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Chinese Students' Perception and Expectation of Online and Post-Pandemic Teaching and Learning Approaches in a UK Transnational Program

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Abstract: A cloud of uncertainty around how to deliver teaching on transnational education programs (TNE) in the new post pandemic era has been created due to little evidence of investigation available. This study for the first time explored the needs and expectations of students (324) enrolled on BSc Pharmaceutical Science and Pharmaceutical Biotechnology degrees at a China UK Joint College, to understand their preferences for the delivery of such programs. Surveys were circulated amongst students to collect qualitative (open questions) and quantitative (Likert-scaling) data around the infrastructure for online learning (internet, IT device, learning platforms and study place) as well as the challenges and expectations of online learning, including student preference towards the delivery of materials, in a post-pandemic era. Focus groups, facilitated by the delivery team, were organized to collect further qualitative data and to explore common themes arising from the surveys and to understand student requirements more thoroughly for a successful TNE program. The data gathered determined that the transition to online learning has been challenging for students, and that they significantly ($p < 0.001$) prefer a hybrid model of teaching, consisting of a mixture of digital and on-campus activities. For the first time, this study demonstrates strategies to ensure that the needs and expectations of students in a TNE program are reached in post-pandemic era and the quality of teaching and learning are enhanced.

Keywords: online learning; student engagement; transnational education programs; hybrid model of teaching; Chinese students; international students

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1. Introduction

1.1. Transnational Education

Transnational Education (TNEs) programs can be defined as the delivery of Higher Education (HE) to undergraduate and postgraduate students in a country other than the country in which the awarding institution is based [1], with the earliest definition of TNE being less than three decades old [2]. TNE provides universities with an opportunity to diversify income, to increase their international student portfolio, and to build their reputation in growing international markets [1,3,4]. As such, TNE represents an important aspect of most universities' internationalization strategy.

1.1.1. Remote Learning in Transnational Education

During the COVID-19 and post-pandemic era, distance learning (with adequate security controls in order to assure the identity of students), has been the primary way for the home institution to deliver the education to students in the TNE partner's country without physically crossing borders [5]. However, its implementation has not been without its challenges including technological issues faced [6], limited experience of educators [6], unsatisfactory internet connection [7,8], etc. Nevertheless, this mode of delivery has offered unique opportunities for both staff and students by providing a combination of

synchronous and asynchronous teaching [9,10], supportive training for instructors [11,12] and promoting motivation and technology skills that are key aspects in online learning and teaching environment, which is distinctly different from the accustomed traditional classroom [13]. For academics, they have been forced to re-imagine and re-envision their teaching. For students, they have been forced to acquire important educational and professional skills [14] that they would not necessarily have gained in the pre-COVID 'classroom' environment.

1.1.2. Expectations of TNE Programs from the UK and China

TNE's stamp is worldwide, with texts from Southeast Asia to Australia to Sweden supporting this article. However, given the context of this research, the authors will focus on TNE in China-UK.

UK universities aim to lead by enrolment of international students on the UK taught programs. Therefore, an increase in offshore programs, where UK universities deliver their own degrees have increased. It is reported that 84% of UK universities now deliver TNE programs to over 700,000 students worldwide with this number increasing year on year [1]. Asia (52%) remains the highest proportion of the UK HE TNE programs, with China hosting 10% of these students [1].

During the mid-1980s, TNE emerged in China and has grown rapidly since China's accession to the World Trade Organisation (WTO). Decades of reform has allowed for the development of TNE in China and is fundamentally based around three key factors. These include the alignment of China's educational reforms with those of the economic sector, the commercialisation of education to 'meet the needs of a socialist economy' [15] and an opportunity to compete with the globalizing world by importing good practices from foreign universities, identifying and establishing major national laboratories and enabling a handful of Chinese universities to become world class institutions [16].

1.2. Challenges of TNE Programs

Although, TNE offers significant advantages to both partner and host institutions [17] there are still many reports, mainly from Southeast Asia; Hong Kong, Malaysia, Australia and Ireland, that highlight the riskiness of such programs, which mainly focus around the idea that such programs are "opportunistic" rather than "strategic" [18–20]. There are three main considerations for the successful delivery of TNE programs including the course, the staff, and the students.

To successfully implement a new program, one must be consciously aware of the cultural context to where it is being delivered. TNE partnerships are often established within countries that are economically growing rapidly, such as those in Asia, where the cultural, linguistic, legislative, and political environments are significantly different from home universities [21]. This impacts heavily on curriculum development. The partner institutes accreditation process requires the degree to be equivalent to that of the home university, whereas the host institute must weigh its development against financial investment, commercial objectives, and licensing agreements of the home country [22]. This can quickly seem like a balancing act between academic quality and academic goals.

Furthermore, teaching staff employed by the parent university also may feel in pendulum and have reported to be like serving two masters—the host and the partner institutes [22]. For example, although the home university in most TNE settings have the authority and ownership for setting and marking assessments and examinations, their foreign partners have sometimes divergent objectives, such as profit maximizing versus academic quality. Therefore, many academic aspects such as academic life, academic freedom, and academic integrity are required to be renegotiated in a TNE setting [23]. Without such open discussion, institutional motivations can vary, which can ultimately affect the quality of teaching and student learning experience.

