

# Switching from In-person to Online Learning: Emotion and Temporal Focus in the Egyptian Tertiary Student Experience

Christina A. DeCoursey<sup>1</sup> & Aliaa N. Hamad<sup>2</sup>

<sup>1</sup> Writing Program, Nazarbayev University, Kazakhstan

<sup>2</sup> Department of Rhetoric and Composition, American University in Cairo, USA

Correspondence: Christina A. DeCoursey, Writing Program, Nazarbayev University, Kazakhstan. E-mail: linguistcd@gmail.com

Received: September 13, 2024

Accepted: January 15, 2025

Online Published: January 27, 2025

doi: 10.5539/elt.v18n2p53

URL: <https://doi.org/10.5539/elt.v18n2p53>

## Abstract

Responding to the Covid-19 pandemic, the Egyptian government closed universities and ordering teachers online. Adjusting to online teaching was difficult for learners. This study of 26 students at a private Egyptian university used Voyant Tools and LIWC to explore their psychometric and cognitive responses to the first few weeks of online learning. Results indicate that stress and anxiety were common. Despite more time with family, social and cognitive process words were less frequent than the norm. Time words focused more on the present and the past than the future. Work words were more frequent than, but mentions of leisure less frequent than the norm. Since the pandemic, tertiary teaching and learning has made increasing use of online platforms. This is likely to continue in future. Negative emotions and the past temporal focus of these students highlights time as a problem for online learning, because virtual time has no boundaries, and may be experienced subjectively as ongoing in an unbounded or unlimited manner. In combination with social isolation, this will tend to enhance negative emotions. This highlights the need for online teaching to manage virtual boundaries, as clock time has in classroom teaching. Qualitative data analysis will remain a frontline tool in assessing learners' experiences online, as universities go forward with this teaching delivery mode.

**Keywords:** emotion, temporal focus, online learning, LIWC, pandemic, Egyptian students, anxiety, stress

## 1. Introduction

In the present moment, as we recall the Covid-19 pandemic, we tend to remember our most recent experiences, and the latest developments in the news. The pandemic impacted people politically, as they watched indifferent political leaders make challenging decisions (Comfort, Kapucu, Ko, Menoni & Siciliano, 2020). It reduced levels of social trust in scientific knowledge and expertise, as people grappled with the new mRNA concept of a vaccine and issues with side effects (Algan, Cohen, Davone, Foucault & Stantcheva, 2021). The pandemic disrupted local and global economies, as family hardship created food and housing insecurities, and knock-on mental health issues (Prime, Wade & Browne, 2020; Strange, 2020). Our internal emotional and psychological experiences varied greatly over the course of the three years of the pandemic, with our thoughts and feelings different at the start, in the middle, and at the end of this global tragedy. Temporal focus, whether past, present, or future, is connected to many fundamental elements of mental health and well-being, with a past focus being maladaptive and tending to accompany distress and anxiety (Shipp & Aeon, 2019). A past temporal focus may accompany negative rumination, regret, guilt and anxiety (Zhou, Zheng, Qi & Miao, 2022). By comparison, the cognitive appraisals and behavioural functions elicited by future thinking include enjoyment and compassion (Bø, Norman & Wolff, 2022). While temporal focus has been noticed as a significant aspect of public responses to lockdowns, (Loose, Wittmann & Vásquez-Echeverría, 2022), its impacts on students have received little notice.

The social isolation created by the lockdowns implemented by many governments worldwide during the pandemic were accompanied by lowered psychological well-being, in whole populations (Dennis, Ogden & Hepper, 2022). They also were often associated with a past temporal focus and with negative emotional states reflecting the loss of regular social interactions and routines (Niziurski & Schaper, 2023). For many people, at the beginning of the pandemic, a sense of anxiety was high (Fellman, Ritakallio, Waris, Jylkkä & Laine, 2020). Across four continents, populations did not sleep as well, felt stress, and had disturbed dreams (Fränkl et al., 2021).

At the start of the pandemic, these difficulties were powerfully intensified for tertiary students, who were told to study online. While student experiences have been a major research focus during and since the pandemic, few studies have explored student reports of time passing, as an element of online learning. This study is an initial effort to address this lack. Egypt's first case of Covid-19 was announced on 14 February 2020, before the WHO declared a pandemic in March 2020. The shutdown of many elements of daily life occurred quickly. On March 19, the government closed shops, businesses other than food and essential services, and instituted a night curfew (Medhat & El Kassas, 2020). On April 20, the government closed schools and universities. Very quickly, tourism and aviation closed down. By the end of the year, there were fines for not wearing masks (El-Din & El-Gundy, 2020), and Sinopharm vaccines were beginning to be administered (Elgendy, El-Gendy & Abdelrahim, 2020). This may be seen in Figure 1.

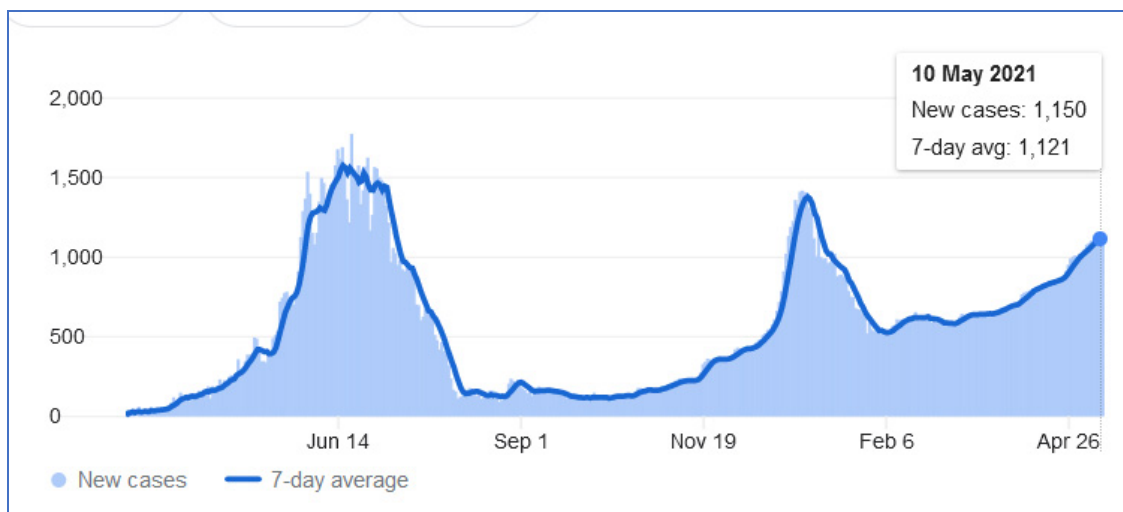


Figure 1. Covid case rate, Egypt, March 2020 through April 2021

(<https://www.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6> accessed May 12, 2021)

While most sectors of daily life in Egypt were impacted, psychological impacts were extensive on those in education. Halfway through the Spring 2020 semester, the Egyptian Ministry of Education closed schools and universities and required them to shift to online mode for fear of the virus spreading (Medhat & El Kassas, 2020). The same scenario was repeated in the Fall 2020 semester when the Ministry of Education announced in December that all the end-of-semester school and university exams would be postponed and that the January mid-year vacation would be extended through February after which the postponed exams would be held. Exit exams for school leavers (Grades 11 and 12) were also rescheduled online. Ongoing reviews by the Ministry of Health kept renewing those provisions. A few months later, the Spring 2021 semester was also cut short when the virus reared its ugly head again (Ammar et al., 2020).

Egyptian students experienced a range of adverse effects due to their isolation and home confinement, during the pandemic. Psychological impacts included fear and uncertainty (Ghazawy et al., 2020), somatic disturbances and eating disorders ((Omar et al, 2021), depression, anxiety, loneliness and stress (Arafa, Mohamed, Saleh & Senosy, 2021). Many went through cycles of hourly news monitoring and anxiety, with no emotional support, and no access to counselling (Sun et al., 2020). Female students experienced a lack of support from family, friends, social institutions, and an increased incidence of family violence (AboKresha, Abdelkreem & Ali, 2021).

