

Transactional Distances During Emergency Remote Teaching Experiences

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Abstract: The Transactional Distance Theory posits that successful remote learning occurs when teachers decrease psychological or transactional gaps. Narrowing the transactional distance can be achieved through a balance of appropriate course structure and dialogue, fostering healthy student autonomy in the process. This paper describes the Emergency Remote Teaching experiences of faculty and students of the Ateneo de Manila University in the Philippines. It examines these experiences in the context of the transactional distance framework. Findings show that a sudden shift to remote learning mandates greater student autonomy, which increases transactional distance. Because of this, efforts by faculty to increase student-teacher dialogue are critical in preventing this distance from widening further. Implications for teacher professional development are subsequently discussed.

Keywords: Transactional distance, dialogue, structure, autonomy, emergency remote teaching, online education, higher education, COVID-19, Philippine education

1. Introduction

The global lockdown caused by the Covid-19 pandemic in early 2020 forced the physical closure of schools, colleges and universities in at least 46 countries (Schleicher, 2020) and mandated the pivot transition to emergency remote teaching (ERT) for the sake of academic continuity. This meant that educational institutions had to enact a temporary shift of instruction from a face-to-face or blended mode to an alternate delivery mode in response to the COVID-19 crisis worldwide (Hodges, Moore, Lockee, Trust, & Bond, 2020). Such modes include the use of technical media such as mobile learning, radio, Zoom-based lectures, or any other methods that are contextually feasible given the crisis circumstances. ERT thus implies a shift to fully remote teaching as a way of survival, using a delivery mode that was neither planned nor designed for the course (Bozkurt et al, 2020).

Although emergency remote teaching impacted education worldwide, the concept of online distance education is not new. Distance education is defined as “an educational experience where instructors and learners are separated in time and space” (Keegan, 2002). Key aspects of distance education include physical separation between teacher and learner, the use of technical media, and communication between teacher and learner within the context of an educational institution (Keegan, 1980). Online distance education has broadened the scope and reach of traditional in-person education, yet it has had its share of criticism. Literature has examined various facets of online learning in higher education, including negative effects such as students’ feelings of isolation, loss of motivation and lack of immediate feedback (De Paepe, Zhu, & Depryck, 2018; Lei & Gupta, 2010; Venter, 2003; Zuhairi, Wahyono, & Suratinah, 2006). Similar detrimental effects on students and teachers have also been noted as a result of the pivot to ERT (Bozkurt et al, 2020; Moser, Wei, & Brenner, 2020; Shim & Lee, 2020).

A paramount consideration in online distance education is the concept of transactional distance. Moore (1993) defines this as “a psychological and communications space to be crossed, a space of potential misunderstanding between the inputs of instructor and those of the learner.”. According to his theory of transactional distance, remote teaching imposes a separation between students and teachers that is not just physical, but psychological or transactional as well. Ideally, transactional distance should be minimized or shortened; the smaller the distance, the more meaningful the learning experience.

Conversely, an increase in transactional distance could potentially contribute to negative psychological effects in students, such as those previously described. Thus, to minimize these negative effects and provide a meaningful learning experience for students, remote teaching needs to consider three variables: (1) course structure, (2) dialogue, and (3) learner autonomy. Structure or design is defined as the degree of rigidity or flexibility of teaching practices; or “the extent to which an education programme can accommodate or be responsive to each learner’s needs” (Moore, 1993). Dialogue is the positive interactions between student and course instructor during remote teaching to which both parties actively listen and contribute; the interactions are characterized as “purposeful, constructive and valued by each party”. Finally, learner autonomy refers to the degree to which students self-direct their own learning, taking responsibility for determining goals, learning experiences and evaluation decisions (Murphy & Manzanares, 2008; Delgaty, 2018).

The theory makes a number of predictions about transactional distance based on the interplay of the three variables. High dialogue and low structure results in low transactional distance (TD). Conversely, low dialogue and high structure beget high TD. The higher the TD, the greater the degree of autonomy or self-direction that a student has to employ. Finally, the greater the learner autonomy, the lower the dialogue and structure that are needed. This implies that the nature of the student plays a critical role in determining transactional distance. Moore (1993) also hypothesized that transactional distance could be lowered through the use of interactive media, inferring that multimodal technology is instrumental in the success of remote learning.

