Article

Impact of the COVID-19 Pandemic on Liberal Arts Education: An Empirical Study in Hong Kong

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Abstract: The COVID-19 pandemic has instigated considerable unprecedented challenges to tertiary education in the aftermath of the mass shutdown of universities across Hong Kong since early 2020. Accordingly, shifting the traditional modalities to the online model has been opted for as the only reasonable alternative in the breakout period. It is, then, essential for educators to perceive the extent to which students' learning attainments and experiences have been negatively impacted by these educational changes in the post-pandemic era. With the aim of examining the abrupt changes which the freshmen students' e-learning experiences and their learning environment have undergone before and after the pandemic, the present quantitative study was conducted at a Liberal Arts Institution in Hong Kong, whose data was collected via the web-based questionnaire FYSLES, or "first-year student learning experience survey". Quantitative analysis of responses indicated that students' impressions and experience of liberal arts education, and students' personalities and skills development, presented a U-shaped trend during the COVID-19 pandemic. The underlying rationale of this study is addressed to higher education policymakers to orient and add value to their safety measures, pertinent recommendations, as well as in context strategies that could be established in view of the pandemic's detrimental effects.

Keywords: COVID-19 pandemic; liberal arts education; e-learning; teaching and learning; wellbeing

1. Introduction

As Davis asserted, contemporary society has been severely affected by the outbreak of the COVID-19 pandemic in early 2020 [1], the vast spread of which has dramatically changed the landscape of higher education at all levels, to the extent that tertiary education systems have experienced significant challenges not only in the teaching–learning process, research, and discovery, but in terms of administration and university governance as well [2,3]. With school closures across the world, higher education institutions rapidly reacted by adopting digital technology for their education systems and developing e-learning tools and platforms, and online learning has swiftly become a leading tendency and an integral part of university knowledge transfer [4].

While there have been multiple prior studies that analyzed and discussed teaching, learning, and students' wellbeing during the COVID-19 pandemic, most of them were conducted in comprehensive universities and focused on STEM (Science, Technology, Engineering, and Mathematics) education. It is noteworthy that different types of colleges and universities have distinctive pedagogical peculiarities. With this in mind, in comparison to colleges, comprehensive universities, research universities, and other higher education institutions, the swift shift to an online learning system at the expense of conventional face-to-face lectures is considered to have a greater negative impact on liberal arts education because it emphasizes close teacher–student relationships, internationalization, and community service [5]. In the face of this situation, it can be seen that in either the

short or the long term, the effects of the COVID-19 pandemic on students are complex, profound, and multifaceted [6]. Deficient computer skills, limited learning space, poor Wi-Fi signal, a lack of confidence in online interactions, and many other issues that can affect students learning experience. Therefore, this empirical study focuses on the students' learning experience at Lingnan University, which is a leading Liberal Arts University in Asia, to critically review the changes in relation to students' engagement in and experience of e-learning during the COVID-19 pandemic. This research paper is coherently built on three underlying questions:

- How have students' liberal arts education experiences changed since before COVID-19 and in the post-pandemic era?
- How has COVID-19 affected the students in terms of teaching and learning activities?
- What is the impact of COVID-19 on students' personalities and skills development?

The present study was, then, conducted to elicit adequate and enlightening answers to the above three questions by means of analyzing the data from the first-year student learning experience survey (FYSLES), an online survey conducted by the Teaching and Learning Centre at Lingnan University. In addition, by comparing and analyzing the data collected from three academic years (2019, 2020, and 2021) from the perspective of the students' learning experiences and learning environment, the specific areas where the quality of liberal arts education has been compromised are identified and strategies to enhance student participation and satisfaction in the context of the post-COVID-19 pandemic era are explored. The findings could spark the future development of digital teaching–learning processes in liberal arts education.

This paper firstly recapitulates recent research in Section 2 and describes the background and the situation in Hong Kong and at the university in Section 3. The survey and research methodology are described in Section 4. The main findings are discussed in Section 5, and the discussions and implications are presented in Section 6. Finally, the contribution of this study is summarized in Section 7.

2. Literature Review

As far as liberal education is concerned, it is worth highlighting that it dates back to Aristotle's "eleutherion epistemon" and Cicero's "artes liberals"; however, its definition has varied throughout different historical contexts and ages [7]. In the 19th century, there was a trend of integrating professional education and liberal arts education in American colleges and universities. With top research universities, such as Harvard, promoting liberal arts education in their undergraduate courses, liberal arts education established its place in the US higher education system and then surfaced in Europe and Asia [8]. During the 20th century, liberal education became the general education for all citizens, with the goal of developing well-rounded individuals who are equipped with general knowledge of a wide range of subjects [9]. Nevertheless, since the 1960s, liberal arts institutions have gradually lost popularity in the US by virtue of the development of research-oriented and comprehensive universities [10]. Before the pandemic, some liberal arts institutions in the US faced the difficult choice of closing or merging due to their low market share or brand recognition [11], while sustaining some liberal arts universities in the context of the COVID-19 pandemic was rather unlikely. As Volk and Benedix pointed out, an estimated 10% to 20% of liberal arts colleges in the US are in danger of closing due to the unique economic pressures they are facing [12]. In addition to the survival dilemma, liberal arts universities have also confronted obstacles to maintain their function as usual during the COVID-19 pandemic.

2.1. Teaching and Learning

The worldwide closure of campuses and the entire lockdown in the context of the COVID-19 pandemic led to the broad adoption of online learning, teaching, and assessment. However, it was a considerable challenge for liberal arts colleges that are located in remote areas to carry out online education. For example, some tribal colleges such as Diné College

were faced with technology access issues. In addition, during the COVID-19 pandemic, one of their students only had a phone and had to climb on top of a mesa to access the internet. Although Diné College bought laptops and MiFi for students in need, there was still a gap [13]. To address the challenge of students lacking the necessary technical devices for e-learning, Ohio State University launched financial assistance and device loan programs to help students gain access to laptops, tablets, or other required devices for the duration of their studies [14]. Meanwhile, many colleges and universities had to cancel their face-to-face activities and practicum, which are regarded as the most beneficial forms of activities, in which student–student and student–teacher relationships are seen as highly constructive in this learning community, where gaining and practicing employability is substantially worthwhile.

