

Article

No Student Left Behind: Students' Experiences of a Self-Paced Online Learning Orientation in Undergraduate Studies during COVID-19 Pandemic

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Abstract: The rapid transition to remote online learning modality during the COVID-19 pandemic forced traditional brick-and-mortar universities to implement student support mechanisms to ensure that student learning is not impaired. This paper presents data derived from a study aimed at investigating students' perceptions of a self-paced online learning orientation (OLO) in an undergraduate Food Science and Technology course. To elicit student responses, a mixed-method survey with a five-point Likert scale and open-ended qualitative questions was conducted via the Blackboard learning management system (LMS). In this study, participants reported having access to the LMS: using smartphones (66.3%), followed by a laptop with a webcam (38.55%), and a laptop with no webcam (26.51%). The participants also felt that it was easy to navigate ($M = 3.95 \pm 0.88$) the OLO course, and they were able to locate the required content ($M = 3.83 \pm 1.03$). Furthermore, results also showed that participants expressed a high commitment to accessing the LMS and reviewing course announcements ($M = 4.72 \pm 0.57$) and kept up to date with the course activities ($M = 4.58 \pm 0.70$) after completing the OLO. Therefore, the authors suggest that using a learner-centered OLO with authentic learning activities that mimic course activities is crucial to online students' success in online learning. These findings have significant implications for educators who intend to re-design their courses and enhance remote online learning experiences for students.

Keywords: online learning orientation; COVID-19 pandemic; online learning; students' perceptions; motivation for learning; computer self-efficacy; course design; remote learning



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1. Introduction

The World Health Organization (WHO) officially declared the novel coronavirus (COVID-19) on the 11 March 2020, a pandemic after the initial outbreak was reported in Wuhan, China, in December 2019 [1]. The onset of the COVID-19 pandemic disrupted economies, social rituals, and political events, and the education sector has not been immune. Higher education institutions (HEIs) across the globe responded by rapidly transitioning from face-to-face classes to online learning or remote teaching and learning [2–4]. In line with many other governments, the South African government-imposed lockdown measures that confined people to their places of residence and strictly limited access to public institutions such as universities. As a result, universities have been required to shut down, and academics and students, like all other citizens, had to find innovative ways to continue with their academic tasks and meet their obligations. This was done to ensure learning continued in spaces that limited the spread of the virus and instituted social distancing measures that are reported to combat the spread of the virus, among others.

Moreover, the Minister of Education, South Africa, Dr. Blade Nzimande, made a call to HEIs that “No student should be left behind” [5] in the modes of delivery of instruction

higher education institutions chose to employ during the pandemic. The concept of ‘No student left behind’ speaks to ensuring that students who have not received the requisite tuition, or those students who need additional teaching and learning support, are afforded equal opportunities to achieve academic success, especially during the lockdown period. This call came after online learning had been proposed as a viable solution given the devastating effects of COVID-19 [6–8]. The “No student left behind” concept is also a call to educational institutions, among others, to put measures in place to adequately support students. It is also prudent to note that in an unequal country such as South Africa, the COVID-19 pandemic laid bare the digital divide that exists. Students accustomed to the face-to-face mode of learning may have struggled due to this swift transition to online learning, primarily where no structured online learning orientation (OLO) programme existed. Therefore, there is a need to provide online students with a structured online orientation prior to commencing with online learning, especially for first-year students, especially during the pandemic.

Online education has been studied for decades, and effective online teaching results from careful instructional design and planning abound [9,10]. Much of the research on online learning during the COVID-19 pandemic has been devoted to online assessments [11], preventing cheating or dishonesty during assessments [11–14], students’ satisfaction with online learning [15], use of digital technologies [2] and instructional strategies [3,11]. Despite this, there is a paucity of information on students’ perception of online learning orientation (OLO) during and post the COVID-19 pandemic. Traditionally, universities conduct face-to-face orientation sessions at the beginning of the year to familiarize students with the institutions, courses, or programmes, how to cope with studies, bridge the gap between high school and university, and more [16,17]. With the rushed transition to online learning during the pandemic, there is a need to explore online learning orientation (OLO) in traditional brick-and-mortar universities. Orientation is viewed as one of the most proactive support strategies for easing students into university [16]. Online orientation sessions are one way that online courses or programmes of study can implement to aid build learning communities and provide students with needed information about the course/programme, thereby reducing confusion about course setup and course expectations and simply coping with their studies. Online learning orientation can also be utilized as a proactive support method to help students improve their self-confidence and readiness, clarify course goals and needs, and dispel misconceptions regarding online learning.

