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A co-orientation analysis of teachers’ and students’ perceptions of online teaching and learning in Hong Kong higher education during the COVID-19 pandemic

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ABSTRACT

This study compares and contrasts teachers’ and students’ perceptions of online teaching and learning during the COVID-pandemic in higher education using the co-orientation model. Data were collected from 145 students and 31 teachers in two Hong Kong higher education institutions. The findings show that teachers were generally more negative about online teaching and learning than students, but such negative views should be reconsidered as students positively evaluated teachers’ efforts to various degrees. It is suggested that during future online learning experiences (1) teachers and students set up expectations together to evaluate online interactions, (2) teachers should not be overly concerned about the potential embarrassment of using camera for class activities, and (3) teachers pay more attention to feedback delivery. Understanding these gaps will provide teachers with insights into more strategic communication and planning to manage the expectations and optimise the online experience for both parties.

1. Introduction

The pandemic of Coronavirus Disease 2019 (COVID-19) changed the global teaching and learning environment by compelling schools to adopt emergency remote teaching (ERT) so that students could continue with learning through the online mode (Crawford, Butler-Henderson, Rudolph, & Glowatz, 2020). Despite the previous experiences with ERT during various disease outbreaks (e.g., SARS and H1N1) (Allen & Seaman, 2010; Cauchemez et al., 2009; Wong, Gao, & Tam, 2007), schools in the world have reported different struggles with the implementation of ERT (Iglesias-Pradas, Hernandez-Garcia, Chaparro-Pelaez, & Prieto, 2021; Kundu & Bej, 2021). This is partly because the scale of impact in previous cases does not seem to be comparable to the current pandemic, which has affected more than 1.6 billion students across 190 countries (United Nations, 2020). It is also partly because there were very limited time and resources for schools to adapt their courses to online teaching during COVID-19, when such adaptation would normally take six to nine months to complete (see Hodges, Moore, Lockee, Trust, & Bond, 2020). Given the sudden switch to ERT under COVID-19, it is only natural that institutions may have been left underprepared or even unprepared for the new online learning environment (OLE). In order to examine the extent to which ERT has been well delivered and received under COVID-19, this study has compared and contrasted teachers’ and students’ general perceptions of their online learning and teaching experience by using two institutions in Hong Kong’s higher education as a case study.

1.1. Emergency remote teaching under COVID-19

ERT differs from regular online learning in that it is usually conducted with “bare minimum resources and scant time” (Hodges et al., 2020, p.7). However, in the case of COVID-19, this emergent form of
online learning has brought more than just challenges to students and teachers, but also opportunities.

Students appreciated that online learning could provide them with a safe and comfortable environment for lessons during COVID-19 (Hussein, Daoud, Alrababia, & Badawi, 2020). It could enhance time- and cost-effectiveness because the time and money spent on commuting could now be saved (Shim & Lee, 2020). The increased flexibility in resource utilization (including time, space and schedules) and convenience in accessing class materials online could even facilitate their class preparation (Hussein et al., 2020). Class videos, in particular, have been found to be an essential resource for self-directed learning to students (Mishra, Gupta, & Shree, 2020; Yeung & Yau, 2021). However, as far as learner autonomy is concerned, students expressed difficulty in maintaining their self-discipline (Mok, Xiong, & Bin Aedy Rahman, 2021). This is largely because when studying alone, students found themselves easily distracted at home and had a rather limited attention span (Amir et al., 2020; Hussein et al., 2020; Lorenza & Carter, 2021; Mukhtar, Javed, Arooj, & Sethi, 2020; Shim & Lee, 2020). There was also a sense of loneliness in online learning because of limited teacher-student and student-student interactions (see Aguiler-a-Hermida, 2020). Offentimes, class interactions were unilateral (Shim & Lee, 2020) and students found it hard to find an appropriate time to ask questions or share thoughts (Oliveira, Teixeira, Torres, & Morais, 2021). The fact that students were not able to see each other as they were generally shy and reluctant to turn on cameras during online learning may further feed into this loneliness (see Castelli & Sarvary, 2021; Oliveira et al., 2021). All these resulted in a loss of teacher and student social presence in online learning (Lorenza & Carter, 2021). This aside, there were also technical challenges to students (e.g., Khogali, 2020). Unstable network caused a delay in image reception and asynchrony between the voice and image (Aboagye, Yawson, & Appiah, 2020; Amir et al., 2020; Shim & Lee, 2020). Internet connectivity became worse when family members all had to use the internet for work (Hussein et al., 2020). Facing all these challenges, many students reported stress and lower learning satisfaction in their online learning under COVID-19 (Amir et al., 2020; Cao et al., 2020). They even described it as an unpleasant learning experience and would prefer face-to-face to online learning (Aguiler-a-Hermida, 2020; Jan, 2020).

Similarly, teachers also experienced some positive and negative impacts brought by online learning during the pandemic. Teachers saw online learning as a chance to reflect on their own teaching practice and also the values of traditional teaching (Iglesias-Pradas et al., 2021). Online learning indeed changed the way teachers gave feedback to students by providing them with more communication channels and time to talk to each other (Oliveira et al., 2021). However, the short adaptation time teachers had to prepare for online learning remained one of the major challenges to them (Iglesias-Pradas et al., 2021). They deemed themselves ill-equipped for the pedagogical and technical challenges ahead of them (Damša, Langford, Uehara, & Scherer, 2021). Even though most of the teachers managed to learn on the job, it was not a sufficient and optimal means of training (Kundu & Bej, 2021). Such lack of adequate preparation subsequently led to frustration and demotivation among teachers (Nabolsi, 2021). Concerning the technical challenges, teachers also faced internet connection problems especially with the e-platform server availability issues (Iglesias-Pradas et al., 2021). Since students had the same internet problem and not all of them had an electronic device for online learning, teachers struggled to deploy appropriate instructional activities that could fit the class (Rasmita-dila et al., 2020). Concerning the pedagogical challenges, lack of student engagement was a major concern to teachers (Iglesias-Pradas et al., 2021). Maintaining student enthusiasm and attention online was not easy (Rasmita-dila et al., 2020). It became particularly challenging when teachers could not closely monitor students’ understanding due to the lack of visual contact and nonverbal communication such as facial expressions (Kundu & Bej, 2021; Mukhtar et al., 2020; Nabolsi, 2021; Oliveira et al., 2021). Relevant to this is also the difficulty of monitoring online examinations, which presented impacts on the overall integrity of assessments and measurement of learning outcomes (Kundu & Bej, 2021). Similar to students, teachers experienced a range of negative emotions in the face of these challenges including anxiety, stress and confusion (Nabolsi, 2021). However, even though teachers showed signs of exhaustion towards online learning, they also displayed a growing sense of accomplishment (Sokal, Trudel, & Babb, 2020). In fact, as online learning continued and more experience was accumulated, teachers rated themselves having more positive than negative emotions (see Meishar-Tal & Levenberg, 2021).

