In times of trouble: Higher education lecturers' emotional reaction to online instruction during COVID-19 outbreak

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Abstract

The disruption of 'normal' academic studies in the wake of the COVID-19 pandemic outbreak was embodied mainly in a rapid transition from in-class teaching to online synchronous instruction. The purpose of this study was to examine the lecturer's emotions towards the change they experienced with the sudden shift to online instruction during the COVID-19 pandemic and the effect of those emotions on their willingness to teach online in the future. In the present study, 239 academic lecturers answered an online questionnaire. Four groups of emotions were examined: Success, opportunity, failure, and threat. The findings indicated that the emotions lecturers experienced most strongly was that of success, followed by opportunity. The predictors of lecturer's willingness to teach online in the future were emotions related to 'opportunity' and 'failure'. Surprisingly, the dramatic event of COVID-19 lockdown evoked more positive than negative emotions among lecturers during the first semester of the crisis. The emotions of threat that might characterize this period did not affect the willingness to teach online in the future as may be expected. This study demonstrates how tracing the emotional response toward adopting technology may contribute to understanding technology acceptance. It also contributes to understanding the differences in experiencing change in the normal process of technology adoption as opposed to emergency times.

Keywords Online synchronous instruction · Emergency remote learning · COVID-19 · Higher education · Emotions

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1 Introduction

The COVID-19 pandemic rocked the higher education systems throughout the world. Due to the guidelines of social distancing, academic lecturers were required in an instant to shift their entire teaching settings from face-to-face classrooms to online synchronous teaching systems. The emotional experience that accompanied this rapid change is of great significance in shaping future willingness to continue in this type of teaching. This study attempted to trace lecturers' emotional reactions toward distance synchronous teaching during the COVID-19 outbreak and to examine the effect of situational characteristics and personal characteristics on their emotions towards online teaching. We also investigated the relationship between the emotions towards synchronous online teaching during the COVID-19 time and the lecturers' willingness to teach online in the future.

1.1 The shift to online synchronous teaching during COVID -19 pandemic

In times of pandemics, educational facilities may continue to operate, even though physical access is restricted by social distancing and isolation (Zhang, 2020). Therefore, wherever communications systems are functioning or can be quickly supported, online education may serve as an alternative to face-to-face teaching and learning (Baytiyeh, 2018; Kumar et al., 2017; Rush et al., 2016).

Nevertheless, teaching and learning in times of emergencies are different than in regular times. Emergencies, such as political conflicts, natural disasters, and pandemics, are saturated with tension and existential anxiety (Baytiyeh, 2018; Burde et al., 2017; Charnsil & Chailangkarn, 2020; Evans et al., 2017; Gautam & Sharma, 2020; Zhang, 2020; Zhou et al., 2020).). On the one hand, in emergency times, students and teachers are less emotionally available for teaching and learning than in regular times (Badrasawi et al., 2018). On the other hand, the continuation of studies may help to preserve a certain routine in life (Creed & Morpeth, 2014; Evans et al., 2017; Rosenberg et al., 2015).

The outbreak of the COVID-19 pandemic in February 2020 required major changes in the academic systems. The requirement for social distancing created significant challenges for higher education institutions globally. The initial reaction of many institutions was to shift all in-class courses to online platforms (Perrotta, 2020). Initially, there was a focus on transferring content to online environments that did not necessarily cater to pedagogical strategies of online teaching (Crawford et al., 2020). Following this, various academics were doubtful about the readiness of higher education institutions to the switch to online teaching (Houlden & Veletsianos, 2020).

A study that examined online education at the height of the COVID-19 pandemic in China reported that the transition of higher education to online learning encountered several problems (Zhang, 2020). One of the problems was the congestion created by the sudden and steep increase in the use of online platforms that were not ready for extensive use. At least two other problems resulted from the transition to home-based online education: The lack of necessary equipment and the presence of family members who may have created distractions to teaching and learning (Zhang,

2020). Moreover, lecturers were not necessarily qualified for teaching in states of crisis, which requires the resilience to function in an emergency and different skills to those needed in routine teaching (Baytiyeh, 2018; Isidori, 2012; Salerni & Vaccarelli, 2019; Sinclair, 2001).