2.2. International Exchange Projects

COVID-19 has had a massive impact on the international exchange and experiential learning projects. Before COVID-19, over 85% of students at Lingnan University had international exposure through semester-long student exchanges or shorter study programs in summer and winter, while few students went on exchange programs in 2020–2021, 95% fewer than the figure in 2019–2020 [15]. Almost 90% of students at Worcester Polytechnic Institute (WPI) are involved in global projects each academic year. However, the lockdown and stay-at-home order strongly overwhelmed students by limiting them from going outside unless it was essential. Although some liberal arts institutions have worked hard with partnership companies by utilizing virtual and online internships as replacements, this conversion still came with colossal limitations and disappointments [16].
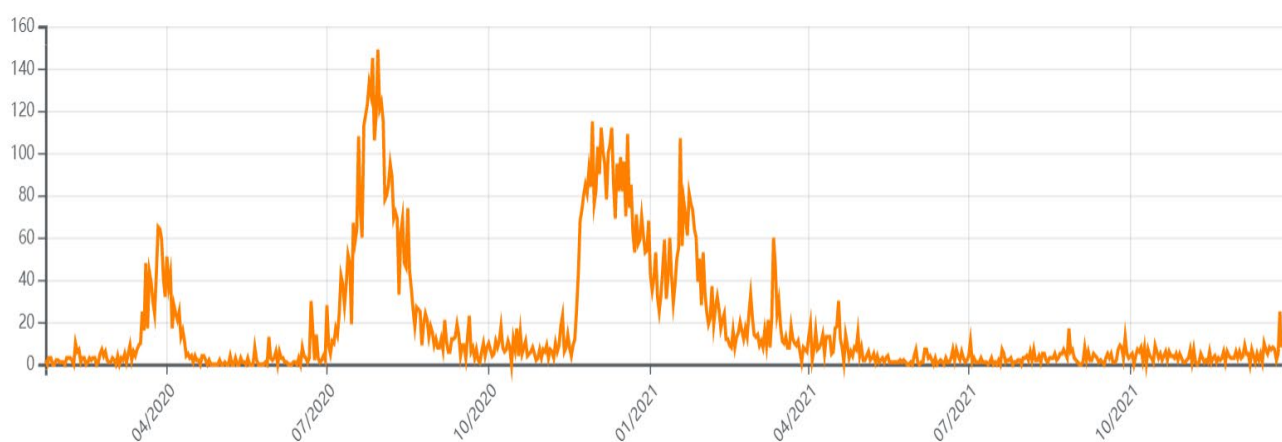
2.3. Students' Wellbeing and Development

Taking for granted that one of the key roles of accommodation environments and campus activities lies in working closely with students' mental health and wellbeing, a survey was conducted within the University of Wisconsin system for the students who used campus counselling services, and the findings were consistent with the assumption of Hagedorn, Wattick, and Olfert, that students suffered from enormous stress, anxiety, and depression much more than before the COVID-19 pandemic [17]. Quite similarly, subsequent to their research in which they interviewed a group of students after the issuance of the stay-at-home order, Son indicated that most participants had trouble sleeping and faced increased social isolation after leaving the student hostel, but what was emphatically upsetting was the potential loss not only of in-person campus experiences but also of liberal arts institutions themselves [18]. According to prior research, pre-orientation materials, orientation events, and workshops held on campus at the institutional, department, or program levels are channels through which colleges and universities can transmit information about wellbeing services [19]. At the individual student level, workshops, seminars, and other events provide students the opportunity to alleviate stress, develop mechanisms for processing challenges, and learn about other ways to adopt a healthy lifestyle, including exercise, meditation, nutrition, sleep, and other health-related behaviors [20,21]. Noticing the critical role of the campus environment in supporting students' mental and physical health, Bard College has responded with a steady stream of virtual events for students who are struggling around COVID-19, such as poetry readings, live performances, or fireside chats [22].

Existing studies mainly examine the impact of COVID-19 on liberal arts education from an organizational perspective, often only focusing on some aspects of the impact, and there is a lack of comparative analysis of liberal arts education before COVID-19 and in the post-pandemic era. This study aims to fill these gaps. Based on the perspective of students, this paper examines students' experience of liberal arts education and personal development in the context of COVID-19.

3. COVID-19 Pandemic in Hong Kong and the Teaching Arrangements of the University

As far as the COVID-19 pandemic in Hong Kong is concerned, it was first confirmed to have spread to Hong Kong on 23 January 2020, and the first local infection case was reported on 4 February 2020. In 2021, the pandemic was under control and there were no local cases for several consecutive months, but then it rapidly spread again at the end of 2021. Figure 1 demonstrates the stages of the COVID-19 development in Hong Kong, and the span of each of its five waves was as follows: the first wave (late January to late February 2020), the second wave (mid-March to late April 2020), the third wave (early July to late September 2020), the fourth wave (late November 2020 to late May 2021), and the fifth wave (from the end of 2021). As a result, the recurrent outbreaks of COVID-19 necessitated the widespread suspension of face-to-face teaching and learning at universities, prominently impacting the higher education system in Hong Kong.

Figure 1. Number of confirmed cases of COVID-19 in Hong Kong in 2020 and 2021. Source: Wikipedia (2022).

As shown in Table 1, Lingnan University was constantly adjusting its teaching and learning arrangements according to the COVID-19 situation in Hong Kong. After the outbreak of the pandemic, the stages of Lingnan University's teaching experience included online teaching (the second semester of the 2019/2020 academic year), the hybrid teaching mode (the 2020/2021 academic year), face-to-face teaching and lecture recording (the first semester of the 2021/2022 academic year), and the hybrid teaching mode again (second semester of 2021/2022).

All things considered, there were many challenges for liberal arts universities to promote online teaching and learning during COVID-19, including a lack of cultural immersion/personal experience and reduced international exchange. To reduce the impact of COVID-19 on teaching and learning, Lingnan University adopted technology-enhanced learning and implemented various actions supporting teaching and learning endeavors. This included the promotion of the relevant guidelines that facilitate faculty members' efforts to acclimatize to online teaching and learning, in addition to promoting a series of online integrated learning programs (ILP) that facilitate connection with the mainland and overseas partners through online forums and meetings. Eventually, the "Virtual Internship Program" was launched, with the theme of "Stay Local, Work Global, Think Global", to provide students with chances to work on projects for enterprises or organizations outside Hong Kong [23]. Nevertheless, it is necessary to examine the impact of COVID-19 at Lingnan University and carry out targeted measures, especially analyzing the differences in the experience of COVID-19 in terms of liberal arts from the perspective of students.

Table 1. Teaching arrangements at Lingnan University during COVID-19 [24].

25.01.2020	To suspend all on-campus face-to-face classes, and e-learning was adopted.
06.02.2020	To suspend further on-campus face-to-face classes and promote online teaching and learning.
18.09.2020	All classes, except the required language courses, were delivered in the hybrid teaching mode. Students could choose to attend either the face-to-face classes or online classes.
02.12.2020	The teaching arrangements in Term 1 remained for Term 2. All classes, except the required language courses, were delivered in the hybrid teaching mode.
12.08.2021	Return to face-to-face teaching and learning. LU requested that all face-to-face lectures be recorded and made available online for students.