The above studies have neatly captured teachers’ and students’ experiences with online learning under COVID-19, but they tended to do so by examining the two parties’ perceptions on a separate basis. There have been very few studies that compared and contrasted teachers’ and students’ views to see to what extent they shared similarities and differences in their experiences with online learning during the pandemic. Looking into the scant literature, it is found that teachers and students shared a number of viewpoints. They both agreed that online learning provided a chance for digital transformation and enabled them to find new ways for teaching and learning, e.g., through webinars (Oliveira et al., 2021). In general, they rated synchronous online learning positively as it allowed real-time meetings and helped maintain the continuity of learning (Bdain, 2021; Tejedor, Cervi, Pérez-Escoda, Tusa, & Parola, 2021), but face-to-face (FTF) learning would be a much preferred option in the future (Bdain, 2021). To teachers and students, online learning was considered as an impersonal teaching method whereas FTF learning as a more interactive one (Oliveira et al., 2021). At the same time, there were also areas that teachers and students could not agree on. For example, in one survey, most of the students believed that examinations should be eliminated in online learning under the pandemic whereas the teachers generally harbored the opposite view (Tejedor et al., 2021). Another example is the perception of emotional support – while the students felt a lack of emotional support from their institutions during this difficult time, a majority of teachers did not feel the same (Tejedor et al., 2021). These comparative studies have helped shed light on whether teachers and students reached any (dis)consensus on certain aspects of online learning, informing us of how the quality of online courses could be measured and thus providing a clear direction on how they could be improved (see Motte-Signoret et al., 2021; Tejedor et al., 2021). However, they have not covered different aspects of online learning (e.g., interaction, motivation, affection, and feedback), which motivates the current study to investigate it further.

1.2. Rationale of this study

To be more specific, this study aims to comparatively examine how teachers and students in Hong Kong perceive online learning under COVID-19 through the use of co-orientation model (McLeod & Chaffee, 1973). The motivations of this study arise from the following research gaps in the growing literature on online learning under COVID-19: (1) content-wise, there are very few comparative studies on teachers’ and students’ perceptions of online learning during the pandemic, (2) methodology-wise, the existing studies have yet to evaluate whether their shared or contrasted opinions present any statistical significance, and (3) context-wise, there is yet to be a systematic study on this from Hong Kong. Hong Kong could be a useful site for the examination of the research objective due to its relatively longer experience with online learning. Class suspension in Hong Kong started a few months earlier than other countries when a social movement brought the whole city to a halt in November 2019, and some institutions were forced to switch to online learning to finish the last few weeks of the semester (Cheng, 2019). Following COVID-19 in early 2020, all institutions in Hong Kong had to adopt online learning for the ensuing semesters (i.e. second and summer semester). Under these circumstances, Hong Kong teachers and students might have more reflective experiences with online learning.
2. Co-orientation model

Co-orientation model was developed by McLeod and Chaffee (1973) to compare views between two people towards an object. Co-orientation concerns a dyadic relationship in communication which two people hope to reach a consensus of views during this process. Individuals not only act according to what they think but also what others think of their behaviours. Therefore, the awareness of others’ views plays a central role in perception research (McLeod & Chaffee, 1973). To measure the co-orientational relationship, there are three variables, namely agreement, accuracy and congruency (shown in Fig. 1).

Agreement is the degree to which the views of two people agree with each other towards an object. Accuracy is the extent to which the view of person A matches with person B’s estimate of A’s perception towards an object. Congruency compares A’s estimate of B’s perception with his or her own view towards an object. Accuracy is an ideal measure of communication effectiveness as effective communication can always improve accuracy. The more the two people communicate, the more they can understand each other’s views, and the higher the accuracy can be. Even though there is effective communication, the two people might not reach a complete agreement as there are many factors such as personal values and individual experiences affecting one’s views towards an object which could hardly be changed through communication. This state is what McLeod and Chaffee (1973) described as “perfect communication in quite literal sense” (p. 486). In view of the importance of accuracy and agreement in this model, our study, therefore, will mainly focus on measuring these two variables.

There are four potential relationships defined by agreement and accuracy and their consequences in strategic communication (Broom & Dozier, 1990; Broom, 1977). They are illustrated in Fig. 2.

Two possible relationships occur when two people have an accurate perception of each other’s views. True consensus occurs when two people have an agreement on a common issue and accurately perceive this agreement. In this relationship, the two people can start working together to resolve the issue. Dissensus occurs when two people have a disagreement on a common issue and accurately perceive that this disagreement exists. In this relationship, the two people can negotiate and find a solution that satisfies both interests. There are two relationships when the two people have a misperception of each other’s views. False conflict occurs when two people have an agreement but either one person or both inaccurately perceive that they disagree with each other. This misunderstanding may cause unnecessary communication efforts of both when they try to persuade each other to change the attitude or action that did not even exist on the other side. False consensus occurs when two people have a disagreement but either one side or both sides inaccurately perceive that they agree with each other. This misunderstanding is the most detrimental to communication since the two sides may not see the need of communication and will continue to use their own approaches to resolve the issue without acknowledging or realising the disagreement. This could result in more disagreements. Learning these co-orientational relationships allows both parties to easily identify communicative issues and develop targeted communicative strategies to resolve them.