However, and with all the challenges accompanying emergency education during the pandemic, the transition to online education speeded up the education system's shift into the digital era. After many years of moving at a slow pace, designing policies, and writing procedures for integrating technologies into education, the pandemic dictated a wide-scale change that also triggered reflections about pedagogical routines (Zhou et al., 2020; Zhang, 2020).

1.2 Technology, change and emotions

Most of the studies that address the adoption of new technology, assume that users apply rational considerations in their decision to accept or reject it (Davis, 1989; Rogers, 1983; Venkatesh et al., 2003). However, although it is known that artifacts may ignite emotions (Rafaeli & Vilnai-Yavetz, 2004), few studies engaged in the influence of these emotions on the willingness to accept a new technology (Davis et al., 1992; Stam & Stanton, 2010). Few studies focus on anxiety (Achim & Kassim, 2015; Cazan et al., 2016; Chiu & Churchill, 2016), users' experience, boredom, and enjoyment concerning the use of technology and online environments (AlDahdouh, 2020; Blythe & Monk, 2018; Hornbæk & Hertzum, 2017; Ninaus et al., 2019).

In the educational arena, the study of the influence of emotions on the acceptance of technology is relatively limited and deals mainly with enjoyment or boredom in learning in online learning environments (Hanif et al., 2019; Ninaus et al., 2019; Noteborn, 2012). For example, Stein et al. (2015), examined the emotions that lecturers experienced towards implementing new software, assessing the lecturers' productivity resulting from that use. They found that lecturers were ambivalent about the change. The various emotions stemmed from different aspects through which they evaluated the change, the decision-making process involved in accepting the change, and the strategies they used to cope with it. Bennett (2014) investigated the emotions of lecturers related to adopting new technological tools into teaching and learning practices. She identified a range of positive emotions, which included loving their work, enjoyment, delight, revitalization, excitement, pride, and confidence. Nevertheless, the positive emotions were fewer than the negative emotions, such as anxiety, fear, humiliation, and anger.

It is possible to examine emotions from different angles, such as anthropological, philosophical, psychiatric, socio-biological, and psychological (Denzin, 1984). According to the evolutionary approach (Nesse, 1990), emotions are modes of operation shaped by natural selection to adjust the individual's physiological, psychological, and behavioral parameters in ways that increase their capacity and tendency to respond adaptively to threats and opportunities that characterize diverse situations. The emotions reflect the value that individuals attribute to a situation and their interpretation of it, which drives them into a certain behavioral response (Keltner et al., 2006; Nesse, 1990). Positive emotions encourage people to identify and take

advantage of opportunities when they succeed. Negative emotions motivate people to refrain from dangerous situations by escaping, attacking, preventing, or dealing with the damage as soon as it occurs (Nesse & Ellsworth, 2009). Specific emotions are associated with particular behaviors: Fear arouses the desire to escape, anger encourages assault, enjoyment promotes the continuation of the existing situation, and the absence of it stimulates conveys the desire to attain it (Plutchik, 2003).

The appraisal theory of emotions proposes that emotions are extracted from our "appraisals"—our evaluations and interpretations of events. These appraisals lead to different specific reactions (Lazarus, 1991). Lazarus (1991) specified two significant types of appraisal methods: (1) primary appraisal, which seeks to establish the significance or meaning of an event, and (2) secondary appraisal, which assesses the individual's ability to cope with the consequences of the event. Lazarus described primary appraisals as judgments about the degree of potential challenge or threat that an event might introduce. The perception of a challenge/threat triggers the secondary appraisal—judgment of the options available to cope with the event and perceptions of how effective such options will be.

