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DIGITAL COMPETENCE AND UNIVERSITY TEACHERS' CONCEPTIONS ABOUT TEACHING. A STRUCTURAL CAUSAL MODEL

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Abstract:
University teachers in their advancing logical and educational transformation, needs to perform effectively the unused strategies and patterns in their proficient field. ICTs significance for any individual needs moral duty, it is the officeholder on the instructive specialists to preserve, continue, and enhance their degree of superior efficiency, and for that reason advance learning and instructing. Strategy: This think about employments a agent test of 186 college instructors and takes after the a quantitative expressive overview strategy. Two surveys were linked namely CEE-ACUTIC. The primary the panel had actually acknowledged the approach for transmission of informations or the development. indicated civil and moment censure, information and utilise of ICT. Comes about: A causal show of auxiliary conditions refers was, of greatest probability, run. We refer to the positive and critical correlation between the educating approach located to the construction of knowledge and the use of ICTs ($\hat{I}^2 = 0.17, p < 0.01$) and, in another sense, a significantly negative correlation between the utilize of ICTs and the instructing approach that emphasised the diffusion of information ($ß = 0.16, p < 0.05$).
Talk: Preliminary evidence by observation is that the instructing approach influences the utilization of technologies. for educating. In other words, there is no question about in other settings, educating methods and high levels of instruction effectiveness competence.

Keywords: Advanced educating competence; instructing approach; basic causal demonstrate; University instructors; ICT utilize; information building; data trade; instructor preparing

Introduction:

In the last two decades, however, the term competence has become of extraordinary importance in the field of education. Whereas it is not that new, can argue that it has been redefined to some extent since Delors made it more relevant.

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that is why it can be linked to the basic, essential information that instruction must provide to all people. Competences as described by Perronoud , comprises of the cognitive, the emotional, the socio-emotional and the physical. an individual is capable of organizing, in a co-ordinate manner, enabling him perform successfully in front of the requests of each setting: When the concept of competence is used, the thought is of changeless but improving features in the human person. subject which are directly linked to profitable implementation of an action. Consequently, we get it that a competence is the potential to select and deploy information, abilities and attitudes to respond in terms, it can be well adapted only to a given proficient circumstance. In this respect, Gonzlvez et al. invite a hypothetical reflection on the relevance of appropriate. teacher versed in Media skills. To such creators, the college instructor needs to know the current trends. conjectures about their capacity, alongside the present-day methodologies for motivating understudy learning, including those reliant on ICT. They affirm that it was not simply a address of relevation of information, and state the mandatory ethical concern job holder for professionals in teaching qualified to safeguard, progress some more and upgrade their degree of computerized proficiency in arrange so as to help out the data and great preparing of the learners.

IST used competence also involves certain and basic use of Data Society Innovation (IST).

for performing activities, recreation and to interact with other people. It is supported by fundamental aptitudes in ICT: the utilize of computers to to collect, restore, survey, store, deliver and reveal information as well as to share and participate in communities in computer supported cooperative work using the Web (p. 14).

However, Marqus presents the notion of Computerised competence to refer to all competences associated with the utilize of ICT put forward up to thirty nine essential ICT competencies that have been categorized into eleven indicators. ranging from information of computer frameworks, look and determination of data in the organize to entertainment and education with ICT or normal manners in types like word processors, or manners like administration towards them. At the same time, college instructors ought to develop the particular competences established by utilising ICT in their proficient work from . The creator moreover states that, regarding understudies, college instructors need a computerized proficiency that allows them to take advantage of these idle mechanical tools

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successfully and efficiently in their efficiency (teaching, asking and managing) as well as personal activities.

In order to use Web programs and resources there are expected certain instrumental aptitudes, but in general there is should purchase instructional skills for the utilization of all these ICT media in a teacher's diverse teaching. roles as: facilitator, negotiator, negotiant, negotiatory, advisary, diplom, dispenser of learning resources and information provider trainer, role model, teacher of pupils and ignition.