For many Egyptian students, drawbacks of online learning included problems with technology, as many had little prior experience with VOIP technologies (Mubarak, Cao & Zhang, 2020). Many tended not to engage well on learning management systems (Al Fadda & Osman, 2020). Many had inadequate access to computers at home, experienced power outages, and faced issues of internet cost and reliability (Mahyoob, 2020). Confused by the lack of visual cues received in classrooms, they felt reluctant to communicate with peers and teachers online, weakening their soft skills, academic literacy skills, and spoken English proficiency (Sobaih, Hasanein, & Abu Elnasr, 2020). They viewed online platforms as being about support and networking, where faculty viewed them as being about content delivery, and this mismatch decreased their motivation (Basuony, Eldeen, Farghaly, El-Bassiouny & Mohamed, 2020). They experienced difficulties with self-regulation and self-discipline, and felt bored when lectures include few organised class activities (Khalil, 2021).

Universities have increased their use of online delivery since the pandemic (Hongsuchon, Emary, Hariguna & Qhal, 2022). Yet in developing world contexts, many students still face issues of access, power, wifi and computing proficiency. These problems impact on and interact with students' psychological, emotional, cognitive and social responses to online learning (Cramarenco, Burcă-Voicu & Dabija, 2023). Globally, Covid exigencies developed institutions' capacities and readiness to work with digital platforms, with online teaching increasing in universities since the pandemic ended (Adedoyin & Soykan, 2023). But technical and professional capacity issues differ from the perspectives of students, who remain focused on technical issues such as connectivity and devices, and emotional issues such as motivation and engagement (Adeniyi et al., 2024).

The question of student use of time management during online learning came to the fore as online learning became more ubiquitous. Extensive reporting affordances on learning platforms make it possible to assess the frequency of connection, and students' learning management tactics. This research shows three main areas of student time spent on Learning Management System platforms (LMS): (a) preparation, where students spend time reading upcoming materials prior to class time, (b) preparation with revisitation, where students both looked at previously taught materials while flipping forward to upcoming class content, and (c) mixed-mode, where students both did catch-up and preview, but little revision (Uzir et al., 2020).

But measuring engagement must take into account the emotional and experiential elements of the student experience. Engagement entails complex internal states related to self-regulation, which ground externally measurable elements such as time invested, making behavioural measures possible. Quantifying the time spent logged into and interacting with specific LMS pages cannot capture those experiences effectively (Henrie, Halverson & Graham, 2015). The same drawbacks are evident in automated time-management enabling systems (Khiat, 2022). Systems that quantify time spent on specific LMS pages do not capture whether the student is emotionally or intellectually engaged, and have crucial weaknesses when applied in developing economies, where access and connectivity are significant problems (Macfadyen, & Dawson, 2010). Perceptions both at work and in school were that online work and learning were both accompanied by extensive social loafing (Chen, Wang, An & Luo, 2024; Yang, Tu & He, 2024).

The question of student experiences of time, while in isolation, while separated from their usual daily routines and prevented from meeting with friends and teachers, has not been well studied. Our experiences of time are quite malleable. Task difficulty tends to slow our perceptions of the passage of time, where positive emotion tends to speed it up (Martinelli, & Droit-Volet, 2022). Younger people tend to experience time passing at a higher rate than older people, and routines tend to make us feel that time has slowed down (Wittmann, Rudolph, Linares Gutierrez & Winkler, 2015). Negative emotional states such as depression tends to slow our sense of the passage of time (Droit-Volet, & Martinelli, 2023). During the Covid-19 pandemic, the social isolation of lockdown tended to slow people's perceptions of the passage of time, with younger people more affected (Ogden, 2020). Social interactions tend to speed up our sense of the passage of time (Flaherty, 2018).

Cognizant of its large youth demographic, the Egyptian Ministry mounted an extensive capacity-building effort ("ICT 2030 Strategy") (Kamel & Rizk, 2019). For future Egyptian students studying online, as well as more broadly for students in developing economies whose educational contexts may embrace online learning, it is important to understand how they responded to online learning, not just when facing issues of access, power, wifi and computing proficiency, but also emotionally in terms of their engagement. Time and emotion are crucial elements of their experience.

## **2. Method**

This study used Voyant Tools and LIWC to analyse the cognitive and psychometric content of qualitative data elicited from Cairo university students about online learning.

### *2.1 Participants*

This study explored psychological and cognitive aspects of online learning among wealthy urban Egyptian university students. Data was taken from 26 students at an elite private university with high IELTS/TOEFL entrance requirements, such that English proficiency could not have been a barrier to using an English-language learning platform. Participants were from wealthy homes, and thus experienced no issues with access, power or Wi-Fi. They also had fairly advanced technical or computing proficiency. The views of "elite informants" are studied in education for the same reasons as the opinions of the upper echelons of management in business studies: their particular view of organisational operations tend to shape strategic directions inside the organizations (Aguiar & Schneider, 2016).

## 2.2 Instrument

Written or qualitative data was selected as preferable to using a survey, which pre-form thematic and attitudinal categories, preventing participants from defining the topic using the full range of their own ideas (Hennink, Hutter & Bailey, 2020). The prompt was expressed in simple language to ensure ease of understanding, and to avoid priming effects (Gilquin & Paquot, 2008). Participants were asked to write a response to the prompt, “What was it like switching to online learning?”

The prompt was sent in early June 2020, six weeks after university classes went online, when students had moved from face-to-face to online learning, but had not yet become used to it. Data was collected via email. Researcher roles were differentiated to ensure that participant comments were anonymous. One researcher collected and de-identified the data. The second researcher received the anonymised data, to analyse. (Sutton & Austin, 2015). Data was aggregated into a corpus of 4,940 words.

## 2.3 Data Analysis

Qualitative data analysis uses software to parse text corpora, and defined major themes and subthemes of a corpus by quantifying content word frequencies (Grgich, 2012). Softwares sophisticate manifest content analysis through semantic dictionaries in areas such as emotion and stance (Litosseliti, 2010). Dictionaries are created by disambiguating lexicogrammar through systematic supervised classification tasks applied to super-large synchronic corpora such as the entire internet (Williamson, Given & Scifleet, 2013). Non-linear, iterative processes may be used to map, focus and refine thematic configurations, patterns and regularities (Suter, 2012). User interfaces permit inquiries, data visualisation and statistical analyses. For example, collocates may be mapped, and correlations quantified (Flick, 2013). Qualitative data analysis is widely used to provide detailed descriptions of subjective elements within textual corpora (Freeman, 2017).

Keyword analysis identifies words which are characteristic of a corpus, and generalisable to a discourse domain (Litosseliti, 2010). Analysis is clarified by limiting the number considered, filtering results to remove semantically valueless collocations, and selectively including colligations, or terms within a grammeme (Krippendorf, 2013). Softwares tags semantic connections beyond the word, for example in phrasal groups and across clauses (Taylor & Marchi, 2018).

Network graph analysis identifies keyword collocates (Seale & Tonkiss, 2012). Word choices in language usage are not randomly distributed, but follow small-world ordering effects where specific items recur in specific sub-vocabulary networks and associational lexicons (Lamba & Madhusudhan, 2021). In linguistic networks, co-occurrence is not structural (Rayson & Potts, 2020). Keyword networks do not reflect syntax dependency, lexeme or grammeme effects, or semantic induction (Rayson et al., 2017). These words appear together frequently because they reflect participants’ personal selection of words, when representing their opinions (Araújo & Banisch, 2016). Network graphs visualise the relationships between keywords in a linguistic corpus, based on the numbers of their shared grammatical vectors (Pachayappan & Venkatesakumar, 2018).

