

## Understanding the Role of Emotions like Threat and Challenge in Explaining Nurses' Educators' Actual Use of Information Technology

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Received date: November 21, 2016; Accepted date: December 14, 2016; Published date: December 22, 2016

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### Abstract

Today, in the 21st century, the academic nurse educators who are devoted to educate the nurses of tomorrow, have to be exposed to the technological era, in order to provide themselves and their student's appropriate tools to handle the digital changes. One of the most urgent missions is to deal with negative emotions that might arise during the implementation of new Information Technology (I.T) and to promote a feeling of excitement (challenge) in order to help nurse educators gain knowledge and skills to use information and other technologies.

The main goal of the study was to examine the academic nurse educators' emotions such as threat and challenge regarding the use of I.T, including a number of variables such as self-efficacy, innovativeness, attitudes, intention to use, and actual use of I.T.

**Method:** This study was a quantitative research. The research tool was a written and online survey that was submitted to 109 academic nurse educators working at ten different academic nursing schools in Israel.

**Results:** Threat negatively predicted actual I.T use, while Challenge positively predicted it. Personality factors like sense of innovation, self-efficacy and attitudes, fully mediated the direct effect of emotional factors.

**Conclusion:** Awareness and activity to strengthen the connection between emotions' feeling and nurses' I.T use, will ensure a better integration of new technology in healthcare, and will promote a great benefit for the nursing profession.

**Keywords:** Threat; Challenge; Nurse educators; Use of I.T; Attitude; Self-efficacy; Innovativeness

### Introduction

The integration of Information Technology (I.T) into academic learning and teaching is expected to have great influence on the experience and performance of learners [1,2].

Nurse educators should be familiar with the use of some kinds of I.T tools, starting with the basic use like: using MS word, and advancing steps like interactive tools (such as Kahoot or Poll everywhere - smartphone apps for Active Learning). In addition, the lecturer would be expected to communicate with students via software such as Moodle. Moodle is an online Learning Management System (LMS), which contains multiple activities and resources. This type of e-learning enables educators to create dynamic courses that extend learning not only for classroom use. The researchers believe that when I.T is integrated into the classroom, students will use technology to learn content and in order to show their understanding of content.

There are a lot of benefits for using I.T in the classroom for the students and the educators. By actual I.T use, the students shift from passive audiences to active users, an effective technology integration practices offer the students greater opportunities to be more actively

involved in the learning experience. At the classroom level, technology helps educators to gather, analyze and give feedback more efficiently. For example, by using an audience response system (ARS), such as [www.polleverywhere.com](http://www.polleverywhere.com), students can send in their answers to warm-up or quiz questions. The entire class can instantaneously and electronically view their collective responses to the multiple-choice questions, which allows the lecturer to differentiate instructions and address misconceptions accordingly. All these may help in accelerating the process of learning, and allowing the nurse educator to gather and respond to data about what students understands more quickly and accurately.

That is why; the authors of this paper are certain that if we would like to advance the nursing students' I.T knowledge and skills, it is important to start with promoting the nurse' educator's knowledge in using I.T. and the first stage is to assess the level of their I.T use and to understand the related factors that might affects their use..

The actual use of I.T depends on the user's technology acceptance [3,4]. This has the potential to have the greatest influence on the successful introduction of I.T learning. Without acceptance by educators, it is unlikely to be fully integrated into formal learning [1]. We believe that in order to achieve acceptance of I.T use, researchers must first assess the impact of factors such as emotions concerning behavior (using I.T). Such acceptance might help understand possible

complexities that may arise when trying to implement I.T into the workplace and curriculum [5,6].