It appears that definitions of computerized educating competence pertain to the proficient and compelling utilize of related mechanical and educational assets to form noteworthy educating and learning circumstances, not overlooking the fact that instructive forms must be conceived from an fundamentally and all encompassing point of view that unites attitudes, knowledge and abilities of an awfully different nature computerized educating competence lead to Where advances are restricted. A few creators decided to open a significant expressed and conceptual conversion. Others however argue that practice in advanced competencies should be extended to all college teachers and from the ground up starting with a definition of exactly what it means to be a well-rounded competent teacher.

Since instructing is experiencing a basic moment, with understudies who anticipate one more sort of instructing, there is a natural space to pose the vital inquiry: Is it vital to proceed with mechanical intangibility or is it perhaps fitting to offer extraordinary unmistakable quality to an instruction dependent on media and advanced proficiency? Similarly, some few inventors state that proficient advanced competency should result from learning handle which generates new chances for reflective based on individual

situations and experiences, where they meet ethical issues, like those connected with the utilize of social organizing locales .

In other decades, the initial and progressing educator preparing has turned into a major issue.

Beginning and advancement of educator preparing turns into an essential issue in later decades. Worldwide ponders demand on the have to be reestablish instructor preparing programs to move forward teaching learning forms in obligatory instruction . Many writers insist that more similar research is necessary to transfer the findings to the classroom teaching practice .

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Literature review

Among the many recommends that have been made on how best to will integrate ICTs, one that's getting a charge out of most back in inquire about on . Educator preparing is the methodical demonstrate of innovative and substantial material data.

The TPACK framework, as identified by Koehler and Mishra . This demonstrate centers on educator preparing that will take in and populace that could be impacted by the program.

coordinating ICT from a triple viewpoint: the recognition and valorization of college and specialized competence of college; educational modeling and the pedantic application of these advances carries with it the instructors; This show has been relatively successful over the last five decades and the considers the impact on educator preparation have duplicated . College teachers appreciations of the measurement of computerized education competence have been identified and college teachers and communication skills have been assessed .

Most important reflects concerning the topic have focused on the achievement of professional digitized proficiency in instructor preparing , in defining the variables explaining computerized integration or on providing fundamental standards for producing computerized competence in schools and educator preparing .

Could it be possible to teach skills? What learning computerized instructing aptitudes consist of? Whereas this would need other kinds of inquire about, Tejada and Pozos suggest competency integration where improved .. Competence would be coordinates into particular instructor competencies in arrange to be able to blend adequately in to the collection of college teachers' activities. A way that passes through other difficult cognitive structures where main mechanical models are identified, differentiated, classified. evaluated and, on a basic level, selected to understand an educative question or academic situation.

University teachers seem to require the same information about the basic elements associated with Information and Communication Technologies, and therefore, used selectively in class . At the same time, college instructors value particularly emphatically the potential that ICTs may bring to their instructing. and are conscious of that part and importance of ICTs for the extra scholastic work of their learners .

In any case, it is first necessary to define what bounds the college instructors face when implementing ICTs in their instructing and learning forms. These are by and large specialized, but there is equally a need of information around them on the

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portion of understudies and college instructors . All the problems of cruel preparing is
needed in advanced and data abilities on the off chance that the obstructions seen by college educators are to can be overcome and ICTs are to be successfully integrated to the classrooms.
Understanding of teaching among college teachers approaches and its implication should be was proposed several a long time ago and two manifest introductions were identified (Figure 1).
One is the instructor-centered design for which the most important feature is that teaching is viewed as The process of transferring information to the learners who receive it. The other, or more personal introduction postulates that educating needs to be aimed at the student conception transformation. All of them flow into the mainstream of the educator's activities in his or her attempts to assist the learners construct their own knowledge and experience of the world promoting the development of own idea as precision which is accredited.

Materials and Methods

This consider livelihoods a expressive quantitative consider sort arrange, as this procedure is able to answer to issues in both realistic terms and in association to variables. Additionally, it licenses the information collected to be generalized for broader populaces.

