

Meaningful Learning through E-Learning

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ABSTRACT

Meaningful learning happens when students start to believe and gain interest to what they are doing, and then demonstrate skills and exhibit personalities that can be positive or negative. Through careful planning and conceptualizing ideas, students gain values, and connect with the project or concept. And since e-learning is also a classroom activity or included in a formal or informal education, meaningful learning could transpire. However, the process of how students experience it remains the focus of this study.

The study interviewed 15 students who are using e-learning as a form of instruction in college and students who are enrolled in distant learning education. They believed that as IT students, e-learning is part of the curriculum and the current trend in instruction, and through it they experienced meaningful learning. Pre-service teachers believed that classroom interaction among classmates and teachers can bring more meaningful learning although, they also believe that they can experience meaningful learning through e-learning if used more often and in a longer period. On the other hand, distant education engineering students have problems experiencing meaningful learning due to limited interaction with their instructor and colleagues. Although, they learned from the courseware and through communicating via virtual classroom and video conferencing, they also believed that if given more time, with deep immersion and chance to have personal interactions with other students and having a well-trained instructor for on-line courses and suitable media and instructional method, meaningful learning could occur.

1. Introduction

Nowadays technology is very useful in teaching and learning in the classroom. Most kids born in developed nations during the late eighties up to the present times are computer literate while an average number of students in developing countries are also computer savvy. Although the traditional methods of teaching are still useful, computers and other information and communication technologies are now the pen and paper, blackboard and chalk, and visual aide of the past.

Technologies are not only convenient to use but it can also be fun and stimulating to the minds of our young generation. Some technologies are easy to use and can be bought in an all-around computer shop. On the other hand, some are also expensive, and one needs to be trained before you can manipulate or operate it. As time passes by, all these technologies will be replaced by better, faster, more convenient and state-of-the-art technologies.

E-learning comes with these technologies. Virtual learning, computer aided learning, internet or web-based research and programs are common denominators of e-learning. They all refer to educational processes that utilize information and communications technology to mediate asynchronous as well as synchronous learning and teaching activities.

The question on how students learn through all these technologies has been proven by so many studies. Learning through e-learning definitely occurs. To some degree, it makes learning fun and interesting. With this kind of innovation, students yearn to learn but how about meaningful learning through e-learning.

Meaningful learning happens when students start to believe and gain interest to what they are doing, and then demonstrate skills and exhibit personalities that can be positive or negative. Through careful planning and conceptualizing ideas, students gain values, and connect with the project or concept. And since e-learning is also a

classroom activity or included in a formal or informal education, meaningful learning could transpire. However, the process of how students experience it remains the focus of this study.

2. Research Design

This research is based on the learning experiences of 5 IT students, 5 Engineering distant learners, and 5 pre-service teachers of Manuel S. Enverga University Foundation. The grounded theory method of Strauss and Corbin (1990) was used. With grounded theory, a semi-structured, open-ended, ethnographic, in-depth conversational interview is more useful. Data gathering took place from September to November of school year 2009-2010.

Strauss and Corbin (1990) describe grounded theory as a process of linking sequences of action and interaction as they pertain to the management of, control over, or response to a phenomenon. Furthermore, the authors say that “process” is a way of giving life to data by taking snapshots of action and interactions and linking them to form a sequence or series.

According to Strauss and Corbin (1990), the purpose of grounded theory method is:

To build theory that is faithful to and illuminates the area under study. Researcher working to this tradition also hopes that their theories will ultimately be related to their within their respective disciplines in a cumulative fashion, and that the theory's implications will have useful application (p.24)

Strauss and Corbin (1990) stress that researchers using Grounded Theory method must be able to reach a certain level of skill and ease to be able to provide an effective and useful research. The following conditions must be met:

- (1) *One must study, not merely read, through the procedures as described in the various books and be prepared to follow them (Glaser, 1978)*
- (2) *The procedure must be followed in doing research. It is only in practicing the procedure through continued research that one gains sufficient understanding of how they work, and the skill and experience that enables one to continue using the techniques with success.*
- (3) *A certain amount of openness and flexibility are necessary in order to be able to adapt the procedures to different phenomenon and research situations (p.26).*

3. Research Questions

The initial research questions in this study emerged from the researcher's inquisitiveness about the learning experiences of students from MSEUF in e-learning. These questions greatly helped this research in the extraction of varied experiences of participants which are associated to meaningful learning. These questions were: (a) What were your expectations before using e-learning in school?, (b) How were you able to learn and understand all the topics given by the instructor through e-learning? (c) When did you start experiencing learning and understanding? (d) What other experiences can you provide that makes e-learning important to you and your classmates?