Behavior theories can be used as a theoretical basis to predict I.T use, and are based on perceptions and beliefs about the nature of technology. These theories are very common, and include the Unified Theory of Acceptance and Use of Technology [7], the Innovation Diffusion Theory [8] and the Theory of Planned Behavior [9]. However, using I.T is not so simple, and cannot be explained only by one cognitive theory, as each on its own does not fully capture all aspects of behaviors. For example, emotions play a powerful and central role in our lives [6], they influence our beliefs and attitudes, and they can be used as a guide for thinking, decision-making and actions. Thus, adding emotion-based aspects to the theoretical base of IT use is needed to complement cognitive-based approaches.

Academic nurse educators are a group of nurses whose top mission it is to educate the nurses of tomorrow. Today, in the 21st century, policymakers and managers have to expose nurse educators to the technological era, and provide them with appropriate tools to handle digital changes. One of the most urgent missions is to deal with negative emotions that might arise during the implementation of new I.T and to promote a feeling of excitement (challenge) in order to help nurse educators gain knowledge and skills to use information and other technologies. The authors are convinced that integrating I.T into academic nursing learning and teaching is essential for educators and students, and that without its acceptance this cannot be effectively achieved.

This study is based on the theory of planned behavior [9] and will examine the correlation between emotional variables (threat and challenge) and actual using of I.T. Additionally, the researchers developed and tested a structural equation model (SEM) that help to find answers for the moderating and mediating mechanisms and will explain how emotions and personality traits affect the use of I.T. That to say, whether personality variables (such as self-efficacy, innovativeness and attitudes) mediate the relationship between emotional components and actual use of I.T.

### **Emotional variables**

Emotions are a mental state that may promote or hinder behavioral activation, and may influence behavior or change [6]. For this reason, it is important to study the effects of emotions on attitudes, and behaviors like using I.T use, that occurred prior to the implementation of a new technology are not much explored.,

For better understanding and for clarifying the emotion issue, we divided emotions into two types: A. emotions concerning loss (such as sensing threat or anxiety). B. Emotions concerning challenge (such as feelings of excitement, hope and anticipation). Throughout this study these concepts will be used as such.

### **Emotions concerning loss – Threat**

Emotions concerning loss such as feelings of threat or anxiety can be implemented when addressing IT use. I.T anxiety has been defined as “the feeling of discomfort, apprehension, and fear of coping with information communication technology tools or uneasiness in the expectation of negative outcomes from computer-related operations” [10]. Negative feelings have been shown to have a negative effect on the adoption of new technology and the perception of how easy new technology will be to use [11,12]. Researchers in the nursing and education professions have found that anxiety concerning the use of

technology has been identified as an important factor in the resistance to new technology [2,13,14] and for some educators, the thought of having to use I.T has even been found to generate high levels of anxiety [15]. Nurse educators might have a negative emotional response to I.T use that derives from fear that the use of the technology may have a negative outcome. The negative outcome may be anything from fear of damaging the equipment, through looking foolish in front of her peers or even concern about providing worse care.

### **Emotions concerning challenge**

Emotions such as challenge (which are considered positive emotions) are triggered by the appraisal of an event as being an opportunity to achieve positive consequences, and individuals may feel that they have some control over it. Lazarus et al. [16] argue that an appraisal of challenge might evoke excitement, arousal, and flow that would promote creativity and flexibility in thinking and problem solving and would facilitate the processing of new or previously unnoticed information.

According to the Transactional Model of Stress and Coping [16], a variety of stressors within the nursing profession, such as using innovative applications and teaching virtual courses, may affect the nurses' performance. Furthermore, in the appraisal of a challenge, a nurse may see the opportunity to exhibit personal growth from the rapid changes in the technological age. In addition, the end user starts to adapt the new I.T when he or she gains an awareness of the potential consequences of a significant I.T event and evaluates it to be of personal and/or professional relevance and importance [17]. Some users might begin adapting when they first hear about the change, while others might begin adapting when the I.T change occurs, and still others might adapt later, only after they had interacted with the technology [8].

### **Personality factors**

Another issue of the adaptation process is that the user might be influenced by a number of individual characteristics, as we call them Personality factors like: a sense of personal innovativeness, a sense of Self-efficacy and attitudes toward using I.T.

