E-learning? Never again! On the unintended consequences of COVID-19 forced e-learning on academic teacher motivational job characteristics

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Abstract

During the COVID-19 pandemic, universities worldwide are going into 'emergency mode'—radically transforming education by switching to online and e-learning education. In the face of these emergent changes, many academic teachers who are unwilling to use e-learning or who lack the appropriate competences are suddenly being forced to teach via electronic devices and the Internet. But how will this COVID-19 forced e-learning influence academic teachers' motivation and performance? In this conceptual paper, drawing from Job Characteristics Theory—a model of human work motivation, we would like to discuss the possible changes in six motivational job characteristics of the academic teacher's job (task identity, task significance, skill variety, feedback, autonomy, social dimensions of the work) caused by COVID-19 forced e-learning. Our concise conceptual elaboration might spark a debate on the possible unintended consequences of COVID-19 forced e-learning.

Streszczenie

W czasie pandemii COVID-19 uniwersytety na całym świecie pracują w „trybie awaryjnym"—radykalnie zmieniając dotychczasowy sposób prowadzenia zajęć dydaktycznych, przechodząc na edukację online i e-learning. W obliczu tych zmian wielu nauczycieli akademickich, którzy nie chcieli korzystać z e-learningu lub nie mieli odpowiednich kompetencji, zostało zmuszonych do nauczania za pośrednictwem urządzeń elektronicznych i Internetu. Warto zadać pytanie,

jak ten wymuszony pandemiczny e-learning wpłynie na motywację i jakość pracy nauczycieli akademickich. W tym konceptualnym artykule, czerpiąc inspirację z Teorii Charakterystyki Pracy—wpływowego modelu motywacji do pracy, chcielibyśmy omówić możliwe zmiany w zakresie sześciu motywacyjnych charakterystyk pracy nauczycieli akademickich spowodowane e-learningiem wymuszonym przez COVID-19 (utożsamianie się z wynikami zadań, znaczenie zadań, różnorodność wykorzystywanych w pracy umiejętności, zakres informacji zwrotnych z pracy, autonomia zawodowa i społeczne wymiary pracy). Zaprezentowane analizy konceptualne mogą być inspiracją do debaty na temat możliwych niezamierzonych konsekwencji wymuszonego pandemicznego e-learningu.

1 | INTRODUCTION

One of the results of the rapid proliferation of COVID-19 has been a significant change in the dominant modes of social life and communication. Under the regime adopted during the pandemic, business, science, cultural events, administration and education have moved online (Sułkowski, 2020). This is a change connected to the technical infrastructure and software but above all to the shaping of social patterns and communication. The transition to the online social environment is happening at a particularly rapid pace in education (Leonardi, 2020). Schools and universities around the world are going into 'emergency mode'—radically transforming education by switching to online, e-learning forms and launching e-learning and learning management systems (Hodges et al., 2020; Tian et al., 2020). Many academic institutions that were earlier reluctant to change their traditional paedagogical approach had no option but to shift entirely to online teaching-learning (Dhawan, 2020). The most serious consequence of COVID-19 for the education sector is the forced transition to distance e-learning—forced e-learning. Although the pandemic has affected academic work in many different ways, for clarity in this paper we focus only on one dimension of academic work: teaching.

E-learning might be defined as the learning process supported by digital electronic tools and media (Basak et al., 2018) or as the delivery of a learning, training or education programme by electronic means (Sangra et al., 2012). E-learning involves using technology as a teaching method (Wheeler, 2012) and to use traditional methods in a new online communication context. During pandemic e-learning teaching independently of teachers will, happens solely online, imposing serious changes in teacher—student traditional patterns of communication. Therefore, the important feature of forced e-learning we would like to highlight is that it is not only emergent but also an involuntary form of communication—e-learning was not chosen by academic teachers but was forced upon them by the COVID-19 situation. We have, therefore, defined *forced* e-learning as the urgent and unpredicted necessity for almost all universities in the world to move almost all activities related to teaching students to the online environment via computer-mediated communication and means of different information technology tools and platforms (e.g., Moodle, Zoom, Microsoft Teams, etc.). Similarly, Hodges et al. (2020) noticed that creating temporary access to an educational ecosystem in a state of crisis might be called 'emergency remote teaching' (ERT).

The pandemic has forced universities around the world to close, prompting a chaotic scramble to move online and find a way to somehow finish the semesters in a way resemblant to the 'do or die strategy'. This means that many academic teachers unwilling to use e-learning or without the appropriate competence to effectively use e-learning in their teaching activities were suddenly forced to move to a learning system via electronic devices and the Internet. Forced e-learning although necessary—it enables the educational process to be maintained, at the same time, might create unanticipated and often undesirable changes in academic teachers' job scope and content, influencing teachers' job motivation. Based on the assumption that successful teaching through e-learning depends heavily on the instructor' attitude, motivations and technical competence (Al-Fraihat et al., 2017; König et al., 2020) raises an important question: How might the unintended consequences of COVID-19 forced e-learning influence academic teachers' motivation and consequently their job performance? This question is important for academic teachers and the management of community and higher education institutions because besides the theoretical and practical implications outlined further in the text, simply asking it helps to ensure that the possibly unforeseen and undesirable effects of forced e-learning will not be overlooked or ignored.

Although one might say that looking for unintended consequences of e-learning on teacher motivation is an important endeavour, but there might possibly be an infinite number of these effects—which one should we take into account? Thankfully, we are not operating under complete uncertainty as there exist many empirically grounded theories of human work motivation. To this end, in our analysis, we are building on the theoretical framework of Hackman and Oldham's Job Characteristics Theory (JCT), which gives clear suggestions concerning which aspects of work should we concentrate on (Hackman & Oldham, 1975, 1976). JCT proposed five core motivational job characteristics: task identity, task significance, skill variety, feedback from the job and autonomy which together create a motivation potential of the job that determines the positive outcomes such as internal work motivation, positive attitudes towards the job and performance quality and quantity (Hackman & Oldham, 1975, 1976; Oldham & Hackman, 2005, 2010). In recent years, Oldham and Hackman (2010) have also put forward the idea that the social dimensions of work are the sixth important job characteristic, a suggestion which was omitted in their previous version of the JCT.