The co-orientation model has been primarily applied to public relations in different settings, including the investigation of relationships between public relation practitioners and journalists (Avery, Lariscy, & Sweetser, 2010; Janecek, 2006; Vereic, Lalic, & Vujicic, 2017), media use and social relations (Friemel, 2021), international public relations (Vereic & Vereic, 2007) and international relations between countries (Vereic, Vereic, & Laco, 2019). It has also been extended to other forms of corporate communication such as forest management and decision making (von Kutzschbach & Bronn, 2006) and corporate reputation (see Goutzamani, 2016). In terms of education, it has been used to examine the perceptual gaps between student intern and on-site supervisors concerning jobs skills and professional characteristics (Shaw, 2017) and also between university staff and students concerning selection criteria of higher education (Oh & Shin, 2020). In these studies, the co-orientation model offers an invaluable “diagnostic and measuring tool” for identifying the perceptual differences between stakeholders, providing practical directions for managing their expectations and informing parties of strategic planning (Goutzamani, 2016, p.162). It will be very useful for the current study where the co-orientation of teachers’ and students’ perceptions of online teaching and learning can potentially reveal how online teaching and learning should be evaluated, planned and executed.

To the best of our knowledge, this is the first co-orientation study that examines the perceptions of online teaching and learning between teachers and students under the impacts of COVID-19. There are three research questions in this study:

(1) What are the co-orientational relationships between the two groups concerning interaction, affection, motivation, and feedback in online teaching and learning?
(2) To what extent do teachers and students agree with each other on the measured items?
(3) To what extent do teachers and students accurately estimate each other’s views of the measured items?

3. Methodology

3.1. Participants

A total of 176 participants from two higher education institutions in Hong Kong were recruited in this study. They had all experienced (for nearly one whole semester) the sudden shift of face-to-face teaching and learning to online teaching and learning during the outbreak of COVID-19. Among these responses, 145 of them were from students (Male = 55; Female = 90) aged between 18–29 years old (Age 15–19 = 68; 20–25 = 67; others = 10) and 31 from teachers (Male = 7; Female = 24) aged between 21–60 years old (Age 21–30 = 4; 31–40 = 13; 41–50 = 11; 51–60 = 3). These students were from various disciplines such as business, medicine, and arts while teachers were teaching language- and content-related courses of different subject areas. Our participants mostly used Zoom (Teachers = 22; Students = 80), Microsoft Teams (Teachers = 13; Students = 78) and Moodle (Teachers = 12; Students = 56) for class, meaning that synchronous online classes were a common mode of online teaching and learning among our participants. All teachers had at least one year’s experience in using these online platforms (16 teachers with one year’s experience; 5 with less than two years’ experience; 1 with less than three years’ experience; 9 with more than three years’ experience). The majority of the participants (Teachers
= 14; Students = 74) spent 10 to < 20 h per week on these e-platforms for online teaching and learning during the outbreak of COVID-19. Given that students usually had five to six subjects to study per semester with a total study load of 15–18 h per week, it is reasonable that the number of hours students spent on online platforms fell within 10 to < 20 h per week. The number of teaching hours for teachers was also justified since most of them taught for less than 21 h per week.

3.2. Instrument

This study utilized an online questionnaire which consisted of 38 five-point Likert-type items (each section with 19 items) to measure respondents’ level of agreement and four demographic questions. Section 1 of the questionnaire comprised 19 items that measured respondents’ level of agreement on various online teaching/learning aspects. These items were based on the literature and adapted from scales used by other researchers (e.g., Alqurashi, 2019; Hung, Chou, Chen, & Oen, 2010; Otter et al., 2013). The items were then revised based on the authors’ experience of adapting to this sudden shift, informal conversations with students and discussions with colleagues so that the questionnaire was contextualised for the current situation and participants. The 19 items were categorised into four constructs, namely interaction, affection, motivation and feedback. Section 2 consisted of the same set of items as Section 1, but the respondents were asked to provide their estimations of the agreement with these items from the perspective of the other party (e.g. students would estimate their teachers’ agreement with an item or vice versa). Both sections used a five-point Likert scale ranging from ‘strongly disagree’ (1 point) to ‘strongly agree’ (5 points).

Two examples of a questionnaire for students are shown as follows: Section 1:

| Items | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|-------|-----------------|----------|--------|-------|----------------|
| I find online learning appropriate for the subject. | ☐ | ☐ | ☐ | ☐ | ☐ |

Corresponding item in Section 2:

| Items | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|-------|-----------------|----------|--------|-------|----------------|
| My teachers find online teaching appropriate for the subject. | ☐ | ☐ | ☐ | ☐ | ☐ |

The questionnaire then ended with a section asking for the background information of the respondents including the e-learning platforms they used and how many hours they spent on these platforms.

3.2.1. Validity of the questionnaire

To provide internal validity over the items that were categorised in a construct, a pilot survey was carried out in which 40 respondents were asked to complete the original questionnaire which included 21 items in Sections 1 and 2 respectively. Since there was more than one item in each construct, the Cronbach’s Alpha was used to measure how closely related the items were to each other in the construct. If the Cronbach’s Alpha was above 0.7, which is the common standard, the items would be seen as appropriately categorised as a construct (Taber, 2018). Table 1 shows the detailed results of the pilot testing.

Other than the feedback construct, all the items were kept after the pilot survey. For the feedback construct, after reviewing the pilot survey results, it was decided that two items “I find that the delivery of teaching materials in online learning is as clear as face-to-face learning” and “I find it easier to follow the instructions of teaching materials and assessments in face-to-face learning than in online learning” were removed. The four items in this construct were tested using different combinations. The Cronbach’s Alpha of the feedback construct could only be increased to over 0.7 after the removal of the shown items. It was finalised that the remaining two items were used in the feedback construct. The final questionnaire consisted of 19 items in each section (38 items in total). These items were then shuffled (i.e. not showing the items according to the constructs) so that the respondents could not remember their answers for a similar item easily.