Interviews were focused on the process of selection and generation of artifacts for their portfolio, and other learning experiences that were significant to the study. The in-depth conversational interview was carried out in a non-formal and candid manner which lasted for about twenty to thirty minutes per student. The students were continually and repeatedly asked what they did, when it happened, why they did it, how they did it and with what consequence did it occur. Some students were interviewed twice to confirm or clarify some facts that they revealed during the preliminary interview. These approaches were very useful during the open coding which gave way in coding initial categories and sub-categories.

An open coding was employed while constantly asking questions like:

What is [the category]?, When does [the category] occur?, Where does [the category] occur?, Why does [the category] occur?, How does [the category occur]?, With what consequence does [the category] occur or is understood?

Through these questions, coding transcripts are broken into sentences and fractured into shorter lines. Analysis was done line-by-line or sentence-by-sentence through constant comparison method. Ideas which emerged were coded or categorized. Furthermore, the categories were compared and grouped to reveal the core categories. Thus, this is where axial coding begins. After which, selective coding gave way to the development of a storyline. And finally, the writing of the theory from the extant data analysis concluded the study's main objective.

4. Research Setting

Manuel S. Enverga University Foundation, a private non-sectarian educational foundation, was conceived and nurtured in the mind, heart, and will of Dr. Manuel S. Enverga (1909-1981), as founder and first president, during the difficult years of reconstruction following the end of World War II (Villariba, et al, 1997). At present, the university has a three-fold function, namely: instruction, research, and community service; offering responsive programs supportive of national development, goals and standards of global excellence. The institution offers over 90 degree and non-degree programs in the tertiary and graduate levels, and is manned by a fully competent teaching force consisting of faculty members with Master's and Doctor's degrees, as well as highly skilled non-teaching human resources.

5. Research Participants

The research participants were 15 students of Manuel S. Enverga University Foundation who have undergone e-learning in their respective courses. They are 5 IT students, 5 preservice teachers and 5 engineering distant learners. The study was conducted from September to November of school year 2009-2010.

Emergenced Procedural Framework

An evolving procedural framework for the generation process of the theory for "experiencing meaningful learning through e-learning" was produced.

Figure 1 describes the evolved grounded theoretical framework as regards to the systematic process of the grounded theory by Strauss and Corbin (1990).