Psychometric measures were obtained with LIWC (Pennebaker, Boyd, Jordan & Blackburn, 2015). LIWC uses semantic dictionaries to parse textual corpora, and quantify realisations of latent psychological potentials in human language (Kline, 2013). Norms are generated through analysis of a corpus of ~231,000,000 words (Tausczik & Pennebaker, 2010). Psychometric categories include polarity, emotion, social processes, cognitive processes, drives and orientations. Frequencies in a particular corpus are compared to a reference corpus to highlight defining characteristics (Sojka, Horák, Kopecek & Pala, 2012).

## 3. Results

The data was analysed for thematic or content keywords, keyword correlations, network graph collocations, and psychometric properties.

### 3.1 Thematic Analysis

The corpus was analysed for keywords using Voyant Tools (Miller, 2018). Thematic analysis removes function words from a corpus, and ranks content terms by frequency. Thematic keywords, or the most frequent content terms, may be aggregated by lexeme, and clumped manually by category. In this way, the major content areas of a corpus become evident (Dickerson, 2018). For this corpus, in cases where word forms were multiple, counts were taken for complete lexemes. Lexemic frequencies give a more accurate thematic representation (Culpeper, 2014).

For the keyword ‘can’, all terms realising the modality of possibility were aggregated. This included the entire lexeme for can, able, ability, capable, as well as similar words and phrases. Ability was the third most

frequently-realised theme. Their use indicates active potentials in the mind of the user, reflecting routinely instantiated actions, and projecting likely future potentials (Palmer, 2014).

However, in this corpus, most realisations of the modality of possibility paired ability with difficulty. For example, a student wrote, “I had experienced some setbacks, but I was able to persevere”. These kinds of thematically linked realisations construe capacities that are routinely instantiated in action, but in ways that speakers understand experientially negative and abnormal. They build in an epistemic reality of something they know experientially about what they can do, but with a negative deontic dimension. This is something that “should not” or “ought not” to be the case. These paired realisations identify a reality where the logic of the capacity dimension is reduced in a non-trivial manner by the logic of the normality dimension, instantiating a dimension of the negative abnormal within routine competencies (Yalcin, 2016). In these realisations, speakers contrast capacity and normality. Language realising normality reflects the speaker’s beliefs both about what is descriptively “average”, but also a prescriptive element based on their beliefs about what is “ideal” (Bear & Knobe, 2017). These personal judgments are gradable on two scales. The first entails realisation of an instance within patterns of what is more or less possible in terms of their own performance. The second entails realisation of an instance within patterns of what is more or less proper, or appropriate based on their experiences of everyday life (Lassiter & Goodman, 2013).

These fifteen most frequently-cited key terms comprised about 9.25% of the entire corpus. They grouped into four thematic areas: the prompt, learning, time, and feelings. The most frequently-realised subjective content area not reflective of the prompt was ability. A slight majority of these were positive (27=56.25%).

Table 1. Keywords by rank

RANK	WORD	FREQUENCY	FREQUENCY %	THEMATIC AREA
1	class*	58	1.17	prompt
2	online	53	1.07	prompt
3	able [all terms, modality of possibility]	48	0.97	learning
4	semester*	43	0.87	prompt
5	course*	35	0.71	prompt
6	learn*	32	0.65	learning
7	professor*	30	0.61	learning
8	campus+university	27	0.55	prompt
9	felt+feel*	25	0.51	feelings
10	tim*	23	0.47	time
11	work*	20	0.40	learning
12	stress*	20	0.40	feelings
13	experience	16	0.32	feelings
14	student*	14	0.28	learning
15	face	13	0.26	learning

These may be seen in Table 1.

### 3.2 Correlations

Correlations were defined using Pearson’s correlation coefficient, where scores approaching 1 indicate that two terms were strongly correlated, appearing in close proximity to each other frequently in the corpus. Significance values of 0.05 or less indicate a strong correlation which cannot be accounted for by random distributions (Krippendorf, 2013), as in Table 2.

Table 2. Correlations and significance values

	COLLOCATION	CORRELATION	SIGNIFICANCE	THEMATIC AREA
1	coronavirus+overwhelming	0.8926	0.00051	feelings
2	internet+semester	0.7969	0.00577	prompt
3	learning+required	0.7917	0.00634	learning
4	switching+understand	0.7913	0.01610	learning
5	coronavirus+time	0.7319	0.01903	time
6	course+sudden	0.7156	0.01994	time
7	feeling+students	0.7156	0.01994	feelings
8	students+time	0.7516	0.01994	time
9	longer+overwhelming	0.7516	0.01994	time
10	home+stress	0.6998	0.02424	feelings

Most correlations fell into the time and feelings thematic areas. Correlations showing greater statistical significance reflected feelings, the prompt and learning. Frequencies for ‘class\*’, ‘online’, ‘semester\*’ and ‘course\*’ reflected the prompt: these words had to be used, in order to respond to the question. By contrast, words not reflecting the prompt were those chosen by participants to represent their views.

### 3.3 Network Graph Analysis

Network graphs were used to explore relationships between key terms. Network graph visuals were obtained in Voyant Tools (Miller, 2018). Higher-frequency keywords are represented in blue, with high-frequency collocates in orange. Terms reflecting the prompt, ‘class\*’, ‘online’, ‘semester\*’ and ‘course\*’, all connected to similar terms, particularly the experience of switching teaching and learning modality from face-to-face to online, which changed the experience of classes and courses, and of the semester. This collocated with a single emotional experience, stress. By comparison, the keyword lexeme for ‘learn\*’ collocated with three words highlighting subjective experiences: ‘face’, ‘experience’ and ‘believe’, as well as with one collocate indicating temporality, ‘period’. This may be seen in Figure 2.

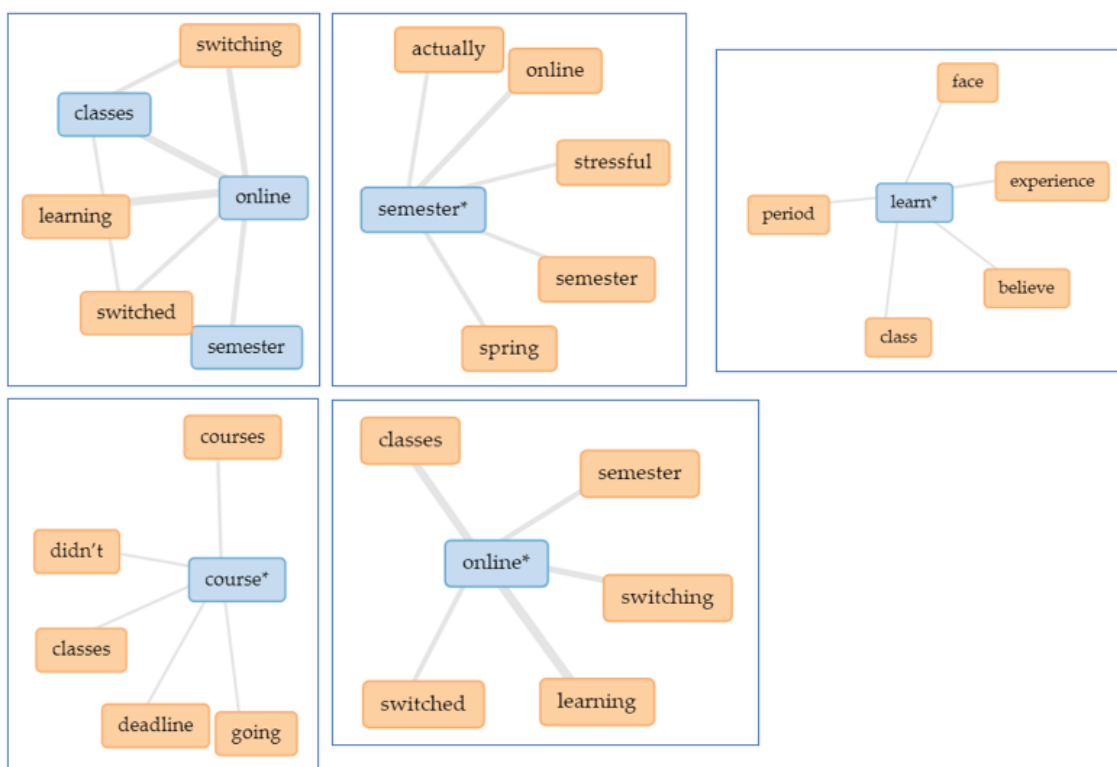


Figure 2. Network graphs for prompt keywords

The term ‘face’ was used almost equally to mean in-person learning (‘I hope that we return back to face to face classes’), and also to mean a difficulty (‘Another hard thing that I faced was...’).

