, with a high correlation (0.733).

Table 3.

Relationship between process simulator, blended learning and decision making.

Model	R	R-square	Adjusted R-square	Typ. Error of estimation	Change statistics					
					R-square change	F-square change	gl1	gl2	Sig. Change in F	Durbin-Watson
1	.769 ^a	.591	.581	.460	.591	55.744	2 ^a	77	.000	1.635
Coefficients ^a										
Model	Standardized coefficients			Typified coefficients		t	Sig.	Correlations		
	B	Typ. error	Beta	Zero order				Parti al	Semi-partial	
(Constant)		.447	.226			1.981	.051			
Blended learning (d1x1) (grouped)		.583	.103	.629		5.650	.000	.761	.541	.412
Process simulator (d2x1) (grouped)		.209	.133	.175		1.570	.120	.650	.176	.114

Since R=0.769, 76.90% of dimensions of process simulator, blended learning correlate with the decision making variable. It can be interpreted with the typified coefficients beta 0.629, blended learning affects 62.90% of the variable. The sig. value .000 is lower than significance .05 (blended learning), sig. 0.120 > .05 (process simulator). Therefore, there is no significant relationship between the process simulator, blended learning and the decision making.

Table 4.*Relationship between social skills and decision making.*

Model	R	R-square	Adjusted R-square	Typ. Error of estimation	Change statistics					
					R-square change	F-square change	gl1	gl2	Sig. Change in F	Durbin-Watson
1	.855 ^a	.732	.728	.371	.732	212.691	1 ^a	78	.000	2.102
Coefficients ^a										
Model	Standardized coefficients		Typified coefficients	t	Sig.	Correlations				
	B	Typ. error				Beta	Zero order	Partial	Semi-partial	
(Constant)		.325	.140	2.321	.023					
SOCIAL SKILLS (x2) (grouped)		.839	.058	.855	14.584	.000	.855	.855	.855	

Since $R=0.855$, 85.50% of the social skills variables correlate with the decision-making variable. In addition, the sig. value .000 is lower than significance .05. Therefore, there is a significant relationship between social skills and decision making with a high correlation (0.855).

Table 5.*Relationship between first skills, advanced skills, feeling management, alternative skills, stress management skills, planning skills and decision making*

Model	R	R-square	Adjusted R-square	Typ. Error of estimation	Change statistics					
					R-square change	F-square change	gl1	gl2	Sig. change in F	Durbin-Watson
1	.885 ^a	.784	.766	.344	.784	44.062	6 ^a	73	.000	2.055
Coefficients ^a										
Model	Non-standardized coefficients		Typified coefficients	t	Sig.	Correlations				
	B	Typ. error				Beta	Zero order	Partial	Semi-partial	
(Constant)		.113	.214	.526	.600					
First skills (d1x2) (grouped)		.294	.148	.308	1.988	.051	.787	.227	.108	
Advanced skills (d2x2) (grouped)		.138	.065	.151	2.116	.038	.594	.240	.115	
Skills related to feelings (d3x2) (grouped)		.061	.093	.077	.658	.513	.757	.077	.036	
Alternative skills (d4x2) (grouped)		.188	.168	.182	1.119	.267	.784	.130	.061	
Stress management skills (d5x2) (grouped)		.324	.108	.330	3.006	.004	.757	.332	.164	
Planning skills (d6x2) (grouped)		.003	.074	.003	.045	.964	.077	.005	.002	

Since $R=0.885$, 88.50% of the dimensions of first skills, advanced skills, feeling management, alternative skills, stress management skills, planning skills correlate with the decision-making variable, the sig. values 0.051; 0.513; 0.267 and 0.964 are not lower than significance .05, only .038; .004 are lower than .05. Then, there is no significant relationship between first skills, advanced skills, feeling management, alternative skills, stress management skills, planning skills and decision-making.

Discussion

For the educational technological variable, the research work carried out by Rivera (2009) stated that the WebQuest designed by teachers facilitates learning in university students. It also shows that its use in university teaching is satisfactorily valued by the students and increases the performance in the courses. In this regard, this research found that there is a significant relationship between educational technologies and the decision making in students in the fifth year of the Industrial Engineering program from a private university in Lima, with a high correlation, analyzing the technologies such as blended learning and process simulators. It proves the importance in the use of new educational technologies to improve the decision-making skill in students in the fifth year of the Industrial Engineering School.

For educational technological variables, Ruiz (2010) conducted an analysis of the use of the business simulator Risky Business as a learning tool to develop the ability to make decisions and teamwork skills through the integration of administrative concepts of university students belonging to the Accounting and Administration programs. In this regard, this research found that there is a significant relationship between educational technologies and the decision making in students in the fifth year of the Industrial Engineering program. For that reason, a new quasi-experimental study should be conducted to see the influence of the process simulation tools in the decision making of students.

As for social skills, García (2005) found a positive significant correlation between social skills and social climate in the family. However, he found that there is no a significant correlation between social skills and social climate in the family with the academic performance. In contrast with it, this research found that there is a significant relationship between social skills and decision makings in students in the fifth year of the Industrial Engineering program with a very high correlation, which has allowed finding the importance of social skills in the decision making process of these students in the fifth year.

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