3.3. Procedures

Convenience sampling was used for data collection as reaching students and teachers in person had been very difficult during the pandemic. Prior to the data collection, ethical approval of this study was sought and granted by the authors’ institutions (Reference Number: [removed for author anonymity]). Data were collected from April 2020 to June 2020 (8 weeks in total) when participants completed their whole semester with online teaching and learning, and it was done through a self-administered web-linked questionnaire sent to the teachers and students from the authors’ affiliated institutions via e-learning platforms (i.e., Zoom, Microsoft Teams, Moodle). Using e-survey could increase the accuracy of data collection as online survey tools can ensure the response validity by requiring respondents to complete all the questions on a page before moving onto the next (Lefever, Dal, & Matthiasdottir, 2007). This function could eliminate missing data and minimise the time and error in data cleaning. Respondents were required to provide their informed consent by reading through the purpose of the study and agreeing to the use of data before entering the actual questionnaire. No personal details of respondents were retained by the research team. A pilot survey was conducted with 40 respondents to check the validity of the questionnaire before proceeding to the final data collection. The final data collection involved 176 respondents (145 students and 31 teachers), with a response rate of over 60% from both students and teachers. This student-teacher ratio in this survey is an accurate representation of a higher education institutional structure in Hong Kong. The collected responses were confirmed to be valid for data analysis after data cleaning.

3.4. Data analysis

Data were analysed by using IBM SPSS Statistics, version 25. The study mainly adopted the co-orientation model to find out the agreement and accuracy on various online teaching or learning items. Independent sample t-test (McClave, Sincich, & ProQuest, 2014) was used to execute this model as there were mainly two groups of responses to be analysed for each hypothesis.

3.4.1. Hypothesis setting for independent t-tests

To perform the independent sample t-test for data analysis on the co-orientation model, hypotheses must be made for each of the relationships in the model. Fig. 3 outlines the hypotheses for the analysis.

Since only agreement and accuracy were measured, only three sets of hypotheses in Fig. 3 were formulated in this study.
5

Studies in Educational Evaluation 72 (2022) 101128

Fig. 3. Hypotheses formulated in the co-orientation model.

H1. There is an agreement between the students’ views and the teachers’ views on an item or a construct in the questionnaire

H2. There is an accurate estimation by the teachers over the students’ views on an item or a construct in the questionnaire

H3. There is an accurate estimation by the students over the teachers’ views on an item or a construct in the questionnaire

If there is no agreement between students and teachers on a certain item or construct, there will be a significant difference between the corresponding responses and the hypothesis H1 will be rejected, marked by LOW in agreement. If there is no significant difference, H1 will be accepted, marked by HIGH in agreement. The same goes to the analysis of accuracy for the hypothesis H2 and H3. The level of agreement and accuracy (HIGH/ LOW) will then reveal the type of relationship for each item or construct.

3.4.2. Measuring agreement and accuracy of a construct

Since there was more than one item in each construct, the average value for the items in the construct was used as a mean score for the hypothesis testing. For example, the average scores of the five items from each of the respondents were used for the interaction construct.

4. Results

Except for the feedback construct, our study found that teachers were generally more negative about online teaching and learning than their students and they perceived that students would also find it negative. However, the results were opposite from the students’ perspective (see Tables 4–9) for all the detailed calculations of the hypothesis testing).

Co-orientational relationships of these four constructs and items within each construct are summarised in Table 2 and 3.

The following sections are the quantitative analyses of the co-orientational relationships of each construct and its relative items.

4.1. Co-orientational relationship: interaction

Broadly looking at the interaction construct, it was found that there was a false consensus (see Table 2). There was a disagreement between teachers and students on how interactive online teaching and learning was. Students took a less negative stance towards interaction than teachers (Mean for students = 2.97; Mean for teachers = 2.66; p-value = 0.001).

Table 3

| Co-orientational relationships: Agreement and accuracy of all items. |
|---------------------------------------------------------------|
| Interaction – i | Agreement | Teacher Accuracy | Student Accuracy | Type of relationship |
|-----------------|-----------|------------------|------------------|---------------------|
| Affection – a   | LOW       | LOW              | LOW              | False Consensus     |
| Motivation – m  | LOW       | LOW              | LOW              | False Consensus     |
| Feedback – f    | HIGH      | LOW              | HIGH             | False Conflict      |

Table 2

| Construct | Agreement | Teacher Accuracy | Student Accuracy | Type of Relationship |
|-----------|-----------|------------------|------------------|---------------------|
| Interaction | LOW       | LOW              | LOW              | False Consensus     |
| Affection  | HIGH      | LOW              | LOW              | False Conflict      |
| Motivation | LOW       | LOW              | LOW              | False Consensus     |
| Feedback   | HIGH      | LOW              | HIGH             | False Conflict      |

(continued on next page)
0.0362 (Table 4). However, this disagreement was inaccurately perceived as an agreement. Teachers thought that students found online learning less interactive than what students perceived (Mean for teachers’ estimations = 2.58; p-value = 0.0057 (Table 5)) while students thought that teachers found online teaching more interactive than what teachers perceived (Mean for students’ estimations = 3.28; p-value = 0.0004 (Table 6)).

To be more specific, a false consensus was identified in three items (see Table 3). On one hand, teachers thought that students would be more negative than what students perceived (Mean for teachers’ estimations = 2.55, 2.84, 2.39; Mean for students = 3.08, 3.39, 3.28; p-value = 0.0099, 0.0097, 0.0000 (Table 8)). On the other hand, students thought that teachers would be more positive towards these items than what teachers perceived (Mean for students’ estimations = 3.28, 3.61, 3.46; Mean for teachers = 2.26, 2.74, 2.65; p-value = 0.0000, 0.0000, 0.0000 (Table 9)). In reality, students found it more interactive to have online learning and considered themselves more proactive in asking questions and engaged in online discussions than how teachers felt in their online teaching (p-value = 0.0002, 0.0026, 0.0045 (Table 7)).