Finally, the students, many of whom choose to study on a TNE program, do so with the hopes of experiencing a foreign education which ultimately increases their chance to

pursue their future education and employment internationally [23–26]. However, unlike international students, TNE students remain in their home country and may find it harder to adapt their learning styles to the teaching methods imposed by the home university [27,28] and cultural frames of reference [22] leading to adjustment difficulties and conflicts of identity.

Therefore, although recognizing the context of the host university and their students' educational needs is the pivotal factor, many factors must be considered to ensure the continued success of TNE programs.

1.3. Transnational Education Program in This Study

In 2013, a UK and Chinese University established a high profile and sustainable education presence in the People's Republic of China (PRC) by forming a joint college. The joint college represented an important international project that was complementary to the parent (UK) activities in international markets and delivers two UK BSc degree programs, Pharmaceutical Sciences and Pharmaceutical Biotechnology, to over 300 registered students.

The joint college has been a fraught exercise where the legislation, business practices, political systems and social culture are very different, overlaid by the challenges of teaching in a foreign environment. It involves working with the Chinese partner that sometimes has different motivations.

Moreover, the joint college's teaching team have overcome significant challenges in terms of embedding the parent university's core values and experience, to a student body who, up to this point, have been exposed to a very different and more traditional education system, and have unique learning styles and cultural frames of reference. Further, delivery of highly technical UK modules to Chinese students in China, where English is not the first spoken language, have proven exceptionally challenging, requiring staff to devise, lead and deliver innovative teaching strategies that can positively impact on student learning [29–31]. The joint college, like many institutions, further faced the added challenge of the SARS-CoV-2 pandemic, with lockdown forcing face to face teaching to move online. However, online learning contradicts the traditional perception which broadly reports that students prefer face to face contact as it allows, for example, easier communication with peers and staff for quick resolution of problems with instant feedback and to better motivate students [32,33]. It is further highlighted that within China, many students experience technological difficulties, with students having to pay for timed access to avail of email accounts, high speed data [34] and/or to overcome access issues to online educational resources due to the internet access legislation implemented by central government [32].

1.4. Aims of the Study

To date, no investigation has been conducted to determine student preferences for the delivery of teaching students in a post pandemic era and from a transnational context. Without understanding student expectations, a high-quality course cannot be designed and delivered, and the 'goodness of fit model' previously described by Chapman and Pyvis will be difficult to achieve [27]. It is hypothesized that students will appreciate the benefits of both models and therefore will prefer a hybrid model of teaching.

The aim of this investigation is to better understand the expectations of Chinese students towards the delivery of TNE, by designing a tailored, personal, and relevant UK degrees to Chinese students. Students from the joint college were recruited for this study with the main research questions (RQ) being

1. to understand what infrastructure is currently available and preferred to facilitate and maximize the educational experience to develop a clear strategic focus for future online learning (RQ1), and
2. to investigate student expectations of online learning (RQ2).

The wider aim of this work is to highlight key teaching and learning areas of focus for future TNE projects in the Chinese context.

2. Methods

2.1. Study Participants

Students (n = 324) who were enrolled on the BSc Pharmaceutical Sciences and Pharmaceutical Biotechnology degrees (Level 1–3) at the joint college were invited to participate anonymously and voluntarily in the study. This research was ethically approved by the parent University, in accordance with the Proportionate Review Process (MHLS 20_111). The survey was assessed by two independent peer reviewers before being presented to the faculty. The reviewers checked the integrity and consistency of the surveys. Feedback from peer revision was taken on board in the final study plan and surveys structure.

2.2. Research Instrument

The study consisted of two surveys and one focus group to help to understand student expectations towards online learning (see Figure 1).

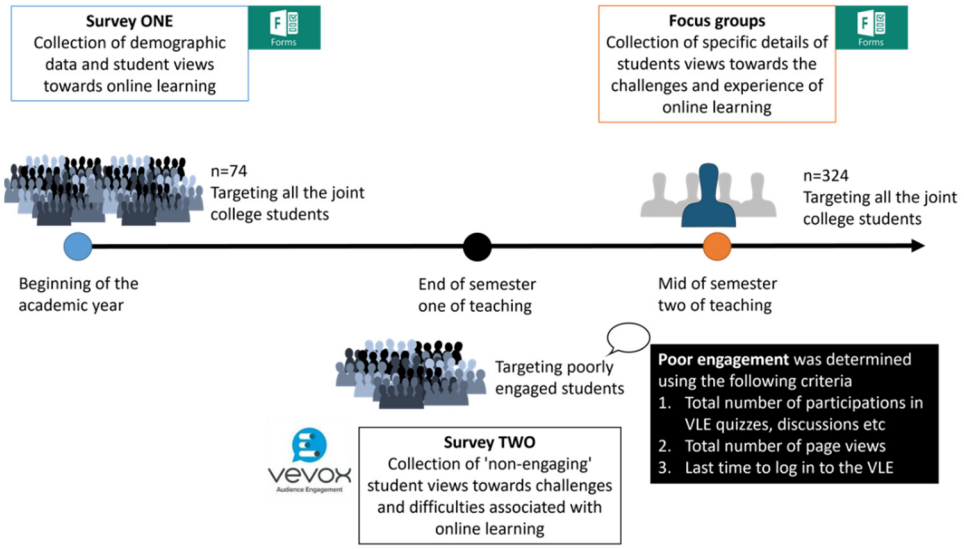

Figure 1. Schematic representation of the study design.