4. Survey and Research Methodology

As a liberal arts university in Hong Kong, Lingnan University is committed to providing quality education, with the key elements of a broad curriculum, close staff–student relationships, a fully residential campus, rich out-of-class learning experiences, active community service, multifaceted workplace experience, and global learning opportunities [24] As a method to gather feedback from students and as an essential source for the university's ongoing improvement, FYSLES focuses on students' learning experiences and self-evaluation, especially in terms of graduate attributes (GAs) and program-specific goals, which include but are not limited to the themes of knowledge, skills, and attitudes (Table 2). The survey collected the learning experience data of the first-year undergraduate students at the university. Both quantitative results and qualitative comments are presented in the survey findings to support the improvement of Lingnan University's teaching and learning strategies, quality assurance, and enhancement. It is worth noting that the years mentioned in this article refer to the academic year. The evaluation of the effects of COVID-19 in "2019" in Table 2 does not imply that students were asked to evaluate the impacts of COVID-19 before it occurred. Instead, it indicates that the survey data collected from students encompassed the period spanning the academic year 2019/2020, which includes the time when the pandemic outbreak and its effects were experienced.

Table 2. Response rate and sample data.

Faculty	AY2019/2020	AY2020/2021	AY2021/2022
Arts	37.7% (95 responses)	40% (94 responses)	56.0% (119 responses)
Business	26.2% (48 responses)	36.4% (52 responses)	58.6% (85 responses)
Social Sciences	35.8% (49 responses)	44% (48 responses)	70.4% (76 responses)
Animation and Digital Arts	—	41.4% (12 responses)	42.9% (3 responses)
Global Liberal Arts	—	51.9% (14 responses)	66.7% (16 responses)
Risk and Insurance Management	—	44.4% (12 responses)	28.6% (8 responses)
Data Science	—	44% (11 responses)	45.5% (10 responses)
Total	33.6% (192 responses)	40% (243 responses)	54.8% (317 responses)

All first-year students were required to complete the survey online from the 2018/2019 academic year [24]. The first-period survey was issued in July 2019 (prior to the COVID-19 pandemic) among three faculties, the second-period survey was carried out in July 2020 (about half a year after the COVID-19 outbreak) among all seven faculties, and the third-period survey was completed between April to mid-June 2021 (about a year and a half after the COVID-19 outbreak). As shown in Table 2, in 2021, a total of 317 responses were received out of 578 first-year students (response rate = 54.8%). In 2020, there were 243 responses out of 595 first-year students (response rate = 40%), and there were 192 responses out of 572 first-year students in 2019, and the response rate was 33.6% [25].

The survey is a web-based comprehensive questionnaire consisting of 52 questions (50 multiple choice and 2 open-ended questions (see Appendix A for the entire question-

naire)). To help the respondents understand the survey more easily, the questions were classified as several items, into three categories, including Overall Impressions of the Lingnan Experience (Category 1), Teaching and Learning Environment (Category 2), and Graduate Attributes (Category 3) (Table 3). Each of these items is associated with either one survey question or a particular set of survey questions grouped for logical consistency.

Table 3. The items for the first-year student learning experience survey.

Category 1: Overall Impressions of the Lingnan Experience	Category 3: Graduate Attributes
• General Education/Core Curriculum Course (B17–22) • Hostel Life Experience (B23) • Exchange Experience (inside Hong Kong) (B24) • Student Society Experience (B25) **Category 2: Teaching and Learning Environment** • Active Learning (B1, 2) • Teaching for Effective Understanding (B3, 4) • Assistance and Feedback to Enhance Learning (B5, 6) • Assessment (B7, 8) • Relationship between Teachers and Students (B9–12) • Workload (B13, 14) • Relationship with Other Students (B15)	• Critical Thinking (A1, 2) • Creative Thinking (A3, 4) • Self-Managed Learning (A5, 7) • Life-Long Learning (A6) • Adaptability (A8, 9) • Problem Solving (A10, 11) • English Language Competence (A12a, b) • Chinese Language Competence (A13a, b) • Interpersonal Skills (A14–17) • Information and Communications Technology Literacy (A18, 19) • Social Responsibility and Integrity (A20–23) • Intercultural Views (A24, 25) • Understanding Beyond Confines of Major (16)

The questionnaire demonstrated a high internal reliability within each scale. It should be noted that although some of the results varied from one year to the next, the survey instrument maintained its internal reliability over the years. The options in the questionnaire mainly examined the degree of recognition of students' ability development, liberal arts education, and teaching and learning experiences. The degree of recognition was also measured on a scale of one to five, where one means 'strongly disagree' and five means 'strongly agree', two means 'disagree' and four means 'agree', and three means 'neutral'. The numbers in the Table 3 are the means of recognition for the past three academic years (2019, 2020, and 2021). Furthermore, an extra option, "NA", is suggested to be added to all questions in the first-year survey as students might not be able to answer these questions in their first year of study. In addition to descriptive statistics, the data were analyzed to determine whether there were any significant differences (for example, statistical significance, $p < 0.05$) between the results in 2019, 2020, and 2021. Based on these results, appropriate actions could be taken by the university to further enhance student learning.

5. Major Findings

By analyzing the survey results, the perspective of students' learning experience and learning environment across various periods of the COVID-19 pandemic was investigated in this study.

5.1. Students' Experience Changed Enormously before and after the Pandemic

Concerning Liberal Arts and Overall Impressions of the Lingnan Experience (Category 1), one of the most considerable changes for the university students was the significant disruption of campus life. Following the announcement made by the HKSAR Government, the university closed for on-campus learning and adapted to purely online teaching in late January 2020. With the aim of minimizing the risk of infection, the university canceled all campus activities or gatherings and appealed to all students and staff to earnestly self-quarantine to the extent possible. Besides, students who stayed at the student hostel were urged to strictly adhere to the health and safety measures and guidelines as advised by the University's Health, Safety, and Environment Committee [24]. Broadly, though, the closure of higher education institutions constrained students to a rather unusual learning style,

which kept them away from the normal campus living environments and put them at risk of mental health disorders and social isolation [2].

