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Faculty perceptions of the exercise science student learning experience during the coronavirus pandemic

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Abstract

Significant disruptions in higher education course delivery occurred during the coronavirus (COVID-19) global pandemic. The implementation of emergency remote teaching (ERT) offered exercise science faculty a safe method to continue educating students in courses generally taught face-to-face. The purpose of this investigation was to explore faculty perceptions of their ERT efforts with respect to student successes, challenges, and faculty expectations. Through an electronic survey, participants ($N = 112$) from higher education institutions in 31 states and three Canadian provinces provided feedback on their perceptions of the student experience across 315 fall 2020 courses. Data analysis included a thematic analysis to identify themes and trends in participant responses. Faculty identified student adaptability, increased autonomy of learning, and maintenance of learning as successes. Also noted was the increased flexibility of alternative pedagogy methods. Participants perceived student challenges related to technology, time management, and well-being. Faculty perceived students expected increased accommodations and instructor responsiveness during fall 2020. While faculty and students were challenged to adapt during the global pandemic, the perceived ERT experiences during COVID-19 highlight the resiliency of higher education students and underscores changes needed by educational institutions to provide resources and training upon return to traditional education or in response to a future crisis.

Keywords: Pedagogy, emergency remote teaching, online learning, COVID-19, kinesiology

Snapshot: This investigation explored faculty perceptions of emergency remote teaching (ERT) efforts related to student successes, challenges, and expectations during COVID-19. Faculty identified student adaptability, increased autonomy of learning, increased flexibility of alternative pedagogy methods, and maintenance of learning as successes. Perceived student challenges included technology, time management, and well-being. Faculty also reported students expected increased accommodations and instructor responsiveness. These findings highlight the resiliency of higher education students and underscores changes needed by educational institutions.

Introduction

Colleges and universities faced significant disruptions in course delivery during the coronavirus (COVID-19) global pandemic. The COVID-19 pandemic likely disrupted more students and schools than any other event in history, with nearly 1.6 billion students affected worldwide (Hanson, 2021). More than 1,300 higher education institutions cancelled in-person classes and moved to online delivery for the spring 2020 semester (College Crisis Initiative @ Davidson College, n.d.). Changes remained in effect during fall 2020, with 44% of institutions continuing primarily online, 21% offering a hybrid delivery method, and 27% offering socially distanced, in-person learning (College Crisis Initiative @ Davidson College, n.d.). In contrast to planned experiences designed to be online, the emergency remote teaching (ERT) that began in March 2020 forced faculty and students to transition to this pedagogy without preparation (Hodges et al., 2020).

Designed to be a temporary solution to the pandemic, the shift to ERT provided rapid access to educational material normally taught face-to-face (Hodges et al., 2020). Like other faculty in the applied sciences, those in exercise science education were challenged to not only convey didactic content, but to continue to deliver experiential opportunities (e.g., laboratory work, research, internships) for students. As colleges and universities transitioned to the new learning environment, expectations of faculty and students with regard to time management, organization, and communication also evolved. While this clearly posed challenges to both faculty and students during the COVID-19 pandemic, successes of the ERT effort can also be identified.

The purpose of this investigation was to explore exercise science faculty perceptions of their ERT efforts with respect to student successes and challenges during the fall 2020 semester. In addition, faculty perceptions of student expectations of faculty during the pandemic response were examined. Teacher perceptions of students' strengths and weaknesses impact faculty expectations and instructional methods (Jelińska & Paradowski, 2021; Reimers & Schleicher, 2020). Awareness of faculty perceptions of how students are handling ERT can guide training and adjustments in the role faculty play in guiding student learning through a crisis. As the landscape of higher education continues to change, this can help target areas for improvement in the face of continued remote learning environments or the occurrence of future world events.

Methodology

Participants

Participants ($N = 112$) from higher education institutions provided feedback on 315 courses (275 undergraduate, 35 graduate, and 5 undergraduate/graduate) taught during the fall 2020 semester in response to the COVID-19 global pandemic. Of the partipants, 53.6% identified as female ($n = 60$), 45.5% identified as male ($n = 51$), and 0.9% identified as non-binary ($n = 1$). Survey participants had an average of 12.9 ± 9.9 years of higher education teaching experience. Participants were distributed across academic rank and institution type (see Table 1) and taught courses in the subdisciplines of kinesiology (see Table 2).

Procedures

Via email and social media, higher education faculty in the subdisciplines of kinesiology were recruited to provide feedback on their perceptions of the student learning experience during the COVID-19 global pandemic, using a non-validated survey instrument developed by the researchers. Institutional Review Board approval was obtained for the study and participants indicated consent in the electronic survey. The survey included Likert scale and open-ended questions which allowed faculty to elaborate on their experiences and cite specific examples of how they perceived the student learning experience was affected during fall 2020. Respondents provided feedback on perceived student successes, challenges, and expectations of faculty during the fall 2020 semester. An inductive reflective thematic analysis was collaboratively conducted by the researchers. Themes were derived from coding and trends were analyzed for emergent findings.