The networks formed in response to the major terms of the prompt differed from those formed by emotion keywords. Networks formed in response to the major terms of the prompt occurred because the words were provided by the prompt. Thus, some of those key terms were very likely to occur frequently. However, the emotion terms and networks occurred because participants chose to realise those words, as a way of representing their personal experiences. These key terms emerged without any prompt.

Network collocates for emotion words have received particular research attention. All humans experience specific emotions which reflect our biophysiology (Perak & Ban Kirigin, 2020). A large range of terms for these physiological experiences are instantiated in all languages (Hinojosa, Moreno & Ferré, 2020). The neuromechanisms allowing for their storage and processing encode the potential to realise them in positive or negative ways, and to graduate the strength of those realisations (Leminen et al., 2019). Subjective attitudes discussing personal experiences of emotional states thus combine physical with subjective experiential states, and are particularly important when we try to assess how people responded to a particular event (Sander, Grandjean & Scherer, 2018).

The complete lexeme for ‘feel\*’ (which includes ‘felt’) had multiple negative emotions as collocates. Among these were, notably ‘anxious’, ‘lost’, ‘isolated’, and ‘stressful’. For example, a student wrote, “I was feeling confused and anxious”, and another wrote, “online I felt lost”. Most uses of the keyword ‘comfortable’ were negative, as for example, ‘it was not comfortable and I wasn’t used to it’. The emotion term ‘overwhelm’ collocated with prompt and learning terms ‘online’ and ‘courses’ and with ‘experience’. For example, a student wrote: “Overall it was an overwhelming experience”. The emotion term ‘stress’ collocated with learning terms ‘exams’ as well as with self-reference ‘i’m’. For example, a student wrote, “It was stressful. For me, the semester was pretty stressful”. That is, the feelings connected to studying online were clearly negative. These networks may be seen in Figure 3.

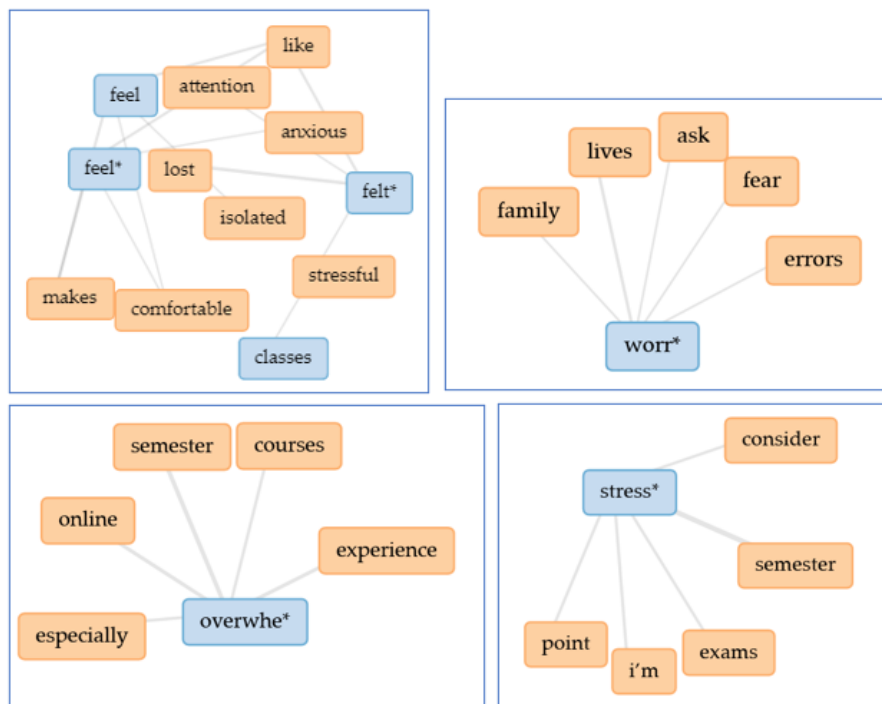


Figure 3. Network graphs for emotion keywords

On a broad level, collocates for feeling keywords included anxiety, stress, isolation and (dis)comfort. At a finer level of analysis, collocates for worry appeared to connect to homelife (‘family’, ‘fear’) rather than to university learning. But collocates for ‘stress’ and ‘overwhelm\*’ clearly connected to the experience of studying online. This suggests that, for tertiary learners, the experience of studying online involves the added component of extensive family and home stressors which they do not experience, or not as strongly, when they study on campus.

### 3.4 Psychometric Analysis

Psychometric content was analysed using LIWC (Chung & Pennebaker, 2018). Values for participants' psychological drives, affiliation, power, reward and risk, were close to the norm. The value for achievement was high, at 2.37 compared to 1.27, probably reflecting the participant group's status as university students.

Corpus polarity was less positive (3.39 compared to 3.66) and more negative (2.47 compared to 2.06) than most informal personal writing. Realisations of anxiety were about five times greater than the norm (1.34 compared to 0.27, for example 'a feeling of fear and worry for my family'), of anger about 3.7 times less than norm (0.18 compared to 0.68, for example 'they made our quarantine as bad as hell'), and sadness about 1/3 higher than the norm (0.57 compared to 0.44, for example 'makes me feel down'). This data may be seen in Figure 4.

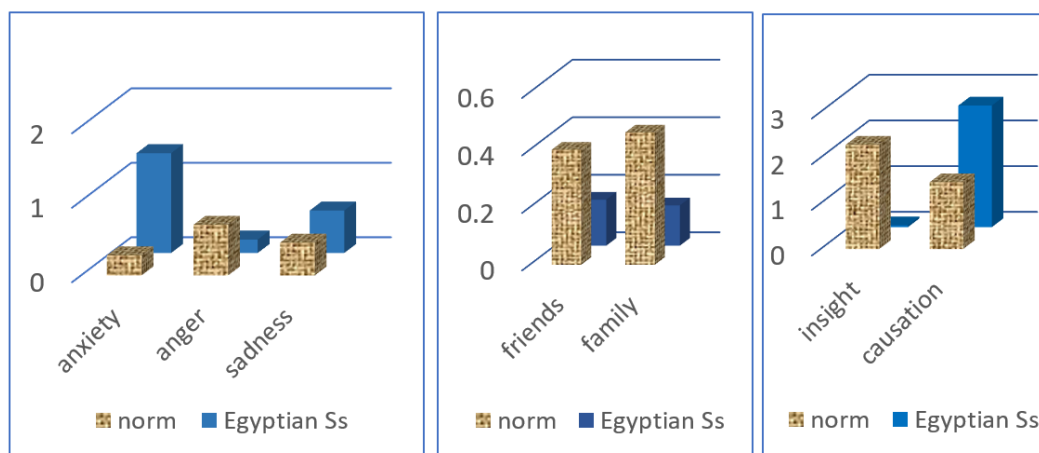


Figure 4. Emotion, social processes and cognitive processes

Social processes realise our need for relatedness. The corpus value was 5.15 compared with the norm of 8.95 in informal personal writing ("no social life and making new friends from the new courses we are taking and not being able to see some family member").

Participants were close to the norm for cognitive processes, except in realising 1.8 times the norm of causation words, probably reflecting relationship between pandemic and online learning. They also realised 0.04 compared to a norm of 2.28, or 1/57th the norm in insight words, terms such as 'think', 'know', 'understand which realise the writer's self-concept as reflective and perceptive.