An initial survey (S1) was published to all students at the beginning of the academic year (September 2021) via Microsoft (MS) Forms and included rating and ranking questions, and open questions to capture and collect all opinions and any additional details from the respondents (see Survey S1). In general, the initial survey assessed student's perception regarding learning accessibility, engagement, and expectations with the infrastructure available for online learning including IT resources and learning platforms as well as internet speed and study space. It also aimed to investigate student perception regarding the negative aspect of online learning such as feeling lonely and anxious. The questionnaire itself was divided into two sections.

1. Section A involved demographic information and questions about the infrastructure available for students to commence their remote learning activities.
2. Section B examined the students' views on remote learning and aimed to investigate student's preference in terms of remote learning activities and what platforms are most convenient for study.

At the end of semester 1, students' performance and engagement were investigated. Those students who were determined to be "non engaging" were sent a second survey (S2) via Vevox, a real-time audience engagement app with self-paced survey feature, (see Figure 1) by the Vice Dean of the college to encourage engagement. It was assumed that the students who did not complete the initial survey will take part in S2 if they are identified and notified about their poor engagement by a senior staff within the college. The follow-up questionnaire (S2) consisted of Likert questions that were designed to understand

why students had a lack of engagement, i.e., poor internet connection, personal related challenges, etc (see Survey S2).

Both S1 and S2 questionnaires were piloted with international postgraduate students (n = 15) who were registered on postgraduate programs in the UK and were modified based on the feedback these students provided including rewording/rephrasing questions to be clearer and understandable by students. The questionnaires and research protocol were also peer reviewed by academics nominated by the Ethics Committee as previously described.

Finally, all students in this study were invited to attend a voluntary focus group (FG) session. Students were split into groups of 10 via MS Teams breakout rooms, with groups comprising of students from the same degree pathway and degree level. During this session, students were asked 10 questions based on feedback collected from earlier surveys and focused on difficulties associated with online learning; students' preferences for the various methods of delivery, and challenges associated with the transition to online learning (see Questionnaire S1). Students' responses were collected anonymously using MS Forms.

2.3. Statistical Analysis

Responses from the completed questionnaires were coded and recorded using MS Excel and GraphPad Prism (8.4.3), with the same program being utilized for subsequent statistical analysis. The analysis of the data took the form of descriptive statistics, i.e., number, frequency, or percentage as appropriate. Appropriate statistical tests were conducted with significance set a priori at $p < 0.05$. A two way-analysis of variance (ANOVA) were used to determine differences between different modes of delivery. Finally, in order to test the reliability of the questionnaires in this study, Cronbach's alpha value was used.

3. Results

Questionnaire reliability test results indicate that the study surveys have acceptable reliability and internal consistency with Cronbach's alpha values of 0.717 and 0.828 achieved for S1 and S2 questionnaires, respectively [35].

3.1. Demographic Information

Students (324) enrolled at Level 1, 2 and 3 on a BSc degree in Pharmaceutical Sciences (43%) and Pharmaceutical Biotechnology (57%) at the joint college participated anonymously and voluntarily in this study. 60% of participants were female. 74 (23%), 93 (29%) and 324 (100%) students participated in S1, S2 and FG, respectively.

3.2. Infrastructure Available for Online Learning

3.2.1. Study Devices

Student accessibility to devices is an important measurement to help ensure student success and was explored in S1. It was determined that 88% of students possessed at least a laptop with 65% using their laptops for daily study. When students owned both iPad and laptop, 44% preferred to use their iPad. More than 90% of all students owned these devices personally and they were always available for use. All students, who were deemed as non-engaging, confirmed that they too had access to a personal device for studying, such as a laptop, iPad, and/or desktop PC in S2. During the FG session, students clarified that many students use multiple devices simultaneously to support their learning (see Figure S1). From S1, 30% of students agreed that they might need financial assistance to own phone, iPad, or laptop to support their studies.

3.2.2. University Platforms

Students surveyed in S1 confirmed that they had access to the main virtual learning environment (VLE) platform and supporting MS applications such as Outlook Email and Teams. MediaSite, the parent university owned streaming platform, had issues with accessibility from China with less than 1.5% of students able to access it (see Table S1).

This platform was heavily used at the parent university in the past for streaming recorded lectures but has been replaced by MS Stream significantly since the COVID pandemic. This has somewhat reduced the accessibility issue regarding streaming of recorded lectures in China.