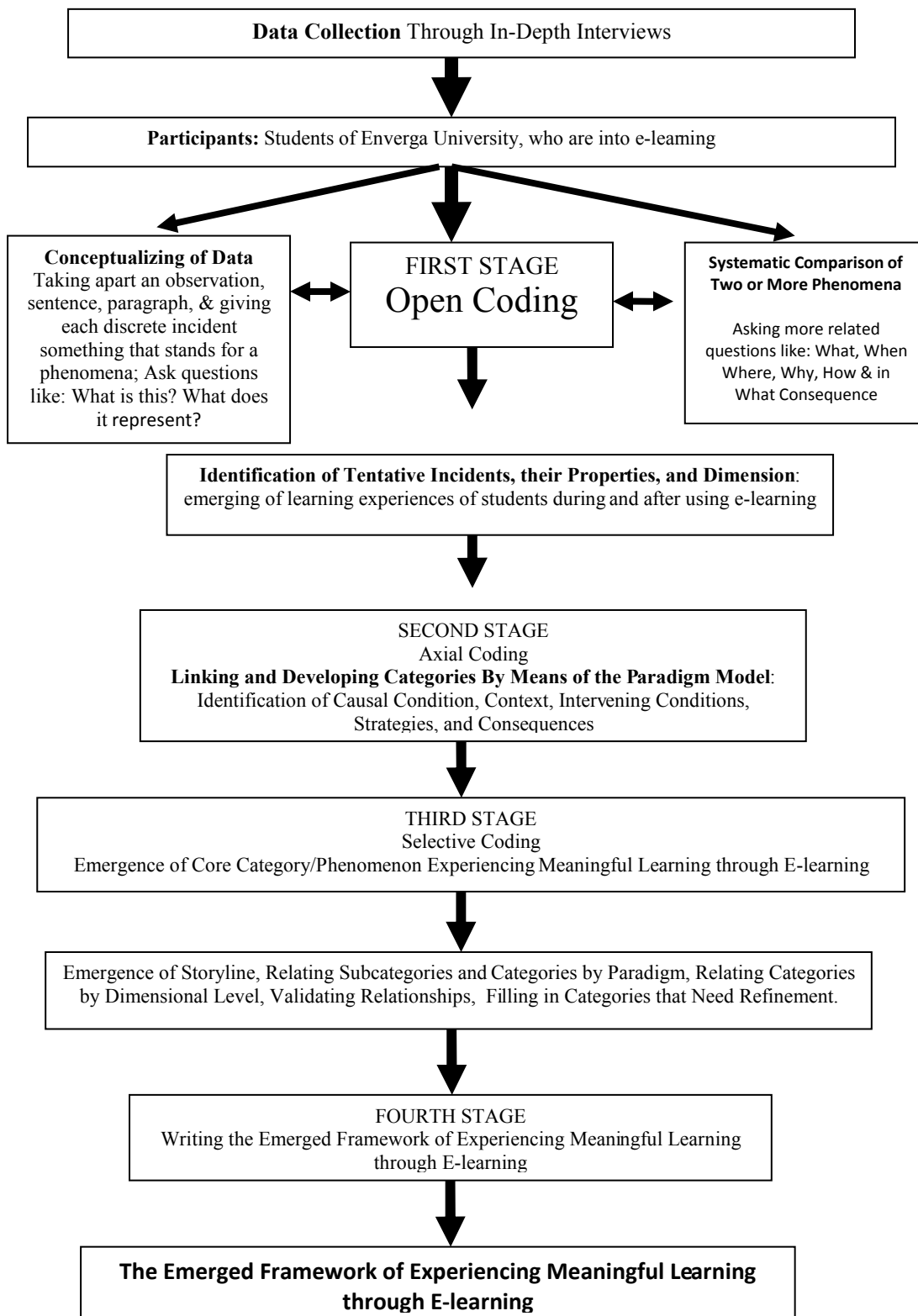


Figure 1. Evolved Procedural Framework for the Generation of the Emerged Framework of Experiencing Meaningful Learning through E-learning

6. Methodology

I. Open Coding

Open sampling can be carried out through: (a) looking at the data purposefully; (b) doing it systematically; and (c) data emerging unexpectedly (Strauss and Corbin, 1990). This comes from having an open and questioning mind, and always being alert for significant data. Always asking oneself: What is this? What does it mean?

Moreover, open coding employs the strategy of constantly asking questions (who, what, when, where, how much, and why), breaking transcript into sentences and cutting or fracturing these into shorter lines. Analysis is done line-by-line or sentence-by-sentence through constant comparison method. This process is very important because categories also become the basis of theoretical sampling. Besides, this process gave way to where the researcher must focus on, and gave ideas of where one must look to find instances of the phenomenon. After which, concepts which emerged were coded.

Table 1 illustrates the Extract Concepts of Field Notes

WHAT	WHEN	WHERE	WHY	HOW	CONSEQUENCE
To learn web designing	During class	Computer laboratory	I was excited to learn	Doing time management, dividing time between learning and having fun	Transforming
Getting interested	During class	Classroom and computer lab	I was interested to learn	Ability to figure out what would happen after completing the database	Gaining interest and Connecting
Valuing computer education and the ethics	All the time	Anywhere	Because it will eventually make me a better person	Believing the computer ethics changed my outlook in life (personality)	Transforming
Believing on what Im doing	All the time	Anywhere	Because I know its the only way that can help me learn	Through self study	Believing
Interested to learn through the web	During class	Computer lab	Because I become excited for what it would bring	By being true to myself and love every bit of learning thru the web	Gaining interest and Connecting
Interested to learn through the web	During class	Computer lab	Learning was easy through e-learning	I found it less taxing	Gaining Interest
Learning competencies	During class	Computer lab	Because it is a requirement	By sharing and collaborating with my classmates	Interacting with classmates and becoming skillful
Learning competencies	During class	Computer lab	Because it was fun learning the applications	By sharing and collaborating with my classmates	Becoming skillful with classmates

II. Axial Coding

According to Strauss and Corbin (1990) axial coding puts the data together and develops connections between a category and its sub-categories. In axial coding:

The focus is on specifying a category in terms of conditions that give rise to it; the context in which it is embedded; the action/interactional strategies by which it is handled, managed, carried out; and the consequences of those strategies. These specifying features of a category give it precision, thus we refer to them as subcategories (p. 97).