Empirical studies on TD in higher education have found dialogue to be crucial in decreasing transactional distance. Chen and Willits (1999) sought to examine the applicability of the transactional distance theory on college and graduate students’ videoconferencing experiences. Their findings showed that various kinds of dialogue (in-class discussions, out-of-class face to face discussions, out-of-class electronic communication) affected perceived transactional distance. In-class discussion was found to contribute positively to learning outcomes, and the smaller the transactional distance between students and instructors, the larger the perceived learning outcomes. Similarly, Chen (2001) found that both a student’s skill level with the Internet and the extent of interaction (peer-to-peer and instructor-students) decreased TD. Stein, Wanstreet et al (2005) collected data from students in six courses that varied in structure, format and dialogue. They found a high correlation between course structure and dialogue, both of which led to greater student satisfaction. Specifically, instructor guidance and encouragement and learner-initiated interaction contributed to student satisfaction with perceived knowledge gained. Flowers, White and Raynor (2012) explored the use of the TD theory in college students’ perceptions of virtual laboratories in a biology course. They found that although student perception of course structure was enhanced by the virtual laboratory setting, this negatively impacted dialogue. The authors suggested that course instructors recognize the importance of dialogue in reducing TD and design courses to decrease negative learner-instructor interactions.

In this paper, we attempt to describe the effects of ERT on higher education students in the light of the transactional distance framework. Specifically, we focus on the ERT experiences of students and faculty of the Ateneo De Manila University in the Philippines, which had to shift to ERT methods from March 16 until May 8, 2020. Our discussion is guided by the following main questions:

- What ERT practices decreased transactional distance?
- What ERT practices widened transactional distance?

The paper ends with a discussion of implications for teacher professional development.

2. Methodology

This paper reports on data that was collected as part of a multi-institutional and multinational study which investigated the responses of faculty, students, and administrations to ERT in early 2020, when COVID-19 first emerged (Bartolic et al, in press). Our procedures also emanate from that study. Here, we concentrate on data collected from the Ateneo de Manila’s Loyola Schools, a tertiary education institution that offers undergraduate and graduate degree programs. There are four schools: the School of Humanities, the School of Social Sciences, the School of Science and Engineering, and the John Gokongwei School of Management. As a whole, the Loyola Schools have approximately 10,000 students at the undergraduate and graduate levels.

2.1 Participants

Participants in this study were course instructors and students who belonged to one of the following departments: Computer Science, History, Psychology, Political Science, and Chemistry. These departments had been pre-selected by the multi-institutional study to represent a university's disciplines. Due to unequal department sizes, the Yamane formula was used to decide on the percentage that would form the sample of courses and faculty. Based on this percentage, 112 teachers and 1032 students were thus randomly selected through the randomization function of MS Excel. From these numbers, an actual total of 45 faculty members and 321 students agreed to participate in the study. The teachers were a mixture of instructors whose teaching experience was 10 years or more (19%) and relatively new instructors who had taught ten years or less (26%). Prior to the ERT period, the majority (60%) had not taught an online course. On the other hand, student participants were mostly in their first or second year of learning at the time that ERT occurred (34% and 38% respectively). A smaller number were third-year students (17%), with final-year and graduate students at 11%. Prior to ERT, only fifty-five students (17%) had had no prior experience with web-enabled or technology-mediated course instruction. All teacher and student participants had been part of a course that had been active during the academic term in which COVID-19 emerged and prompted the shift to ERT.

2.2 Research Instruments

Teachers were given two data collection instruments: (1) a web-based self-administered questionnaire, and (2) a virtual, semi-structured interview. The questionnaire contained 70 core questions about one specific course that was taught during the ERT term. Questions asked about course details prior to and during ERT, such as classroom management, content delivery, interaction, and assessment. The questionnaire was completed prior to the interview, which lasted about 30 minutes to 1 hour per course instructor and asked about general feedback on the emergency transition to remote learning. Student participants were given a web-based self-administered questionnaire that was similar in scope to the one answered by faculty.

2.3 Procedures

The original set of teachers and students that was randomly selected (112 teachers and 1032 students) was sent an individual email invitation to participate in the study. When this failed to generate enough responses, a second invitation was emailed, this time to the entire student population who had taken courses from the aforementioned departments during the term in which the ERT pivot occurred. A final total of 45 faculty members and 321 students consented to participate in the study. Each participant was then automatically provided a link to either the teacher or the student self-administered questionnaire. The research team was also automatically notified to arrange an online interview with the teacher participant. Upon confirmation, the researchers met the faculty member to record the virtual interview, which was later transcribed. All data from both faculty interviews and student and faculty questionnaires were then tabulated, summarized and subjected to thematic analysis. It was assumed that all responses were honest, and that the participants had answered as best as they could.