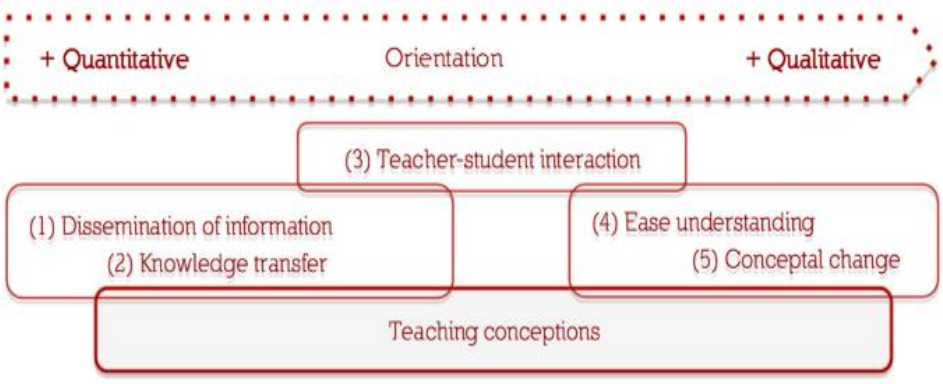

Figure 1. Classification of teaching conceptions. Source: own, based on Säljö [40], Marton et al. [41], Samuelowicz and Bain [38,39].

2.1. Population and Sample

The consider populace included 2467 college instructors and analysts of the College

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of Murcia. This final information creating test included 186 of these over the least fundamental for the ponder to be agent with a high degree of 95% confidence level. Testing was probabilistic by bunches or periodically during the complemental-curvilinear phases.

poly-stage aggregates which prompt touch with to great numbers, of populaces, making it doable to carry out the investigation of person bunches:

Instruments

Two tried and trusted questionnaires of suitable reliability were used to collect the information:

Two questionnaires have been developed: They include; a) The teaching approaches questionnaires (CEE), b) Questionnaire to measure the perceived attitude of teachers towards ELLs.

and transforming it into assets to improve knowledge and usage in the direction of ICTs (ACUTIC)

CEE

Originally, it was developed by Trigwell and Prosser in its basic form, then was translated and changed into.

University performance university context in Spanish university by Hernández-Pina in 2006 and updated by Monroy .This questionnaire

(alpha of Cronbach = 0.682) defines two profiles: , one for the student, or learning, and the other

on the teacher, or teaching. It has 16 item on it on type of response format with the options ranging from 1 strongly disagree to 5 strongly agree.

1=never or very rarely, 2=rarely, 3=sometimes, 4=often and 5=always or almost always.

ACUTIC

A self-report questionnaire, Cronbach's alpha = 0; 917, consisting of 31 items and which is distributed across

three dimensions: Know-what (1) comprises; (2) and perception; and (3) and utilization.

All the dimensions use a 5-Likert scale where 1 is a strongly disagree and 5 is a strongly agree.

Procedure

The procedure of conducting the following research conforms to the general stages of conducting a descriptive quantitative study.

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such as surveys. Data collection was in two phases: we respectively define the first live interview data collection process. A telematic data collection in the departments selected.

To ensure that the ethical principle of doing educational research there were the following considerations as postulated. the rights of the participants as well as the dignity of each of the participants, with whom they evaluated the aims and goals of the research. it entails ideas related to covers, or anonymity of data gathered and/or involvement in commercial and/or volunteer type of research classifications. These collected data were further cleaned and compared with SPSS V.24 for MAC and the IBM SPSS statistics. AMOS V.21.

Results

With regard to the aims and objectives of this study, a method of causal structural equations was used in the analysis.From the models of the structural equations Hoyle held that since the sort of analysis that had been done could be done using the program then it was possible the analysis.

developed. According to the models of the structural equations Hoyle opined that since the analysis carried out was possible

The estimation of the relations between the manifest and the latent variable in the structural model of the connections between them is explained under the structural equation modeling estimation. Nevertheless, the stock and flow structures are at the essence of the system dynamics models while the architectural positioning of the causal loop diagram makes their comprehension challenging.