Furthermore, an OLO can reduce online students’ nervousness and boost their confidence and readiness by providing an early positive interaction with the online learning environment. Online learning orientations have the ability to improve students’ readiness, retention, and success by improving their study skills, such as motivation, time management, self-discipline, and technical skills [16]. Thus, universities must provide ample support for online learning to students for them to succeed in their studies. Early student support is critical for student success during the transition to university [18]. In regard to online learning, Miller and Pope [19] pointed out in 2003 the value of having an online learning orientation as it can introduce students to technology, which can have an impact on their progress. According to a study conducted by Sam et al. [20], it was indicated that the more practice a student has with internet technologies, the higher their satisfaction and motivation would be with their studies. They also revealed that holding workshops on applications used in the course could boost students’ learning attitudes. Orientation programs do a great deal to define what students should expect from their new institution. Orientation tools for online learning have been credited with aiding students, particularly those new to online learning, with navigating the online environment before beginning courses and solving time management and self-regulation difficulties [19,21–23]. Alperin et al. [24] reported that students enrolled in the Master of Public Health (MPH) program at Emory University in the United States (US) were confident in navigating the learning management system (LMS) after participating in an online orientation program. Larson [25] provided an online orientation via skype for undergraduate students at the University of

Hawai'i at Mānoa and reported that students enjoyed participating in the orientation, felt that the online tools were helpful, and motivated them to complete the course.

Moreover, at McGill University, Wilson [26] reported that students did poorly because they poorly attended the webinar component of the orientation program. Furthermore, the poor student performance was attributed to the fact that the webinar was not aligned with the courses in which the students were registered. This observation is vital for course design and relevant in terms of designing activities for online orientation; in other words, it is essential to design online learning orientation programs that meet the needs of the course and the students. In addition, if students lack confidence in the usage of the technology they are using or do not feel a sense of engagement and social connection, the result may inadvertently contribute negatively to the students' learning outcomes. Despite the studies reported in the literature on the implementation of online orientation stated above, there is a paucity of information about the student's perceptions of online learning orientation in undergraduate Food Science and Technology courses. Furthermore, prior to implementing proposed teaching and learning activities or technology-enhanced learning methodologies on a large scale, it is vital to obtain student perspectives or impressions/needs. The aim of this study was to investigate students' perceptions of an online learning self-paced online orientation in an undergraduate Food Science and Technology course during the COVID-19 Pandemic. This study analysed six domains of the OLO, course navigation, course content, motivation for learning, online computer efficacy, computer self-efficacy, and satisfaction with online learning, respectively.

To achieve this aim, our research questions were:

1. What are the access and demographics of the students for online learning?
2. What are the first-year students' perceptions of the course navigation and content provided in the online learning orientation?
3. Does providing online learning orientation motivate the students in their course?
4. What are the students' perceptions of their online communication efficacy and computer self-efficacy?
5. Are the students satisfied with the online learning orientation?

2. Methodology

2.1. Course Description

This study adopted a mixed-method case study approach to explore students' perceptions of an online self-paced online learning orientation during the COVID-19 Pandemic. The study focused on students' experiences in the transition to online learning during the COVID-19 pandemic and the closure of face-to-face educational activities in South Africa. Participants in this study were undergraduate first-year Food Science and Technology (FOT150S) students enrolled at a University of Technology (UoT) in South Africa.

2.2. Design of Online Student Orientation for FOT150S

Since the onset of the COVID-19 pandemic in early 2020, academic institutes in most countries have transitioned their teaching and learning operations from a physical paradigm to an emergency online one or remote teaching and learning. In this case, in 2021, a two-week self-paced online orientation linked to a course was designed to engage online learning students early in the process of their coursework and provide resources for the successful completion of the course. To this end, the online learning orientation course offered students multiple opportunities:

1. Introduced course and university resources (e.g., student regulations and student support services such as counselling and library).
2. Familiarized themselves with the institutional rules and regulations.
3. How to effectively use the LMS (e.g., completing and submitting assignments, posting on discussion boards, locating grades, instructor feedback, etc.).
4. Assessed, practiced, and learned computer and technology skills in a risk-free environment and build a community of practice or learning among FOT150S students.

Compared to the traditional orientations, the online learning orientation was task-oriented, simulating the learning experience of online students. The orientation's activities were designed to introduce students to the various instructional resources they would encounter in their online course (in this case, FOT150S) and presented based on effective course design techniques such as chunking, diversifying, and highlighting content relevance. Table 1 presents *FOT150S self-paced online orientation* modules and their corresponding tasks and assignments for the most recent course offering (for the 2021 academic year). For example, *Module 1* was "start here", and the first task in this module was to view a video that explained the course navigation, features, and essential tools such as the course calendar and students' grades. In some instances, advanced release was implemented whereby the students were required to click review on documents or videos to allow a staggered release of other orientation resources. This was done so as not to exert stress and anxiety or cognitive overload and provided seamless guidance on completing tasks. After completing the self-paced online orientation, a synchronous session on Blackboard collaborate (a web conferencing tool) was also conducted, where the students had the opportunity to meet with each other and the instructor online. This synchronous session aimed to introduce the course, offering students tips on succeeding in remote learning, managing their time, staying organised, and participating in and collaborating in online activities.