We refer to JCT as a theoretical lens for our conceptual analysis as it is amongst the most influential models of work motivation (for a detailed review see Miner, 2005) and was also previously proposed as a theoretical framework to analyse instructors motivations in an e-learning environment (Friedman et al., 2017). Although it is now almost 45 years since JCT was first introduced (Hackman & Oldham, 1975, 1976), it is still one of the most influential and practically useful theories of work motivation (Miner, 2005). The early metanalyses on JCT generally confirm the validity of the relationship between job characteristics and positive psychological and behavioural outcomes (see Fried & Ferris, 1987; Loher et al., 1985). Similarly, the most recent meta-analysis by Humphrey et al. (2007), generally confirmed the propositions of JCT—five core motivation characteristics were positively related to positive outcomes: job satisfaction, growth satisfaction, internal work motivation, organisational commitment and job involvement. Wegman et al. (2018) in metanalysis also confirmed relationships between job satisfaction and task identity, task significance, skill variety, feedback and autonomy. What is more interesting, is that the metanalysis of Wegman et al. (2018) also provides evidence that despite the ongoing discussions concerning the presumed changes in values that workers might place on job characteristics (e.g., propositions that current generations might value some job characteristics differently compared with employees 30 years ago, etc.) their metanalysis does not show significant changes in associations between five job characteristics and satisfaction from 1975 to 2011, and this might be seen as the further evidence supporting the robustness of JCT. Besides the fact that the main propositions of JCT seem to find empirical support (see Humphrey et al., 2007; Miner, 2005; Morgeson & Humphrey, 2006; Wegman et al., 2018) an important strength of JCT is that its theoretical propositions are easily understandable, and their variables are amenable to easy operationalisation (Hackman & Oldham, 1975; Morgeson & Humphrey, 2006). This might be a reason why 71 organisational behaviour experts surveyed by Miner (2005) assessed JCT's current importance at 5.6 (on a 7-point scale), validity on 4 (on a 5-point scale) and

usefulness at 5 (on a 5-point scale). Thus, in searching for the most important unintended consequences of forced e-learning, it seems reasonable for us to concentrate on core job characteristics as proposed by JCT.

Therefore, in this paper based on conceptual research methodology (see e.g., Gilson & Goldberg, 2015; Jaakkola, 2020), we would like to draw from the JCT to analyse the possible changes in job characteristics of academic teachers caused by the COVID-19 emergency forced e-learning and their consequences for teachers' motivation and performance. As Friedman et al. (2017) previously suggested, important e-learning challenges might lie in changes in teachers' job characteristics when teaching and instructing is moved into an online environment.

The investigation into the consequences of forced e-learning in terms of changes in JCT job characteristics is an important endeavour (see also Friedman et al., 2017) firstly because it is based on a solid theoretical background supported by sound empirical evidence, which allows for reliable conceptual analysis based on scientific reasoning driven by JCT assumptions. Second, our analysis might help to understand factors that might undermine the motivation and performance of academic teachers in the difficult times of the COVID-19 pandemic and possibly in future similar 'emergency e-learning' situations. Third, answering the question of how forced e-learning might influence academic teachers' job characteristics might help to elaborate more on possible long-term unintended consequences of COVID-19 forced e-learning for the future adoption of e-learning in higher education. For instance, if academic teachers experience a reduction in motivational job characteristics due to pandemic forced e-learning, this might build a negative attitude towards e-learning in general and undermine e-learning as a way of teaching for many years ahead. Fourth, our analysis might focus the attention of higher education authorities and policymakers on the fact that besides being a quick fix with obvious positive outcomes, forced e-learning might have also some unintended consequences for academic teacher's motivation.

To sum it up in the next sections, drawing from JCT—one of the most influential models of human work motivation, we would like to answer the question of how unintended consequences of COVID-19 forced e-learning might influence academic teachers' motivation and consequently their job performance? We aim to this by discussing the possible changes in six core job characteristics: task identity, task significance, skill variety, feedback, autonomy and social dimensions of the work, caused by COVID-19 force 'emergency' e-learning and its impact on academic teacher's job motivation.

2 | THE PROPOSED CHANGES IN JOB CHARACTERISTICS CAUSED BY COVID-19 FORCED E-LEARNING

Below we present six propositions in relation to possible changes in core job characteristics due to a pandemic forced e-learning. We are not claiming that for every academic teacher, we must observe proposed changes in job characteristics but we tried to prove compelling arguments that in general, it is more probable to observe proposed changes than the opposite.

2.1 | Proposition 1: COVID-19 forced e-learning decreases the task identity

Task identity is *'the degree to which the job requires completion of a "whole" and identifiable piece of work—that is, doing a job from beginning to end with a visible outcome'* (Hackman & Oldham, 1975, p. 161). The job of academic teachers in postsecondary education might be usually characterised by a high degree of task identity, as it has an obvious beginning and end determined by sequences of beginnings and ends of each lesson and the cyclic phases of the academic year. An academic teacher's job also usually allows them to complete the entire work from the beginning to an end with a visible outcome, that is, providing students with a full, coherent piece of knowledge and skills with visible results in the form of students' final evaluation (exams, graded essays, projects, etc.). However, the unexpected and unprepared introduction of forced e-learning might diminish the task identity of academic teachers.

Although it is possible to prepare and plan e-learning in such a form that the online academic courses mimic the life phases of typical stationary courses, thus, provide high task identity, for example, by synchronous e-learning on a permanent schedule, or by a clearly defined beginning and end of the online course as defined by academic year traditions in a given country. However, the unexpected need for e-learning forced by COVID-19 poses a serious challenge to task identity for many academic teachers not prepared for e-learning (see also Almaiah et al., 2020; Hanson, 2009; Trautwein, 2018).

First, because of the general uncertainty posed by COVID-19, since it might be not clear when the academic course will be finished and if the whole course programme will be completed from the beginning to the end in an online environment. Second, the lack of practice and training in the use of e-learning tools and techniques of many academic teachers forced to use e-learning might create a perception that they cannot provide students with the full, coherent piece of knowledge students need and that due to forced e-learning, they will need to compromise their standards, and as a consequence of e-learning, they are not doing their job fully from the beginning to the end. Third, the sudden need for e-learning might place contextual and organisation constraints on teachers' learning experience as even having high competences and experience in e-learning might not be sufficient to conduct all forms of academic learning via means of e-learning if this was not planned at the beginning of the course. Thus, this might create a perception amongst academic teachers that they are unable to provide students with all the necessary knowledge, for example, a medical school teacher might feel that they are unable to do their job fully as they have no access to patients or medical equipment (Rose, 2020) engineering teachers might feel that they are unable to do their job fully as they have no access to proper tools, nor able to carry out laboratory demonstrations (Samantray, 2020), language teachers might feel that they are unable to do their job as they cannot hear their students clearly via online transmissions (MacIntyre et al., 2020), etc. Finally, e-learning even in 'normal' times poses a challenge for teachers' identity as it moves their role from the bearer of knowledge to a facilitator of learning through technology (Hanson, 2009; Trautwein, 2018), emergent forced e-learning might be even more disturbing for the role of the academic teachers. Thus, taking into consideration the above-mentioned reflections, we expect that COVID-19 forced e-learning will diminish academic teachers' task identity.

Finally, we might ask how likely it is that contrast to our propositions, forced e-learning might actually increase task identity. When we assume that according to JCT, task identity is the degree to which the job requires the completion of a 'whole' and identifiable piece of work, a scenario in which imposing forced e-learning increases the task identity of academic seems rather unlikely.