There was one item in which a dissensus was found. There was a disagreement between teachers and students on the distraction level of online teaching and learning. Relative to students, teachers found online teaching and learning less distracting than face-to-face teaching and learning (Mean for teachers = 2.81; Mean for students = 2.39; p-value = 0.0325 (Table 7)). Both parties were also able to accurately perceive this actual disagreement – that they were aware of the level of distraction each other had in online teaching and learning (p-value for teachers’ estimation = 0.2423; p-value for students’ estimation = 0.9458 (Table 9)).

A false conflict was found when both teachers and students agreed on the concentration level they had in online teaching and learning (Mean for teachers = 2.84; Mean for students = 2.70; p-value = 0.5250 (Table 7)). However, this agreement was inaccurately perceived as a disagreement. While teachers correctly estimated the level of students’ concentration in their online study (Mean for teachers’ estimation = 2.52; p-value = 0.2185 (Table 8)), students overestimated teachers’ concentration in their online teaching than what teachers perceived (Mean for students’ estimation = 3.26; p-value = 0.0227 (Table 9)).

### 4.2. Co-orientational relationship: affection

Looking at the affection construct as a whole, a false conflict was found. Both teachers and students were in agreement with how affective they were towards online teaching and learning (Mean for teachers = 2.87; Mean for students = 3.10; p-value = 0.0501 (Table 4)). However, this agreement was inaccurately perceived as a disagreement. Teachers thought that students would be more negative about the affection construct than what students thought (Mean for teachers’ estimation = 2.76; p-value = 0.0003 (Table 5)) while students thought that teachers would be more positive about it than what teachers thought (Mean for students’ estimation = 3.20; p-value = 0.0104 (Table 6)). Comparing teachers’ and students’ views, students were found to be more positive than their teachers in this construct.

Breaking down the affection construct, diverse perspectives existed. A false consensus was found in three items (see Table 3). There was a disagreement between both sides that students found online learning more appropriate and had a higher preference for online learning and assessment than teachers (Mean for students = 3.54, 3.12; Mean for teachers = 3.10, 2.45, p-value = 0.0284, 0.0044 (Table 7)). However, both sides inaccurately perceived this disagreement as an agreement -
that students thought teachers were more positive about these two items than what teachers perceived (Mean for students’ estimation = 3.62, 3.02; p-value = 0.0035, 0.0069 (Table 9)) while teachers thought that students were more negative about them than what students perceived (Mean for teachers’ estimation = 2.90, 2.77; p-value = 0.0000, 0.0284 (Table 8)).

When they were asked about the embarrassment of showing faces on camera, students found it more embarrassing than teachers (Mean for students = 2.49; Mean for teachers = 3.03; p-value = 0.0226 (Table 7)). In terms of perceiving each other’s views on the embarrassment, students were more accurate than teachers. Students perceived the teachers’ embarrassment level accurately (Mean for students’ estimation = 3.33; p-value = 0.1701 (Table 9)), while teachers perceived that students had the strongest negative feeling towards showing faces on camera (as reflected in the lowest mean score among all the items in this questionnaire) than what students perceived (Mean for teachers’ estimation = 1.81; p-value = 0.0007 (Table 8)).

A false conflict was found when both teachers and students agreed on how comfortable they were with this change of teaching and study mode (Mean for teachers = 3.06; Mean for students = 3.39; p-value = 0.1001 (Table 7)). However, teachers wrongly estimated that students were less comfortable with this change than what students perceived (Mean for teachers’ estimation = 2.74; p-value = 0.0006 (Table 8)). In reality, students were more comfortable with it than their teachers.

### Table 7

Agreement between teachers and students over the items in the four constructs.

| Interaction | Students’ Views | Teachers’ Views | t | Sig | Hypothesis |
|-------------|----------------|----------------|---|-----|------------|
| Affection   | Mean | SD | Mean | SD | | |
| attributes  | | | | | | |
| more interactive to have online teaching/learning than face-to-face teaching/learning | i | 3.08 | 1.05 | 2.26 | 1.29 | 3.78 | 0.0002 | Rejected; LOW |
| more proactive in asking questions in online teaching/learning than face-to-face teaching/learning | i | 3.39 | 1.08 | 2.74 | 1.00 | 3.05 | 0.0026 | Rejected; LOW |
| more engaged in discussions in online teaching/learning than face-to-face teaching/learning | i | 3.28 | 1.12 | 2.65 | 1.14 | 2.88 | 0.0045 | Rejected; LOW |
| less distracting to have online teaching/learning than face-to-face teaching/learning | i | 2.39 | 0.96 | 2.81 | 1.01 | −2.16 | 0.0325 | Rejected; LOW |
| more concentrated in online teaching/learning than face-to-face teaching/learning | i | 2.70 | 1.07 | 2.84 | 1.07 | −0.64 | 0.5250 | Not rejected; HIGH |
| online teaching/learning appropriate for the subject | a | 3.54 | 1.04 | 3.10 | 0.94 | 2.21 | 0.0284 | Rejected; LOW |
| comfortable to change the teaching/study mode | a | 3.39 | 0.96 | 3.06 | 1.09 | 1.65 | 0.1001 | Not rejected; HIGH |
| In terms of perceiving each other’s views on the embarrassment | | | | | | |
| do not find it embarrassing to have online teaching/learning by showing faces on camera | a | 2.49 | 1.18 | 3.03 | 1.25 | −2.30 | 0.0226 | Rejected; LOW |
| prefer online teaching/learning and assessments to face-to-face teaching/learning | a | 3.12 | 1.21 | 2.45 | 0.99 | 2.89 | 0.0044 | Rejected; LOW |
| less tiring to have online teaching/learning than face-to-face teaching/learning | a | 2.80 | 1.06 | 2.52 | 1.39 | 1.07 | 0.2894 | Not rejected; HIGH |
| less time-consuming to have online teaching/learning than face-to-face teaching/learning | a | 2.89 | 1.05 | 2.39 | 1.17 | 2.36 | 0.0194 | Rejected; LOW |
| more punctual in attending online classes than face-to-face classes | m | 3.23 | 1.25 | 2.71 | 1.04 | 2.18 | 0.0302 | Not rejected; LOW |
| manage the time better in online teaching/learning than face-to-face teaching/learning | m | 3.37 | 1.18 | 3.19 | 1.25 | 0.76 | 0.4488 | Not rejected; HIGH |
| achieve learning goals better in online teaching/learning than face-to-face teaching/learning | m | 3.32 | 0.98 | 2.58 | 0.92 | 3.30 | 0.0011 | Rejected; LOW |
| keep track of study plans better in online teaching/learning than face-to-face teaching/learning | m | 3.25 | 1.10 | 2.65 | 0.84 | 3.39 | 0.0013 | Rejected; LOW |
| online teaching/learning will enhance results | m | 2.94 | 1.03 | 2.32 | 0.75 | 3.87 | 0.0003 | Rejected; LOW |
| more effective for feedback during online teaching/learning than face-to-face teaching/learning | f | 2.35 | 0.97 | 2.68 | 1.08 | −1.67 | 0.0975 | Not rejected; HIGH |
| easier for feedback during online teaching/learning than face-to-face teaching/learning | f | 2.49 | 0.95 | 2.32 | 0.98 | 0.88 | 0.3783 | Not rejected; HIGH |