3.2.3. Internet Connection

It is broadly known that the firewall in China may disrupt the accessibility of students to certain platforms. Therefore, students' internet connection was investigated to understand whether further support is required for students at the joint college (see Table 1). Most students (76%) initially surveyed reported to use the university Wi-Fi to access online materials, with the remaining students using their own personal 3G data or home-based Wi-Fi. Students scored their internet speed between slow-fast with an average of not less than 2.4 (moderate). This was further confirmed by 42.7% of "non engaging" students in S2. Of all the platforms tested, students had the fastest speed when accessing Canvas as the parent university's VLE (see Tables 1 and S1). The mode revealed that most answers were around fast except for MediaSite, where it was defined as slow as previously explained. "Non engaging" students were asked how they commonly access materials. It was determined that most students (69.7%) were accessing materials from the VLE, but several students (27%) were relying on peers to send the material to them with a half of this cohort (13.5%) rendering the speed of access to the VLE to be slow or very slow (see Table S1) in S2.

Table 1. 'Non engaging' student's perception towards their internet connection to access different university platforms from data collected in S2. Table displays data based on the Likert scale questions where 0 = not at all, 1 = very slow, 2 = slow, 3 = fast, 4 = very fast and are presented as mode and mean ± STD, where n = 24.

Learning Platform	Mode	Mean ± STD
Canvas	3	2.69 ± 0.81
Microsoft Teams	3	2.54 ± 0.93
Live sessions	3	2.51 ± 0.90
OneDrive	3	2.42 ± 1.11
MediaSite	2	1.92 ± 1.13

3.2.4. Access to Study Place

Study space was also investigated to ensure students were able to access suitable space freely and regularly. Most students, from S1, had access to at least a quiet single, shared room, or library. It was determined that 65.2% of students reported that at least one viable study place is always available for them to use, with 32.4%, 1.3% and 1.3% of students claiming they access a suitable study space occasionally, rarely, and never, respectively (see Table S2).

3.3. Student Expectations of Online Learning

3.3.1. The Challenges Associated with the Transition to Online Learning

It was also important to understand the specific challenges that students may face with the transition to online learning.

Students reported an overall optimistic view of online learning within S1. Students felt that the new method of teaching allowed them to organize their time better between hobbies and study (see Table 2). The online teaching and learning approaches were deemed more suitable for learning by most students. Students ranked the flexibility of online learning the highest (rated as strongly agree), which is in correlation with students' satisfaction regarding staff availability to answer questions, learning space flexibility and students' freedom to pause and look up content if they did not fully understand a given area, all

rated as agree in the initial survey. With regard to the negativity of online teaching and learning, students' perception was neutral overall to the pressure of studying, accessing materials, missing support from peers, and a feeling of isolation.

Table 2. Student's perception towards online teaching during S1 using Likert scale survey questions, where 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree. Data is presented as mode and mean ± STD, $n = 74$.

Question Asked to Students	Mode	Mean ± STD
Positivity of online learning		
Location flexibility		
Learning from home allows me to organize my time between hobbies and study	4	3.83 ± 1.00
I enjoy the flexibility of online teaching	5	3.78 ± 1.01
Learning at home is better for me	4	3.65 ± 1.10
Availability of online support		
Lecturers are always available to answer any question that I have	4	3.71 ± 0.93
Learning flexibility		
Online teaching allows me to easily look an answer up online if I do not understand	4	3.82 ± 0.91
It is easier to stop and start lectures than to be present in a lecture	4	3.80 ± 0.91
Negativity of online learning		
Anxiety		
I feel nervous about not seeing lecturers during term	4	3.22 ± 1.25
I feel nervous about accessing lecture material online	3	2.78 ± 1.20
Loneliness		
I need pressure to study	3	2.89 ± 1.15
I miss the support from my friends when studying in school	3	2.54 ± 1.19
There is no opportunity to talk to the lecturer	3	2.47 ± 1.10
I am anxious about the pandemic, and it distracts me from my studies	3	2.43 ± 1.15
I do not know who to contact if I have a problem	3	2.42 ± 1.03
I feel lonely because I have to study online	3	2.41 ± 1.05

Student opinions towards the transition to online learning were further explored during the FG. All levels regardless of degree pathway reported that one of the main challenges of online learning was the lack of clear objectives. Students felt, particularly in Level 2 and 3, that there were too many distractions, which led to a greater risk of '*procrastination*'. Furthermore, participants agreed with the statement "*I feel nervous about not seeing lecturers during term time*" and that students felt anxious not having a direct contact with the lecturer (see Table 2).

Within the FGs, students in Level 1 (26.7%) and 3 (46.7%) particularly reflected that it is difficult to manage their time when completing lectures and the associated required coursework (see Figure 2). However, Level 1 students presented with the greatest challenge of fewer opportunities to develop their English language proficiency, and this led to significant time being spent learning scientific English terminology for each lecture. Further, students felt bereft of a sense of reward and accomplishment with online learning. In addition, Level 2 students reported a lack of motivation, which was further amplified by the transition to online learning (see Figure 2).