These models have been developed with reference to the theory and the above literature as presented in this paper.

Concerning the objectives of this work, the analytical approach of the causal structural equations was used. From the models of the structural equations, Hoyle stated that since the sort of analysis that has been performed can be carried out with the use of program then it was possible the analysis., Following the models of the structural equations Hoyle argued that due to the analysis that was conducted it wasossible analysis .From the models of the structural equations Hoyle held that since the sort of analysis that had been done could be done using the program then it was possible the analysis. developed. According to the models of the structural equations Hoyle opined that since the analysis carried out was possible Details of the level of association between the manifest and the latent variable in the structural model of the relationships between them is defined under structural

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equation modeling estimation. However, the stock and flow structures are central to the system dynamics models while the architectural positioning of the causal loop diagram makes understanding of the models difficult.

Both of these models have been built with regards to the theory and the above literature reviewed in this paper. In the first objectives therefore the program identify the main focal area where the program targets to look for relationship between the strategies and intents of the university. The perceived training need for teachers in their teaching and their ICT competence in < as shown in table 2 table 2 above.

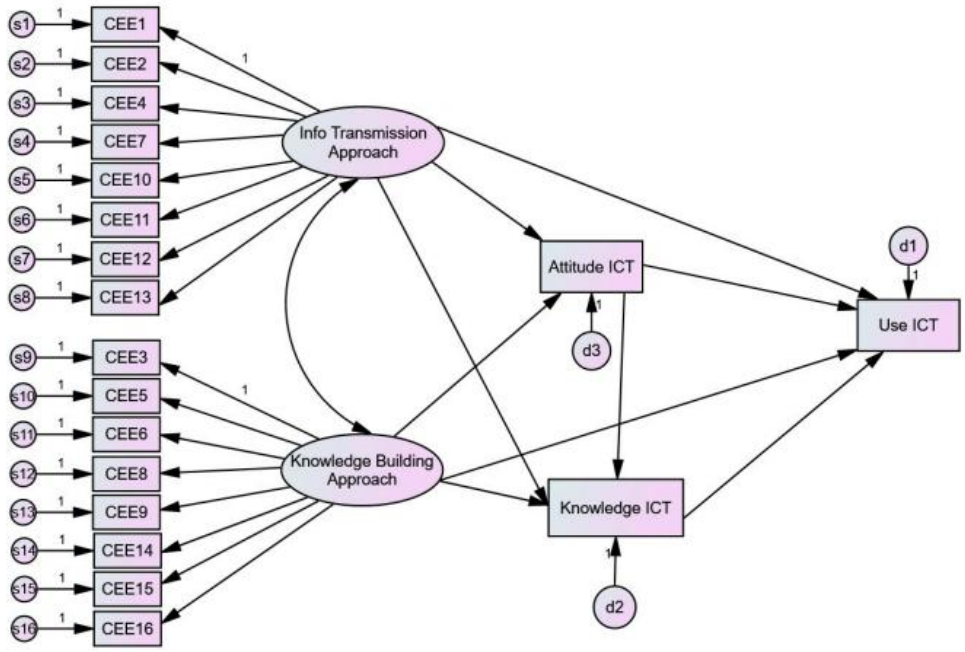

Figure 2. Structural regression model.

These have been described in causal model as included in figure 2 below; Outcome Variable The variable that measures the result of the CBT and CSM intervention. Two variables are operation as the independent variable(s) of the study.

also the parallel measurement of the independent and dependent variables (Attitude ICT and Knowledge ICT) and the dependent variable is the use made of ICT is due to the application of digital competence by the university teachers. This implies that with there inclusion in the model the impact accorded to the Info depends on a measurable rather than qualitative threshold.

Education constructs involved are the Transmission Approach and the Knowledge Building Approach. Completely, we use maximum like hood method to estimate the parameters so long as it is non prejudiced and if the observed variables are at their typical level then the estimation is efficient and normally distributed.