Table 1. FOT150S self-paced online orientation course modules and corresponding tasks/activities.

Module	Activities
Module 1: Start here	Task: Watch the FOT150S introduction YouTube video on LMS navigation. Click on this link to view the course introduction example video (https://youtu.be/dF3jHYhRBVU).
Module 2: Instructor information and meet and greet	Task: Familiarise with the instructor's information. Task: View the instructor introduction video on Flipgrid. Task: Post an introduction video on Flipgrid. (Students used Flipgrid to introduce themselves, including their names, why they chose this course, and their favourite food products). Task: Add a profile picture on the LMS. Task: Read a web link on how to email your professors How to email your professor.
Module 3: Institutional matters	Task: Read the university rules and regulations and the faculty handbook. Task: Visit student support services website. [Students were provided with web links from student support services such as student counselling, IT services, library, disability unit, information literacy ect].
Module 4: Introduction to FOT150s	Task: Read the course syllabus and schedule. Task: View the FOT150S online course calendar. Task: Check the online FOT150S course glossary.
Module 5: Using Blackboard tools	Task: Discussion board—Watch the video on how to complete discussion boards. (Students completed a discussion post to acknowledge having received and read the FOT150S course remote study guide/syllabus). (Students completed a discussion forum on their experiences with food and were required to post on four other student discussion boards). Task: Online test—Watch the video on how to complete and submit an online test. (Students completed a demo online test). (Students completed a quiz on the course syllabus, university rules, and regulations, and faculty handbook). Task: Online Journal—Watch the video on how to complete and submit a journal reflection. (Students completed a journal reflection—My first two weeks of FOT150S). Task: Online assignment—Watch the video on how to submit an online assignment. (Students are given instructions to search for a specific document in the LMS and upload this as an assignment following the instructions given). Task: Check your grades.
Module 6: Feedback	Task: Complete an online survey on Blackboard.
Module 7: Synchronous introduction session	Task: Attend the introduction session on Blackboard collaborate.

2.3. Data Collection and Analysis

The University research ethics committee approved the study (No: 30097110/11/2021). A questionnaire to elicit students' experiences of the online learning orientation (OLO) in the FOT150S course was administered via the Blackboard LMS, and participation was completely voluntary and anonymous. Students were told that their participation in the questionnaire, or lack thereof, would have no bearing on their course grades. The questionnaire administered was adapted from previous research conducted by Cho [27] and Abdous [16]. It included two types of questions: (a) quantitative questions, including a Likert scale rating 5-point ("Strongly Agree", "Agree", "Neither Agree nor Disagree", "Disagree", and "Strongly Disagree") and (b) students were also provided with an opportunity to respond to two open-ended questions about their experiences about the online learning orientation in FOT150S course. A total of 94 students were enrolled for the course, and 88% (n = 83) completed the questionnaire. All quantitative data were analysed using Statistical Package for Social Sciences 27.0 (SPSS 27.0) (2005) (SPSS Inc., Chicago, IL, USA). The quantitative was analysed using descriptive and inferential statistics and data was reported using means (M), standard deviation (SD), and Cronbach alpha were used to verify the coefficient of reliability of the survey questions. In a study reported by Khan et al. [28], it is posited that an instrument is regarded as reliable if the Cronbach alpha coefficient is greater than 0.5. The reliability value of Cronbach's alpha between ± 0.41 and ± 0.70 qualifies for moderate reliability of the scale measured, while a greater value than ± 0.70 shows high internal consistency. As exhibited in Table 2, all constructs evaluated in this study showed Cronbach values greater than 0.60, significantly higher than the threshold value of 0.5. This means that all constructs had a high degree of internal consistency with their measurement indications [29]. Regarding the open-ended questions, representative statements or quotes from the students were analysed inductively, and pseudonyms were used to provide context.

Table 2. Cronbach's alpha for the identified constructs of the survey questions.

Measured Constructs	No of Items	Cronbach's α
1. Course navigation	4	0.822
2. Course content	5	0.725
3. Computer self-efficacy	10	0.817
4. Motivation for learning	5	0.799
5. Online communication self-efficacy	6	0.608
6. Satisfaction with online orientation	8	0.785