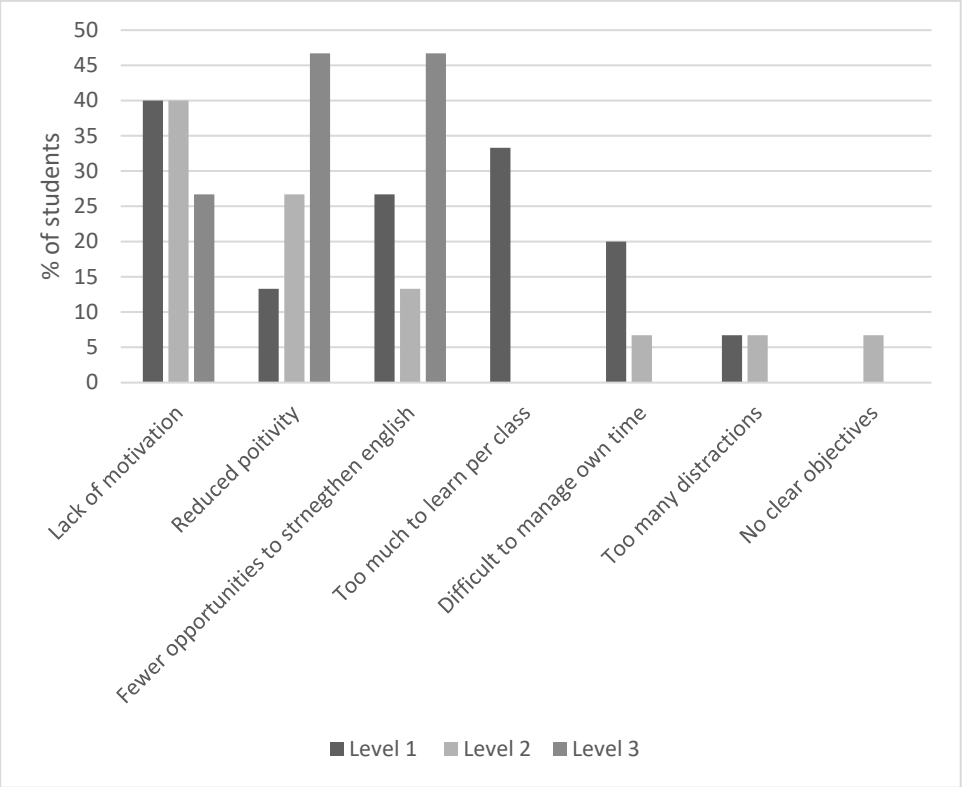

Figure 2. The main challenges associated with online learning collected form focus groups by theme or topic across the three levels of study. Data is presented as percentage, n = 324.

3.3.2. General Feeling towards Online Learning Activities

It was expected that students may associate online learning with a lack of motivation and opportunities for feedback (see Table S3). Therefore, various activities to support learning, that were utilized frequently at the joint college were surveyed to determine their effectiveness as motivational tools during S1. Nearly half of students (43.2%) selected that all such activities supported and encouraged their learning. Of these, online quizzes through Canvas were the most popular (33.8%), followed by online discussion forums (12.2%). Only a small percentage of students (4.1%) found the live revision sessions motivational. Feedback was preferred through a variety of approaches including video (46%), written (41%), group communication (25%), face to face (23%), one to one (19%), and voice recordings (17%) feedback.

3.3.3. Student Preference towards the Delivery of Materials

Students were also requested to select their preference for the delivery method of materials (see Table S3) during S1. Most students favoured lecture notes to be available in PDF version (47.3%), followed by PowerPoint (43.2%) format for ease of browsing and download. Few students liked their slides in MS Word (9.5%) with no students requesting their material in HTML format (see Table 3). Most students (60.8%) preferred their lecture recordings to be provided through Canvas for online streaming, followed by MP4 as a downloadable format (25.7%), with very few students (12%) requested the material to be delivered on both platforms and only a minority of students (1.4%) requested videos on MediaSite. In terms of the delivery style, students preferred either a voice over (40.5%) or a video of the lecturer delivering the presentation (39.2%) (see Tables 3 and S4).

Table 3. Students' engagements towards various learning activities during S1 using Likert scale questions, where 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree. Data is presented as mode and mean ± STD, n = 74.

Preference towards Learning Activities	Mode	Mean ± STD
Lecturing		
Video lectures	4	3.97 ± 0.98
Live lecture	3	3.50 ± 1.00
Online Activities		
Canvas quizzes	4	4.00 ± 0.94
Canvas discussion	3 [a]	3.62 ± 0.89
Conventional activities in face-to-face settings		
Face to face interaction	4	3.72 ± 1.00
Group activities	4	3.62 ± 0.98

[a] Multiple modes exist and the smallest is shown.