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Lévy & Varela have proposed that for the cases involved in, analyses looking into the logics should entail between 100 and 200.

These results attained have indicated that hypothetical variables have to be estimated by Structural Equation Models using the Maximum the likelihood technique.However, to examine the adequacy of size of model under study, Hoelter's critical N at 15% significance level was used.However, to assess the adequacy of the size of the studied model ,In the author's consideration, one can accept the investigation only under the condition that the size of the expected hypothesized sample is also indicated based on this index in the model stated in The critical N obtained from the above calculations is 5% Hoelter critical N is 140 Accordingly since this work used sample comprises of 186 subjects the chosen analytical tool fits the selected analysis technique .

As it stands we get a resultant value of 589 which give values less than 2 or 3 to show that the model fits well. we get a resultant value of 589 which give values less than 2 or 3 to show that the model fits well.

The normative fit was estimates for this case where Tucker–Lewis indices were measured to be 0 They are known to range between 0 and 1; the Comparative Adjustment Index (CFI) values for this case are 0.The extent of goodness of fits therefore is 827 and 0.868 both of which are reasonable. Similarly, the RMSEA index: 0.056,

and is known as quadratic mean approximation error or QMAE for short and which try to avoid the issue that the Chi-square statistic

that is, to exclude models with a sample size that is adequately large – refers to a correct fit of the model . The indices of On the positive samples of university teachers the obtained availability of goodness shows that the model fits well.The first of the factors considered as objectives is a greatly oversimplified pathway diagram was drawn based on the value of the statistical regression coefficients after leaving out the coefficients of connections with unrelated significance (Figure 3). From the same list and as presented in the table 1, coefficient of regression interpretation also proved causality relationship at 5% level of significance with all the variables under study except the method of tutoring aimed at the process of transmitting the knowledge regarding the information.

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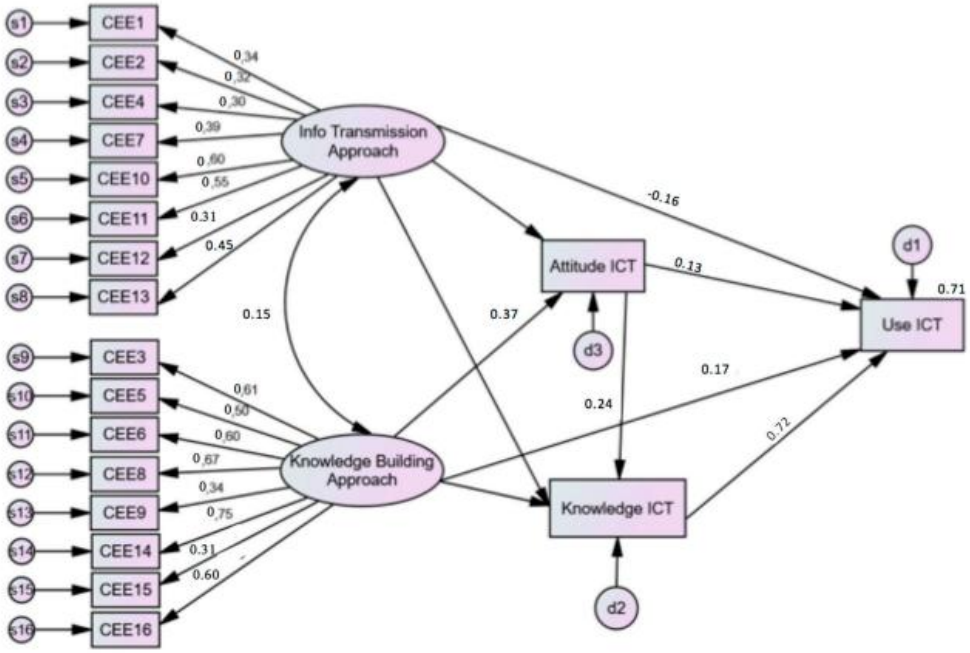

Figure 3. Estimation of the coefficients of the pathway diagram.