3. Results and Discussion

3.1. Personal and Academic Profile of Participants

All enrolled students in the course participated in the OLO, and as a result, had the required experience to complete the questionnaire administered to gather students' experiences of the OLO course. However, of the 94 students enrolled in the course, only 83 participated in the online learning orientation questionnaire (a response rate of 88.29%). The participants' demographics were gathered in terms of gender, age, academic enrolment level, internet access, and residency during the academic year under evaluation (see Table 3 for results). Results show that most of the participants were between the age of 20–24 years and was composed of 67.5% females and 32.5% Males. Eighty percent (80%) of the participants enrolled were in their first year of enrollment, meaning it was their first time enrolling for a course at university, with 15% enrolling for the second time- these are primarily students in the extended curriculum programme (ECP), who make up 30% of

the total enrollment in the OLO course. The ECP, in the South African context, provides access to higher education to students from disadvantaged backgrounds who have only met the minimum requirements for entry to university and supports them in developing academic foundations by offering instructions in small classes over an extended period of, two years and with more dedicated support, while the mainstream students follow the standard modality [30]. Traditionally, FOT150S was offered via the face-to-face modality; but during the COVID-19 pandemic, there were some restrictions in terms of movement between provinces. As a result of the restrictions, the teaching and learning activities of students enrolled for FOT150S were done remotely. Therefore, it was essential to ascertain the location of the students during the pandemic. Findings showed that a high number of students taking the course were residing on-campus (44.6%), followed by those residing at home in the city (28.9%), and a small number were residing at home in the rural areas (2.4%). The university residences are equipped with infrastructure such as WiFi, are closer to ICT resources, and afford the students a quiet adequate study space. Results also pointed out that the majority of the students had slow but consistent internet (43.4%)-this was a vital aspect to ascertain because online learning relies heavily on being connected to the internet.

Table 3. FOT150S Participants demographics.

	Variable	Count (n)	Percent (%)
Gender	Male	27	32.5
	Female	56	67.5
Age	<19	30	36.1
	20–24	50	60.2
	25–29	1	1.2
	30–39	2	2.4
Academic Year of Registration	1st time	67	80.7
	2nd time	13	15.7
	3rd time	3	3.6
Enrollment Level	Extended Curriculum Program	25	30.1
	Mainstream	58	69.9
Internet Access	Slow and Intermittent	20	24.1
	Slow but consistent	36	43.4
	Relatively fast and consistent	27	32.5
Place of Residence during Remote Learning	Home (in a rural area)	2	2.4
	Home (in the city)	24	28.9
	Residence (on-campus)	37	44.6
	Residence (service provider)	14	16.9
	Other	6	7.2

Figure 1 shows that 66% of the participants reported having access to the LMS using smartphones (66.3%), followed by a laptop with a webcam (38.55%) and a laptop with no webcam (26.51%). Seventy-one percent (71%) of the students received mobile data from the institution. These results have significant implications for course design and teaching and learning online. Smartphones have permeated the academic environment, especially classrooms [31–33]. Mobile devices allow learners to access content and communicate with classmates and instructors, no matter where they are. An increasing number of youths depend on their smartphones for internet access. It is also essential to note that, although this sort of ‘internet-on-the-go’ provides quick access to online information, social networking, and social media capabilities, smartphones are limited for many academic activities, such as word processing, which university students heavily require. As mobile

devices such as smartphones are globally adopted, there is no doubt that many students nowadays rely on their mobile devices to interact and access teaching and learning materials since it is possible to have Apps such as Blackboard installed on digital devices. Moreover, as highlighted by Giannoulas et al. [34], it is crucial in the case of wholly remote online learning to consider course designs that are compatible with smartphones to support students learning remotely, with limited access to appropriate devices.

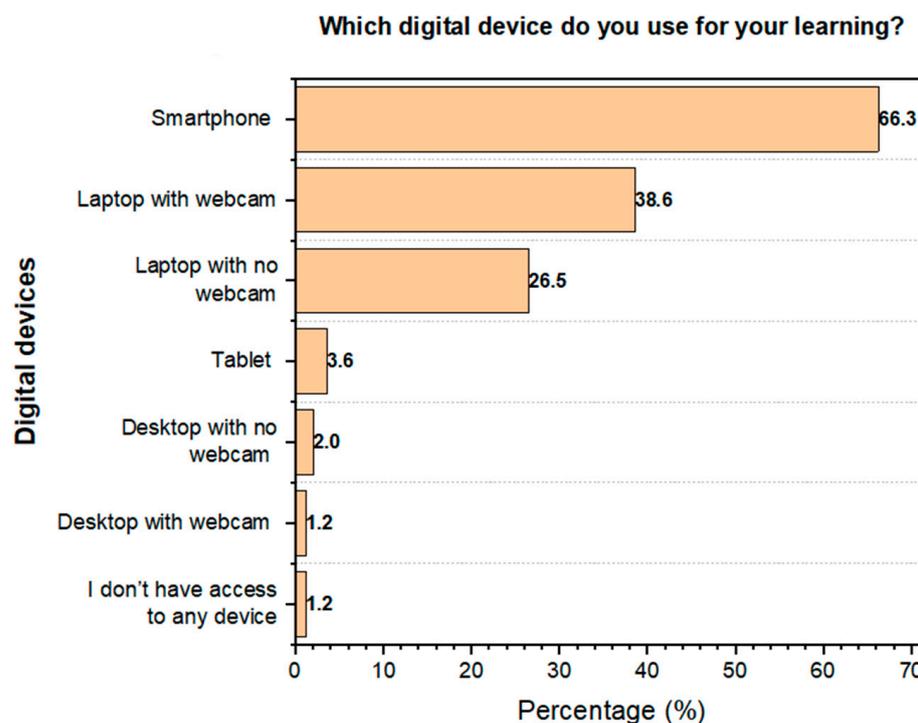


Figure 1. FOT150S Students' ownership of digital devices used in online learning orientation.