### Table 8

Accuracy of teachers’ estimations of students’ views in the items of the four constructs.

| Interaction | Students’ Views | Teachers’ Estimations | t | Sig | Hypothesis |
|-------------|----------------|-----------------------|---|-----|------------|
| Affection   | Mean | SD | Mean | SD | | |
| attributes  | | | | | | |
| more interactive to have online teaching/learning than face-to-face teaching/learning | i | 3.08 | 1.05 | 2.55 | 0.89 | 2.61 | 0.0099 | Rejected; LOW |
| more proactive in asking questions in online teaching/learning than face-to-face teaching/learning | i | 3.39 | 1.08 | 2.84 | 0.93 | 2.62 | 0.0097 | Rejected; LOW |
| more engaged in discussions in online teaching/learning than face-to-face teaching/learning | i | 3.28 | 1.12 | 2.39 | 0.99 | 4.13 | 0.0000 | Rejected; LOW |
| less distracting to have online teaching/learning than face-to-face teaching/learning | i | 2.39 | 0.96 | 2.61 | 0.88 | −1.17 | 0.2423 | Not rejected; HIGH |
| more concentrated in online teaching/learning than face-to-face teaching/learning | i | 2.70 | 1.07 | 2.52 | 0.68 | 1.24 | 0.2185 | Not rejected; HIGH |
| comfortable to change the study mode | a | 3.54 | 1.04 | 2.90 | 0.70 | 4.20 | 0.0000 | Rejected; LOW |
| do not find it embarrassing to have online teaching/learning by showing faces on camera | a | 3.39 | 0.96 | 2.74 | 0.82 | 3.48 | 0.0006 | Rejected; LOW |
| prefer online teaching/learning and assessments to face-to-face teaching/learning | a | 2.49 | 1.18 | 1.81 | 0.91 | 3.59 | 0.0007 | Rejected; LOW |
| less tiring to have online teaching/learning than face-to-face teaching/learning | a | 3.12 | 1.21 | 2.27 | 0.67 | 2.23 | 0.0284 | Rejected; LOW |
| less time-consuming to have online teaching/learning than face-to-face teaching/learning | a | 2.80 | 1.06 | 2.87 | 0.96 | −0.34 | 0.7310 | Not rejected; HIGH |
| more punctual in attending online classes than face-to-face classes | m | 3.23 | 1.25 | 3.03 | 0.95 | 1.01 | 0.3147 | Not rejected; HIGH |
| manage the time better in online teaching/learning than face-to-face teaching/learning | m | 3.37 | 1.18 | 2.81 | 0.87 | 3.06 | 0.0034 | Rejected; LOW |
| achieve learning goals better in online teaching/learning than face-to-face teaching/learning | m | 3.32 | 0.98 | 2.45 | 0.62 | 5.50 | 0.0000 | Rejected; LOW |
| keep track of study plans better in online teaching/learning than face-to-face teaching/learning | m | 3.24 | 1.10 | 2.84 | 0.73 | 2.51 | 0.0147 | Rejected; LOW |
| online teaching/learning will enhance results | m | 2.94 | 1.03 | 2.71 | 0.74 | 1.45 | 0.1536 | Not rejected; HIGH |
| more effective for feedback during online teaching/learning than face-to-face teaching/learning | f | 2.35 | 0.97 | 2.71 | 0.90 | −1.89 | 0.0605 | Not rejected; HIGH |
| easier for feedback during online teaching/learning than face-to-face teaching/learning | f | 2.49 | 0.95 | 2.84 | 0.97 | −1.85 | 0.0662 | Not rejected; HIGH |
A true consensus was found where both teachers and students agreed on how tiring online teaching and learning was (Mean for teachers = 2.52; Mean for students = 2.80; p-value = 0.2894 (Table 7)) and on the confidence level they had in using online teaching and learning (Mean for teachers = 3.52; Mean for students = 3.46; p-value = 0.7717 (Table 7)). They were also able to accurately perceive this actual estimation of teachers’ (Mean for teachers = 0.7310, 0.1630; p-value for students’ estimation = 0.3313, 0.7622 (Table 9)).

A disensus was found in which there was a disagreement between teachers and students about how time-consuming online teaching and learning was (Mean for teachers = 2.39; Mean for students = 2.89; p-value = 0.0194 (Table 7)). This disagreement was also correctly perceived. Both teachers and students were aware of each other’s understanding on how time-consuming online teaching and learning was (Mean for teachers’ estimation = 3.03; p-value = 0.3586; Mean for students’ estimation = 2.64; p-value = 0.2591 (Table 9)).

