COVID-19 Impacts on Teaching and Learning: A Collaborative Autoethnography by Two Higher Education Lecturers

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The phenomenon of the Covid-19 lockdown in New Zealand during 2020 enabled two Higher Education (HE) lecturers to reflect on grappling with new technologies, changes in lifestyle and livelihoods, and the impact that social isolation had on Bachelor of Sport and Recreation (BSR) students as they shifted to emergency "remote" teaching and learning. This paper presents personal narratives, authored collaboratively by lecturers Anna and Hana (pseudonyms), engaging with a socio-ecological systems framework. The systems framework presents a layered, multi-faceted approach to reveal the complexity of the impacts of Covid-19 on HE teaching and learning. In-depth analysis of the microsystems, mesosystems, and macrosystems making up their systems framework, serve to highlight specifically how Anna and Hana interpreted their own and their university students' responses to the unprecedented measures imposed on their lifestyle (home), livelihood (employment), and HE experience (online learning). By applying an autoethnographic methodology, this paper acknowledges and celebrates the lecturers' subjectivity, emotionality, and influence on the presented research. As educators, their critical self-reflections are authentic and timely, expressing key concerns and considerations, while searching for optimal solutions to deliver equal and equitable learning opportunities for all students. A unique characteristic of this phenomenon was the inability (due to COVID-19 restrictions) of students who learn through practical contexts, to enact kinesthetically in a meaningful manner, and the subsequent implications on their learning. This paper presents a snippet of the lecturers' reflective practice, co-constructed from recollections, memories, and anecdotal evidence, against a backdrop of current Covid-19 research on the effects of the pandemic, on teaching and learning globally. Whilst this paper sheds light on the experiences of two HE lecturers during the COVID-19 lockdown, a collection and analysis of "student" voice, is recommended. This paper concludes that a collaborative autoethnographic approach during exceptional circumstances, such as natural disasters, pandemics, and other disruptive situations, provides an opportunity for professional self-observation and self-reflective practice that is mutually beneficial, and empowering. These insights provide shared critical knowledge to sustain achievement while averting negative impacts, for students and lecturers alike.

Keywords: autoethnography, COVID-19, self-reflection, teaching and learning, technology, socio-ecological, wellbeing, lockdown

INTRODUCTION

The Covid-19 pandemic brought extraordinary disruption to Higher Education (HE) institutions, locally and globally. In New Zealand, the Coronavirus pandemic struck in full force during March 2020, affecting the day-to-day delivery of programmes of study, in a manner not previously witnessed since World War I and II. The necessity to impose carte blanche restrictions on every individual's access and connection with their educational programmes, at all levels, was uncompromising. Justification for these severe measures, as cited by New Zealand's Prime Minister, included limiting travel, advice on mass gatherings, and guidelines for student attendance and deferment. By March 25, 2020, full lockdown (except for essential workers) was enforced with campuses closing seemingly overnight (Ministry of Education, 2020a). Students were forced to remain within their home bubble (immediate family) and to prepare for online learning. When venturing out for the recommended 1-h of exercise per day, wearing a face mask and social distancing were mandatory.

Educational establishments were closed for on-campus activity, and lecturers were advised to provide "blended and online learning opportunities", and to implement track and trace options, social distancing, and high levels of hygiene. In the context of the Bachelor of Sport and Recreation (BSR) within an Auckland university, these restrictions forced all lectures to be delivered online, principally through the university's online learning management system (Blackboard) and two intranet platforms: Panopto and Collaborate. This unexpected shift to remote teaching was complicated by the fact that "emergency remote teaching" in response to a crisis bears little resemblance to deliberately designed online teaching and learning (Scherman, 2020).

In New Zealand, government consultation with the ministries of Health and Education shaped the parameters of the level 4 lockdown. Recommendations from the Ministries of Health (2020a, 2020b) and Education (2020b) were formulated in line with overseas countries experiencing similar coronavirus community transmission. While the number of infectious cases in New Zealand was small with less than 1,500, the decision to "go hard and to go fast" (Prime Minister's Covid-19 daily announcement, March 23, 2020) had unexpected and unprecedented impacts on teaching and learning at all levels of the education sector (Ministry of Education, 2020c; Ministry of Education, 2020d).

We adopt a collaborative autoethnographic approach to enable critical reflection on the experiences of teaching in higher education. Autoethnography enables the researcher to reflect on their personal experience through self-reflection. In addition, a collaborative autoethnographic approach ensures reflexivity (Delamont, 2009). The process of reflexivity occurred through each lecturer reading the other lecturer's accounts of their experience and commenting on suitability for inclusion. Thematic analysis was undertaken through this familiarization (Braun and Clarke, 2006). The socio-ecological literature (Bronfenbrenner 1979; Voydanoff, 2007; Pocock et al., 2012) provided opportunity for the authors to triangulate data with their conceptual understanding of their, and others' experiences, in the higher education environment (Wilson et al., 2020). Deep, critical, self-reflective practice at this time, enabled increased compassion with the wider community that both the lecturers and their students were exposed to during Covid-19 lockdowns.

This article proposes a conceptual framework (**Figures 1**, **2**) to help make sense of grappling with new technologies, changes in lifestyle and livelihoods, and the impact that social isolation and increased workload had on two Higher Education lecturers as they shifted to emergency "remote" teaching and learning.

The article falls into seven sections. In the first, we discuss the significance of Anna and Hana's self-reflective practice against international literature that addresses the impacts of the Covid-19 pandemic on global education. For example, studies situated in Canada, United Kingdom, India, and China provide diverse perspectives while revealing commonalities of challenge and opportunity during the forced move to online learning. In the second, we briefly review the current empirical research on the impacts of new technologies on teaching and learning in higher education settings. In the third section, we outline a conceptual approach to lecturer higher education experiences, lifestyle (home) and livelihood (employment) (**Figure 1**). Our central goal is not to make an empirical contribution but to provide insights and recommendations regarding the plight HE lecturers face, and it is assumed many other educators face, when seeking to optimize remote online learning while themselves, concurrently are learning new technologies and IT systems. In the fourth, we consider a modification of the conceptual framework to best fit the exceptional circumstances generated by the Covid-19 pandemic. In the fifth, we set out the demands and resources (**Figure 2**) that arise in each of the domains of higher education experience (new technologies, remote online teaching, and learning), lifestyle (home bubble, work-home balance), and livelihood (employment, workload), on lecturer wellbeing. In the sixth we argue that the four factors of time, space, power, and life stage are important elements of a "socio-ecological system". Section seven considers the socio-political factors influencing demands, resources, and wellbeing during a global pandemic. We conclude our article by summarizing our key concerns and considerations. Throughout the article, we draw on self-observation, self-reflection, memories, and anecdotal evidence to argue for a stronger analytical framework to improve understanding about the relationship between higher education experiences, lifestyle, and livelihood, and how they relate, interrelate, connect, interconnect, and intersect within a "socio-ecological" framework, during unprecedented circumstances. We note that future research on student lifestyle, livelihood and HE experience during pandemic times would further enhance teaching and learning pedagogical practice in HE institutions.