Bagozzi (1992) further developed the linkage between the individual's emotional reaction towards an event of change and their strategy of action. Following Lazarus' (1991) model of appraisal → emotional response → coping, he distinguished between two main situations: (1) An event in the past or an ongoing event. (2) An anticipated event that has not yet occurred. Each case can generate negative or positive emotions. Thus, one can identify four types of reactions: (a) when one fails to achieve a goal or experiences an unpleasant event, the individual will experience it as a failure. Thus, the emotional reaction will be of dissatisfaction, anger, and sadness, and the coping response will be intending to remove or reduce harm; (b) when one experiences a pleasant event, the event will lead to a sense of fulfillment and success. The emotional response will be satisfaction, joy, and pleasure, and the coping response will be maintaining and increase the outcome; (c) when the expected event does not meet the desires of the individuals or its anticipated results might be unpleasant, they will perceive it as a threat and their emotional reaction will be of fear, worry, and anxiety. They may adopt a strategy of avoidance; (d) when the expected event is consistent with the individuals' desires and abilities, they will perceive it as an opportunity. It will evoke hope and intent to facilitate the outcomes and sustain commitment.

We drew upon this classification to measure higher education lecturer's emotions towards online synchronous teaching during the first lockdown of the COVID-19 outbreak in Israel (Fig. 1).

2 Methodology

2.1 Research variables and research questions

The study's main purpose was to measure the lecturers' emotions towards the shift to synchronous learning during the COVID-19 crisis. The second purpose was to identify which emotions, and which background and situational variables

Fig. 1 Research model

may predict the lecturers' willingness of to teach online in the future (Fig. 1). The background variables were: Previous experience in online teaching, present experience in online teaching during COVID-19 crisis, and the perceived competency of online teaching skills. The situational variables measured were anxiety and staying at home with/without children. The emotions that were measured were divided into four groups: Threat, opportunity, success, and failure that were reflected the four categories of emotional reaction towards an event of change (Bagozzi, 1992).

The research questions were:

1. What is the intensity of the four types of emotions (opportunity, threat, success, failure) that lecturers experienced towards synchronous online teaching, and what are the differences between them?
2. What is the relationship between the experience gained in synchronous online teaching and the intensity of the emotions that lecturers experienced towards online teaching during the COVID-19 lockdown?
3. What is the relationship between the perception of perceived competency in online teaching and the intensity of the lecturers' emotions towards online teaching during the COVID-19 lockdown?
4. What are the relationships between situational variables characterizing this period (being with/without children at home, level of anxiety) and the intensity of the lecturers' emotions towards online teaching during the COVID-19 lockdown?
5. Which of the variables (emotions, perceived competency, having children at home, general anxiety) predict the willingness to teach online in the future?

2.2 Data collection

The study was conducted in the third week of the transition from face-to-face teaching to synchronous online teaching due to the outbreak of COVID-19 in 2020. The study applied a quantitative approach, using an online questionnaire directed to higher education lecturers in Israel that was distributed via professional mailing lists like academia-il mailing list, and on academic groups in online social networks such as the Facebook page 'academia-il', the Facebook page of the Israeli network for the social sciences (SocSci-IL) and the researchers' private professional networks in Facebook and LinkedIn. The data was collected anonymously, and the respondents signed an informed consent.

2.3 Research tools

The questionnaire contained five sections with the following scales:

Demographic details. Respondents were asked to report on their age, gender, academic institution and highest degree. They were also asked to report on the number of online courses they had previously taught, the number of online courses they were teaching and the number of study sessions held during the COVID-19 period. They also reported their perceived teaching competencies and staying with/without children at home during that period.