As Figure 2 and Table 4 demonstrate, the satisfaction score of *Hostel Life Experience* of the first-year students from 2019 (mean score of 3.85) to 2020 (mean score of 3.79) witnessed a downtrend, and then regressed to about the same as those of 2021 (mean score of 4.39). One of the key projects was "Wellness Hotspot", which covered a variety of programs, workshops, and activities on sustaining wellness for students through various social platforms to respond to students' psychological and social needs. Meanwhile, due to the global lockdown, the satisfaction score of *Exchange Experience (inside Hong Kong)* decreased from 2019 (mean score of 3.83) to 2020 (mean score of 3.80). Considering that the government announced further relaxation of quarantine measures in mid-2020, the first-year students in 2021 were quite satisfied with their experience with the exchange students in Hong Kong (mean score of 4.27), which was much higher than the mean scores of 2020 (3.83). The satisfaction score of *Student Society Experience* (B25) reflects the achievement of supporting initiatives, documenting a noteworthy phenomenon that the COVID-19 pandemic did not affect, but to some extent relatively enhanced, the experience of the first-year students in student society activities, from 2019 (mean score of 3.65) to 2020 (mean score of 4.05) and 2021 (mean score of 3.69).
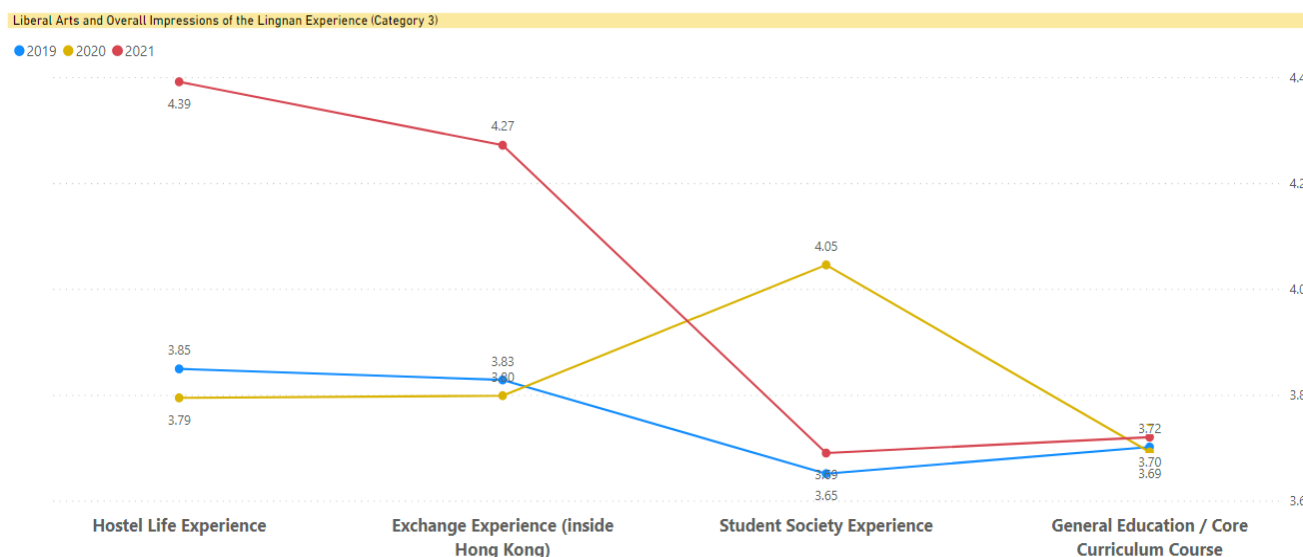

Figure 2. Students' overall impressions of the Lingnan experience.

Table 4. Mean and SD of students' overall impressions before and after COVID-19.

	2019	2020	2021
General Education/Core Curriculum Course			
B17. It has enabled me to integrate knowledge from various fields of learning.	3.63 (0.91)	3.61 (0.89)	3.67 (0.78)
B18. It helped me to be more creative in thinking about possible solutions to different kinds of problems.	3.55 (0.95)	3.56 (0.95)	3.63 (0.83)
B19. Appreciate arts and humanities subjects more.	3.76 (0.89)	3.72 (0.82)	3.75 (0.82)
B20. Much more aware of issues relating to management, social responsibility, and ethics.	3.72 (0.75)	3.74 (0.81)	3.76 (0.73)
B21. Appreciate the value of scientific methods, hypothesis development, and qualitative and quantitative analysis in the process of problem solving.	3.69 (0.82)	3.68 (0.83)	3.68 (0.76)
B22. See things from others' points of view in analyzing contemporary issues.	3.86 (0.76)	3.84 (0.76)	3.84 (0.70)
Hostel Life Experience			
B23. Hostel life is conducive to my growth and whole-person development.	3.85 (0.85) #	3.79 (0.97)	4.39 (1.21) #

Table 4. *Cont.*

	2019	**2020**	**2021**
Exchange Experience (inside Hong Kong) B24. The experience of living, working, and interacting with exchange students in Hong Kong is beneficial to my learning.	3.83 (0.98) #	3.80 (1.00) +	4.27 (1.19) # +
Student Society Experience B25. Student society activities are beneficial to my learning.	3.65 (1.34) *	3.69 (2.02) * +	4.05 (0.75) +

* Significant difference between 2019 and 2020, # significant difference between 2019 and 2021, + significant difference between 2020 and 2021.

5.2. The Changes in the Teaching and Learning Environment before and after the Pandemic

In Figure 3, as far as the Teaching and Learning Environment (Category 2) is concerned, the 2020 ratings of Teaching for Effective Understanding, Assistance and Feedback to Enhance Learning, and Assessment were much lower than the 2019 ratings. This rapid decrease demonstrates the obstacles the university has faced, where both teachers and students were seeking innovative teaching–learning processes and pedagogies along with more time to adapt to the new modes of e-learning during the outbreak of the COVID-19 pandemic in early 2020. As an essential aspect of teaching and learning, the teacher–student relationship remained stable, with a continued upward trend (3.73 in 2019, to 3.75 in 2020 and 3.82 in 2021).
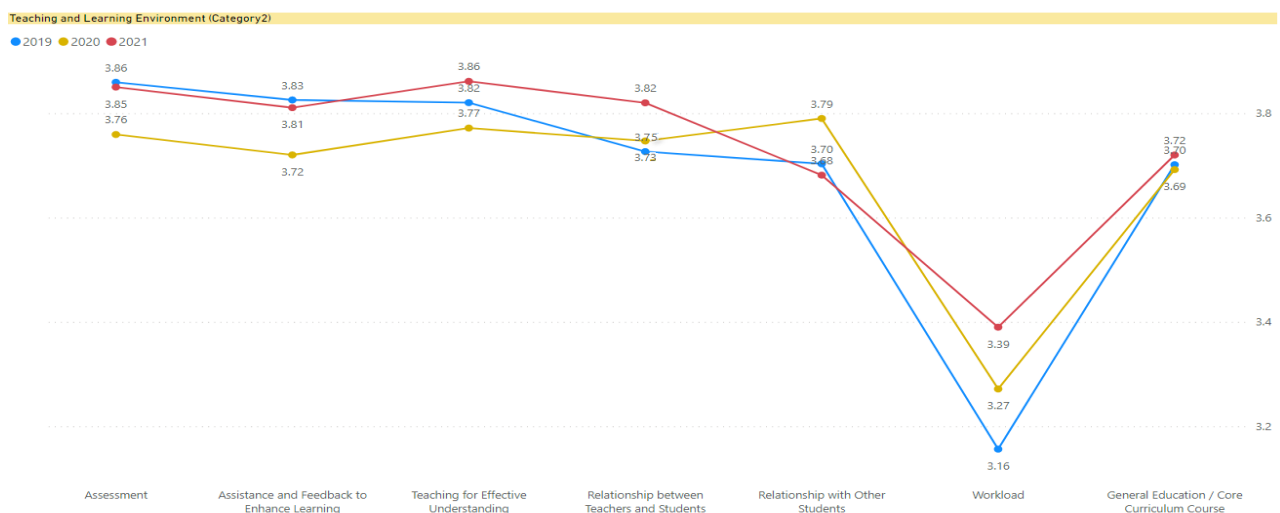

Figure 3. Teaching and learning environment.