Borgatti (2005) stresses axial coding is the process of relating codes to each other. He further simplifies it as emphasizing casual relationship. And fit things into basic frame of generic relationships. Strauss and Corbin (1990) agree with the latter and added that relationships must be verified in terms of paradigm.

During axial coding, the Paradigm Model of Strauss and Corbin (1990) was utilized to create a systematical comparison to all categories that emerged from the documents. The features of the paradigm model is explained again in Table 2.

Table 2. *Elements of Axial Coding*

Element	Description
Phenomenon	This is what in schema theory might be called the name of the schema or frame. It is the concept that holds the bits together. In grounded theory it is sometimes the outcome of interest, or it can be the subject.
Causal Condition	These are the events or variables that lead to the occurrence or development of the phenomenon. It is a set of causes and their properties.
Context	Hard to distinguish from the causal conditions. It is the specific locations (values) of background variables. A set of conditions influencing the action/strategy. Researchers often make a quaint distinction between active variables (causes) and background variables (context). It has more to do with what the researcher finds interesting (causes) and less interesting (context) than with distinctions out in nature.
Intervening conditions	Similar to context. If we like, we can identify context with <i>moderating</i> variables and intervening conditions with <i>mediating</i> variables. But it is not clear that grounded theorists clearly distinguish between these two.
Consequences	These are the consequences of the action strategies, intended and unintended.

Table 3 illustrates the extract from axial coding of core categories with their corresponding properties.

Table 3. *Extract from Axial Coding of Core Categories*

Causal Conditions	Valuing computer education and the ethics	Believing on what Im doing	Getting interested
Phenomenon	Meaningful Learning through E-learning		
Properties	Product	Perception	Process
Context	Because it will eventually make me a better person	Because I know its the only way that can help me learn	I was interested to learn
Strategies	Believing the computer ethics changed my outlook in life (personality)	Through self study	Ability to figure out what would happen after completing the database
Intervening Conditions	Pursuing what I believe and what it can make me.	Doing what I know is best	Always keen to learn more and having fun while doing it
Consequences	Transforming	Believing	Gaining interest and Connecting

III. Selective Coding

The principal objective of selective coding is to explain the story line (Strauss & Corbin, 1990), to integrate the categories, and to build the initial theoretical framework. Basically, a story line is either generated or made explicit from the descriptive narrative about the central phenomenon of the study. When analyzed, the core category emerged from the story line. The paradigm model from the axial coding was exploited to allow the researcher to think in a systematic manner, ask questions back and forth, generate propositions, and constantly compare variables.

Developing the Storyline

In this study, the main story line was:

About experiencing meaningful learning of students during the e-learning process.

Students from the College of Computer Studies began to believe and gain interest to the curriculum upon completing their first grading period on their first year in college. They experienced meaningful learning because they can connect through all the projects and activities, have fun learning all sorts of courseware, and share it with others as well as gaining ethical values that would guide them through out their curricular years.

Students from the College of Education would rather spend more time in the outside world or experiencing the traditional classroom learning than doing virtual learning. On the other hand, some of them would like to experience more e-learning if given more time or allowed to have access to virtual learning more often than the classroom setting. They said that it's easy to do research using the web and it is also exciting to learn new stuff on an introduced courseware or through the internet. They believe that if they can learn more virtually they can connect with it and gain values through sharing their experiences to peers as well as their future students.

Lastly, the students enrolled in distant education believed that e-learning is part of the program and express that it made them value education and the motivation to finish a bachelors degree even while working abroad. On the contrary, they also express that having more time doing the entire task given by their professors will make them improve their outputs. In addition to this, a well-trained and empathetic instructor that will provide them with problem-based learning and learning-by-doing activities, and a skillfully integrated medium/media that will entice them to have more meaningful experiences.