Emotions scale. To measure the intensity of participants' emotions toward online courses taught during the COVID-19 period, we generated a list of nineteen emotions. The participants had to rank their emotions on a 5-point Likert scale which ranged from 1- not at all to 5- very much. An exploratory factor analysis with rotation varimax was conducted. After a successive deletion of items that loaded highly on more than one factor, a four-factor solution was obtained. Another two items were removed from the list to avoid redundancy. These items did not add substantial theoretical content to the subscale and were highly correlated with other items on their subscales. The results of these analysis are presented in Table 1. The first factor contained five Items that pertained to emotion reaction to threat. The second factor contained four items that reflect emotional reaction to success. The third factor contained four items that reflect emotional reaction to failure, and the fourth factor contained two items that reflect emotional reaction to failure. 'Hope' and 'happiness' that were included in the original list and were expected to be in the fourth group were deleted from the list because they loaded highly on 'success' and did not fit the theoretical meaningfulness of the factors. Bartlett's test of sphericity, which tests the overall significance of all the correlations within the correlation matrix, was significant ($\chi^2(120) = 2221.3$, $p < 0.001$). Additionally, the Kaiser–Meyer–Olkin measure of sampling adequacy indicated that the strength of the relationships among variables was high ($KMO = 0.893$).

A parallel analysis (Monte Carlo simulation) results supported the factor analysis solution. Table 2 presents the Eigen values of the principal component analysis (PCA) and the Eigen values of the parallel analysis (PA).

Table 1 Emotions classification and intensity

Items	Factor Loadings				Average	SD
	F1 Threat	F2 Success	F3 Failure	F4 Opportunity		
tension	0.903	0.018	0.075	-0.026	2.38	1.16
stress	0.869	0.011	0.155	-0.183	2.31	1.18
anxiety	0.859	0.042	0.193	0.046	2.06	1.03
worry	0.742	-0.102	0.243	-0.052	2.31	1.07
fear	0.713	-0.008	0.307	0.014	1.67	0.91
pride	0.046	0.879	-0.116	0.054	2.76	1.30
fulfilment	0.013	0.839	0.042	0.219	2.40	1.26
contentment	-0.055	0.750	-0.263	0.365	3.04	1.08
satisfaction	-0.085	0.690	-0.169	0.373	3.15	1.07
anger	0.201	-0.030	0.806	-0.089	1.63	0.88
disappointment	0.221	-0.199	0.733	-0.060	1.90	1.053
frustration	0.501	-0.122	0.637	-0.114	2.36	1.12
annulment	0.389	-0.196	0.545	-0.443	2.36	1.22
expectation	-0.007	0.325	-0.054	0.847	2.76	1.14
excitement	-0.064	0.394	-0.179	0.776	3.03	1.07
Cronbach's Alpha	0.90	0.85	0.80	0.81		

Anxiety Disorder scale: Based on Generalized Anxiety Disorder scale (GAD-7). Cronbach's Alpha = .89. Question about willingness to conduct online lessons in the future: Respondents were asked to rate their willingness to teach online synchronously after the COVID-19 period on a 1-5 Likert scale: 1- not at all, 5- very much.

2.4 Participants

The study included 239 lecturers, of whom 106 (44%) were men and 132 (55%) were women 1 not reported (1%). The average age was 50.3 (*SD* 10.17), and the average of years of academic practice was 14.7 (*SD* 9.6). About 80% of lecturers reported holding a Ph.D. degree. Most lecturers (79%) had no previous experience of online teaching before the COVID-19 pandemic outbreak. Only a few had extensive experience. Approximately 44% of the lecturers taught less than six online synchronous during the COVID-19 period, and over half (55%) taught six or more lessons. The lecturers who responded

Table 2 Parallel Analysis for Principle Components

No. of factors	PCA	PA	Difference
1	3.892	1.453	2.439
2	3.484	1.348	2.136
3	2.274	1.271	1.003
4	1.960	1.242	0.718

Table 3 The distribution of academic disciplines

Academic discipline	Frequency	%
Social Sciences	63	26.35
Humanities and Law	60	25.10
Behavioral Sciences and Education	48	20.08
Engineering and Technology	24	10.04
Exact Sciences	19	7.94
Biology and Medicine	15	6.27
Art and Design	7	2.92
Multi-disciplinary	3	1.3
Total	239	100

to the questionnaire reported affiliation to higher education institutions as follow: Most of them were faculty members in Israeli universities (65%); the others belong to public colleges (16%); teacher training colleges (11%); and private colleges (about 8%). Table 3 presents the distribution of academic disciplines:

To measure their competence, the lecturers were asked to rate their perception of mastery of online teaching skills, on a 1–5-point Likert scale (Table 3).