4.3. Co-orientational relationship: motivation

A false consensus was found in which teachers and students had a disagreement with the motivation construct. Students found online learning more motivating for their study than what their teachers perceived (Mean for teachers = 2.69; Mean for students = 3.20; p-value = 0.0029 (Table 4)). This disagreement was inaccurately perceived as an agreement. Teachers thought that students found online learning less motivating than what students perceived (Mean for teachers’ estimation = 2.77; p-value = 0.0011 (Table 5)) while students thought that teachers found online teaching more motivating than what the teachers perceived (Mean for students’ estimation = 3.37; p-value = 0.0000 (Table 6)).

Among all the items, a false consensus was found in which there was a disagreement between students and teachers in four items (see Table 3). Students found themselves more punctual in attending online classes, more able to achieve their learning goals, more able to keep track of their study plans, and more positive on online learning to enhance their results than what teachers thought (Mean for students = 3.23, 3.32, 3.24, 2.94; Mean for teachers = 2.71, 2.58, 2.65, 2.32; p-value = 0.0302, 0.0011, 0.0013, 0.0003 (Table 7)). However, some of these disagreements were inaccurately perceived as agreements. Teachers thought that students were more negative about achieving learning goals (Mean for teachers’ estimation = 2.45) and keeping track of study plans (Mean for teachers’ estimation = 2.84) in online learning than what students thought (p-value = 0.0000, 0.0147 (Table 8)) while students thought teachers were more positive about these items than what teachers thought (Mean for students’ estimation = 3.51, 3.30, 3.29, 3.13; p-value = 0.0000, 0.0002, 0.0012, 0.0000 (Table 9)).

There was a false conflict concerning time management. Both teachers and students agreed on how well they could manage their time better in online teaching and learning (Mean for teachers = 3.19; Mean for students = 3.37; p-value = 0.4488 (Table 7)) but teachers incorrectly perceived that students could not manage their time well in online study than what students thought (Mean for teachers’ estimation = 2.81; p-value = 0.0034 (Table 8)).

4.4. Co-orientational relationship: feedback

A false conflict was found in the feedback construct where there was an agreement between teachers and students on the effectiveness of feedback delivery and receipt (Mean for teachers = 2.50; Mean for students = 2.42; p-value = 0.6224 (Table 4)). However, this actual agreement was inaccurately perceived as a disagreement. On one hand, students correctly estimated the degree of how teachers felt about feedback delivery (Mean for students’ estimation = 2.42; p-value = 0.6291 (Table 6)). On the other hand, teachers underestimated how negative students thought about receiving feedback than what students thought (Mean for teachers’ estimation = 2.77; p-value = 0.0241 (Table 5)).

Looking into the specific items, a true consensus was achieved concerning both items about feedback, in which both teachers and students agreed on the level of effectiveness (Mean for teachers = 2.68; Mean for students = 2.35; p-value = 0.0975 (Table 7)) and easiness to give or receive feedback (Mean for teachers = 2.32; Mean for students = 2.49; p-value = 0.3783 (Table 7)) in online teaching and learning. Both parties also correctly perceived each other’s understanding on these two items (Mean for teachers’ estimation = 2.71, 2.84; p-value = 0.0605, 0.0662 (Table 8); Mean for students’ estimation = 2.50, 2.34; p-value = 0.3634, 0.9355 (Table 9)).

5. Discussion

This study compared and contrasted teachers’ and students’ perceptions and revealed their misunderstanding of each other’s expectations in online teaching and learning. Teachers were generally more...
negative about online teaching and learning than their students and thought that students should also be more negative than what students perceived. However, students were generally more positive about what they went through than their teachers and thought that their teachers were also more positive about it than what teachers perceived. These unmatched views are illuminating in that students’ perspective seems to provide reassurance to teachers about their online teaching quality, plunging them to dismiss some of the negative notions about online teaching and learning and encouraging them to look for ways to optimize the OLE instead.

Concerning interaction, studies have often argued that there was always a lack of interactions in online classes for students (e.g., Aboagye et al., 2020; Aguilera-Hermida, 2020; Lorenza & Carter, 2021; Oliveira et al., 2021). Yet, our study has suggested otherwise by showing how students found online teaching and learning more interactive than teachers. From students’ perspective, teachers should find online teaching and learning to be more interactive than what teachers perceived. In other words, teachers underestimated the level of interaction perceived by students in online teaching and learning. They may have also underestimated their own abilities to facilitate the interaction and students’ contribution to interaction in online teaching and learning. In particular, students found themselves to be more proactive in asking questions and more engaged in discussions in online teaching and learning than what teachers thought about their students. Students considered teachers to be more able to facilitate these two aspects of interactions in online teaching and learning than what teachers perceived. Such perceptual discrepancy shows that teachers may not have sufficiently recognised the efforts by both teachers and students—how teachers’ designed activities might have already been more interactive than they perceived and how students might have already tried to engage in class more than what teachers perceived. Teachers’ dismissive view of online interactions may not be necessarily true from students’ perspective. The key question is how interactivity in online learning should be measured and expected by both teachers and students. Should quality of activity engagement rule over quantity or vice versa? Or should there be a balance? In the end, there is a need for both sides to set up appropriate measurement of online learning interactivity so as to align the learning expectations between teachers and students. Otherwise, a lack of awareness of such expectations might lead to an inaccurate evaluation of various parties’ satisfaction with online teaching and learning.