Table 1 *Participant Demographics*

Descriptor	Frequency	%
Years of Experience		
<10 years	48	42.8
10-19 years	35	31.3
20-29 years	19	17.0
>30 years	10	8.9
Tenure Status		
Tenured	58	51.8
Tenure Track	28	25.0
Non-tenure Track	26	23.2
Academic Rank		
Instructor*	11	9.8
Assistant Professor	37	33.0
Associate Professor	28	25.0
Full Professor	29	25.9
Adjunct (part-time)	7	6.3
Institution Type**		
R1/R2/Doctoral or Professional	32	28.8
Public 4-year Institution	36	32.4
Private 4-year Institution	44	39.6
Community College	6	5.4

*Includes full-time Instructor, Lecturer, Visiting Assistant Professor, Clinical Faculty

**Faculty selected all applicable options

Table 2 *Kinesiology Teaching Disciplines Included in the Sample*

Institution Type	Frequency	%
Exercise Physiology	85	75.9
Biomechanics	11	9.8
Sport and Exercise Psychology	12	10.7
Sport Sociology	4	3.2
Motor/Behavioral Control	9	8.0
Sport Nutrition	14	12.5
Physical Education	8	7.1
Athletic Training	7	6.3
Coaching	8	7.1
Strength and Conditioning	5	4.5
Research and Statistics	7	6.3
Anatomy/Anatomical Kinesiology	3	2.7
Other	5	4.5

Results

The 112 participants provided feedback on 315 classes taught during fall 2020 of which 73 were taught face-to-face, 141 were remote (75 asynchronous, 36 synchronous, and 30 asynchronous/synchronous combination), 101 were hybrid (5 asynchronous, 67 synchronous, and 29 asynchronous/synchronous combination). The thematic analysis resulted in the identification of key trends in student learning successes, student learning challenges, and student expectations of faculty (see Table 3).

Table 3 *Faculty Perceptions of the Student Learning Experience During ERT*

Academic Variable	Theme	Subtheme
Successes	Pedagogy Utilized	Flexibility
		Communication
		Greater autonomy of student learning
	Resilience	Maintenance of learning
		Adaptability
Challenges	Self-discipline	Time management
		Engagement with learning
		Accountability
	Student Wellbeing	Mental health
		Fatigue
	Technology	Internet access
		Literacy
		Inconsistent course structure
Expectations of Faculty	Accommodations	Resources
		Leniency
	Responsiveness	Immediacy
		Availability

Student Learning Successes

Respondents identified the pedagogy utilized (e.g., synchronous, asynchronous, hybrid, face-to-face) and student resiliency as the greatest successes resulting from the ERT during COVID-19. Faculty perceived the pedagogies adopted during the ERT benefitted student learning by offering greater flexibility (i.e., when and how learning occurred). Students also demonstrated improved communication and greater independence. When asked to evaluate if students' academic successes during the fall 2020 semester were consistent with previous academic terms, 57.1% agreed (n = 56) or strongly agreed (n = 8). The most frequently reported subtheme related to pedagogy was an increased autonomy of student learning, whereas with resilience, the subtheme of adaptability was mentioned most frequently (see Table 4). Sample comments from faculty regarding student learning successes can be found in Table 4.

Table 4: *Faculty Perceptions of Student Successes in Response to ERT*

Theme	Frequency	Subtheme	Sample Comment
Pedagogy Utilized	12	Flexibility	Flexible learning schedules allowed for learning when motivated/planning of other life activities.
			Some students actually expressed preferring the online environment for learning as they got to go at their own pace in watching lectures/taking notes.
	8	Communication	My students were still able to develop their skills working with people but in a virtual way this time.
			I felt like students were more willing to reach out to me as a faculty than they did prior to COVID.
	17	Greater autonomy of student learning	Students grew in their independence and autonomy, and in their ability to advocate for themselves. Teaching and learning became even more of a partnership.
Resilience	10	Maintenance of learning	Continued advancement toward their degrees despite the chaos of the world.
	5	Adaptability	They all wanted to keep progressing towards graduation so they endured remote, online, and hybrid classes through the pandemic.