IMPACTS OF COVID-19 PANDEMIC ON GLOBAL EDUCATION

Lockdown and social distancing measures due to the COVID-19 pandemic have led to closures of schools, training institutions and

higher education facilities in most countries (Pokhrel and Chhetri, 2021). Education systems and educators have been forced to adopt "Emergency Education", transitioning from traditional face-to-face learning pedagogies to remote virtual platforms, despite the challenges posed to both educators and the learners. This forced remote teaching and learning, viewed by Dhawan (2020) as paving the way for introducing digital learning, represents a paradigm shift in the way educators deliver quality education. Challenges inherent in sudden, reactive rather than anticipated and planned e-learning responses to a global pandemic, include accessibility, affordability, flexibility, learning pedagogy, life-long learning, and educational policy (Murgatrotd, 2020). While many countries have substantial issues with a reliable internet connection, others report an inability to afford online learning devices, sufficient physical workspace, or a lack of parental guidance (more so for younger learners). Petrie (2020) identified that the best practices for online home schooling are yet to be explored, and that many students learning at home had undergone psychological and emotional distress and were unable to engage in online learning productively.

Another challenge identified by recent publications on the impacts of Covid-19 on teaching and learning globally, include providing comparable assessments and examination conditions to the pre-Covid-19 face-to-face provision. Research by Sintema (2020) reported that reduced contact hours for learners and a lack of consultation with teachers when facing difficulties in learning/understanding, resulted in lowered performance on year-end examinations and internal assessment outcomes. Online student assessments were documented as requiring a lot of trial and error, with uncertainty and confusion occurring among the teachers, parents, and students. It was found that appropriate measures to check plagiarism was yet to be put in place in many schools and institutions, mainly due to the large student populations involved. The lockdown of schools and universities has not only affected internal assessments and examinations for the main public qualifications like General Certificate of Secondary Educations (GCSE), but A levels have also been cancelled for the entire cohort in the United Kingdom. The United Nations (2020) anticipated that a postponement or complete cancellation of the entire examination system was possible, depending on the duration of the Covid-19 lockdowns, globally. For example, due to the Covid-19 outbreak and national lockdown in India, various entrance-level examinations (such as BITSAT 2020, NATA 2020, CLAT 2020, MAT 2020, ATMA 2020) were postponed/rescheduled (Pokhrel and Chhetri, 2021).

Current literature indicates there are economic, social, and psychological repercussions on the life of students while they are away from their normal schedule of study (Pokhrel and Chhetri, 2021). Increased and unstructured time spent on online learning platforms exposes children, adolescents, and young adults to potentially harmful and violent content as well as greater risk of cyberbullying. School closures and strict containment measures mean more families have been relying on technology and digital solutions to stay engaged in learning, be entertained, and remain connected to the outside world. Substantial increases

of time spent on virtual platforms is reported to impact on domestic violence and child abuse as the perpetrators are often at home or in the neighborhood, which is a mental distraction and threat to the learners (Ravichandran and Shah, 2020).

From a positive perspective, the COVID-19 pandemic has forced governments and educational policy makers, at all levels of education, to take immediate action to optimize implementing e-learning systems during the Covid-19 global pandemic. This urgency has forged a strong connection between educators and their communities, especially with parents who have, without any training, become educators *in situ*. The use of online platforms such as Google Classroom, Zoom, virtual learning environment and social media and various group forums are being explored and tried for teaching and learning, to continue education through digital platforms. The impacts of Covid-19 on HE teaching and learning in 2020 precipitated educators (locally and globally) to develop creative initiatives to overcome the limitations of virtual teaching. For example, lecturers needed to actively collaborate with one another at an institutional level to improve online teaching methods. There were and still are incomparable opportunities for cooperation, creative solutions, and a willingness to learn from others by trying new tools as educators, parents and students sharing similar experiences (Doucet et al., 2020). While online learning has provided the opportunity to teach and learn in innovative ways, many inequities have emerged from this forced shift to remote teaching and learning. As of July 2020, 98.6% of learners worldwide were affected by the pandemic, representing 1.725 billion children and youth, from pre-primary to higher education, in 200 countries (United Nations, 2020). Therefore, making learning possible and available from home schooling has been the need of the hour at all levels of teaching and learning.

Current Research on the Impact of New Technologies on Learning

Integral to this research is an examination of the theoretical perspective upon which the article was based: a socio-ecological perspective. The implications of being a university lecturer whilst living through the overarching impacts of the Covid-19 lockdown were that "normal" face-to-face teaching and learning was speedily replaced with remote online teaching, and a new way of engaging with the university's Information and Communication Technology (ICT) systems. A body of empirical work now exists on the relationships between new technologies and teaching and learning (for recent edited volumes see OECD's Programme for International Student Assessment (PISA) surveys, 2000, 2003, 2006); Pew Research Centre, 2011; SMART Technologies International Society for Technology in Education (ISTE), n.d.). This body of knowledge is not new to pandemic times. Much of the existing work has recognised strengths; it frequently applies multidisciplinary perspectives, multiple methods, and a cross-national perspective which we would expect to take up in lockdown times (Kong and Song, 2014; Zimlich, 2015; Bhakta and Dutta, 2016). Some studies draw attention to the role of the

government, social norms, and future directions (Buckenmeyer, 2010; DeCoito and Richardson, 2018; Raja and Nagasubramani, 2018). There is considerable agreement on some issues: for example, the positive effects of digital devices to enhance and motivate learning for more able students, increased opportunity for self-directed and independent teacher and student learning, flexibility of learning 'times', and the need for effective teaching resource development and implementation. What is not so evident is a consideration of less able and/or less advantaged (culturally, socio-economically, politically) students. There is considerable agreement about the size and direction of effects: that both online learning to lifestyle (home bubble) and online learning to livelihood (employment) spill over exists, with either positive or negative impacts. However, positive online learning to lifestyle is more common and significant than negative online learning to livelihood interactions. Other considerations of note are the timeframe within which new technologies are designed and implemented, the competency and confidence of the educator in utilizing new technologies, and the changing role of the educator in the learning process. Impacts on teacher wellbeing are also highlighted by recent research (Badia et al., 2013; Ruggiero and Mong, 2015).

Studies identify two forms of concern when implementing new technologies within a learning environment: 1) Information overload for educators and students due to the speed of access and volume of material available through digital platforms, such as the internet (via the world wide web), social media sites, and other forms of software programs (both educational and recreational), and 2) Increased workload due to: 24-h connectivity, reduced capacity for educator strategic technology planning (knowledge content, assessment, results and review), appropriate integration of technology in teaching and learning, professional development (to keep up with current innovations), and technology infrastructure management (the utilization of e-platforms from an organisation and educational sector perspective) (for summaries of recent findings, see Pew Research Centre, 2011; Raja and Nagasubramani, 2018).