Findings showed that the lecturers rated their level of competence as medium to high (Table 4).

3 Findings

3.1 The intensity of the emotions that lecturers experienced towards online teaching

The intensity of the four groups of emotions (success, opportunity, failure, threat) that lecturers experienced towards synchronous online teaching and the differences between were calculated by averages and standard deviations for each of the four categories of emotions (Table 5).

Table 4 Perception of competence

Statements	Average	SD
I lack confidence operating the synchronous technology*	3.96	1.07
I have technical problems with managing the class*	3.72	0.99
I have a sense of control over synchronous technology	3.59	1.02
I know how to adjust my teaching for online learning	3.56	0.90
I feel that students are not with me during class*	3.54	0.93
I know how to activate the students in online synchronous learning	3.42	0.91
I managed to conduct online synchronous discussions	3.36	1.00
I know how to use advanced synchronous teaching functions	2.38	1.28
Average	3.44	0.58

*reversed values

A one-way repeated measures ANOVA was conducted to compare the intensity of emotions. A statistically significant difference was found in the intensity of emotions toward online teaching, $F(235,3) = 32.37$ $p < 0.001$. Post hoc tests using the Bonferroni correction revealed that the intensity of 'success' (A) and 'opportunity' were significantly higher than the intensity of 'threat' (C) and 'failure' (D). A significant difference was also found between the intensity of 'threat' and 'failure' ($A, B > C > D$).

3.2 The relationship between the intensity of the emotions and the experience gained in synchronous online teaching prior to and during COVID-19 outbreak

Results of the Pearson correlation indicated that there was a significant positive association between the intensity of the emotions that lecturers experienced towards online teaching before the COVID-19 lockdown and the experience they gained in synchronous online teaching. A weak but significant positive correlation was found between the previous lecturers' experience and emotions of 'opportunity' [$r(237) = 0.164$, $p < 0.05$] and those of 'success' [$r(237) = 0.169$ $p < 0.01$]. No correlation was found with emotions of threat or failure.

A Pearson correlation was performed to investigate the association between the intensity of the emotions that lecturers experienced towards online teaching during the COVID-19 lockdown and the experience they gained in synchronous online teaching. A weak but significant positive correlation was found between previous lecturers' experience and emotions of 'success' [$r(237) = 0.155$ $p < 0.05$]. No correlation was found with emotions of 'opportunity', 'threat', or 'failure'.

3.3 Relationship between the intensity of the emotions and lecturer's perceived competency in synchronous online teaching

A Pearson correlation was calculated to examine the association between the lecturer's perceived competency and the four groups of emotions. A moderate positive correlation was found between the perception of mastery of synchronous teaching skills and the emotion of 'success' [$r(238) = 0.357$ $p < 0.01$] and of 'opportunity' [$r(238) = 0.446$ $p < 0.01$]. A weak positive correlation was found between lecturer's perceived competency and emotions of threat [$r(238) = -0.248$ $p < 0.01$] and a marginally significant correlation was found with failure [$r(238) = -0.124$ $p = 0.056$].

Table 5 Intensity of emotions

Category of emotions	Average	SD
(A) Success	2.83	0.99
(B) Opportunity	2.69	0.90
(C) Threat	2.14	0.90
(D) Failure	1.96	0.83

3.4 Relationships between the intensity of the emotions and situational parameters

A T-test for independent samples was calculated to examine the differences between lecturers who stayed at home with and without children during the COVID-19 lockdown regarding the intensity of their emotions towards online teaching during this period. A significant difference was found between lecturers that stayed at home with children under 18 and those at home without children under 18, in emotions of 'success' [$t(237) = 2.28$ $p < 0.05$]. The emotions of 'success' among lecturers without children at home ($M = 3.01$ $SD = 1.03$) were significantly higher than those with children at home ($M = 2.71$ $SD = 0.95$).