### **Innovativeness**

Agarwal et al. [18] defined innovativeness as an individual's willingness to try new information technologies. They explained that innovativeness has an important place in the research of the behavior of informatics use. Rogers in 1995 [8], the founder of the Diffusion of Innovation Theory, mentioned the important task of innovators. Individuals with higher personal innovativeness have been found to exhibit increasingly positive beliefs about a target technology [19]. In the nursing literature, it was also found that innovativeness predicted behavior intentions, meaning the higher the innovation, the more likely they were to want to work with I.T [2].

### **Self-efficacy**

Self-efficacy (one's belief in his/her ability to adapt to a specific situation) is a moderator variable for the appraisal-coping relationship [20]. This study examines self-efficacy in the context of the user's belief about his/her capability to adapt to I.T and determine what effect it has on appraisal and adaptation. Conner in 2015 [21] found that self-efficacy is related to one's beliefs in one's ability to accomplish a mission. High levels of self-efficacy have been shown to be predictive

of increased academic performance and improved student retention. Teachers with high levels of self-efficacy view technology as an effective way to enable student learning and perceive I.T as a useful tool to support their teaching. Teachers' self-efficacy also influences their level of enjoyment and feeling of control when using technology in the classroom [22].

### Attitudes

Toward using I.T: Research has also shown that a positive attitude towards technology and having the skill to use the technology in the classroom are both important and measurable factors in the level of integration of technology into teaching [7,23]. A number of models and frameworks have been developed to measure these influences on users' acceptance and model adoption. Studies that investigated the impacts of nursing professionals' attitudes toward computers on behavior intention concerning I.T use indicated that a positive association exists between the two variables [14,24]. Therefore, identification of individuals' pre-adoption beliefs and attitudes and an understanding of the temporal evolution of these factors across the pre-adoption and post-adoption stages are crucial for understanding and managing the individuals' initial adoption and use of I.T [25].

The relationship between computer self-efficacy and attitudes toward using I.T within the healthcare professions was studied by Gonen et al. [2]; Leblanc et al. [24]; and Shoham and Gonen [14] and found a positive correlation between the two variables. Self-efficacy was also found to have a significant influence on using I.T [26-28]. Thus, nurse educators who have high levels of self-efficacy may be more confident, tend to use new teaching approaches, and have more motivated students.

### In conclusion

Researching emotions and their impact on I.T use is a quite important issue that there is not enough research on it. Emotions may promote or hinder behavioral activation and project's success and it is important to study the impact of emotions like threat and challenge on nurses' educators' behaviors like actual using I.T use.

### Aim of this Research

The main aim of the study was to examine the academic nurse educators' emotions of threat and challenge regarding the use of I.T, including a number of variables such as self-efficacy, innovativeness, attitudes, and actual use of I.T. Better understanding the direct influence of threat and challenge on actual I.T use, together with understanding the mediation processes, may help future I.T use among nurse educators. Accordingly, the research question that stems from the aim is: Will personality factors mediate the relationship between emotional factors and actual I.T use?

### Research Hypotheses

1. Positive correlations will be found between nurse educators' perceptions of threat and challenge, their self-efficacy, innovativeness and attitudes towards I.T and actual use of I.T.
2. Threat and challenge will directly predict actual I.T use. The more threatening the educators' perception is, the less they will report actual I.T use. The more they feel that I.T use is challenging, the more they will report actual I.T use.

3. Personality factors (self-efficacy, innovativeness, and attitudes towards I.T) will mediate the direct relationship between emotional factors (threat and challenge) and actual I.T use. In order to check this hypothesis, we developed and tested a structural equation model (SEM) that will help to find answers for the moderating and mediating mechanisms and will explain how emotions, personality traits and stressors affect I.T use.