Table 1. Standardized regression weights.

			Estimate
Attitude ICT	<	Info Transmission Approach	0.040
Attitude ICT	<	Knowledge Building Approach	0.367
Knowledge ICT	<	Info Transmission Approach	−0.073
Knowledge ICT	<	Knowledge Building Approach	0.123
Knowledge ICT	<	Attitude ICT	0.241
CEE1	<	Info Transmission Approach	0.341
CEE13	<	Info Transmission Approach	0.453
CEE12	<	Info Transmission Approach	0.314
CEE11	<	Info Transmission Approach	0.552
CEE10	<	Info Transmission Approach	0.604
CEE7	<	Info Transmission Approach	0.392
CEE2	<	Info Transmission Approach	0.325
CEE4	<	Info Transmission Approach	0.296
CEE3	<	Knowledge Building Approach	0.611
CEE16	<	Knowledge Building Approach	0.605
CEE15	<	Knowledge Building Approach	0.313
CEE5	<	Knowledge Building Approach	0.497
CEE6	<	Knowledge Building Approach	0.602
CEE14	<	Knowledge Building Approach	0.746
CEE9	<	Knowledge Building Approach	0.338
CEE8	<	Knowledge Building Approach	0.673
Use ICT	<	Attitude ICT	0.130
Use ICT	<	Info Transmission Approach	−0.158
Use ICT	<	Knowledge ICT	0.721
Use ICT	<	Knowledge Building Approach	0.173

To further support this causal structural model R2 was obtained (0.71) This means that the result shows that in terms of the coefficients derived the specificity of the independent variable in the model correctly predicts 71 per cent of the criterion variable redundancy.

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that they have great predictive power over it: that is, the use that teachers of universities make of ICT depending on how they imagine those concepts that should be taught. It was used when exploring the relationship between two, or more variables at a time with.statistically meaningful coefficients achieved at $p < 0.05$ level, which in turn proves our hypothesis stating positive relationship between what has to be highlighted in the teaching / learning approach towards knowledge construction and the use of ICTs, however any such use is negative correlated with the teaching centred learning however the accessibility of knowledge in the information flow.

From those data it has also been concluded that the teaching approach known as knowledge building is positive.Their results suggested that communication facilitation has both a direct effect on usage and an indirect effect on mediated ICT usage through perceived usefulness of ICT; a moderation effect of task scope on the perceived usefulness of ICT for participating in the learning process; and that perceived usefulness of ICT has an influence and moderation effect on attitude toward ICT.

Two groups showed that perception of practical knowledge was significantly related to score of assessed knowledge with the latter related to 0.24, $p < 0.01$. Therefore, the sum of the regression weights to the independent composites score of attitude towards ICT is 0.30 (table 1).

Discussion and Conclusions

Based on Schommer-Aikins and Beuchat-Reichardt and Hernández-Pina it is with respect to the proposition by that everything educationally significant which happens in classrooms is due to prior decisions. that it is possible to observe that inherent features of the educational process at each stage define certain outcomes. Thus, if we manage to get down to the assumption that the presence of if teaching concepts is in harmony with learning outcomes and vice versa if there is a mutual relationship tussen them then the any change in some of these components by indicating that any introduction of some major change within some of these components would affect, to a higher or lesser degree the other factors. Which is to say that if one directs university teachers toward the set of more specific accommodating conceptions of teaching.

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Carrying on from the proposal focused on conceptual change and personal transformation, the teaching practices should also reflect the same design and this will squarely position the quality of teaching they afford to their learners.

However, in some measure we align ourselves with the words of Sept in order to try understand the ICT mediated teaching approaches that shall be applied regarding the usage that shall therefore be made of them will therefore depend on conception taken while taking the approaches to teaching. They may therefore be limited by the latter; the intended and planned strategies of the university teachers. Therefore, going with my perception, motivation extrinsic can be modified, controlled and even be pressured to something which will compel a teacher to join in the teaching process so that her/al goal, intrinsic in becoming a teacher, could be fulfilled. Because the intrinsic goals of change and transformation, they themselves do not allow the least of them or some number of teaching strategies which the teacher might learn or, in other words, master.