Existing research shows the benefits of new technologies on learning are most pronounced when ICT facilitates the sharing of resources, expertise, and advice, when it provides greater flexibility for educators to carry out different kinds of task at different times, and promotes educators' skills, confidence and enthusiasm when navigating changes in teaching and learning techniques, for example from face-to-face to online learning (Bhakta and Dutta, 2016). The same research indicates that increased use of technology can severally affect the thinking ability of students, reduce the face-to-face interaction between educator and student that provides a more personal experience, and result in a lack of interest in learning as everything is accessible through data saved in a computer or on mobile devices.

We know which factors can make a difference to the successful transition from face-to-face to online learning, without detrimental impacts occurring for educator and student lifestyles and livelihoods. By using modern technological devices educators can expand their knowledge and develop their professional teaching skills. However, this in itself is a learning process which requires time, expertise, resources, and motivation.

While the study of the impact of new technologies on learning has been undertaken in several countries in the past 10 years, a forced shift to online learning during exceptional circumstances such as natural disasters, pandemics, and other disruptive situations, has not previously been documented prior to the Covid-19 global pandemic. First, much of the existing research is based in first-world centric countries such as the United Kingdom, Canada, Australia, and the United States with relatively little research occurring outside these areas (OECD, 2007). During the 2020 Covid-19 global pandemic, over 100 countries (BBC News, 2020) experienced 'lockdown' to reduce community transmission of the coronavirus. This article aims to provide insights from the professional self-observation and self-reflective practice of two HE lecturers in New Zealand, to inform future institution-based policy and procedures, locally and farther afield.

Second, the existing body of work provides a balance between positive and negative impacts but within the context of a 'normal' teaching and learning context. The current global pandemic has forced many countries into rapid online learning, with educators and students being displaced from their usual place of 'work', working, or studying from home, learning new digital platforms and systems within short timeframes, while institutions and educators have endeavored to provide pastoral care for their learners, from a distance. This scenario is unprecedented. It was unexpected and had the potential to cause major disruption and disconnection for the teaching and learning process, world-wide.

Third, there is substantial research on the impact of new technologies on student learning and wellbeing within a classroom (Courduff, 2011; Lin and Yang, 2011; Miller, 2011; Costley, 2014), and student learning and wellbeing outside the classroom (Meier et al., 2016; Lissack, 2018; Dienlin and Johannes, 2020), but less so on the relationship between new technologies, online learning, and wellbeing (Pew Research Centre, 2015; Halupa, 2016). A rapid shift to online learning is a new phenomenon which bears little resemblance to deliberately designed online teaching and learning (Scherman, 2020). The extraordinary situation of working or studying remotely from home (within a lifestyle bubble) requires multiple adaptions, reorganizations, and physical space. Access to electronic hardware and software (livelihood), and some semblance of 'normal' (wellbeing) are essential to provide reassurance and direction, for students and lecturers alike. The sense of disconnectedness from and loss of a 'regular' daily routine was sudden and disturbing, with mental ill-health negatively impacted for many.

This article is positioned to address, through the collaborative autoethnographies of two lecturers, the intersection of the three domains of HE experiences, lifestyle, and livelihood (**Figure 1**) as portrayed by the self-reflective practice of Anna and Hana. These insights provide critical knowledge when reflecting on HE teaching and learning contexts.

Conceptualizing Higher Education Experience, Lifestyle, and Livelihood

Research about educators' experiences is usually undertaken to highlight best practice to support and develop educational outcomes (Paavizhi and Saravanakumar, 2019). Consideration of the impacts of the educator's lifestyle (home) and livelihood (employment) on their experience as an educator, are scarce. Much existing research has been undertaken on teaching and learning with only brief reference to the spillover effect on an educator's lifestyle and livelihood. This section aims to conceptualize the three domains of HE experiences, lifestyle, and livelihood (microsystems), to clarify and highlight the significance of the intersections, interrelatedness, interdependence, and interactions across, within and between each domain (mesosystems). This conceptual framework (**Figure 1**) also represents wider external influences (macrosystems) acting on the educator's system, such as, societal norms, national and international economic, political, and social drivers (decisions and responses made to manage local and global conditions), and historical traditions relating to education.

In the context of this article, the microsystems in Voydanoff's adaption of Bronfenbrenner's Socio-Ecological Model (SEM) (**Figure 1**) represent influences of proximity to the central individual (educator): regarding their higher education experiences (on campus teaching, colleagues, managers, administrators, resources, assessment and reporting deadlines, reviews, planning, etc.), livelihood (physical workplace, tasks and conditions, hours per day, remuneration, outputs, career pathway), and lifestyle (family, extended family, friends, neighborhood, hobbies and interests, leisure, use of leave). It is the most influential level of ecological systems theory.

Beyond this, a mesosystem of intersecting domains exists, surrounded by an exosystem: that is, the external environment which affects the individual but in which they do not personally participate, such as, top-down decision making, policies and procedures (Pocock et al., 2012). Finally, these are located within a larger "macrosystem" which comprises overarching cultures, institutions, and broad belief systems (Bronfenbrenner, 1979).

The mesosystem, consisting of different parts of the microsystem or interactions between different parts of a person's microsystems, has a direct impact on the individual which can be influenced either positively or negatively. The macrosystem involves the links between a social setting in which the individual does not have an active role and the individual's immediate context (Bronfenbrenner, 1979). For example, an individual being restricted to stay within their "home bubble" due to the Covid-19 lockdown, and not venturing out except for essential supplies or for the permitted 1 h of exercise per day. The larger macrosystem also encompasses an environment which includes the economy, culture, and politics, and describes the overall societal culture that an individual lives in. These overarching cultures, institutions, and broad belief systems, impact on the individual indirectly but may be experienced through policy changes, rules, procedures, or laws (Pocock et al., 2012).