2.2 | Proposition 2: COVID-19 forced e-learning decreases task significance

Task significance is *'the degree to which the job has substantial impact on the lives or work of other people—whether in the immediate organization or in the external environment'* (Hackman & Oldham, 1975, p. 161), and as such task significance is usually high in the job of academic teachers, whose work has an impact of young and adult people through helping them shape their lives and professional careers. Although task significance might be high amongst academic teachers in face-to-face higher education settings, it might be significantly diminished by COVID-19 forced e-learning. According to Dhawan (2020), the learning process cannot reach its full potential until students practice what they learn. Sometimes, online content is all theoretical and does not let students practice and learn effectively. According to the findings of König et al. (2020), teachers' self-efficacy during COVID-19 was significant for providing task differentiation and for providing feedback for students. These findings correspond with research that emphasises the importance of teacher competence in successfully attaining relevant educational goals (Kaiser, 2019). According to a UNESCO survey, many more teachers will need psychological support themselves if they are to meet the needs of their students (UNESCO, 2020). As mentioned in a discussion on task identity, the previously planned programmes of academic courses might be seriously disturbed by forced e-learning, as it might be impossible to complete the academic course syllabus in the planned form via e-learning. This disturbance

in course programmes might diminish not only the perception of task identity but also academic teachers' beliefs that their job has an important and significant impact on the students. Consequently, as the perception of the impact on the students diminishes, also the perception that the job has an impact on society as a whole, the people outside the university, might decrease. Academic teachers might feel that due to forced e-learning they are not influencing the students' knowledge, skills and abilities as strongly as during traditional face-to-face classes, something which was also noticed by Bawa (2016) and that they are unable to personally help students to develop their full capabilities, and as a result, students will be unable to fully use their education to contribute to their further role in society.

At the institutional level forced e-learning might also in some instances take the form of a more symbolic rather than rational performance (see Dobija et al., 2019, for rational vs. symbolic performance measurement discussion); by this, we mean that the rapid, emergent introduction of forced e-learning in the COVID-19 situation may aim to legitimise higher educational institutions (HEIs) to various stakeholders. Forced e-learning might be used by an educational institution as a part of a performance measurement system. Via the means of forced e-learning, HEIs might want to provide the performance metrics—the symbols, evidence to taxpayers, parents, governments and other stakeholders that they still are eligible to provide educational services, despite the critical COVID-19 pandemic circumstances. Thus, forced e-learning might create a lot of red tape for individual academic teachers, that is, regulations, formal rules and standards, which in the eyes of the academic teachers are excessive, complex, rigid and redundant (see Hattke et al., 2020). This kind of institutional approach to forced e-learning might further reduce task significance as academic teachers might realise that during COVID-19 forced e-learning, besides teaching they are also expected to comply with many irrelevant regulations that primarily serve as a way to provide legitimisation for e-learning and safeguard against possible stakeholders' claims. This is not to say that teachers are not providing high-quality education under forced e-learning, even in the situation when institution adopts forced e-learning in a symbolic, bureaucratic manner the individual teachers still might provide high-quality services to their student, nevertheless, such situation create tensions that might diminish academic teachers perception of their task significance. Forced e-learning used by educational institutions as a means to provide performance metrics might create conflicts between individual teachers aiming to educate students and institutions need for surviving. These conflicts between intuitional and individual levels might further diminish teachers' experience of the significance of their job. Taking this into consideration, we predict that the task significance of academic teachers might decrease as a result of COVID-19 forced e-learning.

Moreover, one might assume that forced e-learning might also have some positive effect on the task significance of academic teachers because students might be more grateful for online classes during the pandemic, as it enables them to get in touch with others and continue their education even under these unfavourable circumstances. However, in this situation, although teachers might feel that they are doing some good for their student's psychological well-being, at the same time, they might also experience the feeling that they are not actually doing their ordinary teaching tasks and educating students. Thus, even if we assume that forced e-learning might have some positive effects on task significance, we suggest that they will be relatively small in relation to the previously described decreases and in sum, we obtain a rather negative balance in task significance due to forced e-learning.

2.3 | Proposition 3: COVID-19 forced e-learning increases skill variety

Skill variety is '*the degree to which a job requires a variety of different activities to carry out the work, which involve the use of a number of different skills and talents of the employee*' (Hackman & Oldham, 1975, p. 161). Although the job of an academic teacher requires the individual teacher, to some degree, to apply a variety of skills, this is usually done at a rather modest level as academic teachers are highly specialised in their subject and during the course of their careers, they usually use a set of rather similar, specialised teaching skills and techniques. In some studies, weak IT skills of academics were the biggest barrier in successful e-learning programmes (Almaiah & Alyoussef,

2019). Vershitskaya et al. (2020) found that teachers were reluctant to accept and use the new technology. Also, Babinčáková and Bernard (2020) noticed that teachers claimed that they could be more efficient if they had knowledge, skills and proper equipment to run classes online. Forced e-learning might increase the degree of skills variety as it forces the use of a variety of different skills to perform different tasks to meet the demand and challenges of an unexpected shift from learning to e-learning (Alturise, 2020). Forced e-learning leads to an increase in the need to use a diverse set of skills, for example, using and configuring e-learning platforms, recording videos or podcasts, using electronic devices, creating online assessments, setting lights and sounds for proper recording, etc. But besides many technological skills, there are also others that are necessary to provide online courses: paedagogical skills, communication skills (presenting, moderating), enthusiasm so that the e-tutor can encourage and motivate the learners, engagement, involvement, empathy, patience and the ability to 'listen' to other people, radiating kindness and interest in the learners and their progress, a relation of trust and confidence (ELF, 2006). Moreover, also the students as digital natives, although familiar with technology and the Internet may have severe limitations in understanding how technology could support their learning. Therefore, they need constant guidance from their teachers-mentors until they become familiar with educational technologies (Ng, 2012). It is also widely discussed that there are learners not familiar with e-learning and, in some contexts, lacking even basic IT knowledge and skills (Kitching et al., 2015; Regmi & Jones, 2020). Thus, academic teachers need skills not only to be able to navigate their online activities but also to guide students through the maze of emergency online learning. Therefore, in general, COVID-19 forced e-learning leads to an increase in the use of cognitive skills to understand and apply the technology needed in e-learning amongst teachers. Thus, we expect that forced e-learning might lead to an increase in skill variety, that is, the degree to which a job requires a variety of different activities to be done and academic teachers will have more opportunities to use a number of their different skills and talents in a forced e-learning situation.