3.2. Course Navigation

Course navigation and organization are essential elements in the design of any online course. Hence, it was also essential to examine the students' perceptions of this variable regarding the designed OLO course. As shown in Table 4, the participants felt that it was easy to navigate ($M = 3.95 \pm 0.88$) the OLO course and were able to locate the required information ($M = 3.83 \pm 1.03$). Moreover, they could quickly figure out how to navigate the LMS ($M = 4.08 \pm 0.94$). As started by Rodrigues [22], the most frequently cited reasons for dropping out of online courses include poor or unstructured course design, technology issues, and communication practices.

Furthermore, Attack [35] reported that students were unable to give course content sufficient attention because they had spent so much time learning how to navigate the LMS. Therefore, the novelty of the OLO course is that it also included elements of the adaptive release of content, meaning course content was released sequentially once the student had completed specific tasks. The adaptive release was used in the design of this course to limit the cognitive overload and provide more straightforward navigation and increase the familiarity of the students with the LMS. For example, Nomfundo, one of the students, wrote:

I enjoyed the consistency of the course structure. The first module seemed quite difficult, and there was a lot of content, but because the following modules were very similar, I eventually got the hang of things and felt much more comfortable and confident.

The consistency and layout of the OLO course were helpful and effective, and the results of this study demonstrate that structured course navigation is essential to keep

students engaged in an online course. The ability to navigate resources has ramifications for the student's ability to grasp subject information: to develop problem-solving, critical thinking, and communication skills, all of which are skills and capabilities students in higher education should develop and are needed in the 21st-century workplace. In a study conducted by [36], it was reported that being able to navigate online resources and learning new technology contributed to student success in online learning. In addition, these findings demonstrate the applicability of a self-paced OLO that can be used to prepare students for online learning. The results of this study extend the literature in that it also offers insights into students' experiences with OLO, particularly in Food Science and Technology.

Table 4. Students' perceptions of course navigation (CN), course content (CC), and motivation for learning (ML).

Dimensions of Evaluation	Count (N)	Minimum	Maximum	Mean	Std. Deviation
CN—The navigation for FOT150s was easy to understand	83	1	5	3.95	0.88
CN—It did not take me long to figure out how to navigate the online FOT150s orientation	83	1	5	4.08	0.94
CN—I was able to locate needed information easily	83	1	5	3.83	1.03
CN—The layout made it easy to navigate the online student orientation	83	1	5	3.94	0.94
CC—The content in the online FOT150s online student orientation was well organized	83	1	5	4.35	0.88
CC—The content of the FOT150s online orientation was presented in an appropriate way	83	1	5	4.45	0.87
CC—The access to the online student orientation was easy	83	1	5	4.04	0.94
CC—There was no technical delay when watching videos	83	1	5	3.98	1.23
CC—The content of the FOT150S online orientation was informative	83	1	5	4.45	0.85
ML—I am confident that I can create a plan to complete the given assignments	83	1	5	4.37	0.88
ML—I am confident that I can create a plan to complete the given assignments	83	2	5	4.58	0.70
ML—I am committed to regularly logging in to monitor course activities in FOT150s	83	2	5	4.58	0.70
ML—I am committed to regularly checking the announcements to keep up to date	83	3	5	4.72	0.57
ML—I am confident I can regularly participate in discussion boards when needed	83	1	5	4.41	0.94

3.3. Course Content

Due to the recent transition from face-to-face to online learning in response to COVID-19, there was a further need to understand the student's satisfaction with online learning orientation (OLO) course content. As depicted in Table 4, participants felt that the OLO course content was presented appropriately ($M = 4.45 \pm 0.87$) and was informative ($M = 4.45 \pm 0.85$). Since online learning environments are characterized by various pedagogical practices involving active student-centered techniques, the OLO content had a unique feature, that is, it was scaffolded to introduce the tools on the LMS and course information and highlighted support structures available in the university. These included student support systems such as information technology (IT) support and student counselling. Moreover, the inclusion of visual and aesthetic content motivated and attracted students' attention to online learning and created satisfaction. One student, **Thembeka**, commented:

“The online learning orientation videos that the lecturer posts are very clear, I can hear and see everything properly, and they are informative.”