With regard to the individual attention and care given by teachers, in Table 5, the question-B11 displays that the first-year students of 2020 and 2021 (mean scores of 3.80 and 3.83) were more satisfied than those of 2019 (mean score of 3.54), revealing that valuing the human factor in teaching and learning and promoting the close relationships between teachers and students is a way to maintain the students' learning experience during online distance learning. However, at the same time, the freshmen of 2020 reported lower satisfaction in being encouraged by at least one teacher or staff member (mean score of the question-B12 is 3.47 in Table 5). It is worth noting that this phenomenon might have been caused by the blended learning strategies (mixing both face-to-face classroom teaching and the online learning mode) that were widely adopted at Lingnan University from 18 September 2020, and that both teachers and students were more adapted at that juncture time.

Table 5. Mean and SD of students' experiences of liberal arts education.

	2019	2020	2021
Active learning			
B1. Participate constructively in class.	3.61 (0.84)	3.79 (0.75)	3.75 (0.75)
B2. Contribute ideas and opinions both inside and outside classes.	3.71 (0.77)	3.80 (0.71)	3.84 (0.74)
Teaching for effective understanding			
B3. Teacher used different approaches to enhance my understanding of course contents.	3.89 (0.72)	3.84 (0.74)	3.88 (0.73)
B4. The design of courses helped me understand the contents.	3.76 (0.74)	3.71 (0.78)	3.85 (0.73)
Assistance and feedback to enhance learning			
B5. Teachers' explanations were always useful when we had difficulty with learning materials.	3.90 (0.70)	3.80 (0.77)	3.86 (0.73)
B6. There was sufficient feedback from teachers.	3.76 (0.79)	3.64 (0.77)	3.76 (0.81)
Assessment			
B7. There are a variety of assessment methods.	3.92 (0.70)	3.77 (0.71)	3.85 (0.76)
B8. The assessment tools tested my understanding of key concepts.	3.80 (0.65)	3.75 (0.74)	3.85 (0.74)
Relationship between teachers and students			
B9. The communication between teachers and students was good.	3.84 (0.72)	3.79 (0.77)	3.89 (0.71)
B10. More than one teacher made me excited about learning.	3.84 (0.91)	3.93 (0.92)	3.94 (0.81)
B11. My teachers cared about me as a person.	3.54 (0.91) * #	3.80 (0.76) *	3.83 (0.78) #
B12. At least one teacher or staff member encouraged me to pursue my goals and dreams.	3.69 (0.88) *	3.47 (0.96) *	3.61 (0.92)
Workload			
B13. Completed the requirements without excessive stress.	3.06 (1.074)	3.14 (0.97)	3.23 (1.01)
B14. The workload was reasonable.	3.26 (0.96) #	3.41 (0.91)	3.54 (0.89) #
Relationship with other students			
B15. Enriched by the experiences of working with peers.	3.70 (0.69)	3.80 (0.78)	3.68 (0.80)

* Significant difference between 2019 and 2020, # significant difference between 2019 and 2021.

Meanwhile, by comparing the data of first-year students from 2019 to 2021 (B14 in Table 5), an upward trend in students' perception of the reasonableness of their workload was observed (3.26 in 2019, to 3.41 in 2020 and 3.54 in 2021). In this case, under the COVID-19 circumstances, students gradually adapted to constructively participate in the online classes and learned to contribute ideas and opinions both inside and outside classes through different digital platforms. Therefore, students agreed their active learning behavior improved, from 3.61 in 2019, to 3.79 in 2020 and 3.75 in 2021, which is shown in Table 5.

5.3. The Impact of COVID-19 on Students' Personalities and Skills Development

Prior and subsequent to COVID-19, the changes in the attributes dimension of college freshmen reflected a clearly diversified trend. As shown in Figures 4 and 5, some competency dimensions of college freshmen were negatively impacted by COVID-19, including adaptability, problem solving, self-managed learning, interpersonal skills, understanding beyond confines of major, etc. In particular, the mean of adaptability decreased from 4.11 in 2019 to 3.9 in 2021. By analyzing the specific items in the table, noticeably, it was difficult for freshmen to adapt to the rapidly changing new environment. However, it is worth noting that some of the competency dimensions of college freshmen improved after COVID-19, including creative thinking, Chinese language competence, English language competence, life-long learning, ICT literacy, etc. In particular, the mean for life-long learning dramatically increased from 3.55 in 2019 to 3.75 in 2021. As the pandemic continues to spread around the world, students' desire to engage in life-long learning has been developed.

In terms of the period following the peak of the pandemic, that is, in 2020 and 2021, the change trend of the attributes dimension of college freshmen was relatively consistent. Nonetheless, the mean of critical thinking dropped during the pandemic period (2019~2020), and jumped back after the pandemic (2021), but it was still higher in 2021