7. Results and Discussion

The study interviewed students who are using e-learning as a form of instruction in college and students who are enrolled in distant learning education. They believed that as IT students, e-learning is part of the curriculum and the current trend in instruction, and through it they experienced meaningful learning. Pre-service teachers believed that classroom interaction among classmates and teachers can bring more meaningful learning although, they also believe that they can experience meaningful learning through e-learning if used more often and in a longer period. On the other hand, distant education engineering students have problems experiencing meaningful learning due to limited interaction with their instructor and colleagues. Although, they learned from the courseware and through communicating via virtual classroom and video conferencing, they also believed that if given more time, with deep immersion and chance to have personal interactions with other students and having a well-trained instructor for on-line courses and suitable media and instructional method, meaningful learning could occur.

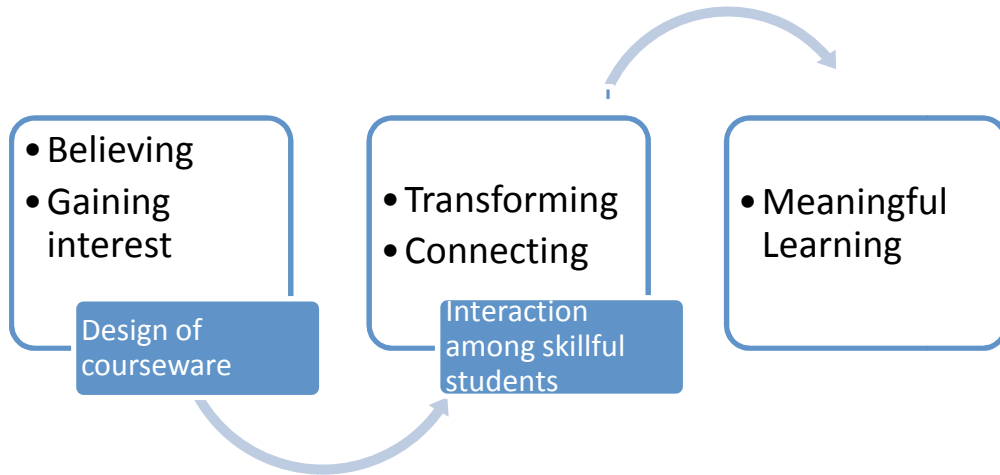


Figure 2 shows the emerged integrative construct of the theory of meaningful learning of Information Technology students of MSEUF through e-learning.

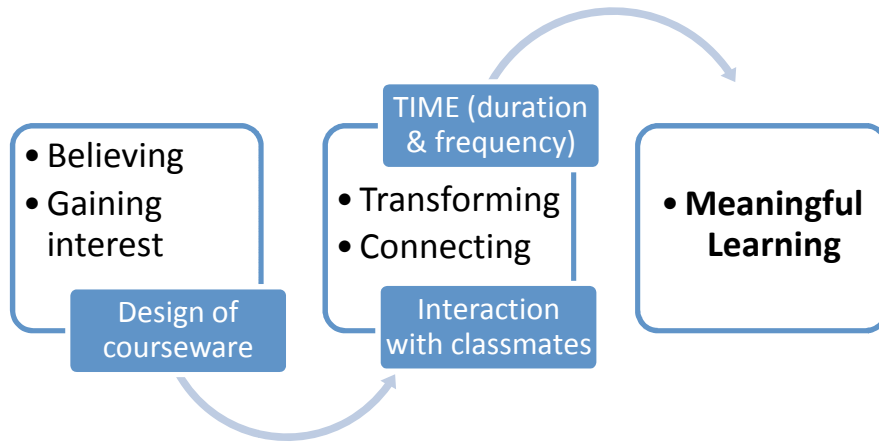


Figure 3. The emerged integrative construct of the theory of meaningful learning of preservice teachers of MSEUF through e-learning