### Methods

#### Participants and procedure

This study is part of a larger study pertaining to the impact of personality, significant others, and work climate [5] on the actual use of I.T. All data was collected in 2015.

#### The study population

Consisted of academic nurse educators working at ten different academic nursing schools in Israel (out of 20 nursing academic schools in Israel). Participation of the nursing staff was voluntary and the data was anonymous. We used an online survey and hardcopy questionnaires in order to encourage those who were deterred by technology to participate. Both the online survey and the questionnaire were accompanied by an introductory letter including information about the purpose of the study, assurance of confidentiality and each nurse was asked to sign informed consent. Out of the 150 questionnaires, 109 were returned (total response rate 72.5%). One limitation of the sample is it was difficult to assess what is the percentage of respondents to the questionnaire (written or online) from each one of the ten schools.

With regard to the characteristics of nursing teachers, 90% were Jewish and 80% females. It is also important to note that to be appointed a nurse educator in Israel, the minimum academic degree must be a Master's degree, which is why the average years of experience that was found in the sample was 16 and the average age was 46.

#### Ethical consideration

The research was approved by the Ethics Committee of the Academic Institution conducting this study. Health professionals participated on a voluntary basis and their rights to anonymity and confidentiality were ensured.

#### Data analyses

The statistical tools used in this research were chosen according to the nature of the study and the characteristics of the variables: Descriptive statistics was employed, i.e., means and standard deviations of sequential variables and frequencies of categorical variables. Pearson correlations were used to measure the relationships between variables using a hierarchical regression model for predict actual I.T use. In order to understand the mediated effect of emotional factors on actual I.T use (mediated by personality factors) a Structural Equation Model (SEM) was used. The SEM model adds to the regression model in that it assesses direct and indirect paths simultaneously.

## Measures

The survey instrument was organized into three groups of questions: A. Background demographic factors such as age, seniority, and religion; B. Emotional factors - Threat and Challenge (row 1+2, see Table 1); C. Personality factors - Attitude toward using I.T (row 3); Innovativeness (row 4); and Self-efficacy (row 5); and Behavioral factors - Actual use of I.T (row 6).

Row	Scale Name	Source	No. of items	Cronbach's alpha
1	Threat	16	8	0.85
2	Challenge	16	8	0.85
3	Nurses attitudes towards using IT	28	19	0.89
4	Innovativeness	14	3	0.78
5	Self-Efficacy	14	2	0.41
6	Actual use of IT	2	8	0.83

Note: All questionnaires used a 5-point Likert scale ranging from 1='Strongly Disagree' to 5='Strongly Agree'

**Table 1:** Measures used in the study.

### Threat

There were 8 items on 5 level of Likert scale. For example: To what extent do you believe that you will be stressed, due to the use of I.T software in your workplace? Or, to what extent do you believe that the training towards the use of I.T will be difficult for you?

### Challenge

There were 8 items on 5 level of Likert scale. For example: To what extent do you believe that the use of I.T in your workplace will

promote you professionally? Or: To what extent you believe that the use of I.T in your workplace will have a beneficial effect on your work performance

### Actual I.T use

Scale was constructed by the authors. It is important to note that due to the fact that it is not so simple to measure the actual I.T by answering a questionnaire, we were measuring respondent's perceptions about their actual I.T use.

The I.T use was measured by asking respondents to indicate the extent of their knowledge and use of three types of use: A. MS-Office (Word, Excel, etc.; four items; Cronbach's alpha=0.82.); B. Email and surfing the internet (two items; Cronbach's alpha=0.83); C. Interactive educational and healthcare software (two items; Cronbach's alpha=0.83). The reliability of the combined three scales of I.T use was 0.83. Participants were asked how skilled they were on each of the I.T tools. Thus, they could answer that they were not skilled at all (1) up to very skilled (5).

## Results

### The first hypothesis

The first hypothesis was that there would be significant correlations between emotional, personality and behavioral factors.