Student Learning Challenges

Students' self-discipline (e.g., time management, engagement, accountability), well-being, and technology were identified as perceived barriers to the student learning experience during the ERT in response to COVID-19. When faculty were asked to evaluate whether students were more engaged with learning during fall 2020 as compared to previous academic terms, 77.7% disagreed (n = 48) or strongly disagreed (n = 39). Technology was viewed as a barrier to the student learning experience as faculty reported students having issues with internet access, poor technology literacy, particularly with the learning management system, and inconsistent method of course delivery amongst faculty. Additionally, 33.9% of respondents either agreed (n = 25) or strongly agreed (n = 13) that incidences of academic dishonesty associated with the use of technology were greater in comparison to previous semesters. Examples of comments from faculty regarding challenges to student learning are in Table 5.

Table 5: *Faculty Perceptions of Student Challenges in Response to ERT*

Theme	Frequency	Subtheme	Sample Comment
Self-discipline	25	Time management	Poor time management due to the minimally structured environment of remote learning. Some of them were not in environments conducive to learning during synchronous online classes. Students were joining class while at work, while driving, and during various other life responsibilities. Their class time was not protected. They attempted to learn on-the-go.
	25	Engagement with learning	It was hard to engage the students. They were distracted and busy with other simulations around them rather being active in class.
	10	Accountability	It is tough for some of the students to hold themselves accountable for their learning without the classroom interactions.
Student Wellbeing	12	Mental health	Inability to perform well academically due to mental health struggles or other personal life stressors (i.e., parent was laid off due to COVID and student had to work to help pay bills).
	6	Fatigue	Online fatigue…boredom with being on Zoom™ all day.
Technology	10	Internet access	IT struggles were a barrier to learning. Rural Wi-Fi is unreliable.
	7	Literacy	My fully online freshman class struggled with technology literacy required to navigate the learning platform. We assume that young individuals/students know how to use technology, but they often struggle.
	7	Inconsistent course structure	Inconsistencies between faculty. Some were meeting in person, others were only meeting in person on Monday or Wednesday, and both had online work Friday. Students struggled with knowing which days they were supposed to attend, or if they were attending at all.

Student Expectations of Faculty

Faculty perceived that students expected increased accommodations and responsiveness during the ERT in response to COVID, with leniency being the most common subtheme reported. When faculty were asked if student expectations of them were higher during the fall 2020 semester as compared to other semesters, 47.4% either agreed (n = 32) or strongly agreed (n = 21). Although not an expectation of faculty, in response to this question, respondents (n = 12) also noted students showed increased empathy and appreciation for their efforts as educators during the pandemic. Sample faculty comments are included in Table 6.

Table 6: *Faculty Perceptions of Students' Expectations of Faculty in Response to ERT*

Theme	Frequency	Subtheme	Sample Comment
Accommodations	8	Resources	They expected online class sessions or recordings of each class session to be available, even for classes that are traditionally face-to-face.
	24	Leniency	Students expected leniency in certain aspects even if they, personally, were not experiencing difficulties.
			Many students seemed to expect faculty to be extremely flexible and lenient, particularly with due dates.
Responsiveness	6	Immediacy	Expectations to be on email and respond immediately were high.
	6	Availability	They expected to me to respond to emails immediately at all hours and all days of the week.

Discussion

The rapid transition to e-learning to keep the academic community safe and limit the spread of COVID-19 posed challenges to faculty and students. The purpose of this investigation was to explore exercise science faculty perceptions of the student learning experience during the coronavirus pandemic. Specifically, faculty ERT efforts with respect to student successes and challenges, as well as student expectations of faculty during the pandemic were examined.

Student Learning Successes

Amidst the anxiety of the pandemic and the sudden shift to ERT (Gallagher & Schleyer, 2020), positive educational outcomes can be identified. In the current sample, flexibility, improved communication, and greater autonomy of learning were identified by faculty as perceived successes of the ERT pedagogy. Current faculty perceptions parallel the perceptions of health professional students reported by Almoayad et al. (2020) where 67% indicated they were more responsible for their learning, 75% reported ERT helped them to become independent learners, and 71% reported being able to work at their own pace as a positive outcome of ERT. Engineering students in the Gelles et al. (2020) sample indicated that while their faculty helped them adapt, they felt a responsibility for their own learning. Likewise, science students in a Kedraka and Kaltsidis (2020) study noted the development of new skills (56%) and convenience of attending courses (53.3%) as positives of the learning experience during COVID-19.

The perceptions reflect previously identified benefits of e-learning of encouraging student autonomy, student-teacher interaction, and flexibility (Algahtani, 2011). The merit of student autonomy or students taking a proactive role in their learning outside the direct guidance of faculty interactions is an established concept (Holec, 1981). The identification by faculty in this sample of students becoming "partners" in the learning process as a success of ERT supports the shift from teacher-control to learner-control (Thanasoulas, 2000). Within exercise science, students' autonomy can be encouraged by educating faculty on practices to support student-directed learning of laboratory activities. In physiology, for example, Colthorpe and

Ainscough (2021) indicated that students valued video presentations of the laboratory experiences. The continued use of some of these features from ERT, combined with in-person practice of assessment skills, may contribute to improved learning outcomes in exercise science.