It will always be had an orientation of the conveyance of the information.

Similarly, past literature also acknowledges that university teachers have positive attitude toward the adoption Integration of ICTs in-class. On the other end, other researchers like the Training as taken digitally. are needed in order to employ them effectively in education practices It is thereby reasonable that a favourable attitude towards ICTs therefore should lead to better knowledge or higher use of the technologies.

The relationship Between the three competency components within attitude, knowledge and use, the possibility does exist, but the teaching approach can be as such positively viewed as the conditioning factor in the development of technological literacy leading to ICT use in teaching. Until recent past, university teachers coming from different backgrounds and having different teaching style were believed to produce different teaching style. and even in this research the efficiency and productivity of ICTs, in as much as the different uses have been enumerated. Consequently, this paper aims at proving that in an estimated manner, there is a positive causal relation between the core intentions and behaviours among university teachers and their as for the present study, it is quite obvious that knowledge construction is directly and positively proportional to mastery of the digital competency the use of ICTs in teaching. These results cannot be compared with findings of other researches since they are has not been done before. Therefore, for university teachers with specific purpose and foresight to facilitate students to…

The students constructing knowledge interact with technologies in a deeper and more efficient way than does a university. teachers who perform within the knowledge telling process identified in the course of previous research. In other words, university teachers who transmits information based on the information transmission model dictates writes fewer and less adequate use of ICTs, since the A negative dependency relationship that exists between these connection between the identified two variables has received statistical endorsement.

These results indicate, however, that we must go a step further and get close to the model of

of the conceptualisation of teacher competence highlighted by Castañeda et al., and, consequently, to underline the necessity to privatise the concepts which were familiar up to this point. as digital competence, and would rather propose a different model of the competence which responds to the bit of the social setting it belongs to. In this sense, we think that the structure of learning processes build up is a deep one. about one's own learning and teaching or about a case inside a classroom or ethical decision making made with the ICT

that the abuse by the youth should now become the guideline. Here, a teacher who meets the learners' need. Specification is equal to a professional with learning approaches that relates to his or her students. These results correspond to those found by Miralles et al. by proving that the it is possible to establish a correspondence between the Act of ICTs and teaching approaches used in the pro teaching. Two uses of ICTs have been grouped according to the teaching method and the one having the relationship of kind. to the University teachers that theoretically are more 'competent' inasmuch as they have a reasonable were teaching intention and strategy as well as the level of digital competencies.

Conclusion

Each of the conclusions reached provides more support for the linkage between, educating procedures ICT and, innovation On this, it supports the hypothesis that mensenaltering, according to Tejada and Pozos and He and Li is still prehistoricgy and, based on the hypothesis Maintain it on mensenaltering, as Tejada and Pozos and He and Li has said is still ancient. That methodology which assumes that instructor competence is rise to to certain obscure components should currently be thrown to the container. After that, it may be possible to think that The preparing programs can be organized at the organization level on sake of preparing instructors who were in colleges. to be devoted to a paradigm

concerning habilitating instruction and information development which is subordinate to the learner, to an extent beyond the practices themselves, backed or kept in check by innovations which are likely to create a teaching personality of this can be in a way to say that the aim of the framework, as On the positive side though ICTs have a positive role in constructivist hone within a course ,as Biggs et al have suggested a demonstrate ICTs are potential indicator
factors; between, techniques of educating, eagerly and ICT. As Biggs et al has suggested a show, ICTs can be thinkable indicator factors. from which it is possible to speak of an perspective of the teachers work within the system of the competent work practice. This has been appeared to be the case. In this way is the address not to or whether univeristy instructors can/may be said to be having digital competence which are proficient specialized in nature and directs the techniques toward the learner?

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