Social processes realise our need for relatedness. The corpus value was 5.15 compared with the norm of 8.95 in informal personal writing ("no social life and making new friends from the new courses we are taking and not being able to see some family member").

Participants were close to the norm for cognitive processes, except in realising 1.8 times the norm of causation words, probably reflecting relationship between pandemic and online learning. They also realised 0.04 compared to a norm of 2.28, or 1/57th the norm in insight words, terms such as 'think', 'know', 'understand which realise the writer's self-concept as reflective and perceptive. Areas of significant difference between the internet norm and the experience of Egyptian students during the pandemic were increased anxiety, reduced social interaction, and focus on insight and causality.

Another area of significant difference was temporal focus. Participants' sense of time differed strongly from the norm. LIWC uses the Box-Jenkins (2015) time series methodology used to analyse time-related language, for example when people reference the past to explain present conditions, or use both to predict future conditions. It uses the ARIMA (Autoregressive Integrated Moving Average) model to quantify time values (Mukta, Ali & Mahmud, 2019). Participants' time orientations showed 1.5 times more frequent realisation of past (6.57 compared to 4.25), only 2/3 the normal realisation of present time (7.32 compared to 10.95) and only about 3/4 the normal realisation of future time (1.18 compared to 1.6) for informal personal writing, as in Figure 5.



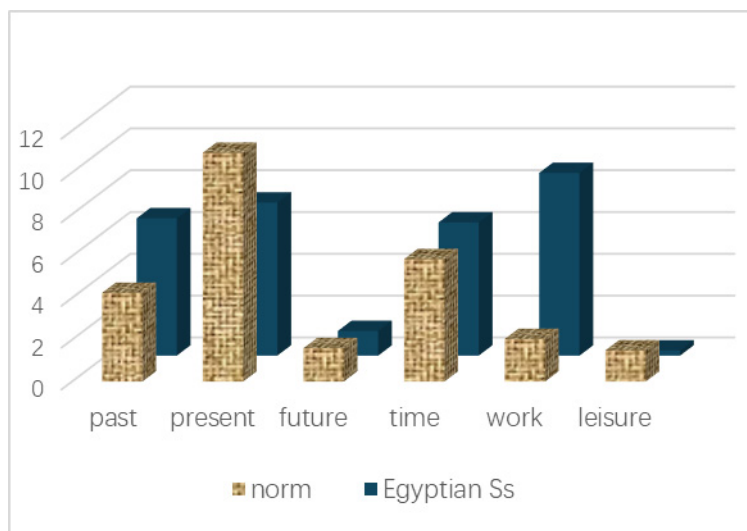


Figure 5. Egyptian students' temporal focus during the pandemic

Students realised a desire to return to university learning as they had previously known it (“I hope our lives turn back to normal soon”). They were aware of the difference between online and clock time: “The hardest part was figuring out the division between university time and home time, the line between the two seemed to blur.” They found it difficult to manage: “I would work for 14 hours straight and sleep for 2 hours only, then the cycle would repeat.” While they realized time words about as frequently as normal, they realized work words more than four times as frequently as the norm (8.74 compared to 2.04, for example “there was a heavy workload”), but leisure words less than a sixth as frequently as normal (0.24 compared to 1.5, for example “when the first couple of midterms passed I started to relax and actually enjoy online learning (at least relaxed as I could be, without freaking out over what’s yet to be done).”

#### 4. Discussion

Frequently-realised subjective themes and significant correlations reflected participants' views about learning, time, and emotions. Common correlations for online learning were the negative emotions ‘overwhelming’, ‘stress’ and ‘anxious’ where network graphs showed that ‘worry’ related to family. The main limitation of this study is sample size. Feelings were negative, with home and family worries an added burden students seemed not to experience when studying on campus. While wider sampling might change the relative frequencies of specific keywords, correlations all had very high significance, suggesting these specific feelings would remain frequently-realised.

Stress and anxiety were the most notable psychosocial impacts of online learning. Participants realised unusually negative emotions about online learning, both in overall polarity, and in frequently realised emotions, particularly anxiety. High anxiety is an important negative mental and physical health outcome associated with online learning (Biber, Melton & Czech, 2020). In the same way, the combination of positive capacity with negative normality indicates that students viewed the stressors of online learning as in some way abnormal, both descriptively but also prescriptively, as something that “should not” be happening.

Psychological drives remained close to the norm, but social processes were reduced, with Egyptian students realising these about half as frequently, and discussing family and friends about one-third as often as the norm. As one participant noted, “Everything felt so surreal when I’m locking myself in my small quiet closet room in front of my laptop and having to pretend that this is me in class with others.” Online learning appears to have an internalising effect, reducing social interactions across daily life, including in the physical space of the home. A clear implication of this is that it would interact with students' increased home time and family worries, creating a strong negative emotional burden.

Egyptian students' cognitive processes differed from the norm, with causation words linking online learning and stress. More significantly, online learning seemed to reduce students' critical thinking. Elite university student data should be higher than the norm for tentativeness, certainty and differentiation, as these terms make qualify opinions, explore possibilities, make concessions, include or exclude specific cases, and negotiate shades of meaning. This initial data suggests that online learning, at least six weeks into its usage, may have undermined their academic confidence, or their sense of themselves as having the ability to explore, assess and evaluate. This

is supported by the startling finding, that Egyptian students realised insight words, which reflect the cognitive activity of re-appraisal (think, view, understand, reason, realise, discover and so on), only 1/57th as frequently as the norm. This result requires further study, to understand student responses to online education, and ensure it inculcates and elicits metacognition.

Online learning seems to replace time with work. These students realised the present less frequently than usual and had little sense of future time, but realised work four times as frequently but leisure one-sixth as frequently. This may be why they felt nostalgia for face-to-face learning “there's no point in crying over spilled milk (unless I can use a time machine, and go back in time)”. The digital affordances of online learning can create a sense of immediacy. Mediated time in technology-saturated cultures already tends to increase focus on present and near futures, heightening the sense of speed, but locating it in the present and near-term future and decreasing the focus on more distant futures (Hartmann, Prommer, Deckner & Görland, 2019). However, these seem to have been offset by the negative experiences of stress and anxiety. Temporal focus is a major element of psychological time, with a past focus tending to reflect psychological distress, and a slowed sense of the passage of time (Loose, Wittmann & Vásquez-Echeverría, 2022). This indicates that students understand this to be something that they cannot manage in their normal way, and require support to handle (Vaughn, Vizier & Corker, 2019).

## 5. Conclusion

This initial study has limitations, particularly the small sample size. This indicates the need for greater study, particularly of the impacts of online learning on temporal focus. While tertiary students are not a valid participant group for generalising to national populations, they are valid for generalising to other tertiary students and to the educated segment of the population within a similar age range (Fugard & Potts, 2015). These results are somewhat generalisable to participant groups in other developing contexts who share cohort traits including age and educational experience (Börjesson, & Lillo Cea, 2020).

The data from this study highlights the fact that, where the linear units of clock time have well-established boundaries associated with them, virtual time has both maximum flexibilities, but also no boundaries between discretionary and obligatory actions or moments. Thus, it tends to overwork students while also making them emotionally unhappy. While this data reflects student awareness at the moment of change-over from face-to-face to online learning, it also indicates how online modalities impact both students and teachers: “professors started increasing the workload because ‘we have time’”. Egyptian faculty were also aware of this issue. As two teachers of Arabic put it, “”عدم قدرة المعلم على رؤية الطلاب قد يدفع تدريجيا إلى غياب التفاعل و اتساع الفجوة بينهما”” (El-Sayed, 2020).

Online learning will likely be used for tertiary teaching delivery in future. Negative emotional responses may be reduced as students get accustomed to it. Still, many students in developing economies face technical obstacles to using LMSs. While these are improving, the negative emotional impacts are substantial with online learning. Egyptian students experienced anxiety, sadness, isolation and increased stress, at a time when they were also experiencing reduced social interactions.