2.4 | Proposition 4: COVID-19 forced e-learning does not change job feedback

Feedback from the job itself is '*the degree to which carrying out the work activities required by the job results in the employee obtaining direct and clear information about the effectiveness of his or her performance*' (Hackman & Oldham, 1975, p. 162) and as such is usually limited in academic teachers' work as it is difficult to discern the direct, clear and immediate effects of teacher activities on student's learning since the process of learning takes both time and effort (see Kolari et al., 2008). Feedback information from the academic teacher's job most often takes the form of exam or assignment results but although they provide clear information, they are usually irregular and happen only a few times during the whole academic course, with final exams and students' teaching evaluations only made after the course has already ended. Moreover, student evaluations of teaching are often judged as inadequate and do not reflect real teaching effectiveness (Shevlin et al., 2000) and meta-analysis findings even suggest that students' evaluations of teaching and student learning are not related (Uttl et al., 2017). Although in some situations forced e-learning might allow for an increase in the amount of direct feedback about a teacher's performance from students, (e.g., an online feedback forms after every online meeting), from our point of view, it is unlikely that either the students or the teacher will make use of these possibilities. This is due to the increased workload that is being imposed on students and teachers under forced e-learning during the pandemic; consequently, neither the teachers nor the students will be motivated to invest even more additional effort in additional feedback activities that usually are not formally required. As there might be some teachers who take advantage of e-learning to get limited feedback about their performance we suggest that generally speaking, most teachers will not be motivated to prepare additional feedback forms and students will not be motivated to fill them in if they already have a higher workload and obligations related to forced e-learning. Moreover, even if teachers receive feedback from students, this is usually inaccurate and represents students' satisfaction but not necessarily teacher performance, that is, learning quality (Uttl et al., 2017). Thus, we predict that the level of feedback from

the job will not change as a result of forced e-learning and will stay at a low level. However, while there might be no changes in the feedback from the job itself, there might be changes in feedback from the students themselves but this will be discussed in social characteristics of work as this is not feedback from the job but rather from other people.

2.5 | Proposition 5: COVID-19 forced e-learning decreases autonomy

Autonomy, that is, '*the degree to which the job provides substantial freedom, independence, and discretion to the employee in scheduling the work and determining the procedures to be used in carrying it out'* (Hackman & Oldham, 1975, p. 162; see also Morgeson & Humphrey, 2006), is usually high in an academic teacher's job. Academic teachers have a moderate to a high degree of freedom and independence in planning their work methods, but most importantly, they usually have a high degree of autonomy in making decisions on how to best transfer knowledge to students. However, we predict that forced e-learning will decrease the academic teacher's job autonomy. Autonomy in selecting work methods will be lowered as academic teachers are forced to use e-learning, even if they do not agree that this is a good way to teach their courses. Although there are many online teaching methods and many traditional methods might be conducted via the means of computer-mediated communication nevertheless forced e-learning limits the opportunities available for academic teachers to choose what methods to use to complete their work as it restricts all direct face-to-face activities. This might be even more problematic when teachers are forced by their institutions to use one particular platform or software to conduct e-learning. For example, a teacher might prefer platform *X* whereas the employing institution subscribes to and forces teachers to use software *Y* for all e-learning activities as this is an official online platform for those institutions which allows performance measurements of teacher activities in an online environment to be made. Decision-making autonomy of academic teachers in job-related activities also might decrease as with forced e-learning and the HEI authorities might provide a set of more restricted rules and standards on how the e-learning activities must be conducted, for example, what methods of students' progress assessment to implement, how to conduct final online exams, etc. For example, a teacher might be forced to prepare videos available on the Internet even when he/she resits from putting his/her private image onto the Internet or teachers might prefer live lecture transmissions whereas the employer institution forced them to prepare asynchronous forms of e-learning such as blog or forum posts, etc. It is possible, however, that for some groups of teachers, forced e-learning as a computer-mediated communication might be an occasion to implement a few new teaching approaches and methods and thus increase their experience of autonomy. However, in our view, this might only be true for those teachers who are highly proficient in IT and communication technology, have a high level of online competences and are actively looking for different ways to use it, for example, the pool of teaching methods used on an e-learning platform might depend on knowledge of all the additional apps and plugins available for this platform Moreover, there are some teachers who strive to use the basic features of this software. In this context e-learning might be metaphorically seen as a foreign language and the autonomy of communication with students via the e-learning might depend on the teachers fluency in this, for many still new 'language'. In general, we predict that the experience autonomy of academic teachers' jobs will decrease during COVID-19 forced e-learning.

2.6 | Proposition 6: COVID-19 forced e-learning decreases the social dimensions of the work

Social dimensions of the work might be understood as '*the degree to which the work required dealing with other people, and the amount of feedback received from others'* (Oldham & Hackman, 2010, p. 467). Generally, there are many social dimensions to an academic teacher's job since academic teachers usually deal with other people (students,

colleagues) on a daily basis and also receive some amount of verbal and nonverbal performance feedback from students. However, unlike online learning, the classroom learning method is more real and students have an opportunity to debate, deliberate and discuss with their class teachers and friends (Radha et al., 2020). Also as we mentioned before, the direct feedback from the job of an academic teacher is limited, that is, the job activities do not result in an immediate visible effect that can be assessed, but there is some direct and indirect feedback from the students themselves. During face-to-face classes, students and teachers form some type of bonds; relationships develop and influence each other through behaviours, cognitions and emotions. Even if students are unwilling to provide personal verbal feedback to the teachers, there is always some form of nonverbal reciprocity, for example, teachers observe students' behaviour or emotions like boredom or excitement and this is an important form of feedback for teachers. This observation might be seen as a vital aspect of management and structured teaching process (Bennett & Barp, 2008). Students do not necessarily provide timely information and feedback about teachers' work performance; however, academic teachers in face-to-face learning usually have occasions to observe students' behaviour and a great deal of nonverbal feedback information is transferred. However, this type of nonverbal feedback from students is largely limited due to forced e-learning due to multiple factors. For instance, a lack of proper equipment, reluctance to turn on a camera at home (e.g., due to family interruptions), low quality of video transfers, etc. might lead to the impossibility to observe students behaviour and emotional expressions during e-learning courses; thus, the academic teacher is deprived of a lot of silent nonverbal feedback information. Muirhead (2004) points out that online instructors feel challenged to create collaborative learning atmospheres that generate true and meaningful learning. Frequently, this difference in perception results in a certain amount of apathy on the instructors' part to recognise students' emotions and feelings.

Forced e-learning also increases anonymity and decreases direct personal conversations and the need to deal with other people, thus, this might lower the quality of the interpersonal relationship between teachers and students, whereas participation in social interactions with other participants in the process of e-learning is essential for collaborative learning (Lu & Churchill, 2014; Puška et al., 2020). Some studies showed that the absence of traditional and familiar classroom conventions may result in additional uncertainty for fully online students (Shea & Bidjerano, 2010). Moreover, students face psychological problems during a crisis—there is stress, fear, anxiety, depression and insomnia that lead to a lack of focus and concentration (Almaiah et al., 2020; Dhawan, 2020; Kapasia et al., 2020) and which might further hinder meaningful interpersonal communication between teacher and students.

Forced e-learning might also lead to teachers receiving disturbing personal feedback from supervisors because supervisor feedback in times of forced e-learning might be based more on bureaucratic regulations needed for e-learning legitimisation, for example, time spent on e-learning platforms, numbers of conducted online assignments, using a recommended e-learning platform but not necessarily on the quality of e-learning. On the one hand, e-learning changes teaching styles that have an impact on work professionalism provides opportunities to assess students and evaluate each student's learning, and explore themselves efficiently (Minghat et al., 2020; Singh et al., 2005). On the other hand, Keeton (2004) noticed that educators must spend a lot of time creating effective strategies for giving online instructions. Therefore, in summing up our arguments, we predict that in general, COVID-19 forced e-learning will decrease the social dimension of the academic teachers' job.