than the score before the pandemic. As outlined in Table 6, compared to the 2020 freshmen, the 2021 students significantly improved in the following attribute dimensions: the ability to construct sound arguments and the competency of English communication, and their means increased, respectively, from 3.68 and 3.59 in 2020 to 3.87 and 3.79 in 2021.
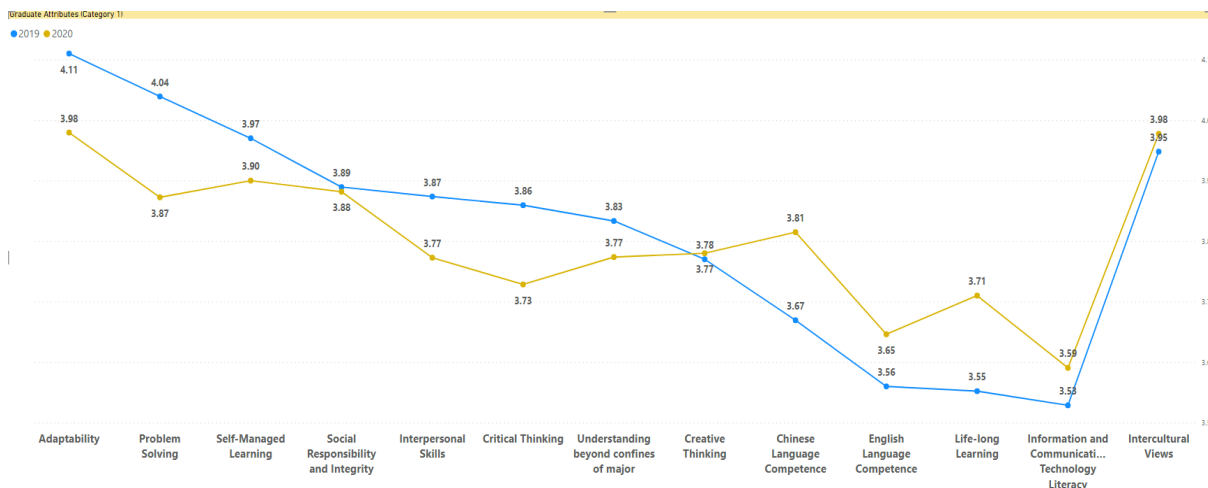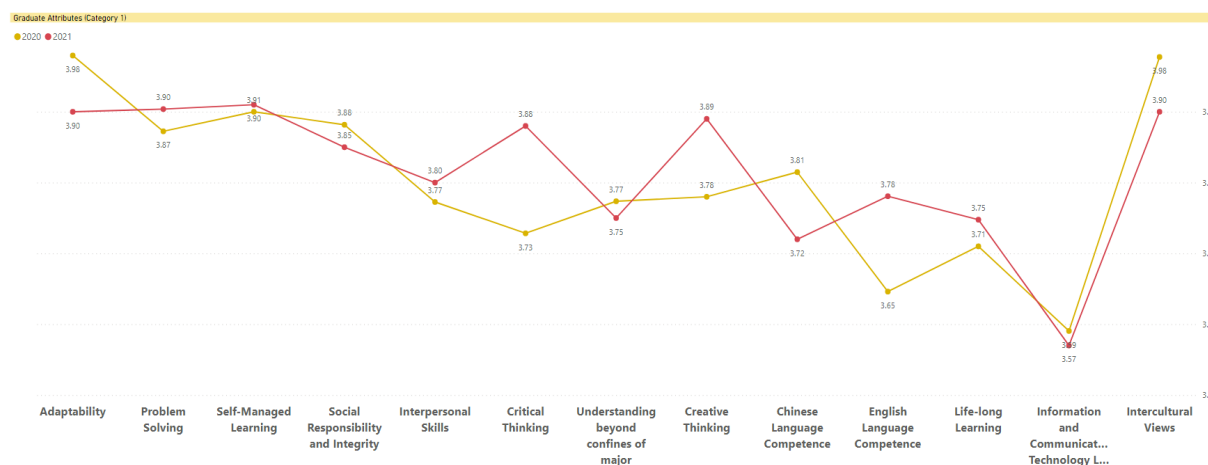

Figure 4. Graduate attributes (2019 vs. 2020).

Figure 5. Graduate attributes (2020 vs. 2021).

Table 6. Mean and SD of students' attributes before and after COVID-19.

	2019	*2020*	*2021*
Critical thinking			
A1. Developed the ability to construct sound arguments.	3.79 (0.76)	3.68 (0.85) +	3.87 (0.69) +
A2. Developed the ability to assess alternative perspectives and arguments.	3.93 (0.71)	3.77 (0.72)	3.90 (0.69)
Creative thinking			
A3. Learned to take initiative in different contexts.	3.83 (0.72)	3.75 (0.82)	3.84 (0.71)
A4. Have been challenged to develop new ideas.	3.72 (0.82) #	3.86 (0.88)	3.95 (0.78) #
Self-managed learning			
A5. Became an independent learner.	4.17 (0.71) * #	3.96 (0.76) *	3.98 (0.83) #
A7. Improved ability to conduct research.	3.76 (0.74)	3.83 (0.74)	3.84 (0.81)
Life-long learning			
A6. Developed the desire to engage in life-long learning.	3.55 (0.89) #	3.72 (0.83)	3.75 (0.84) #

Table 6. *Cont.*

	2019	*2020*	*2021*
Adaptability			
A8. Learned to adapt to new environments.	4.15 (0.82) #	4.00 (0.78) +	3.81 (0.93) # +
A9. Became more receptive to new ideas.	4.08 (0.66)	3.96 (0.67)	4.00 (0.67)
Problem solving			
A10. Developed problem-solving skills.	4.00 (0.65)	3.88 (0.69)	3.93 (0.75)
A11. Take into account several factors in order to solve problems.	4.08 (0.61) * #	3.86 (0.67) *	3.88 (0.72) #
Language skills (English)			
A12a. Improved competency in English communication (Written).	3.48 (0.82) * #	3.70 (0.83) *	3.79 (0.77) #
A12b. Improved competency in English communication (Oral).	3.64 (0.85)	3.59 (0.89) +	3.79 (0.79) +
Language skills (Chinese)			
A13a. Improved competency in Chinese communication (Written).	3.43 (0.93) * #	3.77 (0.95) *	3.67 (0.85) #
A13b. Improved competency in Chinese communication (Putonghua).	3.91 (0.93)	3.86 (0.95)	3.78 (0.97)
Interpersonal skills			
A14. Learned to become an effective team member.	3.85 (0.81)	3.82 (0.75)	3.85 (0.79)
A15. Acquired leadership skills.	3.61 (0.90)	3.62 (0.89)	3.61 (0.83)
A16. Confident in dealing with people from different backgrounds.	3.93 (0.85) *	3.70 (0.87) *	3.77 (0.84)
A17. Learned to be more open to different views.	4.10 (0.62)	3.95 (0.75)	3.96 (0.69)
ICT Literacy			
A18. Learned to use ICT to enhance learning.	3.55 (0.91)	3.60 (1.00)	3.57 (0.84)
A19. Improved communication and presentation skills with ICT.	3.51 (0.88)	3.58 (1.00)	3.56 (0.90)
Social responsibility and integrity			
A20. Willing to serve the wider community.	3.75 (0.75)	3.81 (0.72)	3.81 (0.75)
A21. Enhanced understanding of ethical standards.	3.72 (0.81)	3.85 (0.72)	3.82 (0.75)
A22. Maintain high standards of personal integrity.	4.19 (0.63) * #	3.93 (0.69) *	3.91 (0.70) #
A23. Aware of my role and behavior as a responsible citizen.	3.89 (0.74)	3.94 (0.67)	3.86 (0.69)
Intercultural views			
A24. Encouraged to take a global view of issues.	3.89 (0.80)	3.96 (0.72)	3.91 (0.72)
A25. Developed a better understanding of cultural differences.	4.01 (0.68)	4.00 (0.70)	3.90 (0.70)
Understanding beyond confines of major			
B16. Acquired understanding in areas beyond the confines of major.	3.83(0.81)	3.77(0.76)	3.75(0.78)

* Significant difference between 2019 and 2020, # significant difference between 2019 and 2021, + significant difference between 2020 and 2021.