3.4. Student Expectations of the Future of Teaching

3.4.1. Specific Student Challenges for Online Learning

It is important to understand the specific barriers faced by students towards the VLE platform Canvas, particularly by those who are 'non engaging', in order to support future teaching and learning. It was determined that the majority of engaging and non-engaging students (60% and 80% in S1 and S2, respectively) were familiar with Canvas and its use for studying (see Tables 4 and S1). However, there were still a few students who disagreed and found Canvas difficult to use and unable to engage with the platform. In S1, it was determined that 39% and 47.8% of students were neutral to or agreed with, respectively, that the transition to online learning was difficult, with 40% of students having trouble logging on. Students also indicated that they had difficulty managing their time, and therefore unable to engage with some activities on Canvas (38.3%). When this was investigated further during the FG sessions, students highlighted that the difficulty was personal. They felt prone to "*procrastination*" due to the flexibility of the timetable associated with online learning, which meant that they would "*postpone that task until the deadline*". During the live FG, students (13.7%) requested clear weekly objectives to help them manage their time better and ultimately "*master the content*". A minority of students (27.5%) also indicated due to the nature of the timetable that scheduled asynchronous lectures to be on a particular date and time. Considering the time difference between China and the UK, there were additional challenges in studying lectures in time and contacting the respective lecturer: "*We cannot get timely feedback from teacher*".

3.4.2. Student Suggested Improvements to Online Learning

It was imperative to understand what changes and/or improvements students would like to see implemented into future teaching. When surveyed, S1 students requested more support to be available on the VLE, e.g., quizzes and lecture notes, feedback, drop-in sessions, and goals to work towards (see Table 5). Students indicated that email was a convenient method for communication and that students would like to be part of a discussion group. When learners were asked if they felt confident using MS Teams as a method of communication, there were a variety of opinions, suggesting that some students were/were not confident in its use.

Table 4. The challenges associated with the transitioning to online learning according to students who participated in S2 (non-engaging) and from the focus groups. Data is presented as frequency (percentage) where 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree. Data is presented as mode and mean ± STD, where n = 93 and n = 324 for S2 and FG, respectively.

Questions		Mode	Mean ± STD
Are you familiar with Canvas and how to use it to engage in your studies?		2	1.91 ± 0.72
Have you found the transition to online learning via Canvas challenging?		3	2.5 ± 0.97
Do you experience difficulties attempting to log on to Canvas?		4	2.92 ± 1.22
Are you having difficulties in managing your time and therefore have not been able to log on to Canvas to engage in the study materials		2	3.00 ± 1.13
Focus groups			
Topic	**Count**	**Relevant comment**	
Flexible timetable	13 (25.5%)	The main difficulty is flexible timetable which causes learning procrastination. Because we can do anything at any time including play or sleep, which causes that we will postpone the task until the deadline	
Absence of weekly objectives	7 (13.7%)	Online learning is flexible, and we have enough time to watch the record. The weekly objectives are not clear enough and we cannot test the extent we master the content in the lecture.	
Internet and connectivity issues	14 (27.5%)	Have difficulties to download video	
The asynchronous nature of communication with teachers	14 (27.5%)	Sometimes we have some problems but the way to communicate with the teachers is not convenient	

Table 5. Student's perception towards improvements to online teaching during S1 using Likert scale questions, where 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree and [a] indicates that multiple modes exist. Data is presented as mode and mean ± STD, n = 74.

Questions with Regard to Improvements That Can Be Made to Online Teaching	Mode	Mean ± STD
I would like to receive more material to support my learning in the form of quizzes and lecture notes	5	4.21 ± 0.82
I would like to receive more feedback from lecturers	4	4.07 ± 0.80
I would like drop-in sessions with lecturers to ask any questions that I may have	4	3.83 ± 0.76
I would like lecturers to set more goals for me to work towards	3 [a]	3.76 ± 0.74
Email is a convenient means to communicate with me	4	3.76 ± 0.87
I would like to be a part of a discussion forum to discuss problems with my peers	4	3.66 ± 0.86
I feel confident to use Microsoft teams	3 [a]	3.48 ± 1.02
I would prefer for lectures to be live rather than recorded	3	3.12 ± 1.00

[a] Multiple modes exist and the smallest is shown.

Further suggestions made by students were to improve the access of online content, and reduce time required to upload assessments. These suggestions, however, are associated with the firewall in China as previously discussed. Students were also asked what advice they would give a peer to improve their online learning, with replies including *"Make yourself a deadline. Keep on going with the timetable and check the email box as soon as possible. It is better to write a to do list for the next day and check out whether you have finish*(ed) *today's lecture before sleeping."*

3.4.3. Preferred Method of Teaching

Finally, students were asked via S1 to select which method of teaching would they prefer. It was significantly ($p < 0.001$) determined by all levels and degree pathways that students would prefer a hybrid model of delivery compared to solely face to face or online learning models (see Figure 3). No significance ($p > 0.05$) between degree or level was identified during this analysis.