3 | HOW THE CHANGES IN JOB CHARACTERISTICS MIGHT AFFECT ACADEMIC TEACHERS' MOTIVATION?

The main idea of JCT is that motivational job characteristics create the motivational potential of the job, the higher the degree of motivational job characteristics, the higher the motivational potential—the probability that the job will foster motivation and consequently better job performance. The suggested changes in academic teacher's job characteristics due to COVID-19 forced e-learning are summarised in Table 1.

TABLE 1 Summary of the proposed effect of COVID-19 forced emergency e-learning on characteristics of the academic teacher's job

Job characteristic	Description	Expected changes in job characteristics as a result of forced e-learning
Task identity	'the degree to which the job requires completion of a "whole" and identifiable piece of work—that is, doing a job from beginning to end with a visible outcome'	↓ Decrease
Task significance	'the degree to which the job has substantial impact on the lives or work of other people—whether in the immediate organization or in the external environment'	↓ Decrease
Skill variety	'the degree to which a job requires a variety of different activities to carry out the work, which involve the use of a number of different skills and talents of the employee'	↑ Increase
Feedback from the job	'the degree to which carrying out the work activities required by the job results in the employee obtaining direct and clear information about the effectiveness of his or her performance'	↓/↑ No changes
Autonomy	'the degree to which the job provides substantial freedom, independence, and discretion to the employee in scheduling the work and determining the procedures to be used in carrying it out'	↓ Decrease
Social dimensions of the work	'the degree to which the work required dealing with other people, and the amount of feedback received from others'	↓ Decrease

Note: Task identity, task significance, skill variety, feedback and autonomy, quotes from Hackman and Oldham (1975, pp. 161–162); social dimensions of the work quoted from Oldham and Hackman (2010, p. 467).

As Table 1 shows, the four job characteristics are expected to decrease, one stays the same and one increases. Therefore, as four core job characteristics might decrease as a consequence of the forced e-learning, this poses a serious challenge for academic teacher's motivation and consequently job performance. The one exception here is that there is a need for further discussion concerning skill variety, as we have proposed that skill variety might actually increase during forced e-learning, thus according to JCT this should have positive effects on academic teacher's motivations. However, this effect might depend upon the different attitudes of individual teachers towards online technology and e-learning. JCT made a prediction that the effects of an increase in motivation job characteristics on motivation might depend upon individual differences, specifically JCT proposes a set of moderators that might highlight the effects on job characteristics. First 'growth needs strength' (GNS)—the degree to which an individual values the opportunities for personal growth and development at work. Second, the level of job-relevant knowledge and skills possessed by the employee. Third, satisfaction from the job contexts—satisfaction from contextual aspects of the job such as managers, pay, co-workers and job security (see Hackman & Oldham, 1976; Oldham & Hackman, 2010; Loher et al., 1985; and see Miner, 2005 for discussion). These moderators might weaken or strengthen the effects of job characteristics on motivation and performance. These moderating predictions might be particularly important in the context of our analysis, as they suggest that to fully understand the possible effect of the increase in skills variety on academic teachers' motivations, we need to take in to account the individual differences. For example, the effects of an increase in skill variety on motivation might be positive for an academic teacher high in GNS in regard to technology and online communication, who values and seeks opportunities for personal growth and development in the area of IT and has a high level of e-learning-relevant knowledge. Whereas the same increase in skill variety might have a

weak or possibly even a negative effect on motivation amongst academic teachers low in GNS in relation to technology, who lack knowledge in the domain of IT technology and might avoid opportunities for IT development or see them as a threat. The authors of this article analysing communication processes at universities in which they work from the perspective of insiders and propose the recognition of the three dominant attitudes of academic teachers towards e-learning: (a) acceptance of blended learning as part of the education process, (b) rejection of online education and treating it only as exceptional 'emergency education' and (c) recognition of e-learning as a better form of education compared to traditional contact education. The first group is accustomed to remote learning tools and ready to accept that lectures can be given to a large extent online (both in the synchronous and asynchronous form). The second group is 'discouraged from online education', recognising it as a less effective, less activating and lower quality form or even one impossible to apply to the subject they teach. This group, on the one hand, might be seen as a side effect of not preparing the university in terms of competence, organisation and technology for the process of remote education. On the other hand, some academic courses might be difficult or impossible to conduct via means of distance learning. The third group is 'e-learning enthusiasts' who prefer distance learning over more traditional forms and want to stay online for the most part of their courses, perceiving online teaching and learning as more convenient and flexible. Although these propositions are speculative in nature, they might facilitate a better understanding of the possible different reactions to the increase in skill variety amongst academic teachers. According to moderating predictions of the JCT, teachers 'discouraged from online education', might be vulnerable an increase in skill variety caused by forced e-learning and might see it as overwhelmingly demanding. At the same time, however, a teacher who accepts blended learning as part of the education process, or even recognises e-learning as a better form of education compared to traditional contact education, might see an increase in skill variety as a motivational opportunity for development. However, even if we assume that an increase in skill variety might have some positive effects on the motivation of some proportions of academic teachers, there is still a decrease in four other important job characteristics—that in our view—create a total negative balance of 'gains and losses' that might decrease the overall motivational potential of the job and thus in performance.

4 | CONCLUSIONS—THE UNINTENDED CONSEQUENCES OF FORCED E-LEARNING

Many studies show that e-learning is not the most preferable way of studying (Bawa, 2016) and only 10% of students prefer an 'online only' form of teaching, while the blended formula is the most preferred, followed by face-to-face learning (EDUCAUSE, 2020). In a survey by Times Higher Education of 200 rectors from the top 1000 universities, only '*19 per cent think that digital technology will have eradicated physical lectures by 2030, compared with 65 percent who disagree*' (Matthews, 2018). It was also noticed that the combination of a traditional didactic process and online learning yields very good results (Stein, 2014). Other studies confirmed that the majority of students attending campus universities will prefer to attend classes and the more conventional face-to-face encounters (Guri-Rosenblit, 2005; San-Martín et al., 2020; Shea et al., 2017). But in this conceptual paper, we draw attention to the fact that the students are not the only ones who might face difficulties from forced e-learning, but also the academic teachers, who might face serious changes in motivational job characteristics, affecting their job motivation and performance. We propose that although forced e-learning is inevitable and necessary for the survival of educational institutions during the COVID-19 pandemic, changes in academic teachers' motivational job characteristics caused by forced e-learning might have some serious unintended consequences. Similarly, Dhawan (2020) suggests, that the challenge to educational institutions is not only finding new technology and using it but also reimagining its education, thereby helping students and academic staff who are seeking guidance for digital literacy. Based on our conceptual analysis, we suggest that the authorities of HEIs should not consider forced e-learning as a simple solution to all COVID-19 higher education problems, as although forced e-learning