6. Discussion and Implications

6.1. Correctly Attributing U-Shaped Changes in Students' Impressions and Experience

From Tables 4 and 5, it can be seen that students' impressions and experiences of liberal arts education generally presented a U-shaped trend; that is, after the outbreak of COVID-19, university education shifted from offline to online, and students' experiences of liberal arts education declined. However, in the post-pandemic period, university education has shifted from online to the hybrid mode, and students' experiences of liberal arts education have begun to improve. However, some dimensions also showed different trends. For example, the average scores of items such as students' social activities (B25), care from teachers (B11), and social responsibility (B20) gradually increased. Students' impressions and experiences of liberal arts education are the result of multiple factors. The reason for the different trends of students' experiences may be the result of the transformation of the teaching model due to the impact of the pandemic, the result of the university's targeted countermeasures, or it may also be due to the impact of changes in the social environment and international relations caused by COVID-19 on students. The COVID-19 pandemic has drastically altered the educational landscape, as schools and universities around the

world were forced to adapt to new modes of teaching and learning to mitigate the spread of the virus. Consequently, students have faced significant challenges in their academic journeys, with the shift to remote learning presenting both opportunities and obstacles for effective education. This paper aimed to explore the multifaceted implications of the COVID-19 pandemic on students' teaching and learning experiences. COVID-19 may only be the background of the reform of the liberal arts university education model, and the changes in students' experiences of liberal arts education cannot be directly attributed to COVID-19. It is necessary for liberal arts universities to specifically analyze the changes for students in each dimension, examine the key factors that cause the changes, and take targeted measures to improve the students' experiences.

6.2. Reimagining and Reshaping the Type of Hybrid Liberal Arts Education

Through the results of the items concerning the relationships between teachers and students (B9, B10, B11, B12), students highlighted the value of close teacher–student interactions and whole-person development via liberal arts education. COVID-19 has forced HEIs, including liberal arts institutions, to move online. In sharp contrast with the small-scale use of online education in the past, the contemporary online education has become a must for everyone under the health and safety conditions imposed by the pandemic, which has provided an opportunity for people to rethink online education. Volk and Benedix argued that we should create a type of liberal arts education that works for the students who need it the most [12]. Although online education has achieved an alternative to offline education, virtual connections cannot, and should not, replace the face-to-face teaching and learning [22]. Hence, education is not only the transmission of knowledge but also the transmission of values. Online platforms are a feasible method of knowledge transfer, while the transfer of social values and moral sentiments requires in-depth interaction and communication between teachers and students. As William G. Bowen mentioned, anyone who benefits from direct interaction with outstanding teachers can attest to how inspiring these experiences are and how they change their lives [26]. Simultaneously, students are also inseparable from peer learning in the process of growing up, and information technology can hardly replace the interaction and communication between students and teachers and among students themselves. Therefore, the hostel life experience (B23) benefits the whole-person development of liberal arts students.

6.3. Breaking through the Barriers of Students' Adaptability and Self-Learning Ability

Taking into consideration that the effect of online education is closely related to students' learning initiative and self-learning ability, the elicited findings elucidate that in contrast to 2019, the students achieved lower scores in self-management learning ability and environmental adaptability (A8). Although the students can actively participate in classroom activities under the guidance of teachers, it is difficult for students to become independent learners (A5) or conduct research (A7). Remote learning environments may lack the in-person social interactions that foster a sense of community and encourage participation in class. This can lead to feelings of isolation and disconnection, which may result in decreased motivation and engagement in the learning process. In addition, faced with unfamiliar environments or new viewpoints, students often behave at a loss and lack the vital know-how to effectively deal with them. These are the potential factors that may affect students' evaluation of online liberal arts education. Due to the individual reasons of the students, if they cannot effectively participate in liberal arts education, it will further affect the development of students' ability in knowledge, skills, and values. Therefore, to examine the barriers of students' adaptability and self-learning ability, we must scientifically analyze whether it comes from the technical level, the organizational level, or the individual level.

7. Conclusions

This paper has attempted to provide a systematic analysis of the effects of the COVID-19 pandemic on first-year students, focusing on students' experiences of liberal arts education and personal development in the context of COVID-19. This study found that a U-shaped trend was presented for students' impressions and experiences of liberal arts education, generally, and students' personalities and skills development. Colleges and universities should examine the impact of online teaching on students' development, take measures to overcome its negative impacts, and enhance students' adaptability to online teaching and self-directed learning ability. Meanwhile, educators and other support staff should note that some students might be itching to return to campus, while others may be feeling anxious about it and concerned about whether their needs will be met in the return of face-to-face teaching. Therefore, it is necessary to be prepared and flexibly adapt to the students' requirements and reshape the type of hybrid liberal arts education.

The findings indicate that students encountered significant changes and challenges across academic, personal, social, and institutional domains. In academic terms, although in the initial stage of online teaching students and teachers had to work hard to adapt to the online teaching mode, the students believed that mixing both face-to-face classroom teaching and the online learning mode contributes to their learning. In the domain of personal and social dynamics, the disruption of campus life brought challenges in the form of diminished or absent socialization with peers and instructors and difficulties in nurturing interpersonal relationships. In the domain of students' personal development, it became apparent that freshmen encountered challenges in effectively acclimating to the swiftly evolving new educational landscape.

It would also be interesting to develop further studies to investigate the long-term effects of the COVID-19 pandemic on liberal arts education at Lingnan University, which may involve conducting follow-up surveys or interviews with students and faculty to gather more in-depth insights into their experiences and perceptions as they transition back to in-person learning or adapt to the new normal in the post-pandemic era.

Appendix A

First-Year Student Learning Experience Survey

FIRST YEAR STUDENT LEARNING EXPERIENCE SURVEY

The purpose of this questionnaire is to find out about your experience as a full-time university student. Consider your undergraduate studies programme. When answering questions please treat the term "programme" to mean all courses you took in your undergraduate studies. The term "teaching staff" refers to the professors, lecturers and tutors who taught you at this university. Take into account all types of classes.

Instructions: Please use BLACK/BLUE ball pen or HB pencil. Mark your responses to the items by filling up the most appropriate oval.