As can be seen in Table 2, negative correlations between threat and challenge emerged. Positive correlations between challenge and personality characteristics were found. The more challenge nurse educators felt, the more self-efficacy, the more positive attitudes toward I.T, the more positive their innovativeness and the more Actual I.T use there was. Negative correlations between threat, self-efficacy, attitudes towards I.T, innovativeness and actual use of I.T emerged, meaning that the higher the threat the less self-efficacy, the more negative the attitudes towards I.T and the less the innovativeness and the actual use of I.T there were. Personality characteristics were inter-correlated.

	Threat	Self-efficacy	Attitude towards IT	Innovativeness	Actual IT use
Challenge	-0.38***	0.44***	0.55***	0.41***	0.36***
Threat		-0.45***	-0.59***	-0.41***	-0.33***
Self- efficacy			0.47***	0.36***	0.59***
Attitude towards IT				0.39***	0.27**
Innovativeness					0.43***

Note: \*P<0.05; \*\*P<0.01; \*\*\*P<0.001

**Table 2:** Pearson correlations between challenge and threat, personality characteristics, intention to use I.T and actual use of I.T.

### The second hypothesis

Second hypothesis was that threat and challenge (emotional factors) would directly predict actual I.T use. The more threatening the educator's perception is, the less they report actual I.T use. The more they feel that I.T use is challenging, the more they report actual I.T use. Emotional factors still predict actual I.T use, even after taking personality factors into consideration, but their influence lessens.

This hypothesis was tested using a hierarchical regression model in which actual I.T use was the dependent variable; emotional factors were entered in the first step, followed by personality factors. Table 3 shows the outcomes of the regression analysis.

As can be seen in Table 3, threat and challenge both significantly predict actual use, explaining 16% of the variance. As hypothesized, threat negatively predicted actual use, while challenge positively predicted it. The more threat nurse educators felt, the less actual I.T use

they reported, and the more challenge they felt the higher the actual use of I.T was. In the second step of the regression model, personality factors (self-efficacy, innovativeness, and attitudes toward I.T) were introduced. Entering these factors elevated the explained variance to 39%. Self-efficacy and innovativeness positively predicted actual use. The more self-efficacy and innovativeness nurse educators reported,

the higher their actual I.T use was. Attitudes towards I.T did not predict actual use at all. Furthermore, personality factors fully mediated the previous direct effect of emotional factors, meaning that threat and challenge predict actual use of I.T only through personality factors.

	R2	Adj. R2	Δ R2	F	β	t
<b>Step 1</b>	0.17	0.16		(2,105)=10.80***		
Challenge					0.28***	2.86**
Threat					-0.22***	-2.31*
<b>Step 2</b>	0.41	0.39	0.24***	(5,102)=14.23***		
Challenge					0.1	1.06
Threat					-0.05	-0.46
Self-efficacy					0.51	5.52***
Innovativeness					0.25	2.80***
Attitudes towards IT					-0.15	-1.42

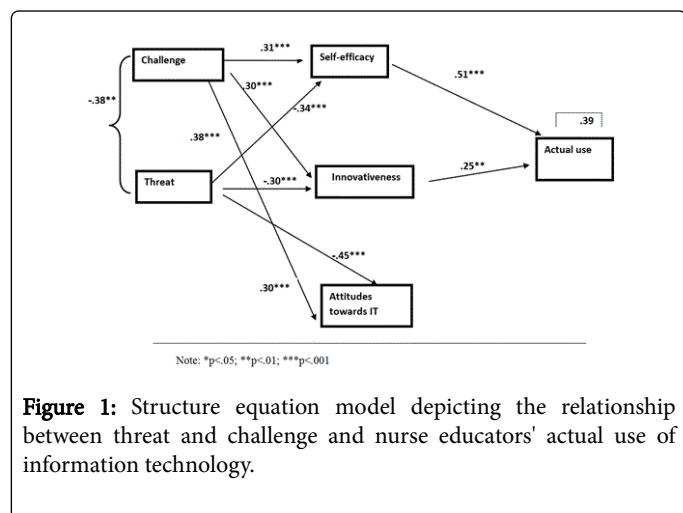
N=109. \*P<0.05; \*\*P<0.01; \*\*\*P<0.001

**Table 3:** Hierarchical regression analysis predicting actual I.T use from demographic data, personality characteristics and intention to use.