Future uses of online learning may inadvertently reproduce these conditions. Issues in student cognition and metacognition during online learning require further study, particularly in their impacts on student experiences of time. This study highlights the need for universities to define and set online lecture norms. The negative impacts of online learning may be mitigated through group activities, and giving attention to breaks both online and out of class hours. Thematic and linguistic analysis of sentiment will remain a crucial tool in evaluating the impact on students, and adjusting how education is delivered.

## References

- AboKresha, S. A., Abdelkreem, E., & Ali, R. A. E. (2021). Impact of COVID-19 pandemic and related isolation measures on violence against children in Egypt. *Journal of the Egyptian Public Health Association*, 96(1), 1-10. <https://doi.org/10.1186/s42506-021-00071-4>
- Adedoyin, O. B., & Soykan, E. (2023). Covid-19 pandemic and online learning: the challenges and opportunities. *Interactive learning environments*, 31(2), 863-875. <https://doi.org/10.1080/10494820.2020.1813180>
- Adeniyi, I. S., Al Hamad, N. M., Adewusi, O. E., Unachukwu, C. C., Osawaru, B., Chilson, O. U., ... David, I. O. (2024). Reviewing online learning effectiveness during the COVID-19 pandemic: A global perspective. *International Journal of Science and Research Archive*, 11(1), 1676-1685. <https://doi.org/10.30574/ijrsra.2024.11.1.0282>

- Aguiar, L., & Schneider, C. (Eds.) (2016), *Researching amongst Elites: Challenges and opportunities in studying up*. New York, N.Y. Routledge. <https://doi.org/10.4324/9781315605586>
- Al Fadda, H., & Osman, R. (2020). Challenges and Strengths of Transitioning to Online Learning during COVID19 University Lockdown: Case Studies from Egypt and Saudi Arabia. *CDELTA Occasional Papers in the Development of English Education*, 71(1), 191-212. <https://doi.org/10.21608/opde.2020.159774>
- Algan, Y., Cohen, D., Davoine, E., Foucault, M., & Stantcheva, S. (2021). Trust in scientists in times of pandemic: Panel evidence from 12 countries. *Proceedings of the National Academy of Sciences*, 118(40), e2108576118. <https://doi.org/10.1073/pnas.2108576118>
- Ammar, A., Mueller, P., Trabelsi, K., Chtourou, H., Boukhris, O., Masmoudi, L., ... ECLB-COVID19 Consortium. (2020). Psychological consequences of COVID-19 home confinement: The ECLB-COVID19 multicenter study. *PLoS One*, 15(11), e0240204. <https://doi.org/10.1371/journal.pone.0240204>
- Arab News. (12 May, 2021). *Egypt ends school year early due to coronavirus*. <https://www.arabnews.com/node/1849216/middle-east>
- Arafa, A., Mohamed, A., Saleh, L., & Senosy, S. (2021). Psychological impacts of the COVID-19 pandemic on the public in Egypt. *Community mental health journal*, 57(1), 64-69. <https://doi.org/10.1007/s10597-020-00701-9>
- Araújo, T., & Banisch, S. (2016). Multidimensional analysis of linguistic networks. In Mehler, A., Lücking, A., Banisch, S., Blanchard, P., & Job, B. (Eds.), *Towards a Theoretical Framework for Analyzing Complex Linguistic Networks* (pp. 107-131). Berlin, Heidelberg. Springer. [https://doi.org/10.1007/978-3-662-47238-5\\_5](https://doi.org/10.1007/978-3-662-47238-5_5)
- Basuony, M. A., Eldeen, R., Farghaly, M., El-Bassiouny, N., & Mohamed, E. K. (2020). The factors affecting student satisfaction with online education during the COVID-19 pandemic: an empirical study of an emerging Muslim country. *Journal of Islamic Marketing*, 12(3), 631-648. <https://doi.org/10.1108/JIMA-09-2020-0301>
- Bear, A., & Knobe, J. (2017). Normality: Part descriptive, part prescriptive. *Cognition*, 167, 25-37. <https://doi.org/10.1016/j.cognition.2016.10.024>
- Biber, D. D., Melton, B., & Czech, D. R. (2020). The impact of COVID-19 on college anxiety, optimism, gratitude, and course satisfaction. *Journal of American College Health*, 70(7), 1947-1952. <https://doi.org/10.1080/07448481.2020.1842424>
- Börjesson, M., & Lillo Cea, P. (2020). World class universities, rankings and the global space of international students. In Rider, S., Peters, M., Hyvonen, M., and Besley, T. (Eds) *World Class Universities: A contested concept* (141-170). Springer, Singapore. [https://doi.org/10.1007/978-981-15-7598-3\\_10](https://doi.org/10.1007/978-981-15-7598-3_10)
- Bø, S., Norman, E., & Wolff, K. (2022). Discrete emotions caused by episodic future thinking: A systematic review with narrative synthesis. *Collabra: Psychology*, 8(1), 35232. <https://doi.org/10.1525/collabra.35232>
- Box, G., Jenkins, G., Reinsel, G., & Ljung, G. (2015). *Time Series Analysis: Forecasting and Control*. (5th ed.), UK. Wiley.
- Chen, C., Wang, B., An, H., & Luo, M. (2024). Organizational justice perception and employees' social loafing in the context of the COVID-19 epidemic: the mediating role of organizational commitment. *Humanities and Social Sciences Communications*, 11(1), 1-8. <https://doi.org/10.1057/s41599-024-02612-6>
- Chung, C. K., & Pennebaker, J. W. (2018). What do we know when we LIWC a person? Text analysis as an assessment tool for traits, personal concerns and life stories. In Zeigler-Hill, V., & Shackelford, T. K. (Eds.), *The Sage handbook of personality and individual differences* (pp. 341-360). London. Sage. <https://doi.org/10.4135/9781526451163.n16>
- Comfort, L. K., Kapucu, N., Ko, K., Menoni, S., & Siciliano, M. (2020). Crisis decision-making on a global scale: transition from cognition to collective action under threat of COVID-19. *Public Administration Review*, 80(4), 616-622. <https://doi.org/10.1111/puar.13252>
- Cramarencu, R. E., Burcă-Voicu, M. I., & Dabija, D. C. (2023). Student perceptions of online education and digital technologies during the COVID-19 pandemic: A systematic review. *Electronics*, 12(2), 319. <https://doi.org/10.3390/electronics12020319>