The results of this study contribute to knowledge on the online learning orientation content students value, especially in the context of the COVID-19 pandemic and online remote learning. Participants also strongly agreed that the OLO course content was well organized ($M = 4.35 \pm 0.88$). This finding is important because previous research by Atack [35] highlighted that course content that does not offer students an opportunity to engage in active learning was a challenge and hindrance for online learning. Providing good videos on how to use the LMS and practical exercises is critical for OLO. In addition, the participants felt that there were no technical delays when watching the videos ($M = 3.98 \pm 1.32$). This observation can be attributed to the fact that the OLO videos were short (10 min maximum) and thus did not consume too much bandwidth. Technical challenges are common, and they are a significant issue that academic institutions must consider in order for all students' learning experiences to be beneficial; thus, a carefully designed OLO course has the potential to reduce or mitigate these by preparing students well in advance before the course commences with the delivery of discipline-specific content.

The findings of this study suggest that OLO course content provided in smaller chunks and various forms is appreciated by students and valuable to orient them in the online learning course. The results of this study echo the findings of Abdous [16], who reported that the use of a learner-centered OLO course with authentic learning activities that mimic course activities is crucial to online students' success and increases academic self-efficacy.

3.4. Motivation for Learning (ML)

Students' efforts to be compatible with their own goals and improve their learning, retention, and retrieval can be significantly aided by the dimension of motivation for learning. Motivation in learning is critical for ensuring student success in their learning, more importantly during the COVID-19 pandemic. Gamage [36] pointed out that students may develop feelings of fear, stress, worry, and isolation during the university closure and lockdown. Therefore, in this study, motivation for learning was considered one of the essential constructs to evaluate after offering the OLO. Table 4 shows students' perceptions of the OLO for enhancing motivation for learning through descriptive statistics. Results showed that participants expressed a high level of commitment to accessing the LMS and keeping up in reviewing course announcements ($M = 4.72 \pm 0.57$) and kept up to date with the course activities ($M = 4.58 \pm 0.70$) after completing the OLO. Moreover, the participants were confident that they could participate in the discussion boards ($M = 4.41 \pm 0.94$). When the results are further interpreted, it can be seen that the OLO positively impacted the participants' attitudes and behaviours towards their online learning during the pandemic. These results are significant because the nature of online learning is more individual and independent; therefore, motivation is a key to efficient learning. The results of this study expand on the research conducted by Tang et al. [37], who reported that virtual activities such as offering guidance to students could be used to enhance the motivation of students to learn online during the pandemic. Moreover, Yimlaz [38] reported that increased online learning readiness levels increased student motivation. Furthermore, if students appear to be having difficulties or are discouraged during the online learning process, prompt and supportive intervention and assistance are required to maintain students' motivation, and thus, in this case, providing an OLO is one of the mechanisms that was used to sustain student motivation in their quest for online learning during the COVID-19 pandemic.

3.5. Online Communication Efficacy (OCE)

In the context of e-learning, computer self-efficacy can be defined as students' ability to use certain online e-learning services in order to achieve the desired learning outcomes. Since online learning is delivered through online networks, it is essential to determine students' experiences with ICTs and assess their competencies in using the online tools, especially the LMS. The mean for students' perceptions of online communication self-efficacy

(OCE) and Computer self-efficacy (CE) scores are depicted in Table 5. After completing the OLO, participants self-reported that they were confident they could effectively participate in online discussion forums ($M = 4.17 \pm 0.71$) in the LMS, communicate with peers via email ($M = 4.22 \pm 0.83$), share opinions respectfully ($M = 4.10 \pm 0.74$), and request and provide help when required ($M = 4.41 \pm 0.64$). Another advantage of having a self-paced OLO highlighted was that it afforded the students the opportunity and flexibility to access their learning materials at times and places that were convenient to them. Given that most students had smartphones and could also download the blackboard mobile application, the ability to communicate with peers was also enhanced through the provision of this OLO. This is exemplified in the following statements stated by most of the participants:

Ruth: It was a whole new experience of having an out-of-class experience while still having instruction from the professor, and still be in active communication with peers even though we are separated due to the COVID-19 pandemic.

Mary: I appreciate the opportunity to get comfortable with the technology we will be using throughout the program, especially on discussion boards. I obtained more information on the discussion board because I got many opinions from different students. When I didn't understand, I tried to look all over the discussions.

In addition, Kalkan [39] examined the online learning readiness of university students in Turkey using the online learning readiness scale. Findings showed that computer, internet, and online communication self-efficacy were the top-ranked factors that significantly affected the online learning readiness of students, followed by self-learning, learning control, and motivation. These findings showed that students must be comfortable navigating and using technology and participating in discussions with their classmates and lecturers to maximize learning opportunities in an online setting. This is due to the fact that learner engagement, as well as teacher-learner interaction, plays a crucial influence on the experience and outcomes of online learning (students' meaningful learning) [40].

Table 5. Students' perceptions of online communication self-efficacy (OCE) and computer self-efficacy (CE).