might fix some problems, it might simultaneously cause others, that is, have unintended consequences for teachers' job motivation (see also McGregor & Doshi, 2020). We must be aware of these possible side-effects of forced e-learning and address them if we want to continue providing educational services at a high level during and after the COVID-19 pandemic. The quality of teaching, particularly during the forced e-learning depends on mutual supportive interactions between teachers and students driven by teacher motivations (Holzberger et al., 2014; Xiao & Wilkins, 2015). However, if forced e-learning does lead to a decrease in academic teachers' job motivation, this might cause dissatisfaction amongst students and, in turn, affect the HEIs as students might withdraw from the HEI they are not satisfied with. From a more global perspective, less motivated academic teachers might also lower their teaching standards, resulting in less educated members of society. Therefore, when implementing forced e-learning we should concentrate not only on the technological side of this endeavour (see König et al., 2020) and student motivation (see Hoffman, 2020) but also on possible changes in academic teachers' job characteristics and consequently, for teachers' motivation. To this end, our conceptual propositions might be seen as a starting point for a teacher attitudes survey which aims to check changes in core job characteristics resulting from forced e-learning. We see our propositions as of some practical importance as the usual employee opinion surveys are often designed to be detached from a broader theoretical framework whereas our propositions might guide HEI authorities and policymakers to use JCT assumptions in searching for valuable insights. Another practical recommendation that might be drawn from our propositions is addressed to the university policymakers who are responsible for preparing training of academic teachers during forced e-learning. Based on our reasonings, policymakers might focus on providing training in IT-related skills, abilities and knowledge (KSA) areas that have the highest potential to have an impact on the core job characteristics of academic teachers. This might quite easily be done by simply posing the question: 'Will the training in this technical KSA influence the teachers' core job characteristics or not?'

Forced e-learning might also have more long-term negative consequences in the form of hindering the progress of the implementation of e-learning across higher education. If forced e-learning is, as we predict, related to a decrease in JCT's motivational job characteristics, it might create a generally negative experience related to e-learning amongst many academic teachers. This negative experience might further influence academic teachers' decisions to not adopt e-learning in their further individual learning activities and also to look unfavourably at any education policy changes that promote the use of e-learning. When we also take into consideration that forced e-learning for many academic teachers 'discouraged from e-learning' might be the first serious practical experience with e-learning in their professional career and this first experience due to the negative effect of forced e-learning on motivational job characteristics might be negative, this might create a long-lasting negative memory, the stigma on e-learning: *E-learning? Never again, I was forced to use it once and it sucks!*

One might suggest that forced e-learning during the COVID-19 pandemic is a great opportunity to show the advantages of e-learning and to 'convince the unconvinced' that e-learning in higher education is possible and that this will foster the transformation of higher education into more e-driven (e-platform, e-learning, e-meetings, etc.). Others presented online learning as a panacea in the time of the COVID-19 crisis (Dhawan, 2020). However, in this paper, we predict that instead of showing advantages and fostering e-learning, COVID-19 forced e-learning might instead provide many negative experiences with e-learning, thus creating barriers for its further development across academia. First, forced e-learning might lead to a decrease in motivational job characteristics for academic teachers, second, it might expose teachers to many e-learning disadvantages exaggerated by the extraordinarily and disturbing COVID-19 situation. However, many teachers, particularly amongst the e-learning opposers, may fail to recognise that the problems with e-learning they have experienced during forced e-learning were not caused only by e-learning disadvantages but by the fact that this whole experience was forced upon them unexpectedly without necessary preparations in turbulent and chaotic times (see also Hodges et al., 2020).

As readers might have the impression that we paint rather a negative picture of e-learning, we would lie to make it clear that we do not take the position that forced pandemic e-learning has only negative effects on teachers. As we mentioned before, pandemic forced e-learning is necessary, but we would like to stress that it might

have some unintended consequences we should not overlook. It is also important to notice that not all possible positive sides of e-learning might be related to teacher motivation. As we mentioned in the introduction, there are possibly infinite numbers of different effects of forced e-learning on teachers both positive and negative, but not all these effects necessarily affect job motivation. For the purposes of clarity, therefore, we should state that in this paper, our reasoning was built upon the JCT framework which gave us clear suggestions regarding what factors should be taken into consideration and this allowed us to concentrate on six core job characteristics regarded as the most important predictors of teachers' job motivation. Other effects of forced e-learning might exist, for example, positive emotions, decrease in boredom, increase in overall well-being, more comfortable working conditions, teacher access to new IT infrastructure, etc. However, all this is related to different constructs, states or behaviours than core job characteristics as, for example, well-being, emotional happiness, feeling of work comfort from the environment, thus according to the JCT framework, they have minimal potential to affect teacher job motivation.

We suggest that the future of e-learning implementation in higher education will depend on how we will cope with the challenges posed by COVID-19 forced e-learning on academic teachers' job characteristics. We have highlighted that based on JCT—one of the most influential contemporary theories on work motivation, the biggest challenge is to keep a high degree of task identity, task significance, autonomy and social dimensions in the academic teacher's job. Second, it is important to clearly disentangle which changes in the academic teacher's job characteristics resulting from COVID-19 forced e-learning come from 'COVID' and which come from 'e-learning', to avoid confusion around the consequences of e-learning for academic teachers' job. We hope that our concise conceptual elaboration presented in this paper inspires further debate on the possible consequences of COVID-19 forced e-learning for the academic teacher's job motivational potential. Our discussion might also raise the attention of HEI authorities and the academic teachers' community about a possible side-effect of COVID-19 forced e-learning, thus, helping to craft strategies and interventions that might diminish the possible negative influence of forced e-learning on academic teacher's motivation, performance and attitudes towards e-learning in general.

CONFLICT OF INTEREST

We declared no conflict of interest for this study.

DATA AVAILABILITY STATEMENT

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

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REFERENCES

Al-Fraihat, D., Joy, M., & Sinclair, J. (2017). Identifying success factors for e-learning in Higher Education. In *12th International Conference on e-Learning*. Orlando, FL.