Further interpretation of Voydanoff (2007) adaptation of Bronfenbrenner's (1979) SEM, suggests that each of the domains overlap, intersect, a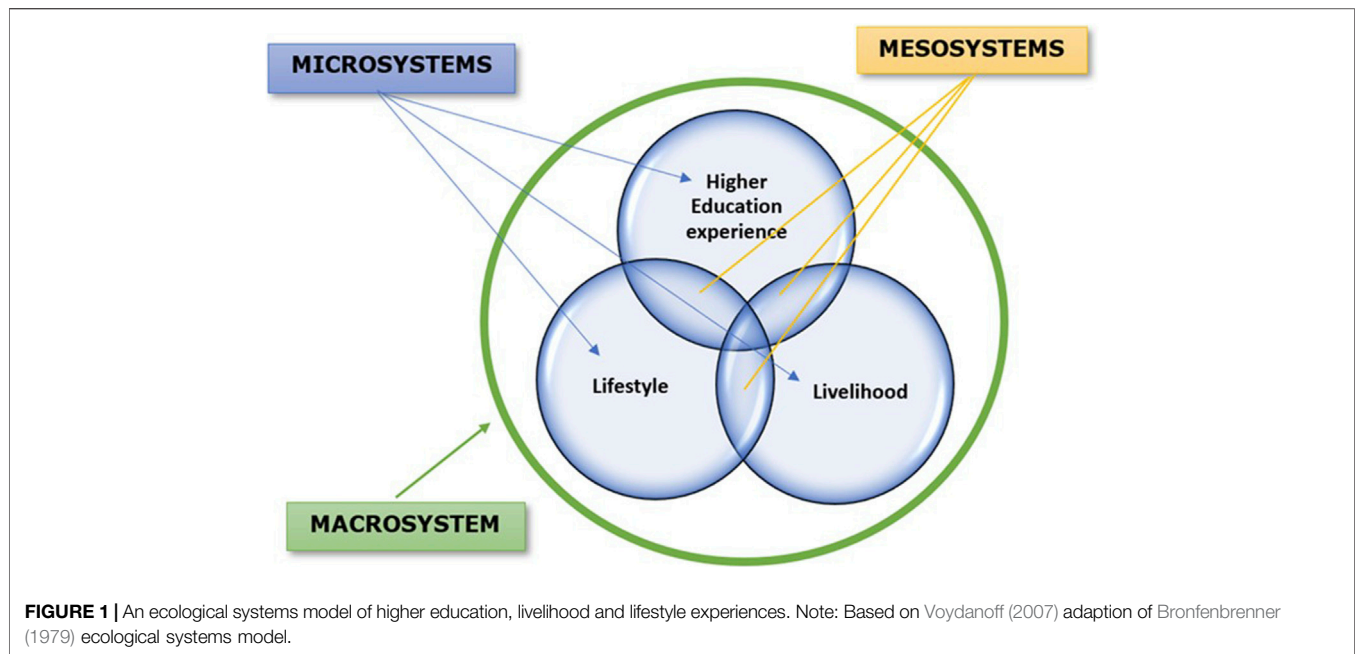nd can directly impact or affect the other domain/s (**Figure 1**). The model suggests that a complex ecosystem constructs an outcome for the central individual. For the HE lecturers in this article, the intersections (mesosystems) are of particular interest due to spill over between their higher education, livelihood, and lifestyle experiences. Analysis of each domain (microsystem), intersections between the domains (mesosystems), and the demands and resources within and beyond the overarching macrosystem, matter to outcomes. While the model is displayed in a tripartite form, the balance between domains, and intersections across domains, makes analysis of influences and impacts unique for every individual. Comments from Anna and Hana follow to illustrate their initial impressions regarding the Covid-19 lockdown.

> Anna: I was in a Work Integrated Learning (WIL) supervisory meeting with a third year BSR student when an on-campus security guard popped his head into the meeting room and said, "You need to leave the building by 12 pm. We are in lockdown, so take everything you need, with you". I felt somewhat stunned even though we had received a heads up from our Prime Minister in her daily announcements, some days earlier. Almost robotically, I advised my student of our next meeting, agreed a plan of work to be completed, and finished the meeting. I recall drifting along the corridor to my office in a dream-like state, feeling numb, trying not to let the sense of panic rise. My steady, rational self, took over. I systematically downloaded files and documents for all my AUT courses and papers, from my PC to a portable hard drive. I had a strong sense of relief and gratitude that I had used this backup system many times so I felt reassured and confident that I could deliver course content remotely, although quite how and when, I was not sure.

> Hana: Within 2 days of New Zealand going into lockdown we were told by AUT that we were to teach papers in blocks. Students would study one paper only for a 4-week period before moving on to the next paper. I was in shock, re-envisaging teaching a practical based paper in a 4-week block and completely online. How was I supposed to do this? As a paper leader I needed to understand how this would work and then convince my colleagues who were teaching in the same paper, that we could be effective, and students could meet the paper learning outcomes.

DEFINING KEY DOMAINS AND INTERSECTIONS: THE SOCIO-ECOLOGICAL SYSTEM OF HIGHER EDUCATION EXPERIENCE, LIFESTYLE, AND LIVELIHOOD

Applying the conceptual framework of **Figure 1**, the domain of higher education experiences constitutes the lecturer's online

FIGURE 1 | An ecological systems model of higher education, livelihood and lifestyle experiences. Note: Based on Voydanoff (2007) adaption of Bronfenbrenner (1979) ecological systems model.

learning experience, systems engagement, and the pedagogical environment created during the 2020 lockdown. This domain was significant as the lecturers were both experienced teachers in tertiary education but had not experienced "carte blanche" online teaching and learning in any educational context, previously.

During this time, at their Auckland-based university, the higher educational landscape emerged as a complex domain of several levels. The first being that "norma"' on campus teaching and learning was replaced (after some delay) with an "alternative" online version. All face-to-face delivery was cancelled, and lecturers were expected to engage with students through the university's online learning management system (Blackboard) and two intranet platforms: Panopto and Collaborate. The second level comprised systems of communication between the organisation, its staff, and its students. This level of communication was created to disseminate information, to provide platforms for collaboration and decision-making, to share new policies, procedures, and practices, to diffuse anxiety, and to reassure. Changes to HE experiences within this level included multiple daily video-conferencing meetings dependent on the lecturer's roles and responsibilities, electronic communication (email, staff announcements), and new procedures for student tracking and monitoring. Third level factors within the HE domain encompassed prevailing technologies, access to technology, expertise and confidence using available technologies, ICT support and troubleshooting, increased staff workload relating to producing "virtual" versions of course resources, and increased student flexibility pertaining to engagement with the new learning technologies. Finally, the speed of the spread of the coronavirus globally was important, where factors like closing borders, self-isolation, quarantine facilities, the safety of essential workers, tracing, and tracking movements, and imposing severe restrictions on all citizens, affected the ways in which the HE lecturers experienced the

higher education learning environment, during the lockdown period.

The second domain of interest, lifestyle, is represented by the government-imposed concept of a 'home bubble', that is, the people who share an individual's household, including flat mates, parents, siblings, children, and/or partner. In New Zealand, whoever was in the dwelling when lockdown was imposed (11.59 pm, March 25, 2020), constituted a home bubble. The level 4 lockdown restrictions included: one designated shopper, 1 h of exercise per day within a 10 km radius, social distancing, hand washing, sanitizing, and wearing a face mask when in public (for essential supplies or medicines). The home bubble was designed to severely limit social contact and interaction, for individuals, groups, and communities, to mitigate community transmission of the coronavirus pandemic, in New Zealand. The lifestyle of individuals within each home bubble was impacted to a greater or lesser extent, dependent on various factors, such as age, gender, workplace and type of employment, socioeconomic status, urban versus rural, access to the internet and technology, number in the home bubble, health status, etcetera.

The third domain of livelihood is embodied broadly as employment. Employment can be defined as "the state of having paid work" or "the utilization of something" (Webster dictionary, n.d.). In this article, employment pertains to the work required of Anna and Hana as full-time permanent lecturers in Higher Education. For example, in their role as educators, they were required to plan, prepare, and deliver undergraduate paper content, to review and update content in accordance with evidence-based practice, to design and deliver appropriate assessment tasks, to mark and grade assessments with feedback, and to record and report on student outcomes and progress. Concomitant with this role, lecturers had a 'duty of care' to provide pastoral support for their students, to optimize their learning success. In their role as researchers, Anna and Hana were

required to engage in research projects, funding bids, writing, and publishing, either individually or in collaborative teams. Another key area of work for lecturers in higher education is to provide leadership and to promote innovation. As a "University for the Future", Anna and Hana's institution stated their vision and mission statement as providing "innovative, technology-rich, entrepreneurial, experiential university and learning environments that produces civically active and market-ready graduates" (aut.edu/about us, n.d.).