### The third hypothesis

The third hypothesis of our study was to build a research model that would explain the behavior process of using I.T, focusing on the influence and impact of threat and challenge, and would take into account all factors simultaneously. We hypothesized that personality characteristics (self-efficacy, innovativeness and attitudes) would mediate the relationship between emotional factors and actual use.

The Chi-square Goodness-of-Fit index presented an excellent fit for the data, ( $\chi^2=7.83$ ;  $p=0.25$ ; Normed Fit Index (NFI)=0.96; Root Mean Square Error of Approximation (RMSEA)=0.05). The statistically significant path coefficients are provided as standardized estimates in Figure 1.



The SEM models show that threat and challenge both predict actual I.T use through mediating personality variables such as self-efficacy, innovativeness and attitudes towards I.T. Threat negatively predicts all three personality factors. The more threatened by I.T the nurse educators are, the less they feel self-efficacy, the less innovative they feel and the more negative their attitudes towards I.T are. Challenge positively predicts all three of the personality factors. Meaning, the more challenged by I.T the nurse educators feel, the higher their self-efficacy, the more innovative they feel, and the more positive their attitudes towards I.T are. Self-efficacy and innovativeness both positively predict, in turn, actual I.T use. Namely, the more self-efficacy and innovativeness the nurse educators reported, the more actual I.T use they reported. Attitudes did not predict actual use.

### Discussion

Based on the results of the study, a number of relationships were confirmed. Primarily, a negative correlation was found between threat and challenge. This result strengthens the transactional theory of Lazarus et al. [16] which claims that it is an individual's appraisal of situational relevance to well-being that potentially leads to a stress appraisal, rather than the situation itself. Such appraisals may be classified as either a challenge (a positive connotation) or threat (a negative connotation). It can be explained by the fact that a nurse, who has a sense of challenge, excitement at using I.T, will not be threatened by using I.T [5,14]. On the other hand, when a nurse educator lacks sufficient resources to cope with a stressor, she perceives being in danger, and may see it as a threat due to a recent string of poor performances. Therefore, the correlation between the two stress appraisals (challenge and threat) is proven to have an impact on understanding this issue.

Negative correlations were also found between threat and personality characteristics, such as self-efficacy, innovativeness,

attitudes towards I.T, and actual use of I.T. Mac Callum et al. [1] claimed that I.T anxiety has a negative mediating effect on behavioral intention to implement learning and attitudes toward the use of I.T. The effect I.T anxiety has on an individual's adoption and use of technology in education has been identified in a number of studies [10,15]. Anxiety arises from fear of the unknown and unwillingness to cope with changes. Educators who perceived their I.T knowledge as low, often felt threatened and overwhelmed when using I.T. Jeffrey et al. [29] found that perceived threat has a direct and negative effect on perceived usefulness and behavioral intentions. Therefore, a sense of anxiety by the nurse educator will make the adoption of new technology harder and will result in avoiding the introduction of new technology into teaching. When nurse educators feel more secure and positive about their technology usage, they are likely to be more relaxed and have more intention to use. These results are strengthened by Lapointe et al. [30], who interviewed four nurses regarding their use of I.T. The nurses stated that they were cognitively absorbed when they found I.T useful. One of the nurses said: "Hopeful nurses who weren't afraid of it, who wished and hoped... and who saw the advantages... technically integrated the new system in their work routines" [30].