To examine the relationship between the intensity of 'anxiety' during the COVID-19 outbreak and lecturers' emotions, a Pearson correlation was calculated. A weak positive meaningful correlation was found between the degree of anxiety and emotions of 'failure' [$r(235) = 0.149$ $p < 0.05$]. A moderate positive correlation was found between 'anxiety' and 'threat' emotions [$r(235) = 0.375$ $p < 0.01$].

3.5 Predictors of the willingness to conduct online teaching in the future

The variables predicting lecturers' willingness to conduct online teaching in the future were examined via a two-step multiple regression. In the first stage, we examined the extent to which the various groups of emotions toward online courses during the COVID-19 lockdown could predict the willingness to engage in online teaching in the future. In the second stage, we added the additional variables defined in the study: the degree of anxiety, staying at home with children, perceived mastery of online teaching skills, prior experience in online teaching, and experience in online teaching during the (Table 6).

The results showed that 'success', 'opportunity', 'failure', 'perceived mastery of online skills' and 'staying home with children' statistically significantly predicted 36.9% of the variance of willingness to conduct synchronous courses in the future, [$F(4,227) = 33.14$ $p < 0.001$, $R^2 = 0.369$]. 'Success', 'opportunity' and 'perceived competency' were found to be positive predictors of willingness to conduct online courses in the future, while 'failure', and 'staying home with children' were negative predictors of the willingness to conduct online teaching in the future.

4 Discussion and conclusion

The COVID-19 pandemic, which broke out in China in February 2020 and spread like wildfire across the world, presented a range of serious challenges to academic institutions, which were forced to move immediately to online teaching and learning. This unusual event ignited an emotional response among lecturers. Thus, the purpose of the present study was to examine which emotions lecturers experienced towards synchronous online teaching during the first COVID-19 lockdown and to

Table 6 Variables predicting lecturers' willingness to conduct synchronous lessons in the future

		<i>B</i>	Std. Error	Beta	
1	(Constant)	1.459	0.370	3.941	0.000
	Threat	0.148	0.102	0.094	0.147
	Opportunity	0.500	0.095	0.357	0.000
	Failure	-0.491	0.117	-0.283	0.000
	Success	0.250	0.099	0.174	0.012
2	(Constant)	1.570	0.579	2.712	0.007
	Threat	0.155	0.112	0.098	0.168
	Opportunity	0.399	0.099	0.285	0.000
	Failure	-0.522	0.118	-0.301	0.000
	Success	0.256	0.100	0.178	0.011
	Previous experience	0.024	0.021	0.060	0.271
	Number of lessons taught during period	-0.122	0.095	-0.070	0.200
	Perceived competency	0.285	0.120	0.148	0.018
	Staying home with children	-0.341	0.152	-0.118	0.026
	Anxiety	0.122	0.131	0.053	0.354

determine the relationship between their emotions and their willingness to teach in online courses in the future.

Findings of this study indicated that although the online teaching experience was unplanned, sudden, and carried a high potential for anxiety and resistance to change, the positive emotions were higher than the negative ones. This can be explained in the context of the emergency of the COVID-19 outbreak. The sense of emergency forced lecturers to embark on the task of continuing to teach and maintaining a routine, for their own benefit and at the service of their students (Evans et al., 2017; Rosenberg et al., 2015; Zhou et al., 2020). Following the functional-evolutionary approach, experiencing emotions of 'success' can be explained by the fact that lecturers managed to maintain their teaching during this period, thus professionally surviving (Nesse, 1990; Nesse & Ellsworth, 2009). It is conceivable that this change would have probably raised more resistance in regular times and evoked more negative emotions (Bennett, 2014).