Within the limitations of this article, the domain of livelihood encompasses "paid" employment, within the HE lecturers' home bubble (family microsystem) due to the Covid-19 lockdown restrictions. Unpaid work in the form of childcare, household tasks, transportation, and support for extended family (whanau[1]), is not considered within the livelihood domain for this article. Deeper analysis of livelihood includes considering "spatial" influences (the place of work, the home, community making) and "relational" influences (the relationships that make up work, household, or community interaction) (Pocock et al., 2012). Reflective thoughts pertaining to the unexpected shift from face-to-face to remote online learning follow:

Hana: Initially I was excited about spending time in lockdown. I thought I could stay in my PJs and work when I wanted. What a surprise to find the reality was not quite like that. Home was very quiet, my husband worked upstairs on the dining room table, I worked downstairs in my office. I found myself constantly checking my calendar and being on alert for incoming messages. This meant little "down time" and in fact kept me at my desk and workstation. A new reality was the video conferencing calls. What a surprise when I realised that people could see me. This then compelled me to ensure I was appropriately presented in a professional manner when on video calls. Interestingly, most of my students when on our live workshop sessions (using the collaborate function in our LMS Blackboard) chose not to turn their video on. When I enquired as to why, they had various reasons. These were: "My hair is bad today", "I am still in my pajamas", and "I am in my bedroom in the garage".

Anna: Phew. Within our home bubble my husband was working online (at a makeshift desk in our kitchen/ dining room), I was working online (at a small work-space upstairs), and our two adult children were also online (in their bedrooms). I was often recording lectures or talking in Teams or Zoom meetings during lockdown. As a programme leader I engaged in up to seven online sessions per day. My home bubble revolved almost entirely around the demands and requirements of my job, with breaks for meals and occasional exercise. I recall thinking that the separation between home and work had become blurred, and it had. I established a new home routine to accommodate the needs of other family members but mainly to meet the demands of my employment. Equally, my family adjusted to my constant screen-time by avoiding upstairs and reducing noise to a minimum. For example, before using the blender for a smoothie they would check whether I was recording, or in an online meeting.

When reflecting on my experiences during lockdown, I realised that I was anxious about the quality of my pre-recorded Panopto lectures as I prepared for the transition from face-to-face to remote online teaching. I wanted to reproduce the "effect" of face-to-face lectures and workshops, through the remote online platforms available to us. This goal was not possible through pre-recorded Panopto lectures or the "live" Collaborate timetabled workshops. An acceptance of this fact rendered feelings of conceding to a greater force as the reality of the global pandemic hit home. As the weeks passed, I became more frustrated and stressed, mostly because my sense of "control" over the learning environment had disintegrated. This sense of disempowerment was shared by other colleagues who expressed various levels of fear, and a lack of motivation or optimism. "It is what it is" was a common phrase heard during collegial discussions online. The university's ICT team provided many helpful tutorials, online support, and responded quickly when systems failed. However, one of the disadvantages of first-timer anxiety is that "the corridor of tolerance" (McAlpine et al, 1999; cited in Hussey and Smith, 2003: 359–360) is narrower, that is, I was less comfortable shifting the locus of control to 'others'. I had a strong need and desire to master the new technological challenges myself, even though there were many constraints and unknown quantities in this endeavor.

TOWARDS A SOCIO-ECOLOGICAL SYSTEMS MODEL OF HIGHER EDUCATION EXPERIENCE, LIFESTYLE, AND LIVELIHOOD DURING THE 2020 COVID-19 LOCKDOWN

In **Figure 2**, the authors adjusted the SEC model for higher education, livelihood, and lifestyle experiences to incorporate additional factors impacting each domain: power, time, space, and life stage. According to Pocock et al. (2012) research, how the aspects of the system act and interact together, constructs the well-being of those who live in any socio-ecological system, with economic productivity and social reproduction dependent on the effective functioning of all areas of the system. The additions to **Figure 2** of power, time, space, and life stage illustrate how multiple factors can influence and have potential to act and interact, to create opportunities, outcomes, and obstacles, or to create a new system equilibrium (transformation). The impact of demands and resources identified as acting in each domain and at each intersection, generates a further level of complexity to the analysis and interpretation of each lecturer's experiences during
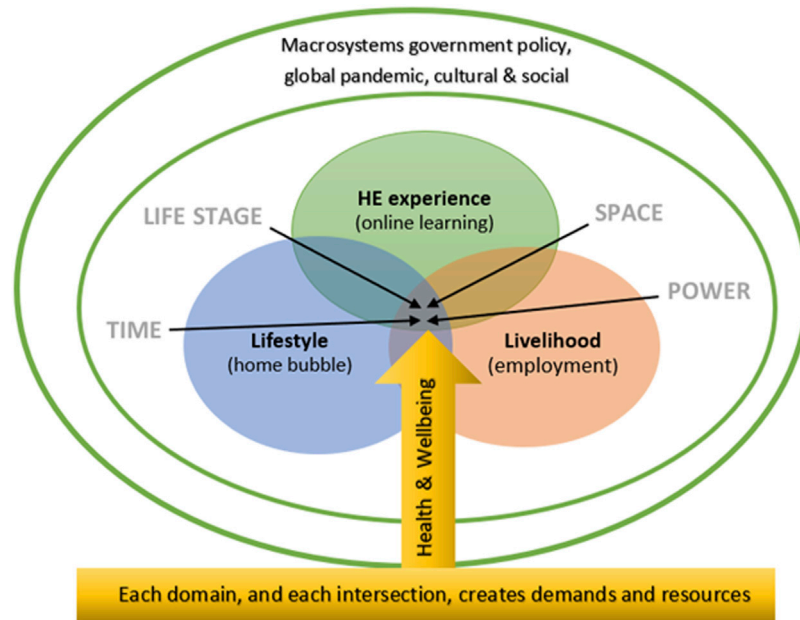
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[1]Whanau: Māori word for family.

FIGURE 2 | A socio-ecological systems (SEC) model highlighting the multifaceted influences and interactions of Higher Education experiences, livelihood, and lifestyle on an individual's health and wellbeing during a global pandemic phenomenon. Note: Based on Pocock et al. (2012) SEC model of work, home and community.

lockdown in 2020. A greater depth of interpretation and understanding was possible when conceptualizing the impacts of Covid-19 on teaching and learning, through **Figure 2** model of socio-ecological systems (SEC) theory.

The relocation of the workplace into each lecturer's home bubble, the increased demands on time due to a spill over between one microsystem and another (livelihood, lifestyle, and HE experience), sudden changes to personal spaces, and the impact on individual health and wellbeing are acknowledgment by the additions of power, time, space, and life stage. The underlying effects of demands and resources on each microsystem and on the whole ecosystem are recognised, combined with how these multiple influences impact on the individual's health and wellbeing.