I. Gender

Male	Female
o	o

II. Nationality / Region

Hong Kong	Mainland China	Others, please specify:
o	o	o _____

III. Which faculty do you belong to? / What is your major? (Please select the most appropriate choice)

Faculty of Arts	Faculty of Business	Faculty of Social Sciences
o	o	o
(Major) Animation and Digital Arts	(Major) Global Liberal Arts	(Major) Risk and Insurance Management
o	o	o
(Major) Data Science		
o		

IV. Where have you lived this academic year?

Student hostel	Off campus
o	o

Please darken the circle for each of the questions below to indicate your level of agreement with the statements. Choose ONE option that best describes your response to each question.

SA	A	N	D	SD	NA	
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Not Applicable	

A.   During my time at Lingnan

Critical thinking	SA	A	N	D	SD	NA
A1. I have developed the ability to construct sound arguments.	o	o	o	o	o	o
A2. I have developed the ability to assess alternative perspectives and arguments.	o	o	o	o	o	o

Creative thinking	SA	A	N	D	SD	NA
A3. I have learnt to take initiative in different contexts.	o	o	o	o	o	o
A4. I have been challenged to develop new ideas.	o	o	o	o	o	o
						o

Self-managed learning	SA	A	N	D	SD	NA
A5. I have become an independent learner.	o	o	o	o	o	o
A6. My desire to engage in life-long learning has been developed.	o	o	o	o	o	o
A7. My ability to conduct research has improved.	o	o	o	o	o	o

Adaptability	SA	A	N	D	SD	NA
A8. I have learnt to adapt to new environments.	o	o	o	o	o	o
A9. I have become more receptive to new ideas.	o	o	o	o	o	o

Problem solving	SA	A	N	D	SD	NA
A10. I have developed problem-solving skills.	o	o	o	o	o	o
A11. I am able to take into account several factors in order to solve problems.	o	o	o	o	o	o

Language skills	SA	A	N	D	SD	NA
A12. I have improved my competency in English communication.						
a. Written	o	o	o	o	o	o
b. Oral	o	o	o	o	o	o
A13. I have improved my competency in Chinese communication.						
a. Standard written Chinese	o	o	o	o	o	o
b. Putonghua	o	o	o	o	o	o

Interpersonal skills	SA	A	N	D	SD	NA
A14. I have learnt to become an effective team member.	o	o	o	o	o	o
A15. I have acquired leadership skills.	o	o	o	o	o	o
A16. I feel confident in dealing with people from different backgrounds.	o	o	o	o	o	o
A17. I have learnt to be more open to different views.	o	o	o	o	o	o

Information and Communications Technology Literacy (ICT)	SA	A	N	D	SD	NA
A18. I have learnt to use ICT to enhance learning.	o	o	o	o	o	o

		SA	A	N	D	SD	NA
A19.	I have improved my communication and presentation skills with ICT.	○	○	○	○	○	○

Social responsibility and integrity		SA	A	N	D	SD	NA
A20.	I am more willing to serve my wider community.	○	○	○	○	○	○
A21.	My understanding of ethical standards has been enhanced.	○	○	○	○	○	○
A22.	I maintain high standards of personal integrity.	○	○	○	○	○	○
A23.	I am more aware of my role and behavior as a responsible citizen.	○	○	○	○	○	○

Intercultural views		SA	A	N	D	SD	NA
A24.	I have been encouraged to take a global view of issues.	○	○	○	○	○	○
A25.	I have developed a better understanding of cultural differences.	○	○	○	○	○	○

B.   Teaching and Learning Environment

Active learning		SA	A	N	D	SD	NA
B1.	I have learnt to participate constructively in class.	○	○	○	○	○	○
B2.	I have learnt to contribute ideas and opinions both inside and outside classes.	○	○	○	○	○	○

Teaching for effective understanding		SA	A	N	D	SD	NA
B3.	The teaching staff used different approaches to enhance my understanding of course contents.	○	○	○	○	○	○
B4.	The design of courses helped me understand the course contents.	○	○	○	○	○	○

Assistance and feedback to enhance learning		SA	A	N	D	SD	NA
B5.	When I had difficulty with learning materials, I found the teachers' explanations useful.	○	○	○	○	○	○
B6.	There was sufficient feedback on course-related activities and assignments as a way of enhancing my learning.	○	○	○	○	○	○

Assessment		SA	A	N	D	SD	NA
B7.	The programme used a variety of assessment methods.	○	○	○	○	○	○
B8.	The assessment tools tested my understanding of key concepts in the programme.	○	○	○	○	○	○

Relationship between teachers and students	SA	A	N	D	SD	NA
B9. The communication between teachers and students was good.	○	○	○	○	○	○
B10. At least one teacher at Lingnan made me excited about learning.	○	○	○	○	○	○
B11. My teachers at Lingnan cared about me as a person.	○	○	○	○	○	○
B12. I have encountered at least one teacher or staff member at Lingnan who (has) mentored me – by encouraging me to pursue my goals and dreams.	○	○	○	○	○	○

Workload	SA	A	N	D	SD	NA
B13. I completed the requirements of my programme without excessive stress.	○	○	○	○	○	○
B14. The workload of my study was reasonable.	○	○	○	○	○	○

Relationship with other students	SA	A	N	D	SD	NA
B15. I have enriched myself from the experiences of working with my peers.	○	○	○	○	○	○

Liberal Arts	SA	A	N	D	SD	NA
B16. I feel I have acquired understanding in areas beyond the confines of my major.	○	○	○	○	○	○
B17. The General Education/Core Curriculum has enabled me to integrate knowledge from various fields of learning.	○	○	○	○	○	○
B18. The General Education/Core Curriculum has helped me to be more creative in thinking about possible solutions to different kinds of problems.	○	○	○	○	○	○
B19. I have learnt to appreciate arts and humanities subjects more.	○	○	○	○	○	○
B20. I am now much more aware of issues relating to management, social responsibility and ethics.	○	○	○	○	○	○
B21. I have learnt to appreciate the value of scientific methods, hypothesis development and qualitative and quantitative analysis in the process of problem solving.	○	○	○	○	○	○
B22. In analyzing contemporary issues, I am more able to see things from others' points of view.	○	○	○	○	○	○

Other questions related to Teaching and Learning Environment

	SA	A	N	D	SD	NA
B23. I found hostel life conducive to my growth and whole person development 。	○	○	○	○	○	○
B24. I found the experience of living, working and interacting with exchange students in Hong Kong beneficial to my learning.	○	○	○	○	○	○
B25. I found department/ faculty/cross-faculty student society activities beneficial to my learning.	○	○	○	○	○	○

A.   What do you think the strongest aspect of your programme is?

B.   Which aspects in your programme are most in need of improvement?

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