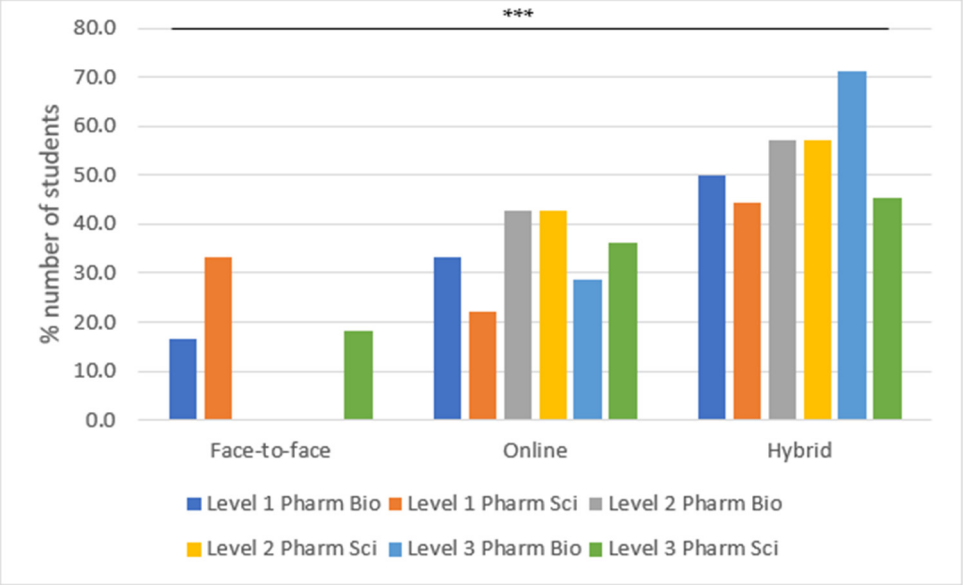

Figure 3. Students' preferences for face to face, online or hybrid teaching approaches per level of study during the FG. Data was tested by a two-way ANOVA and presents as percentage where $n = 324$, *** $p < 0.001$.

4. Discussion

4.1. Infrastructure for Online Learning (RQ1)

In the new era of technology, it is important to understand how students' study and what devices better support learning. It was highlighted that most students use laptops for daily study, but if students were fortunate to possess both laptop and iPad, the latter was preferred. Tablet devices are more convenient to transport than laptops with the touch screen adaption better to engage users when reading, annotating and/or accessing materials. Further, touch screen devices have been linked to a greater motivation for learning [36]. Our findings are in parallel with a study carried out in 2013, which indicated that students used iPads (50%) more than laptops (25%) during class [37]. Therefore, educators need to be mindful of users when creating content to ensure their compatibility with various devices.

Students also highlighted simultaneous use of multiple devices when completing tasks online. This may be because laptops are easier to type on, and tablets are easier to read on. A recent study confirmed that multi device use is independent of complexity of a required task [38] and therefore future studies should investigate the effectiveness of multi device usage to overcome this limitation and to determine whether financial support should be offered to students if multi device usage is determined to be advantageous to study.

The "Great Firewall" of China serves as an important part of the internet censorship in mainland China. However, this firewall can also affect the speed and accessibility of approved platforms required for online learning [39]. This was reflected in students' response in this study as only 60% of them reported to have access to foreign educational platforms in China.

Further, internet speeds were also investigated and were determined to be of moderate speed, regardless of whether students were using university Wi-Fi, personal 3G data or

home-based Wi-Fi. The "non engaging" students presented as a bimodal cohort, i.e., able to access the required platforms with relative ease or as a cohort reporting the speed to be slow-very slow and therefore they rely on peers to share materials. A small group of students claimed to be unable to access interactive activities such as quizzes, discussion groups, etc., on Canvas. It needs to be understood why their internet connection is slower than their peers and what support is required to improve their connection. Regardless, further incentives such as weighting of activities could further encourage engagement amongst students [40].

Finally, it was determined that most students had access to a quiet place to study with only a minority (1.3%) of students never able to access such places. Still, further investigation is required to understand the needs of these students and why private study places are not always available.

4.2. Student Expectations of Current Online Learning (RQ2)

Anderson et al. described the role of an educator in three ways; (a) cognitively where the educator took account of the general student body's preparedness to learn, (b) faciliatory where the educator directed students to tools or activities, and (c) socially where the educator encouraged student-student and student-teacher interactions [41]. Although online learning was received well by many students in this study, an area of concern raised by them was the lack of direct contact with educators.

An understanding of student academic performance is achieved with more confidence through online diagnostic, formative and summative assessments as both synchronous and asynchronous tasks can be designed to obtain real data rather than a perception from the teacher in the classroom. Formative assessments provide students with more opportunity to test their own understanding, provide a sense of achievement and promote the goals of lifelong learning [42].