Several factors are consistently relevant at each level of the higher education experience, livelihood, and lifestyle domains (microsystems). Namely, the power dynamics of students, teachers, and management teams (power), the timeframes within which information, restrictions, and resources were disseminated (time), the implications of students learning solely within their home bubble and teachers working from home (space), and the impact of these interconnected and interrelated factors on educators and students (life stage). Each of these key aspects is discussed further: *Power:* Relative to the dynamic between lecturers and their students (microsystems), lecturers and their colleagues (mesosystems), middle management with associated lecturers and administrators (exosystem), middle management with higher management structures (exosystem), and higher management structures with external governance (Ministry of Education, 2020b) and other macrosystem influences (Ministry of Health, 2017;

New Zealand Government, 2020; World Health Organisation, 2020).

Time: Relative to the timeframes within which information, restrictions, and resources were disseminated to staff and students pre, during, and post lockdown. The factor of time includes the hours spent in each domain, the predictability of these hours, the fit of hours spent in each domain with personal and household preferences, how home bubble schedules fit together, how the experience of time in each of the three domains spills over into other domains (that is, intensity of work or care). Other influences included lecturer control over time, the timing of activity in each sphere, and the way that schedules within each domain fitted together (university lectures and workshops, childcare, work hours). The intersections between domains (mesosystems) were potential sources of conflict, for example, livelihood-lifestyle, lifestyle-HE experience, and HE experience-livelihood interactions. Issues with transport may exacerbate or ameliorate the impact of time as an influence on each domain or microsystem.

Space: This includes how spatially separated and distant from each other these domains are, how long it takes to cover these distances and whether distances are virtually connected. A further consideration is physical space within the educator's home bubble, particularly regarding appropriate and sufficient space to work. Connection to the spaces pertaining to the university (campus, food hall, staff hub, administrators), home bubble, and place of employment impact the lifestyle-livelihood, livelihood-HE experience, and HE experience-lifestyle intersections, dependent on educator capacity to meet requirements (demands) and access information (resources). Lecturers who experienced restricted personal space within their home bubble

during lockdown were disadvantaged in terms of access to a conducive work environment.

Life stage: Livelihood, lifestyle and HE experience varied dependent on the life stage, that is, as mature lecturers but new and emerging researchers, Hana and Anna were experiencing a dramatic shift from on-campus face-to face delivery, to remote online teaching and learning, with little or no previous professional development for this transition. The student's life stage was an important factor in the lecturers' socio-ecological systems model, as many were also experiencing remote online teaching and learning for the first time. During lockdown, whether as a parent, an older sibling, or living with extended family, many of the BSR students had significant responsibilities in addition to their university course of study.

How these aspects of the system act and interact, constructs the well-being of those who live in a socio-ecological lifestyle, livelihood and HE experience system (Pocock et al., 2012). In the context of the Covid-19 impacts on learning in HE, a socio-ecological system that is functioning well is represented by strong, healthy, and inclusive educational practices, productive workplaces with low rates of absenteeism, injury and illness, and high levels of well-being, satisfaction, and engagement, combined with high-levels of family well-being, coherence, and support (for all age groups) (Pocock et al., 2012).

Comments from Anna and Hana follow to illustrate their deeper thoughts and feelings regarding the complexity of their experiences, and the impact of the Covid-19 lockdown on their well-being.

Anna: New Zealanders were often referred to as "A team of five million" (Prime Minister's daily announcements, April 2020). This was inspiring and gave purpose and direction when many aspects of our livelihood and lifestyle were completely disrupted. In relation to time, the shift to working full-time from home meant that each day was essentially the same with multiple meetings online, and an increase in electronic mail, phone calls, and queries. The extended hours of screen-time became exhausting; mentally, physically, and emotionally, affecting my Hauora[2] (Durie, 1998). The physical separation from colleagues and students impacted negatively on my social wellbeing. I experienced a feeling of loss of connection to people and place. Being contained within my home bubble signified a constraint on my ability to access "normal" spaces such as the university campus, classrooms, the stadium, gym, the staff hub, etcetera. Part of who I am as an educator hinges on the ambience and atmosphere I create and facilitate in a learning environment. The removal of this connection with colleagues and students unhinged an essential characteristic of who I am as a lecturer. My attempts to reproduce the ambience and atmosphere of face-to-face teaching and learning was thwarted due to

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[2]Hauora: Māori philosophy of health unique to New Zealand. It comprises taha tinana, taha hinengaro, taha whanau, and taha wairua (Durie, 1998).

my own dissatisfaction with talking to and through a screen. On reflection, I am not comfortable using digital and electronic delivery platforms to communicate in a meaningful way with others, although I can utilize these tools successfully if, and when required to.

Hana: I too have reflected on my Hauora as I spent time in lockdown, in a teaching and learning environment. Certainly, the physical separation was easy to accept mainly because we had no choice, however, the social disconnect, was something that I struggled with. I like speaking face-to-face and interacting with my students in a classroom and lecturing environment and therefore, using the online platform was not ideal for that social interaction. I really appreciated the collegial support I received from lecturers in my team and from our administration support staff. This was from simple gesturers such as "How are you going today?" to "What technical support do you need?" I also reached out to my students when either on email or in our live collaborate sessions to do the same. This resulted in a community of practice developing (Lave and Wenger, 1998). Students within the papers also spent time "chatting" at the beginning. This was mostly on the chat function in Collaborate. Interestingly they wrote messages to each other, rather than talking directly. I, like Anna, liked the familial or whanau focus on lockdown, despite my bubble being very small. I still felt very safe and supported, with my husband being in my bubble at home. In terms of the spiritual dimension of Hauora, I sometimes struggled because I was unsure about the future, and from a global perspective I worried about what was happening in other countries in the world, and to my daughter who was living in Australia. And therefore, that sense of connection was broken.

DEMANDS AND RESOURCES IN THE INTERACTING DOMAINS OF HIGHER EDUCATION EXPERIENCES, LIFESTYLE, AND LIVELIHOOD

The abrupt transition from face-to-face to remote online teaching and learning created unprecedented demands on HE lecturers, and the need for specific resources for staff and students that had not been anticipated.