Positive correlations were found between challenge and the personality characteristics (self-efficacy, innovativeness, and attitudes towards I.T) and actual use of I.T. Excitement (challenge) promotes creativity and flexibility in thinking, problem solving, and performing specific tasks [6]. The explanation for it can be explained by the fact that when users are more curious and have a sense of challenge, it leads them to explore the new I.T and learn it.

The SEM model shows that challenge and threat both predict actual I.T use through the mediating personality variables: self-efficacy and innovativeness. These findings help to identify the role that these factors have in influencing the acceptance of I.T, thus enabling educators and their institutions to assess and plan a successful introduction of the change.

Self-efficacy proved to be an important mediating factor. Self-efficacy, the ability to adapt to a specific situation, is a moderator variable for the appraisal-coping relationship, as was found by additional researchers such as Jex et al. [20]. In the nursing profession, several researchers investigated the impact of self-efficacy and found positive connections between self-efficacy and actual use of actual I.T [2,14,31]. A nurse educator, who has a high level of self-efficacy, is bound to be more positive toward using I.T, to overcome emotions such as threat, and to adapt quickly to the new technology.

Innovativeness also proved to be an important mediator in this study between threat and challenge and actual I.T use. Gonen et al. [2] found a significant link between the nursing student's innovativeness and the intention to use a computer. We believe that when a nurse educator is interested in technological innovations, she is less frightened of using I.T, she feels a sense of challenge, and she exhibits higher use of I.T at her workplace.

Nurse educators, who experience a sense of challenge in using I.T and do not suffer anxiety about using I.T, will find a way to offer their students an advantageous and beneficial learning experience, and will adopt the digital way of learning happily and satisfactorily.

It is important to add that attitudes towards I.T use did not predict actual use. It might be explained due to the fact that nurses today fear showing their real attitudes towards I.T and prefer to portray a false positive attitude as they feel this is what is expected of them. It may also be that they have positive real attitudes but these are not enough

when low self-efficacy or innovativeness is also involved. We feel this should be further investigated in future studies.

## Recommendations

As we wish for successful I.T use by nurse educators, we recommend that: A. Policymakers and managers assess and deal with negative emotions that might emerge during the implementation of new I.T, and reduce emotions such as anxiety by planning the adaptation behaviors for themselves and the end-users. B. Providing support (such as personal guidance and a friendly helpdesk) in order to help reduce the negative effects of anxiety would provide opportunities for users to share positive experiences. C. Future research is needed to identify the strategies that can stimulate challenge emotions (such as excitement) in order to ensure that new I.T is perceived as an opportunity for the users. D. Making a further investigation about the finding that attitudes did not predict actual use.

## Summary

Today I.T techniques allow nurse educators to use countless tools in the classroom setting, for the benefits of their students and for themselves. This is a new area of research that needs to be examined. This study is unique due to its' focus on one important aspect of I.T use - emotional factors such as threat and challenge which may promote or hinder nurses educator's I.T use in their workplace. As it is well known, when planning a new building, it is impossible to move forward without building a solid foundation. The nurse educators might feel senses of threat and fear from using I.T without having a solid foundation of knowledge and competencies. This is a new vision because emotions have proved their importance, and should be included in considerations before starting any a new I.T project.

Therefore, this study gives us a better understanding of nurse educators' support of or resistance to I.T use and understanding of the factors that contribute to technology acceptance. The use of new technologies in nursing education is a challenge for the nursing profession. Nursing schools have struggled to keep pace with emerging educational technologies. It is important for nursing education to remain at the forefront of this transformation in higher education [32]. The authors believe that now, in the digital age, the nurse educator must be a part of this technologic change. Helping nurse educators to gain knowledge and skills to use information and other technologies will expand the capacity of nursing schools to educate students for the 21st century healthcare practice.

## Conflict of Interest

There are no possible conflicts of interest in the manuscript including financial, consultancy, institutional or other relationships that might lead to bias or conflict of interest.

## Acknowledgement

We are grateful to the nurse educators in Israel who participated in this study. This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

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