- Culpeper, J. (2014). Developing keyness and characterization: Annotation. In Hoover, D., Culpeper, J., & O'Halloran, K., *Digital literary studies: Corpus approaches to poetry, prose, and drama* (Vol. 16). (pp. 49-77). London. Routledge.
- Dennis, A., Ogden, J., & Hepper, E. G. (2022). Evaluating the impact of a time orientation intervention on well-being during the COVID-19 lockdown: past, present or future? *The Journal of Positive Psychology, 17*(3), 419-429. <https://doi.org/10.1080/17439760.2020.1858335>
- Dickerson, M. (2018). *A gentle introduction to text analysis with Voyant tools*. eScholarship, University of California. <https://escholarship.org/uc/item/6jz712sf>
- Droit-Volet, S., & Martinelli, N. (2023). The psychological underpinnings of feelings of the passage of time. In Wöllner, C., & London, J. (Eds.) *Performing Time: Synchrony and Temporal Flow in Music and Dance* (pp. 67-80). Oxford. Oxford University Press. <https://doi.org/10.1093/oso/9780192896254.003.0006>
- Egypt Today. (13 February, 2021). *Egypt extends mid-year vacation for schools, universities for week amid pandemic*. <https://www.egypttoday.com/Article/1/98576/Egypt-extends-mid-year-vacation-for-schools-universities-for-week>
- El-Din, M., & El-Gundy, Z. (27 December, 2020). Egypt to impose EGP 50 fine for not wearing masks in public. *AhramOnline*. <https://english.ahram.org.eg/NewsContent/1/64/397639/Egypt/Politics-/Egypt-to-impose-EGP--fine-for-not-wearing-masks-in.aspx>
- Elgendy, M., El-Gendy, A., & Abdelrahim, M. (2020). Public awareness in Egypt about COVID-19 spread in the early phase of the pandemic. *Patient education and counselling, 103*(12), 2598-2601. <https://doi.org/10.1016/j.pec.2020.09.002>
- El-Sayed, B. (9 December, 2020). *Sky News Arabia* (sky news عربية), "طق نجاه للطلاب أم" في مصر. ورطة كبيرة؟ <https://www.skynewsarabia.com/varieties/1399187>
- Fellman, D., Ritakallio, L., Waris, O., Jylkkä, J., & Laine, M. (2020). Beginning of the pandemic: COVID-19-elicited anxiety as a predictor of working memory performance. *Frontiers in psychology, 11*(2020), 576466. <https://doi.org/10.3389/fpsyg.2020.576466>
- Flaherty, M. G. (2018). An S-shaped pattern in the perceived passage of time: how social interaction governs temporal experience. *Language and Cognition, 10*(1), 1-25. <https://doi.org/10.1017/langcog.2016.4>
- Flick, U. (Ed.). (2013). *The Sage handbook of qualitative data analysis*. London. Sage. <https://doi.org/10.4135/9781446282243>
- Fränkl, E., Scarpelli, S., Nadorff, M. R., Bjorvatn, B., Bolstad, C. J., Chan, N. Y., ... Holzinger, B. (2021). How our dreams changed during the COVID-19 pandemic: effects and correlates of dream recall frequency-a multinational study on 19,355 adults. *Nature and Science of Sleep, 15*73-1591. <https://doi.org/10.2147/NSS.S324142>
- Freeman, M. (2017). *Modes of thinking for qualitative data analysis*. London. Routledge. <https://doi.org/10.4324/9781315516851>
- Fugard, A. J., & Potts, H. W. (2015). Supporting thinking on sample sizes for thematic analyses: a quantitative tool. *International Journal of Social Research Methodology, 18*(6), 669-684. <https://doi.org/10.1080/13645579.2015.1005453>
- Ghazawy, E., Ewis, A., Mahfouz, E., Khalil, D., Arafa, A., Mohammed, Z., ... Mohammed, A. (2020). Psychological impacts of COVID-19 pandemic on the university students in Egypt. *Health Promotion International, 36*(4), 1116-1125. <https://doi.org/10.1093/heapro/daaa147>
- Grbich, C. (2012). *Qualitative data analysis: An introduction*. London. Sage. <https://doi.org/10.4135/9781529799606>
- Gilquin, G., & Paquot, M. (2008). Too chatty: Learner academic writing and register variation. *English Text Construction, 1*(1), 41-61. <https://doi.org/10.1075/etc.1.1.05gil>
- Hartmann, M., Prommer, E., Deckner, K., & Görland, S. O. (2019). *Mediated Time London*. Palgrave Macmillan, Cham. <https://doi.org/10.1007/978-3-030-24950-2>

- Henrie, C. R., Halverson, L. R., & Graham, C. R. (2015). Measuring student engagement in technology-mediated learning: A review. *Computers & Education*, *90*(2015), 36-53. <https://doi.org/10.1016/j.compedu.2015.09.005>
- Hennink, M., Hutter, I., & Bailey, A. (2020). *Qualitative research methods*. Sage.
- Hinojosa, J. A., Moreno, E. M., & Ferré, P. (2020). Affective neurolinguistics: towards a framework for reconciling language and emotion. *Language, Cognition and Neuroscience*, *35*(7), 813-839. <https://doi.org/10.1080/23273798.2019.1620957>
- Hongsuchon, T., Emary, I. M. E., Hariguna, T., & Qhal, E. M. A. (2022). Assessing the impact of online-learning effectiveness and benefits in knowledge management, the antecedent of online-learning strategies and motivations: an empirical study. *Sustainability*, *14*(5), 2570. <https://doi.org/10.3390/su14052570>
- Johns Hopkins University Centre for Systems Science and Engineering. <https://www.arcgis.com/apps/dashboards/bda7594740fd40299423467b48e9ecf6>
- Kamel, S., & Rizk, N. (2019). The Role of Innovative and Digital Technologies in Transforming Egypt into a Knowledge-Based Economy. In Habib, M. (Ed.) *Handbook of Research on the Evolution of IT and the Rise of E-Society* (pp. 386-400). USA. IGI Global. <https://doi.org/10.4018/978-1-5225-7214-5.ch017>
- Keightley, E. (2013). From immediacy to intermediacy: The mediation of lived time. *Time & Society*, *22*(1), 55-75. <https://doi.org/10.1177/0961463X11402045>
- Khalil, S. (2021). Investigating Nonnative TEFL Students' Self-Regulation in an Online Learning Environment. *International Journal of English Linguistics*, *11*(1), 125-134. <https://doi.org/10.5539/ijel.v11n1p125>
- Kline, P. (2013). *Handbook of psychological testing*. UK. Routledge. <https://doi.org/10.4324/9781315812274>
- Kacewicz, E., Pennebaker, J., Jeon, M., Graesser, A., & Davis, M. (2013). Pronoun use reflects standings in social hierarchies. *Journal of Language and Social Psychology*, *33*(2), 125-143. <https://doi.org/10.1177/0261927X13502654>
- Khiat, H. (2022). Using automated time management enablers to improve self-regulated learning. *Active Learning in Higher Education*, *23*(1), 3-15. <https://doi.org/10.1177/0261927X13502654>
- Krippendorff, K. (2013). *Content analysis: An introduction to its methodology*, London, Sage.
- Lamba, M., & Madhusudhan, M. (2021). Network Text Analysis. In Lamba, M., & Madhusudhan, M. (Eds.), *Text Mining for Information Professionals: An Uncharted Territory* (pp. 139-172). London. Cham Springer International Publishing. [https://doi.org/10.1007/978-3-030-85085-2\\_5](https://doi.org/10.1007/978-3-030-85085-2_5)
- Lassiter, D., & Goodman, N. D. (2013, August). Context, scale structure, and statistics in the interpretation of positive-form adjectives. In *Semantics and linguistic theory, Proceedings of SALT 23* (pp. 587-610), USA. Linguistics Society of America. <https://doi.org/10.3765/salt.v23i0.2658>
- Leminen, A., Smolka, E., Dunabeitia, J. A., & Pliatsikas, C. (2019). Morphological processing in the brain: The good (inflection), the bad (derivation) and the ugly (compounding). *Cortex*, *116*(2019), 4-44. <https://doi.org/10.1016/j.cortex.2018.08.016>
- Litosseliti, L. (Ed.) (2010). *Research Methods in Linguistics*, New York. Continuum.
- Loose, T., Wittmann, M., & Vásquez-Echeverría, A. (2022). Disrupting times in the wake of the pandemic: Dispositional time attitudes, time perception and temporal focus. *Time & Society*, *31*(1), 110-131. <https://doi.org/10.1177/0961463X211027420>
- Mahyoob, M. (2020). Challenges of e-Learning during the COVID-19 pandemic experienced by EFL learners. *Arab World English Journal*, *11*(4), 351-362. <https://doi.org/10.24093/awej/vol11no4.23>
- Macfadyen, L. P., & Dawson, S. (2010). Mining LMS data to develop an “early warning system” for educators: A proof of concept. *Computers & Education*, *54*(2), 588-599. <https://doi.org/10.1016/j.compedu.2009.09.008>
- Martinelli, N., & Droit-Volet, S. (2022). What factors underlie our experience of the passage of time? Theoretical consequences. *Psychological Research*, *86*(2), 522-530. <https://doi.org/10.1007/s00426-021-01486-6>
- Medhat, M., & El Kassas, M. (2020). COVID-19 in Egypt: Uncovered figures or a different situation? *Journal of global health*, *10*(1), 01368, 1-4. <https://doi.org/10.7189/jogh.10.010368>