Online synchronous teaching experience was associated with 'opportunity' and 'success' but not associated adversely with 'failure' and 'threat'. This finding has a theoretical significance in reinforcing that negative emotions are not the mirror image of positive ones. Conversely, they stand as different kinds of responses to change (Solomon & Stone, 2002). Similar results were found concerning experience gained over the COVID-19 period. The findings indicated that acquiring experience during that period also contributed to the perception of 'success' and 'opportunity'. This suggests that experiencing online synchronous teaching contributed to the positive attitudes and emotions towards that teaching solution. Nevertheless, experience in online teaching did not explain lecturers' negative emotions towards online synchronous instruction. Therefore, the source of negative emotions may be routed in other factors, such as situational factors, as will be discussed later, or related to

resistance to online synchronous teaching on the ground of pedagogical positions and other factors that were not investigated in this study.

The intensity of emotions among lecturers was also associated with their perception of online synchronous teaching skills. As the level of perceived competency increased, the online synchronous learning was experienced as more positive and evoked a sense of 'opportunity' and 'success'. As the perceived level of competency decreased, the experience evoked negative emotions of 'failure' and 'threat'. We should bear in mind that most lecturers started teaching online without any formal training and without the competency to teach online. They lacked the required skills and the support that their institutions supply (Aini et al., 2020). Therefore, lecturers who faced technical and pedagogical difficulties may have experienced 'threat' and 'failure' more intensely than in regular times. This perceived lack of competency may well influence their willingness to continue to teach online in the future.

Another finding that can explain the emotions that were attributed to the perception of 'failure' and 'threat' is the association between these emotions and the degree of anxiety experienced during this period. The COVID-19 outbreak was a time of crisis threatening the human race's health and was naturally accompanied by fundamental existential anxiety (Isidori, 2012; Charnsil & Chailangkarn 2020; Salerni & Vaccarelli, 2019). An examination of the association between the lecturer's state of anxiety and their emotions towards teaching online, suggests an association between the level of anxiety and emotions of 'threat' and 'failure'. These findings mean that the general anxiety lecturers felt during that time impacted their ability to cope with the change in teaching and with the transition to synchronous technology. Most lecturers experienced online teaching for the first time in times of emergency, being more anxious and distracted than in routine, which contributed to the negative attitudes they may develop towards online teaching in the future.

The association that was found between the lecturers' emotions and staying at home with children during the pandemic can be explained considering the social isolation that was forced on parents and children. Lecturers were required to teach from home, not an optimal teaching environment, especially with young children that need ongoing attention (Zhou et al., 2020). According to the findings, lecturers who stayed at home with their young children felt less success during the quarantine than those at home without young children. Nevertheless, it did not affect the emotions of 'failure', as one might think. This is another evidence that negative emotions are not the opposite of positive emotions, and they generate different sets of emotions.

The primary objective of this study was to examine which of the groups of emotions that lecturers experienced during the COVID-19, could predict their willingness to continue online teaching in the future. The findings indicated that the willingness to continue teaching synchronously online in the future depended on the emotional experience experienced during the COVID-19 period – both for better and for worse. 'Opportunity' and 'success' were found to predict lecturers' willingness to carry out online teaching in the future, while 'failure' was a negative predictor of the willingness to teach in future online courses. Lecturers who experienced the sudden shift to online teaching as an 'opportunity' may be more open to change also in the future. The lecturers who experience emotions

of ‘success’ may adopt a strategy of maintaining and increasing the outcome (Bagozzi, 1992). Nevertheless, the experience of failure was also influential on the willingness to teach online in the future. Lecturers who felt they failed to conduct online teaching may adopt a strategy of avoidance in the future (Bagozzi, 1992), decreasing the willingness to continue teaching in the future. At the same time, the special conditions of the situation, staying at home with the children, and the fact that the lecturers entered the process without preparation and with only a moderate level of readiness contributed to their sense of ‘failure’ and decreased their willingness to continue online teaching in the future.