Dimensions of Evaluation	N = Number of Respondents	Minimum	Maximum	Mean	Std. Deviation
OCEC—I am confident I can actively participate in online discussions	83	3	5	4.17	0.71
OCE—I am confident I can effectively communicate with my classmates	83	1	5	4.22	0.83
OCE—I am confident I can express my opinions to other students respectfully	83	2	5	4.11	0.75
OCE—I am able to respond to other students in a timely manner	83	2	5	4.10	0.74
OCE—I am able to request help from others when needed	83	1	5	4.23	0.82
OCE—I am able to provide help to other students when assistance is needed	83	3	5	4.41	0.64
CE—After the online orientation in FOT150S, I am confident that I can download instructional materials.	83	1	5	4.33	0.87
CE—After the online orientation in FOT150S, I am confident that I can post a new message on a discussion board.	83	1	5	4.19	0.96

Table 5. Cont.

Dimensions of Evaluation	N = Number of Respondents	Minimum	Maximum	Mean	Std. Deviation
CE—After the online orientation in FOT150S, I am confident that I can reply to others & respond to messages on a discussion board	83	1	5	4.43	0.87
CE—After the online orientation in FOT150S, I am confident that I can submit assignments	83	2	5	4.73	0.54
CE—After the online orientation in FOT150S, I am confident that I can Open files within MyClassroom (Blackboard)	83	3	5	4.73	0.50
CE—After the online orientation in FOT150S, I am confident that I can use the chat tool to communicate with others	83	1	5	4.28	0.94
CE—After the online orientation in FOT150S, I am confident that I can send emails to others with or without attached files	83	1	5	4.57	0.84
CE—After the online orientation in FOT150S, I am confident that I can complete an online Journal	83	1	5	4.28	1.00
CE—After the online orientation in FOT150S, I am confident that I can submit a quiz or test	83	3	5	4.83	0.44
CE—After the online orientation in FOT150S, I am confident that I can join a collaborate session	83	1	5	4.75	0.66

OCE—online communication self-efficacy; CE—computer self-efficacy

3.6. Computer Self-Efficacy (CE)

In order to evaluate the effectiveness of the OLO in preparing the students for remote online learning, it was also vital to assess the student's perceptions in connection to their efficacy to use the tools offered in the LMS. To this end, the computer efficacy of the students in using the LMS tools such as discussion boards, learning journals and submitting assignments was assessed, and the results are shown in Table 5 above. The top three tools in which participants reported being confident are submitting online quizzes ($M = 4.83 \pm 0.44$), joining online synchronous sessions (Collaborate sessions) ($M = 4.75 \pm 0.66$), submitting assignments, and opening files in the LMS ($M = 4.73 \pm 0.50$). Moreover, students felt confident that they could download instructional materials ($M = 4.33 \pm 0.87$), post messages on discussion boards ($M = 4.19 \pm 0.96$), and send emails to others ($M = 4.57 \pm 0.84$). This high level of confidence in performing academic functions in the LMS was attributed to the hands-on nature of the OLO offered. This is exemplified in the following statements from a selected student, which can be taken to represent most of the students:

Napo: It definitely improved my academic life, I am glad I was able to meet my classmates via the discussion forum, and the Flipgrid video also was good to see their faces. There is an opportunity to ask questions and get clarity.

The above findings add to the current literature on active learning in that students are more likely to be motivated or confident if they are actively engaged in their learning [41]. Wu et al. [42] reported that computer self-efficacy was critical for online learning and was strongly linked to students' success with online learning. Moreover, this is the first study to our knowledge to explore the student's perceptions of OLO in an undergraduate Food Science and Technology course and add valuable insights to the field. In addition, Yilmaz [38] reported that the student's computer self-efficacy, internet self-efficacy, and online communication self-efficacy skills significantly improved after taking a computing class. The current study, whose results are shared in this paper, further adds to the body of literature on the importance of providing OLO for students and their satisfaction.

Assignments, announcements, resources, course outlines, and the chat room are the most sought LMS services for student satisfaction and success by students at the University of Cape Town (UCT) and Makerere University, according to results from a study by Ssekakubo et al. [43].

3.7. Satisfaction with an Online Learning Orientation

If the student is satisfied with online learning, he/she will continue to use this type of learning, and if not satisfied with it, the student will reduce the use of online learning or, in the end, he/she will never use it anymore, that is if they have a choice. Understanding the students' level of satisfaction towards a course or a learning activity is paramount for efficient course design and for understanding its efficiency [44]. Therefore, it was important to investigate the students' satisfaction with self-paced online learning orientation in this study. Table 6 exhibits the students' satisfaction results with the OLO. Participants reported that they could better use the functions (tools) of the LMS ($M = 4.39 \pm 0.85$), and the time allocated to the OLO was appropriate ($M = 4.20 \pm 0.93$). These results indicate that providing the OLO assisted the students with transitioning from face-to-face to online learning modality, and students viewed this intervention as useful and could better understand the nature of online courses ($M = 4.29 \pm 0.87$). These results highlight the importance of an OLO in preparing and engaging online students in order for them to succeed in their classes. The participants were well satisfied with the OLO ($M = 4.41 \pm 0.65$).