The pedagogical environment provided during the 2020 lockdown in New Zealand, was mostly effective, and met the needs of many students enrolled in the Bachelor of Sport and Recreation degree programme. Anecdotal evidence from informal discussion with students after the lockdown indicated that a small group of the BSR cohort had substantial challenges coping with the abrupt shift to online learning strategies and delivery platforms, however, many students were able to adapt and engage relatively seamlessly to the new pedagogical environment. A concerning number of students reported experiencing greater pressure on their time due to demands

from their home bubble, workplace, or other commitments, which impacted on their level of stress, and confidence regarding study success going forward. Anecdotal evidence from lecturers indicated that the quality and reliability of the teacher-learner relationship was crucial to success, and that clear, informative, and reassuring communication from management (exosystem), with plenty of forewarning was appreciated by staff and students, as was the prompt response to questions or technical issues (exosystem). Factors that were outside the university's direct sphere of control (the lecturers' and students' livelihood and lifestyle—micro and mesosystems) appeared to have some detrimental influences on teaching and learning, health and wellbeing, and successful outcomes when the demands on or resources of space, time, and/or power, were compromised. For example, when a lecturer had dependents at home who needed to be "home-schooled" this compromised their time "at work", when there were insufficient electronic devices within a home bubble this compromised access to content and live interactions, and when physical space was limited due to the needs of others within the home bubble, the creation of a conducive teaching and learning environment was contested. Reflective thoughts regarding the impact on educators of increased demands, and the access and availability of resources, follow:

Hana: My thoughts about the lockdown impact on teaching and learning focused on my students' expectations of me. I felt I was on-call 24/7. This feeling of always checking my emails, ensuring I met my students' needs in a responsive way, was quite demanding. I know that students in higher education are independent learners, however, after teaching at secondary school level I felt that my students were back down at that secondary school level, that is, they needed to be guided and stepped through every week, what they needed to know and what they needed to learn for that week. In particular, the assessments, there was a lot of stress around the assessments, and my students were anxious about whether they understood what was required. This was despite our course guide being very detailed with information about assessments, including additional documents uploaded on a "needs" basis. We found we were holding additional "live" online teaching sessions. Question and answer sessions, where students could come into the online environment and ask questions, 90% of which were about the assessments. This demonstrated to me that they were not confident in obtaining the information required and they weren't able to document the information in a way that gave them confidence about being able to achieve a successful grade in that assessment. Self-directed learning in HE is paramount and requires a degree of independence. I think our students were not at the stage where they were fully independent and able to manage study by themselves. Having a lack of confidence, also increased their anxiety, and their neediness. When I discussed some of these concerns with other colleagues, they too

found the same situations. This impacted on how I explained and used the lockdown environment to give them more information. To address this concern for our strongly kinaesthetic students, I suggested additional places for further information, for example, websites which had video illustrations. In a normal face-to-face environment, we would call these "learning conversations", however, this was not possible in a lockdown environment, and because of the social distancing, communicating over email or a video call was not conducive to quality teaching and learning.

Anna: The demands that had the greatest impact on me as a higher education lecturer resulted from, an overload of information, and an increased workload. During lockdown, information was disseminated via several online sources, via 1) all-staff emails, department, ICT and personal emails, 2) online meetings using Microsoft Teams or Zoom for senior management, department, programme, paper and collegial information sharing, and 3) the university's Blackboard and Collaborate intranet platforms for staff-student information sharing about changes to assessments, workshop times and dates, designated lecturers, and how to access resources or troubleshoot issues. The division between home and work suddenly evaporated. Instead, nearly all information sharing was work-related.

A marked increase in workload occurred at the same time as lockdown was imposed. I had 24-h internet connectivity at home so there was no excuse "not" to complete content changes, to update course outlines, or to record lectures ahead of deadlines. And there was nowhere to go as travel restrictions were stringent. When I struggled to insert YouTube clips into a Panopto recording I learnt the procedure by watching online tutorials or via a virtual lesson with an IT tutor. I was spending more than 10 h a day on my screen. My workload during 'normal' on campus teaching and learning varied from as little as 2 h (a face-to face lecture using PowerPoint) up to sometimes eight or more hours during intense assessment marking and results generation. Continuous on-screen hours, day after day, was unprecedented. Before the Covid-19 pandemic my employment was predictable and secure, and my lifestyle was settled and balanced. During lockdown, all facets of "normality" seemed to disappear, being replaced instead with a constant round of words, images and faces on my screen. So, how did these extra 'lockdown' demands on my time, personal space at home, and increased interaction with colleagues (but not students) impact on my wellbeing? Not well.

Positions of power (management and leadership positions within the university) determined our workload and ways of working. An initial reaction I had was to question the rationale for "freezing" regular communication with our students as we had completed

just 4 weeks of the university first semester. As a programme leader I sought clarification and an explanation regarding providing pastoral care for new students but was advised that mixed messages (from staff other than senior management) were potentially more harmful. The enforced separation of lecturers and students at this time affected my taha whanau. Feeling distressed and powerless, I decided to step down from my programme leader role.

SOCIO-POLITICAL FACTORS INFLUENCING DEMANDS, RESOURCES, AND WELLBEING IN EACH HIGHER EDUCATION EXPERIENCES, LIFESTYLE, AND LIVELIHOOD DOMAIN, AND THEIR INTERACTION

This section explores the larger macrosystem influences on Hana and Anna's socio-ecological system during the Covid-19 lockdown 2020. This section provides insights about the intersections between and across each lecturer's microsystems of lifestyle, livelihood, and HE experiences, plus an understanding of the impact on teaching and learning from outside factors, such as, guidelines from international bodies, government directives, and institutional policies and procedures. Further insights can be gleaned from considering the effects of relationships, connections, and interactions, within each lecturer's micro and mesosystems.

An example of the sudden change in these relationships was the emergency shift to remote online learning, in response to the Covid-19 crisis. This occurred almost overnight. Students were informed of this change and were advised to prepare for full online learning, from within their home bubble. Programme leaders and paper coordinators were advised to prepare all necessary materials and resources. Online delivery commenced on April 28, 2020, 4 weeks after (March 24, 2020) a state of emergency was announced, and the level 4 lockdown restrictions were imposed. Comments, anecdotes, and musings follow regarding the impact of external factors and influences on Anna and Hana as they navigated teaching and learning during the Covid-19 lockdown 2020.

Anna: I watched the 1 pm updates on television with my family each day. Our Prime Minister and the Director General of Health spoke in reassuring tones, but the messages were clear and direct. "Stay at home. Save lives". We tried to get our heads around the new terminology and what the differences were between the categories of transmission, infection, or outcomes. Fascination and curiosity were mixed with a growing concern for the health of self, others, our New Zealand communities, and people of all nations. The impact on lifestyle was immediate and dramatic. While it was novel for a few days, once understanding emerged, the severity of the situation became all too apparent. Within our

home bubble our family talked through the what now and what next scenarios. We took heart at the strong measures taken by the government to close our borders, to enforce new social contact regulations, to constantly inform everyone in an open and honest manner.

On reflection, my self-imposed screen-time limit of 7 pm worked well to guarantee I continued to have "time" with family. Conversely, I under-estimated the fatigue involved with so much digital exposure when my usual work-life balance was face-to-face, interactive, social, and sporadic (albeit timetabled for the working week). The crossover effects of constantly communication with the university, working from home, and trying to create some semblances of a normal lifestyle were that I increasingly felt dis-empowered, distressed, and "over" being displaced and disconnected from students and colleagues. My lack of tolerance for the imposed social, emotional, physical, and psychological separation came as a surprise to me but has provided deep learning regarding my motivation and enthusiasm to continue to facilitate learning in a blended format, within a HE context.