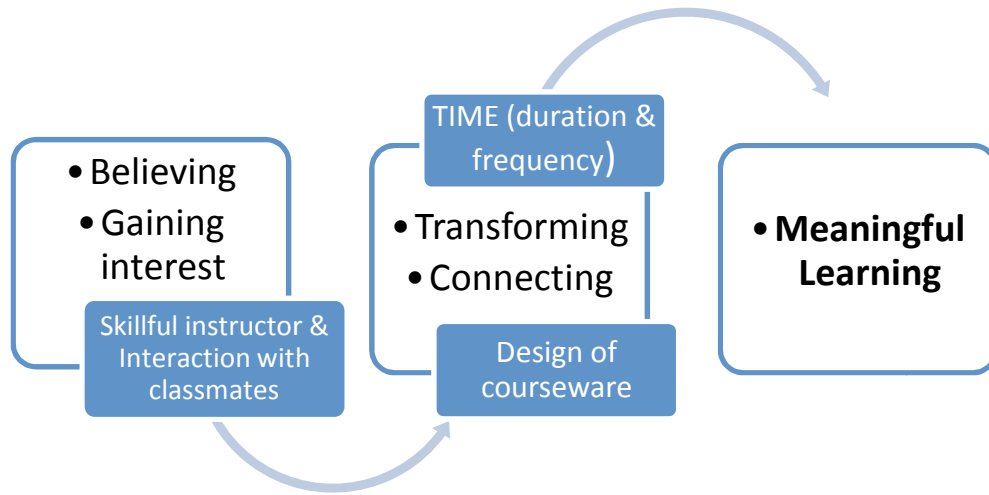


Figure 4. The emerged integrative construct of the theory of meaningful learning of Engineering Distant learners of MSEUF through e-learning

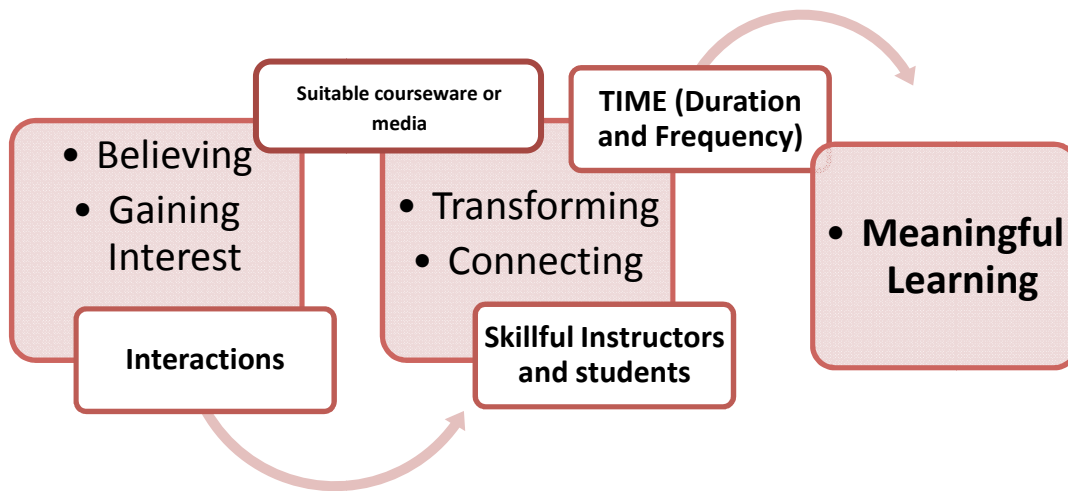


Figure 5. The emerged integrative construct of the theory of meaningful learning of students during e-learning in MSEUF.

8. A Grounded Typology of MSEUF students with Regards to How They Experienced Meaningful Learning through E-Learning

The aim of this study is that all concepts are grounded, and as such they are not proven, they are only **suggested**. The end theories are set of hypotheses, not of **findings**, and that the enormous effort that makes up the process of generating theory cannot be shown in a single publication (Glaser, 1978).

Meaningful learning through e-learning for IT students could mean for them as *believing and gaining interest to the design of courseware. Through careful and skillful planning and conceptualizing, IT students gain values upon finishing an IT and multimedia project, and connecting and transforming themselves after each course. On the other hand, meaningful learning through e-learning for pre-service teachers could mean employing it in longer periods and more often than traditional classroom settings. They started believing and gaining interest to the design of courseware only after one year of using it as a form of learning context, and through collaborating with peers, they gain values, and started connecting and transforming themselves after supporting e-learning.* Finally, meaningful learning to engineering students enrolled in on-line or distant education could mean to them as *having a well-trained and empathetic instructor that will provide them with problem-based learning and learning-by-doing activities, and a skillfully integrated medium/media that will entice them to experience meaningful learning.*

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