- Miller, A. (2018). Text mining digital humanities projects: Assessing content analysis capabilities of VoyantTools. *Journal of Web Librarianship*, 12(3), 169-197. <https://doi.org/10.1080/19322909.2018.1479673>
- Mubarak, A., Cao, H., & Zhang, W. (2020). Prediction of students' early dropout based on their interaction logs in online learning environment. *Interactive Learning Environments*, 30(8), 1414-1433. <https://doi.org/10.1080/10494820.2020.1727529>
- Mukta, M., Ali, M., & Mahmud, J. (2019). Temporal modelling of basic human values from social network usage. *Journal of the Association for Information Science and Technology*, 70(2), 151-163. <https://doi.org/10.1002/asi.24099>
- Niziurski, J. A., & Schaper, M. L. (2023). Psychological wellbeing, memories, and future thoughts during the Covid-19 pandemic. *Current Psychology*, 42(3), 2422-2435. <https://doi.org/10.1007/s12144-021-01969-0>
- Ogden, R. S. (2020). The passage of time during the UK Covid-19 lockdown. *PloS One*, 15(7), e0235871, 1-16. <https://doi.org/10.1371/journal.pone.0235871>
- Pachayappan, M., & Venkatesakumar, R. (2018). A graph theory based systematic literature network analysis. *Theoretical Economics Letters*, 8(05), 960-981. <https://doi.org/10.4236/tel.2018.85067>
- Palmer, F. R. (2014). *Modality and the English modals*. London. Routledge. <https://doi.org/10.4324/9781315846453>
- Pennebaker, J., Chung, C., Frazee, J., Lavergne, G., & Beaver, D. (2014). When small words foretell academic success: the case of college admissions essays. *PLOS ONE*, 9(2014), 1-10. <https://doi.org/10.1371/journal.pone.0115844>
- Pennebaker, J. Boyd, R., Jordan, K., & Blackburn K. (2015). *The Development and Psychometric Properties of LIWC2015*. USA. University of Texas at Austin. <http://hdl.handle.net/2152/31333>
- Perak, B., & Ban Kirigin, T. (2020). Corpus-based syntactic-semantic graph analysis: Semantic domains of the concept feeling. *Rasprave: Časopis Instituta za hrvatski jezik i jezikoslovlje*, 46(2), 957-996. <https://doi.org/10.31724/rihjj.46.2.27>
- Prime, H., Wade, M., & Browne, D. T. (2020). Risk and resilience in family well-being during the COVID-19 pandemic. *American Psychologist*, 75(5), 631-646. <https://doi.org/10.1037/amp0000660>
- Rayson, P. E., Mariani, J. A., Anderson-Cooper, B., Baron, A., Gullick, D. S., Moore, A., & Wattam, S. (2017). Towards interactive multidimensional visualisations for corpus linguistics. *Journal for Language Technology and Computational Linguistics*, 31(1), 27-49. <https://doi.org/10.21248/jlcl.31.2016.200>
- Rayson, P., & Potts, A. (2020). "Analyzing keyword lists." in Paquot, M. & Gries, S. (Eds.) (2020) *A practical handbook of corpus linguistics*. (pp. 119-139) Springer, Switzerland. [https://doi.org/10.1007/978-3-030-46216-1\\_6](https://doi.org/10.1007/978-3-030-46216-1_6)
- Seale, C., & Tonkiss, F. (2012). Content and comparative keyword analysis. in Sele, C. (Ed.) *Researching society and culture* (pp. 459-478). London. Sage.
- Shipp, A. J., & Aeon, B. (2019). Temporal focus: Thinking about the past, present, and future. *Current Opinion in Psychology*, 26(2019), 37-43. <https://doi.org/10.1016/j.copsyc.2018.04.005>
- Sobaih, A., Hasanein, A., & Abu Elnasr, A. (2020). Responses to COVID-19 in higher education: Social media usage for sustaining formal academic communication in developing countries. *Sustainability*, 12(16), 6520-6538. <https://doi.org/10.3390/su12166520>
- Sun, R., Balabanova, A., Bajada, C., Liu, Y., Kriuchok, M., Voolma, S., ... Sauter, D. (2020). *Psychological wellbeing during the global COVID-19 outbreak*. <https://doi.org/10.2139/ssrn.3634846>
- Sutton, J., & Austin, Z. (2015). Qualitative research: Data collection, analysis, and management. *The Canadian journal of hospital pharmacy*, 68(3), 226. <https://doi.org/10.4212/cjhp.v68i3.1456>
- Sojka, P., Horák, A. Kopecek, I., & Pala K. (eds) (2012). *Text, Speech and Dialogue, Berlin and Heidelberg: Springer*. <https://doi.org/10.1007/978-3-642-32790-2>
- Strange, R. (2020). The 2020 Covid-19 pandemic and global value chains. *Journal of Industrial and Business Economics*, 47(3), 455-465. <https://doi.org/10.1007/s40812-020-00162-x>
- Suter, W. (2012). Qualitative data, analysis, and design. *Introduction to educational research: A critical thinking approach*, 2(2012), 342-386. <https://doi.org/10.4135/9781483384443.n12>

- Taylor, C., & Marchi, A. (Eds.) (2018). *Corpus Approaches to Discourse: A Critical Review*. New York. Routledge.
- Tausczik, Y., & Pennebaker, J. (2010). The psychological meaning of words: LIWC and computerized text analysis methods. *Journal of Language and Social Psychology*, 29(1), 24-54. <https://doi.org/10.1177/0261927X09351676>
- Uzir, N. A. A., Gašević, D., Jovanović, J., Matcha, W., Lim, L. A., & Fudge, A. (2020, March). Analytics of time management and learning strategies for effective online learning in blended environments. In *Proceedings of the tenth international conference on learning analytics & knowledge* (pp. 392-401). Germany. Association for Computing Machinery. <https://doi.org/10.1145/3375462.3375493>
- Vaughn, L., Vizier, S., & Corker, K. (2019). Distinguishing between need support and regulatory focus with LIWC. *Collabra: Psychology*, 5(1), 32, 1-20. <https://doi.org/10.1525/collabra.185>
- Williamson, K., Given, L., & Scifleet, P. (2013). Qualitative data analysis. In Williamson, K., & Johanson, G. (Eds.). (2017). *Research methods: Information, systems, and contexts* (pp. 417-439). London. Chandos Publishing.
- Wittmann, M., Rudolph, T., Linares Gutierrez, D., & Winkler, I. (2015). Time perspective and emotion regulation as predictors of age-related subjective passage of time. *International journal of environmental research and public health*, 12(12), 16027-16042. <https://doi.org/10.3390/ijerph121215034>
- Xinhua News Agency. (2021). "Egypt postpones school exams until after mid-year vacation over COVID-19 concerns" 2021-01-01. [http://www.xinhuanet.com/english/2021-01/01/c\\_139633570.htm](http://www.xinhuanet.com/english/2021-01/01/c_139633570.htm)
- Yalcin, S. (2016). Modalities of normality. In Charlow, N., & Chrisman, M. (Eds.). (2016). *Deontic modality*. (pp. 230-255). Oxford. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780198717928.003.0009>
- Yang, D., Tu, C. C., & He, T. B. (2024). Effect of Conscientiousness on Social Loafing Among Male and Female Chinese University Students. *The Asia-Pacific Education Researcher*, 33(2), 459-469. <https://doi.org/10.1007/s40299-023-00742-0>
- Zhou, Z., Zheng, L., Qi, W., & Miao, M. (2022). Finding meaning from the present and future: The mediating role of meaning in life between temporal focus and mental health. *Journal of Pacific Rim Psychology*, 16(2022), 1-11. <https://doi.org/10.1177/18344909221138710>

## Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).