For affectation, students overestimated teachers’ affectation thinking that they would be more positive about online teaching and learning than what teachers perceived, whereas teachers underestimated students’ affectation thinking that they would be more negative about it than what students perceived. This lack of co-orientation is particularly strong in the perception of camera use in online classes. Camera use seems to be a new issue arising from this new OLE under COVID-19 where the lack of social interactions potentially underscores teachers’ or students’ desire for social presence. Previous studies seem to have underestimated its importance to online teaching and learning by focusing on other aspects of teachers’ and instructors’ presence (e.g., Ladyshewsky, 2013; Martin, Wang, & Sadaf, 2020) but our study has highlighted how camera use concerning teachers’ and students’ presence could also be an important factor influencing the online learning experience. Undeniably, students were more negative about showing faces on camera than teachers and it may be related to a socio-economic issue in Hong Kong that the living space is generally limited yet crowded with family members (Textor, 2019). Having this kind of environment might also force students to attend lessons outside when school facilities or public study rooms were closed due to safety and hygiene measures under COVID-19. The lack of a suitable learning environment might lead to embarrassment when students were required to expose their surroundings to the whole class via camera. However, our findings have suggested that students were less negative about showing their faces than what their teachers thought about their students. This implies that having classroom activities with students’ presence on the camera is a feasible choice. Teachers should not over worry students’ embarrassment issue and abandon the use of camera. Instead, essential tasks that require non-verbal communication like oral discussion should also be considered for class activities or assessments.

Regarding motivation, our study has suggested that teachers’ view of students not being competent and motivated independent learners in online learning should also be dismissed (e.g., Aboagye et al., 2020; Mok et al., 2021). Teachers might have underestimated their students’ abilities in deploying their own strategies for self-directed learning (SDL) than what students perceived because despite teachers’ disagreement, students evaluated their own efforts in managing time and study progress in online learning more positively. It seems that teachers also underestimated their effort in promoting SDL in this OLE. Teachers perceived themselves as less capable of helping students achieve their learning goals and keeping track of their study plans than what students thought about their teachers. One potential reason why SDL was better than imagined by students than teachers may have to do with the awareness of the flexibility and student-centeredness required in OLE (Sumuer, 2018; Tanner, Noer, & Totaro, 2009). This might have driven both parties to look for ways to enhance independent learning skills to facilitate online learning and teaching. There are two messages that can be drawn from this. Firstly, teachers should be more confident about their own efforts in motivating students to learn in OLE. Secondly, teachers ought to give more credits to students about their independent learning skills. This is important as teacher encouragement is suggested to have a positive impact on students’ educational progress and motivation of SDL (e.g., Baran, Correia, & Thompson, 2011; Komarraju, 2013).

Among all the constructs, our findings have shown that feedback delivery was the construct teachers should have paid more attention to in online teaching and learning because of the perceptual gap that teachers expected students to be more positive about feedback than students perceived when it was quite the opposite case. In other words, teachers may have underestimated how students were less satisfied with the quality of online feedback. While students in our study found online learning more interactive than teachers, they felt that they it was more difficult for them to receive feedback from teachers for their participation. Previous studies have reported insufficient feedback in online learning from students’ perspective (e.g., Jan, 2020; King, 2014). Yet, they have overlooked the extent to which teachers agree with their user-experience. Our study has revealed a perceptual gap where teachers were unknowingly complacent about their online feedback delivery when students comparatively felt otherwise. A lack of awareness as such might further jeopardize the quality of feedback. Therefore, our study has called for teachers’ attention to the way they deliver their feedback, and also to the importance of constantly checking their students’ satisfaction with feedback so as to avoid any potential misalignment of expectations.

6. Conclusion & implications

Using the co-orientation approach, this study has identified the perpetual gaps between teachers and students in the following areas of online teaching and learning under COVID-19: level of engagement, the use of camera, self-directedness and feedback delivery. In addition to these gaps, this study has also shown that both parties have devoted much effort to adapting to OLE. Several implications could be drawn from our co-orientational analysis for future practices and research.

Concerning the future practices, our findings have practical psychological implications for teachers to reassure their efforts in online teaching and learning during COVID-19 as reflected by students’ generally more positive views than their teachers and what their teachers thought about their students. Based on the findings, we urge teachers to move away from a pessimistic view of looking at their own inputs in online interactions and instead look for constructive ways to
seek how such inputs can be effectively maximized and also how the level of interactivity can be effectively measured by aligning the perspectives of both sides. We also suggest that teachers could give more credits to acknowledge their students’ effort towards SDL so as to encourage students for online learning.

Concerning future research, a further examination of camera use concerning both teachers’ and students’ presence during synchronous classes is needed when nonverbal communication is of paramount importance to instructor effectiveness, student learning and engagement and affective online experience, especially when there is a complete lack of social interaction under COVID-19 pandemic (Castelli & Sarvary, 2021). The findings of this study have also pointed towards the need for more co-orientation research. Co-orientation analysis has demonstrated to be useful in evaluating the under- and over-estimated aspects of online learning, allowing teachers and students to see how much (dis)agree with each other. This provides meaningful insights into better strategic planning on how their positions can be juxtaposed and their needs can be addressed. We also suggest that future research could expand this study by involving more higher education institutions and a larger sample size, incorporating some qualitative elements, and taking students’ and teachers’ demographic characteristics (e.g., learner types, previous online learning, and teaching experiences) into account to increase the representativeness and generalizability of the study and reveal the factors affecting their perceptions of this sudden shift of teaching and learning mode.

7. Limitations

There are some limitations in this study. First, we were well aware that the student group was larger than the teacher group in this study. Although there might be some implications on the group variance, this ratio is a realistic reflection of the higher education institution structure in Hong Kong in which the student number is usually four to five times more than the teacher number. Second, as with many other case studies, this study was conducted in a specific context, i.e., ERT during COVID-19. The findings might not be able to be generalised to normal OLE and the experience of using those online teaching and learning tools might also be very different. Third, methodologically speaking, triangulation of data with interviews could better explain some of the findings, but the pandemic made it rather difficult for such data collection. It also brought challenges to collecting data from a larger population, making the sample size of this study not large enough to study the effects of other factors such as demographic characteristics, learner types, previous online learning, and teaching experiences etc. Despite the above limitations, it is hoped that this study can provide directions for teachers and university policymakers to devise strategies to alter the expectations of both teachers and students and reduce the perceptual gaps so as to foster effective online teaching and learning under the ‘new normal’ in higher education when online teaching and learning is no more an option, but a necessity.

Declaration of Competing Interest

The authors declare no conflict of interest.

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