Signposting students to resources is easier through online platforms. Content on the VLE can be created for students to include module handbooks, module activities, progression policies, etc. However, the hardest role to adapt to online learning is the lack of social opportunities. Only a small percentage of students at the joint college found the main opportunity of interaction with staff, i.e., live revision sessions to be motivational. This could be due to the lack of consistency amongst educators in their delivery with regard to the motivational and engaging strategies embedded within their synchronous online sessions. Standardizing academic approaches and using the results from formative assessments to identify areas of difficulty may be a way to improve student outlook of revision sessions. This can be supported by the creation of clear weekly goals, e.g., deadlines for when tasks such as lectures, learning outcomes and assessments should be completed by. This can encourage a sense of achievement and community amongst students in line with Rovai's Classroom Community Scale [43,44]. Further, digital badges have been reported to help students (275 undergraduate Business students) to organize their study, maintain and track their progress, and to help motivate them to engage with module content [45]. These, digital badges could be used to encourage engagement in online discussion boards. Discussion boards can challenge and encourage students to think about different opinions and to promote language of an academic, engaging, and persuasive style [46]. However, data collected from 94 students in a blended marketing course revealed that self-efficacy related significantly to student performance and therefore, ultimately creating goals and rewards should only be used as a method of encouragement [47]. However, as few social opportunities outside of the "classroom" were created at the joint college during online teaching and learning, this role cannot be directly comparable, but it is unlikely that social opportunities will ever be replaced by online activities.

Teaching materials are commonly created by MS PowerPoint converted to PDF prior to circulation amongst students with no students requesting notes to be provided in HTML format, which may be as a result of students lack of familiarity with this form of document. Students were split in preference to PowerPoint or PDF forms and requested that both

options to be available to them. The authors are in favour of providing downloadable content in both formats or at least in PowerPoint format as it can get easier converted to PDF should the student wish to do so in comparison to converting PDF files to PowerPoint. Most students determined that streaming the recordings over the VLE platform was appropriate, with students split between the method of delivery, i.e., voice over (40.5%) or supplemented with a video of the instructor delivering the presentation (39.2%). However, reports suggest voice overs can further enhance the feeling of "disconnect" amongst students and that where possible slide captured face recording can give the perception that the teacher is present and available to contact [48]. Moreover, voice over lectures cannot signpost students to a specific part of the slide, hence there is a chance of misinterpretation and difficulty in understanding of the verbal content over audio lectures [49]. Having said that, in line with providing choice and flexibility in learning [50], Universal Design for Learning (UDL) [51], and considering the limitations in streaming large files in China outlined earlier, the authors suggest providing both audio and video files of the online lectures to the students.

4.3. Students' Expectations for Future Teaching and Learning (RQ2)

The transition to online learning has been a teaching curve for both students and teachers, but particularly difficult for students as they meander their way through various online resources. At the beginning of the academic year, all students received training on the use and functionalities of the VLE. As expected, there were a few students who had difficulty logging on to the platform due to connectivity issues. Still, nearly half of the student cohort found the transition difficult or having particular difficulty managing their time. However, implementation of weekly objectives, as highlighted above, will hopefully ease the transition.

Results also reflected that students request "*timely feedback from teacher*", which is problematic due to the time difference between China and the UK. Quality feedback has high influence on student learning and the development of their critical thinking [52]. Feedback should be delivered frequently via a variety of means, i.e., text, video, audio, etc., to meet the needs of the diverse range of students and to be in line with UDL [53].

Finally, for the first time and in the post-pandemic era students studying in a transnational program were asked to determine which method of learning they preferred. It was significantly determined that a hybrid model was the method of choice for future learning. This model should contain the flexibility of online learning whilst still maintaining face to face student-educator interactions.

4.4. Limitations of This Study

As a case study, the sample size of this study is limited to one college in Northeast China. Further, due to restrictions associated with the pandemic it was not possible to inform students of this research face-to-face and therefore online tools such as MS Teams and email were heavily utilized. However, it is believed that this research will serve as a basis for the future delivery of transnational education programs worldwide.

5. Conclusions

Universities worldwide have quickly adapted their material to suit online learning. This has presented significant challenges such as requiring extensive resources to deliver activities and materials to help support student learning and engagement. This change in teaching strategy has forced all educators to review their teaching practices and hence to identify any shortcomings and/or improvements to their approach. Similarly, students have also quickly adapted and have been forced to become more effective with their time to maximize their learning. The majority of the students tested at the joint college significantly identified that the mechanism of delivery they would prefer, in the post pandemic era and for future teaching, was the hybrid model of learning. This will blend the benefits of online learning, e.g., flexible timetable, review of past lectures, and formative assessments, with the benefits of face-to-face teaching, e.g., social interactions. This information gathered

can be used to develop clear and strategic focus for future online learning success. The authors are hopeful that this approach will help to promote the continued recruitment of international students and ensure a high quality of teaching on transnational education programs within the UK, China and beyond.

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/educsci12110761/s1, Survey S1; Survey S2: Survey for "Non-engaging" students; Questionnaire S1: Focus group questions; Figure S1: Percentage of students who have access to different devices that can be used in online learning environment; Table S1: Students' accessibility to online teaching platforms offered by the university; Table S2: Students' accessibility to a quiet study place; Table S3: Students' perceptions of levels of motivation and feedback obtained from various online learning activities; Table S4: Students' preferences for the delivery method of materials.

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