Surprisingly, COVID-19 period that threatened and caused anxiety contributing to the emotions of threat regarding online teaching, may be perceived by the lecturers as temporal and thus not deeply affecting future willingness to teach online as could be expected. In this aspect, the situational atmosphere that characterized the crisis and contributed to the perceived threat during a crisis did not necessarily apply when contemplating the future and returning to routine teaching. This finding shows that Bagozzi’s theory (Bagozzi, 1992), as well as other models of technology acceptance (Davis, 1989; Rogers, 1983) and theories of coping with change (Weiss & Cropanzano, 1996) that are based on the assumptions of the theory of planned behavior (Ajzen, 1991) are not fully applicable in times of emergency. The uniqueness of the emergency context, like the COVID-19 crisis, is that it isn’t planned, and it is situated in the broader crisis atmosphere. In such conditions, one must overcome negative emotions of threat, avoid resistance, and cope with the crisis.

The abrupt and unexpected transition to online synchronous teaching in higher education institutions by a large portion of the lecturers in the emergency atmosphere of the COVID-19 outbreak impacts the willingness to continue teaching online in the future. Surprisingly, the dramatic event of COVID-19 lockdown evoked more positive emotions than negative ones among lecturers during the first lockdown. The emotions of threat that might have characterized this period did not affect the willingness to teach online in the future as may be expected. In contrast, emotions of opportunity, success and failure during have an essential effect on future willingness to continue online synchronous teaching.

Higher education policymakers should leverage the decline in lecturers’ emotional barriers to the adoption of online teaching wisely, and their sense of opportunity and success, by investing in preparing lecturers to online teaching not only in emergency times but in the long run. They should be aware that “success” in emergency times is not experienced in the same way as in regular times, not by lecturers and not by the students. Therefore, they should train the lecturers to improve their online teaching to be qualified for teaching at better times. They also have to provide better teaching conditions and facilities for lecturers who are teaching online from home, especially to lecturers with young children who experienced less success teaching in this condition.

From the theoretical perspective, this study demonstrates how tracing the emotional response towards online synchronous teaching may also contribute to understanding technology acceptance. It also contributes to understanding the differences in emotional experience of technology acceptance in times of trouble.

5 Limitations and Further Studies

The study was conducted among lecturers in Israel about three weeks from the beginning of the COVID-19 crisis, when the crisis was at its peak. In this period, the uncertainty and shock among lecturers and all world population were at their highest stage. Most of the study participants in this study were inexperienced in online teaching at the time of the survey. As the crisis continued, they gained further experience and might have reacted differently to the event that was no longer perceived as temporal. Further study should be conducted to examine the effect of time and experience that the lecturers earned over the long period of the pandemic on their perception of competencies and their willingness to use it in the future, and with association with other personal and situational factors. Global studies from other countries will give better pictures of lecturer's experiences around the world.

Additionally, it was hard to recruit participants for the study in the pandemic period, when social distancing and lockdown impaired the accessibility to participants. The only way to reach lecturers was by social networks and online communications. Since the participants were recruited online it could be possible that they were biased toward those who had better ICT skills and favored the use of ICT. However, we invested a lot of effort in reaching a wide range of lecturers from diverse academic institutes in Israel. Nevertheless, it could still be considered a convenience sampling. Therefore, it limits the generalizability of the results.

This study attempted to identify the emotions that lecturers experienced towards online synchronous teaching during COVID-19 pandemic and to explain them in relation to online teaching experience, perceived competency, anxiety and being at home with children. These factors explained only 36% of the variance. Other factors, like pedagogical position and attitudes towards face-to-face instruction were not included in this study. Future research is recommended to investigate their impact on the emotional reaction of higher education lecturers to online teaching during COVID-19 outbreak.

Data Availability The data that support the findings of this study are available from the corresponding author upon reasonable request.

Declarations

Ethics approval The research was approved by the ethics committee of the faculty of Instructional Technologies Holon Institute of Technology (HIT) Israel.

Conflict of interest The authors declare that they have no competing interests or personal relationships that could have appeared to influence the work reported in this paper.

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