Faculty also perceived students as being resilient and adaptable in maintaining degree progress during the ERT period. When asked to evaluate if students' academic successes during the fall 2020 semester were consistent with previous academic terms, 57.1% agreed (n = 56) or strongly agreed (n = 8). Science students (62.7%) in the Kedraka and Kaltsidis (2020) sample also noted their understanding of the course content as a positive attribute of ERT. Understanding the switch to the online environment was not freely made by students or faculty, the perceived student successes are notable and also reflective of the success of faculty in making this transition.

Student Learning Challenges

Technology and self-discipline were key trends noted by faculty that challenged students during ERT. Technology challenges encompassed issues with access and lack of knowledge. Interestingly, students in the Coman et al. (2020) sample identified technical problems and the lack of technical skills of their faculty as challenges during ERT. The duplicate perception of technology as a barrier by faculty and students emphasizes the need to bolster available technology support and resources in higher education institutions. It also highlights the need to provide education on features of learning management systems and using technology to advance faculty and student digital literacy.

As a sub-theme of self-discipline, student time management was identified as a challenge to student learning. While the flexibility permitted through the online environment is a positive attribute, it also introduces distractions such as opportunities to work and socialize, in addition to the potential lack of adequate learning environments. This may be an area where continued guidance from faculty is warranted, even in a remote environment. Gelles et al. (2020) suggested that faculty faced with ERT should begin the process by providing lessons to help students develop time management skills, in addition to technology skills. Students in the Gelles et al. (2020) investigation identified time management as an integral part of the self-discipline necessary for remote learning. The lack of physical structure provided by the classroom creates a new need for tools to help guide students in their learning. Faculty can help facilitate and guide learning using tools such as virtual office hours, synchronous lectures, and online calendars, often available through learning management systems.

Student Expectations of Faculty

Faculty in the current sample noted the inconsistency in structure and technology features being used across classes as challenging for students. These perceived challenges likely contributed to the expectation the faculty perceived from students requesting accommodations including additional resources and leniency. From student focus groups, McDaniel et al. (2020) noted students desired consistency and flexibility in course expectations, requirements, and engagement during ERT. The students voiced a desire for flexibility in expectations and requirements to permit them to meet course goals while concurrently facing the challenges of the pandemic.

The expectation of responsiveness perceived by the faculty in this sample, including wide-spread availability and responsiveness, may also be associated with the flexible characteristic of the remote learning environment. As students gained the freedom to complete and view course materials on their own schedule, faculty were likely contacted on inconsistent schedules, resulting in the perception of consistent demand for responsiveness. This emphasizes the importance of clear communication guidelines, including availability and expected response time, for both students and faculty.

The global pandemic presented unique challenges for educators, who perceived greater demand from students, yet also felt students appreciated their efforts as educators. Faculty in this study also reported perceptions of student empathy for the challenges they faced during ERT. These findings support those of Gelles et al. (2020), who also expressed that students knew faculty were also facing difficulty in adjusting to COVID-19 and ERT and displayed compassion for their instructors. This partnership between faculty and students lends to the resiliency of higher education.

Conclusions

As the landscape of higher education continues to evolve, it is important to identify possible teaching successes and challenges among faculty, which can guide professional development efforts to ensure a more positive online learning experience for students. The exposure to online learning may alter the post-pandemic education environment. A recent survey examining post-pandemic education preferences revealed that both faculty and students had a more optimistic view of online learning and 73% preferred to take some of their courses in a fully online format, while 68% expressed a desire for more technology in face-to-face courses and 67% wanted more digital resources in their courses (Seaman & Johnson, 2021).

While the findings of the current investigation provide insight on exercise science faculty perceptions of the student learning experience during a global pandemic, there are limitations to be considered in future investigations. Respondents in the current sample reported varied experience teaching online prior to the ERT implemented in response to COVID-19, which may have influenced their perceptions of the student learning experience. It could be expected that those faculty with extensive online experience may have had a better understanding of students' needs as compared to those faculty with little or no experience teaching online courses.

The trends identified in the current investigation provide insight on the student learning experience in a hands-on field during a global pandemic. As higher education returns to post-pandemic classrooms, some of which may remain virtual, further understanding of the needs of e-learners can better prepare faculty to guide and facilitate learning for all students. The transition to ERT in response to the COVID-19 global pandemic quickly and unexpectedly highlighted the necessity for digital literacy of both faculty and students.

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