Almaiah, M. A., Al-Khasawneh, A., & Althunibat, A. (2020). Exploring the critical challenges and factors influencing the E-learning system usage during COVID-19 pandemic. *Education and Information Technologies*, *25*(6), 5261–5280. https://doi.org/10.1007/s10639-020-10219-y

Almaiah, M. A., & Alyoussef, I. Y. (2019). Analysis of the effect of course design, course content support, course assessment and instructor characteristics on the actual use of E-learning system. *IEEE Access*, *7*, 171907–171922. https://doi.org/10.1109/ACCESS.2019.2956349

Alturise, F. (2020). Difficulties in teaching online with blackboard learn effects of the COVID-19 pandemic in the western branch colleges of Qassim University. *International Journal of Advanced Computer Science and Applications*, *11*(5), 74–81. https://doi.org/10.14569/IJACSA.2020.0110512

Babinčáková, M., & Bernard, P. (2020). Online experimentation during COVID-19 secondary school closures: Teaching methods and student perceptions. *Journal of Chemical Education*, *97*(9), 3295–3300. https://doi.org/10.1021/acs.jchemed.0c00748

Basak, S., Wotto, M., & Belanger, P. (2018). E-learning, M-learning and D-learning: Conceptual definition and comparative analysis. *E-Learning and Digital Media*, *15*(4), 191–216. https://doi.org/10.1177/2042753018785180

Bawa, P. (2016). Retention in online courses: Exploring issues and solutions—A literature review. *SAGE Open*, 1–11, https://doi.org/10.1177/2158244015621777

Bennett, S., & Barp, D. (2008). Peer observation—A case for doing it online. *Teaching in Higher Education*, *13*(5), 559–570. https://doi.org/10.1080/13562510802334871

Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal of Educational Technology Systems*, *49*(1), 5–22. https://doi.org/10.1177/0047239520934018

Dobija, D., Górska, A. M., Grossi, G., & Strzelczyk, W. (2019). Rational and symbolic uses of performance measurement: Experiences from Polish universities. *Accounting, Auditing and Accountability Journal*, *32*(2), 750–781. https://doi.org/10.1108/AAAJ-08-2017-3106

EDUCAUSE. (2020). *Horizon report*. https://library.educause.edu/-/media/files/library/2020/3/2020_horizon_report_pdf.pdf?la=en&hash=08A92C17998E8113BCB15DCA7BA1F467F303BA80

E-learning Facilitators (ELF). (2006). *The roles of e-learning facilitators. Skills, competencies and training.* https://conseil-recherche-innovation.net/download/ELF/ELF%20-%20facilitators%20roles%20report%20-%20Greta%20du%20Velay.pdf

Fried, Y., & Ferris, G. R. (1987). The validity of the job characteristics model: A review and meta-analysis. *Personnel Psychology*, *40*, 287–322. https://doi.org/10.1111/j.1744-6570.1987.tb00605.x

Friedman, B. A., Bonzo, S., & Ketcham, G. F. (2017). Instructor satisfaction and motivation in online teaching environments: A job design framework. *The BRC Academy Journal of Education*, *6*(1), 41–56. https://doi.org/10.15239/j.brcacadje.2017.06.01.ja02

Gilson, L., & Goldberg, C. B. (2015). Editors' comment: So, what is a conceptual paper? *Group & Organization Management*, *40*(2), 127–130. https://doi.org/10.1177/1059601115576425

Guri-Rosenblit, S. (2005). "Distance education" and "e-learning": Not the same thing. *Higher Education*, *49*(4), 467–493. https://doi.org/10.1007/s10734-004-0040-0

Hackman, J. R., & Oldham, G. R. (1975). Development of the job diagnostic survey. *Journal of Applied Psychology*, *60*(2), 159–170. https://doi.org/10.1037/h0076546

Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance*, *16*(2), 250–279. https://doi.org/10.1016/0030-5073(76)90016-7

Hanson, J. (2009). Displaced but not replaced: The impact of e-learning on academic identities in higher education. *Teaching in Higher Education*, *14*(5), 553–564. https://doi.org/10.1080/13562510903186774

Hattke, F., Hensel, D., & Kalucza, J. (2020). Emotional responses to bureaucratic red tape. *Public Administration Review*, *80*, 53–63. https://doi.org/10.1111/puar.13116

Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020). The difference between emergency remote teaching and online learning. *EDUCAUSE Review*. https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning

Hoffman, B. (2020). Enhancing motivation for online learning during COVID-19. *Psychology Today*. https://www.psychologytoday.com/us/blog/motivate/202005/enhancing-motivation-online-learning-during-covid-19

Holzberger, D., Philipp, A., & Kunter, M. (2014). Predicting teachers' instructional behaviors: The interplay between self-efficacy and intrinsic needs. *Contemporary Educational Psychology*, *39*(2), 100–111. https://doi.org/10.1016/j.cedpsych.2014.02.001

Humphrey, S. E., Nahrgang, J. D., & Morgeson, F. P. (2007). Integrating motivational, social, and contextual work design features: A meta-analytic summary and theoretical extension of the work design literature. *Journal of Applied Psychology*, *92*(5), 1332–1356. https://doi.org/10.1037/0021-9010.92.5.1332

Jaakkola, E. (2020). Designing conceptual articles: Four approaches. *AMS Review*, *10*, 18–26. https://doi.org/10.1007/s13162-020-00161-0

Kaiser, G. J. K. (2019). Competence measurement in (mathematics) teacher education and beyond: Implications for policy. *Higher Education Policy*, *32*, 597–615. https://doi.org/10.1057/s41307-019-00139-z

Kapasia, N., Paul, P., Roy, A., Saha, J., Zaveri, A., & Mallick, R. (2020, January). Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information.

Keeton, M. T. (2004). Best online instructional practices: Report of phase I of an ongoing study. *Journal of Asynchronous Learning Networks*, *8*(2), 75–100.

Kitching, F., Winbolt, M., MacPhail, A., & Ibrahim, J. E. (2015). Web-based social media for professional medical education: Perspectives of senior stakeholders in the nursing home sector. *Nurse Education Today*, 35, 1192–1198. https://doi.org/10.1016/j.nedt.2015.05.013

Kolari, S., Savander-Ranne, C., & Viskari, E. L. (2008). Learning needs time and effort: A time-use study of engineering students. *European Journal of Engineering Education*, 33(5), 483–498. https://doi.org/10.1080/03043790802564046

König, J., Jäger-Biela, D. J., & Glutsch, N. (2020). Adapting to online teaching during COVID-19 school closure: Teacher education and teacher competence effects among early career teachers in Germany. *European Journal of Teacher Education*, 43(4), 608–622. https://doi.org/10.1080/02619768.2020.1809650

Leonardi, P. (2020). You're going digital-now what? *MIT Sloan Management Review*, 61(2), 28–35.

Loher, B. T., Noe, R. A., Moeller, N. L., & Fitzgerald, M. P. (1985). A meta-analysis of the relation of job characteristics to job satisfaction. *Journal of Applied Psychology*, 70(2), 280–289. https://doi.org/10.1037/0021-9010.70.2.280

Lu, J., & Churchill, D. (2014). The effect of social interaction on learning engagement in a social networking environment. *Interactive Learning Environments*, 22(4), 401–417. https://doi.org/10.1080/10494820.2012.680966

MacIntyre, P. D., Gregersen, T., & Mercer, S. (2020). Language teachers' coping strategies during the Covid-19 conversion to online teaching: Correlations with stress, wellbeing and negative emotions. *System*, 94(October), 102352. https://doi.org/10.1016/j.system.2020.102352

Matthews, D. (2018). How will technology reshape the university by 2030? Results from THE's university leaders survey. *Times Higher Education*. https://www.timeshighereducation.com/features/how-willtechnology-reshape-university-2030

McGregor, L., & Doshi, N. (2020). How to Keep Your Team Motivated, Remotely. *Harvard Business Review*. https://hbr.org/2020/04/how-to-keep-your-team-motivated-remotely

Miner, J. B. (2005). *Organizational Behavior: Essential theories of motivation and leadership*. (J. B. Miner, Ed.). Routledge.