Table 6. Student satisfaction of a self-paced online learning orientation.

Dimensions of Evaluation	Count (N)	Minimum	Maximum	Mean	Std. Deviation
OLO-Satisfaction—I felt I can perform better in my online course	83	1	5	4.19	0.956
OLO-Satisfaction—I better understand the nature of online courses	83	1	5	4.29	0.877
OLO-Satisfaction—I believe I can better use the functions in MyClassroom for my online course	83	1	5	4.39	0.853
OLO-Satisfaction—The content of this FOT150s online orientation was what I expected	83	1	5	3.77	0.992
OLO-Satisfaction—The amount of time I spent on this FOT150s online orientation was appropriate	83	1	5	4.20	0.934
OLO-Satisfaction—It was worth my time to take this FOT150s online orientation course	83	1	5	4.35	0.889
OLO-Satisfaction—I would recommend that other students take this online student orientation.	83	1	5	4.36	1.019
OLO-Satisfaction—Overall, I am satisfied with the online FOT150s orientation	83	3	5	4.41	0.645

Moreover, to the best of our knowledge, this is the first study to report on the implementation of online learning orientation in an undergraduate Food Science and Technology course or studies. The obtained results improve the understanding of the value of online learning orientation. They also provide significant implications for both theory and practice of online learning as results show that success for online students hinges on employing a learner-centered OLO with authentic learning activities that resemble course activities. Multiple opportunities for students to clarify course requirements and become familiar with the online learning course environment, logistics, and technology should boost their confidence to complete their course successfully. This study would be a valuable addition to the field of online education, especially in the event of a pandemic or situations where face-to-face instruction is not possible.

4. Limitations

Despite the present study's new insights, several limitations should be noted. First, the study was carried out with first-year undergraduate students enrolled in Food Science and

Technology; therefore, its results may not be generalized to the students of other disciplines. Secondly, the data in the study was collected through self-report instruments. In future studies, qualitative research methods (in-depth interviews or focus group interviews) could be used to examine students' opinions in-depth. Examining students' LMS log data with learning analytics techniques is recommended in this context. It would also be helpful to study the opinions and experiences of returning students (senior students) on online learning orientation. We advise, however, that an OLO is not a panacea for resolving the students' lack of enthusiasm and preparedness, the faculty's absence, or the institution's lack of support. While an online orientation has a clear benefit in relieving students' fears and preparing them for online learning, it does not address the developmental and social concerns that can obstruct students' learning on its own. Notwithstanding these limitations, the study suggests that providing a self-paced online learning orientation is vital to ensure that no student is left behind, especially when transitioning from face-to-face to online learning.

5. Pedagogical Implications

The results of this study are essential for institutions of higher learning in food science and technology for two main reasons. Firstly, the shift to online learning modality or remote multimodal learning has been an abrupt one due to the unprecedented lockdown imposed to manage the COVID-19, and most institutions of higher learning did not have sufficient time to design and adopt the course contents for the online mode. Students' perceptions, learnings, and experiences can be infused to design simple, efficient, and productive remote online courses.

Secondly, even after the lockdown measures are revoked, life post the COVID-19 pandemic will unlikely be the same as before, and online learning will be a prominent feature through a blend of face-to-face with online classes. Furthermore, there is still very much uncertainty about the length of the pandemic and the possibilities of future COVID-19 waves and re-infections. Therefore, institutions of higher learning need to embrace and be prepared to shift the majority of their course content to online platforms and course structure and curriculum suitably while providing adequate support and training opportunities to both instructors and students on how to use online teaching and learning technologies effectively. Equipping students with confidence in using technology was essential as it will assist them in mastering the navigation of subject materials and learning resources required for student success.

6. Conclusions

The present research from which data is presented in this paper aimed to examine students' perceptions of a self-paced online learning orientation in an undergraduate Food Science and Technology course. The use of OLO as a student support intervention allowed the first-year students to transition from face-to-face to online learning during the COVID-19 pandemic. Due to its self-paced nature, structured content, and adaptive release (scaffolding), computer and communication self-efficacy and motivation for learning were enhanced. Findings showed that a well-planned and designed OLO is vital to increasing student motivation for learning for undergraduate first-year Food Science and Technology Students in the cohort under study. It adds insights into the body of knowledge in the field. The authors recommend future research on multi-disciplinary research on students' perceptions of OLO, the instructors' perceptions of online learning orientation, and returning students (levels two to three). Moreover, a learning analytics approach should be considered in future studies to evaluate the level of activity, engagement, and uptake of online learning orientation in tandem with students' perceptions.

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