Hana: In my role within the Faculty as an Academic Advisor, I felt responsible for doing additional reading and investigation, not only for block learning but also about the adoption of online learning and teaching that was expected of lecturers, by management. I did not mind doing this (actually, I was quite curious) because I was intrigued by how we could turn face-to-face lecturing into engaging, short, snappy, online presentations that could be viewed several times over by students. It was a steep learning curve to master pre-recorded video lectures and produce slideshows using new (Panopto) software. However, I found this challenging but also stimulating, as I was concurrently learning new technologies and navigating IT systems, while also teaching remotely. Students told me they preferred Panopto lectures because they could view them several times over, and they could also turn up the speed of the voice delivery to 1.5 or two times the speed. I was amused by this.

DISCUSSION

Within the context of the Covid-19 lockdown in New Zealand, the autoethnographies of lecturers Hana and Anna reported a range of reactions and responses to their abrupt change to remote online learning, as identified below.

While the disruptive move from "normal" face-to-face teaching and learning to remote, online platforms was unprecedented, the effects and impacts of this forced shift were under-estimated, occurred without sufficient planning or preparation, and tested individuals and institutions to new limits. Anna and Hana's reflections highlight: the loss of power within and across their HE experiences, impactful changes in the space and place of employment (livelihood), coupled with an array of expectations and demands on their skills, time, and energy while

functioning under lockdown restrictions within their home bubble (lifestyle). Both lecturers recognised the importance of the decisions they made and actions they took within each microsystem (domain), especially in relation to their ability to function as educators through a completely different delivery medium (online). Anna and Hana voiced their concerns about information overload, increased workload, a lack of "down-time", and the impact their new "normal" had on their Hauora (well-being). Concern was expressed regarding the anxiety and lack of confidence displayed by students during remote online teaching and learning during "live" sessions. Additional support and information was essential to reassure and offset many students' sense of confusion and impending failure. Apart from the online platforms provided by the university, lecturers also utilized other measures to support and sustain student engagement and learning, for example, via text messages, electronic email, video conferencing, online Question and Answer sessions, chatrooms, and one-on-one phone call tutorials. A major concern was for the well-being of staff and students, including retaining students in their programme of learning.

Considerations going forward include the need to recognise and manage uncertainty; the integration of affect and cognition; and the recognition and acceptance of human limitations when faced with exceptional and unexpected trauma (Linley, 2003). The American Psychological Association (2012) comment on this consideration further, offering constructive suggestions to develop resilience during extra-ordinary circumstances, by building connections, fostering wellness, finding purpose, embracing healthy thoughts, and seeking help when needed.

Key learnings for lecturers Anna and Hana began to emerge from their self-reflective practice, both personally and professionally, as evidenced from their shared insights. The interaction or spillover from one microsystem to another, interwoven with influences from external managers and leaders (exosystem level) as well as the macro factors that affected all citizens during the coronavirus pandemic, however, were recognised as detrimental to their work-life balance, mental and social well-being, and sense of value within the wider socio-ecological system of the university. At ground level, it was clear that the student-educator learning partnership was the highest priority for Hana and Anna, with no limits on how they optimized communication, information, and learning, albeit through virtual platforms. This dedication and determination, to retain and to sustain students, was a shared focus across the HE sectors (Wilson et al., 2020).

Returning to the authors' earlier claim that socio-ecological models are helpful to represent the "true" influencers of an individual might be a misrepresentation of the complexity of the whole ecological system. According to Stanger, (2011) research, a reorientation of socio-ecological models to "eco-sociological models" through which the environment and changes to the environment (political, economic, social, physical, and educational) can have substantial impacts on the individual, community, and larger society connected to and associated with that eco-sociological system, are the next step. This view is worthy of serious consideration as reinforced

through Hana and Anna's self-reflective approach to the impact of Covid-19 on their lifestyle, livelihood, and HE teaching and learning.

CONCLUSION

According to Bauman (2001), the most important learning for individuals in postmodernity is the capacity of the learner to unlearn and "adapt to uncertainty" (p. 125). As lecturers, Hana and Anna were learning to 'unlearn' their previous 'normal', while also learning new technologies and navigating alternate IT systems. The challenge in education as in life is to adapt and to succeed, whatever the circumstances. Drawing on the socio-ecological systems framework (**Figure 2**), Anna and Hana described the demands and resources that arose from each of the domains of their higher education experience (new technologies, remote online teaching, and learning), lifestyle (home bubble, work-home balance), and livelihood (employment, workload), aligned to their well-being as HE lecturers.

While valuable insights and learning have occurred through the conceptual, interpretative, and reflective processes presented here, the significance of Hana and Anna's experience is: 1) Learning in higher education. Whilst systemic change and adaptations are imperative during times of crises, a "one-size-fits-all" is not always conducive for learning partnerships, between lecturers and students. Students in Sport and Recreation courses of study who enact primarily through kinaesthetic contexts were compromised in their learning, creating additional expectations and pressures on lecturers to ensure that authentic and appropriate learning and assessment occurred. 2) Lifestyle. The impact on HE lecturers during the Covid-19 pandemic precipitated a forced change of the delivery platform from on campus to each lecturer's home bubble. This created unprecedented impact on the work-home balance of educators. Social isolation, being disempowered, and expectations of availability 24/7 combined to create a sense of feeling overwhelmed. Some reassurance existed through collegial support and the IT Help services, however, individual lecturers reacted and responded differently, with some finding this more challenging than others. 3) Livelihood. While there were many issues relating to their employment situation and environment, Anna's, and Hana's first response was to optimize student learning. The challenges of grappling with new technology and IT systems caused stress and anxiety due to striving to meet high university-level academic standards. This was exacerbated by self-imposed perfectionism when delivering online, synchronously, and asynchronously. 4) Well-being. The importance of well-being for individuals who live in any socio-ecological system is paramount (Pocock et al., 2012). Applying the domain in **Figure 2**, Anna's, and Hana's degrees of satisfaction and engagement as HE lecturers during the Covid-19 lockdowns, were reflected through their open and authentic self-reflective accounts. Impacts on social and spiritual well-being were revealed through collaborative thematic analysis and the sharing of experiences. Hana and Anna's recall of familial support

systems demonstrated the importance of social well-being when navigating through the exceptional circumstances of a pandemic.

Anna's, and Hana's personal experiences during the Covid-19 pandemic forced them to manoeuvre through uncertainty to deliver and support student learning. Further investigation of 'student' voice is recommended to enhance understandings gained. Recommendations for future pandemic situations include ensuring that all domains of an individual's socio-ecological systems framework (**Figure 2**) are considered, for students and educators alike.

Study Limitations

As qualitative researchers and educators, Anna, and Hana's position grants extensive knowledge about the inner workings of higher education as an institution, which is generally regarded to be an advantage in qualitative research (Thagaard, 2003). This reflective and reflexive autoethnographic approach shaped the interpretations and synthesis of self-observations and self-reflections within the identified theoretical framework. Therefore, the analysis and discussion represent one interpretation of the impact on teaching and learning during the Covid-19 lockdown, viewed by Hana and Anna through their socio-ecological framework of higher education experiences, livelihood, and lifestyle.

ETHICS STATEMENT

Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

AUTHOR CONTRIBUTIONS

ACKNOWLEDGMENTS

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