Minghat, A. D., Ana, A., Purnawarman, P., Saripudin, S., Muktiarni, M., Dwiyanti, V., & Mustakim, S. S. (2020). Students' perceptions of the twists and turns of E-learning in the midst of the Covid 19 outbreak. *Revista Romaneasca Pentru Educatie Multidimensionala*, 12(1Sup2), 15–26. https://doi.org/10.18662/rrem/12.1sup2/242

Morgeson, F. P., & Humphrey, S. E. (2006). The Work Design Questionnaire (WDQ): Developing and validating a comprehensive measure for assessing job design and the nature of work. *Journal of Applied Psychology*, 91(6), 1321–1339. https://doi.org/10.1037/0021-9010.91.6.1321

Muirhead, B. (2004). Encouraging interaction in online classes. *International Journal of Instructional Technology and Distance Learning*, 1(6). http://itdl.org/Journal/Jun_04/article07.htm

Ng, W. (2012). Can we teach digital natives digital literacy? *Computers & Education*, 59, 1065–1078. https://doi.org/10.1016/j.compedu.2012.04.016

Oldham, G. R., & Hackman, J. R. (2005). How job characteristics theory happened. In M. A. H. K. G. Smith (Ed.), *Great minds in management: The process of theory development* (pp. 151–170). Oxford University Press.

Oldham, G. R., & Hackman, J. R. (2010). Not what it was and not what it will be: The future of job design research. *Journal of Organizational Behavior*, 31(2–3), 463–479.

Puška, A., Puška, E., Dragić, L., & Maksimović, A. (2020). Students' satisfaction with E-learning platforms in Bosnia and Herzegovina. *Technology, Knowledge and Learning*, 26(1), 173–191. https://doi.org/10.1007/s10758-020-09446-6

Radha, R., Mahalakshmi, K., Kumar, V. S., & Saravanakumar, A. R. (2020). E-learning during lockdown of Covid-19 pandemic: A global perspective. *International Journal of Control and Automation*, 13(4), 1088–1099.

Regmi, K., & Jones, L. (2020). A systematic review of the factors—Enablers and barriers—Affecting e-learning in health sciences education. *BMC Medical Education*, 20(1), 1–18. https://doi.org/10.1186/s12909-020-02007-6

Rose, S. (2020). Medical student education in the time of COVID-19. *JAMA Network*, 323(21), 2131–2132. https://doi.org/10.1001/jama.2020.5227

Samantray, P. (2020). *Teaching learning process in engineering education post-pandemic*. Digital Learning.

Sangra, A., Vlachopoulos, D., & Cabrera, N. (2012). Building an inclusive definition of E-learning: An approach to the conceptual framework. *International Review of Research in Open and Distance Learning*, 13(2), 145–159. https://doi.org/10.19173/irrodl.v13i2.1161

San-Martín, S., Jiménez, S., Rodríguez-Torrico, P., & Piñeiro-Ibarra, I. (2020). The determinants of teachers'continuance commitment to e-learning in higher education. *Education and Information Technologies*, 25, 3205–3225. https://doi.org/10.1007/s10639-020-10117-3

Shea, N. O., Verzat, C., Verzat, C., Shea, N. O., Jore, M., Verzat, C., & Jore, M. (2017). Teaching proactivity in the entrepreneurial classroom Entrepreneurship & Regional Development Teaching proactivity in the entrepreneurial classroom. *Entrepreneurship & Regional Development*, 29(November), 1–39. https://doi.org/10.1080/08985626.2017.1376515

Shea, P., & Bidjerano, T. (2010). Learning presence: Towards a theory of self-efficacy, self-regulation, and the development of a communities of inquiry in online and blended learning environments. *Computers & Education*, 55, 1721–1731. https://doi.org/10.1016/j.compedu.2010.07.017

Shevlin, M., Banyard, P., Davies, M., & Griffiths, M. (2000). The validity of student evaluation of teaching in higher education: Love me, love my lectures? *Assessment & Evaluation in Higher Education*, *25*(4), 397–405. https://doi.org/10.1080/713611436

Singh, G., O'Donoghue, J., & Worton, H. (2005). A study into the effects of e learning on higher education. *Journal of University Teaching and Learning Practice*, *2*(1), 14–24. https://ro.uow.edu.au/cgi/viewcontent.cgi?article=1020&context=jutlp

Stein, J. G. C. R. (2014). *Essentials for blended learning*. Routledge.

Sułkowski, Ł. (2020). Covid-19 pandemic; recession, virtual revolution leading to de-globalization? *Journal of Intercultural Management*, *12*(1), 1–11. https://doi.org/10.2478/joim-2020-0029

Tian, F., Zheng, Q., & Chao, K. (2020). Current and future of technologies and services in smart e-learning. *Service Oriented Computing and Applications*, *14*, 1–3. https://doi.org/10.1007/s11761-020-00288-9

Trautwein, C. (2018). Academics' identity development as teachers. *Teaching in Higher Education*, *23*, 995–1010.

UNESCO. (2020). *Policy brief: Education during COVID-19 and beyond*. https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2020/08/sg_policy_brief_covid-19_and_education_august_2020.pdf

Uttl, B., White, C. A., & Gonzalez, D. W. (2017). Meta-analysis of faculty's teaching effectiveness: Student evaluation of teaching ratings and student learning are not related. *Studies in Educational Evaluation*, *54*, 22–42. https://doi.org/10.1016/j.stueduc.2016.08.007

Vershitskaya, E. R., Mikhaylova, A. V., Gilmanshina, S. I., Dorozhkin, E. M., & Epaneshnikov, V. V. (2020). Present-day management of universities in Russia: Prospects and challenges of e-learning. *Education and Information Technologies*, *25*(1), 611–621. https://doi.org/10.1007/s10639-019-09978-0

Wegman, L. A., Hoffman, B. J., Carter, N. T., Twenge, J. M., & Guenole, N. (2018). Placing job characteristics in context: Cross-temporal meta-analysis of changes in job characteristics since 1975. *Journal of Management*, *44*(1), 352–386. https://doi.org/10.1177/0149206316654545

Wheeler, S. (2012). e-Learning and digital learning. In N.M. Seel (Ed.), *Encyclopedia of the Sciences of Learning* (pp. 1109–1111). Boston: Springer. https://doi.org/10.1007/978-1-4419-1428-6_431

Xiao, J., & Wilkins, S. (2015). The effects of lecturer commitment on student perceptions of teaching quality and student satisfaction in Chinese higher education. *Journal of Higher Education Policy and Management*, *37*(1), 98–110. https://doi.org/10.1080/1360080X.2014.992092