2.4 Limitations

The use of online form and virtual interviews was necessary due to the health and safety measures in place. However, this meant that the research team was unable to meet students and faculty in person, thereby eschewing any non-verbal and extralinguistic cues might have added to the richness of the data (Hewson, 2015). In addition, the relatively small sample sizes imply that the results are not generalizable to all students and teachers of the Ateneo De Manila. It is also worth noting that the study focused on general teacher and student experiences during the academic term in which ERT was imposed. It does not aim at comparing data across year levels and departments.

3. Results

Transactional distance is characterized as the dynamic interplay of program structure, student-teacher dialogue and learner autonomy (Moore, 2012). The TD theory posits that a course with more ongoing dialogue greatly benefits students who may need more guidance in their learning, resulting in decreased transactional distance. In contrast, with minimal dialogue, students are forced to make choices for themselves, resulting in greater learner autonomy. More autonomy and less structure gives rise to increased transactional distance. A similar increase in transactional distance also occurs when students are forced to make choices on their own, which stems from less dialogue and more program structure, resulting in a poor remote learning experience. Thus, to minimize transactional distance in remote learning, teachers must ideally provide appropriate teaching practices and opportunities for dialogue, both of which should encourage healthy student autonomy (Delgaty, 2018). We now look at the general course structure that teachers used, as well as dialogue and student self-learning experiences, to evaluate qualitatively the effects of the shift to ERT in the context of transactional distance.

3.1 Structure

Structure is determined by the actual design of the course and how instruction was organized. This is manifested in aspects of instructional design, namely content delivery and assessment.

3.1.1. Flexible Content Delivery

Transactional distance is reduced when pedagogical approaches are flexible and student-centered (Rugube et al, 2020). One way to achieve this is to provide students with diverse avenues for interacting with the content. Face-to-face instruction has instructional design features that are not available in online learning environments and vice versa. Hence, the abrupt shift to online teaching challenged instructors to think of alternative ways to deliver content. One obvious strategy adopted during ERT was to provide lectures online. Most teachers (31/45, or 69%) conducted live lectures over the Internet during scheduled class hours or recorded their own lectures/instructional videos. A second strategy adopted by 35 faculty respondents (78%) was the use of existing materials found online.

In spite of these, academic topics had to be reduced. Eighteen instructors (40%) said they took away topics scheduled for the latter part of their respective courses. One said difficult topics were removed because delivering these online posed to be challenging. Supplementary or special lectures had to be dropped as well. As one teacher put it, “I did take away academic topics particularly the last few modules.” Another was more explicit: “I definitely had to exclude a lot of lectures that I usually do that are more specific.”

Altogether, student and faculty responses show there were efforts to provide academic structure by providing synchronous or asynchronous lectures, capitalizing on existing online materials, reducing content, and individualizing requirements. However, the sudden need to shift to ERT provided teachers with little to no time to thoughtfully plan how they would implement their classes online.

3.1.2 Assessment

Assessment was another aspect that changed during the sudden shift to ERT. This was examined by looking at course assessment activities prior to and after the pivot. Student respondents were asked what features were part of a specific course prior to the shift to ERT and which of these continued after the shift. The results are shown in Figure 1.

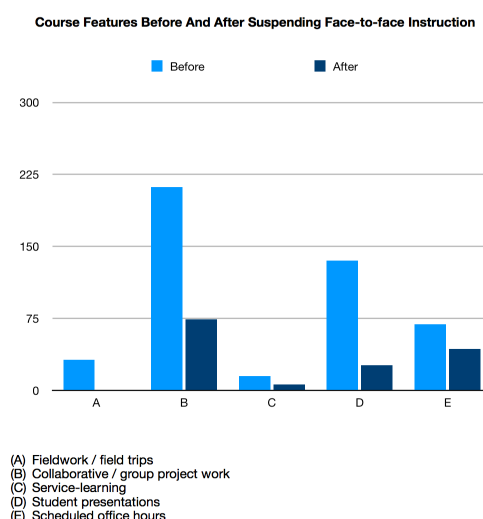


Figure 1. Course Features Before and After the Suspension of Face-to-Face Instruction.

Course assessment activities that continued were those that could be facilitated online. Field works/trips such as for data gathering or field experiments were cancelled. The majority of the students (66% or 212) indicated their course had collaborative/group project work prior to the shift to ERT; 23% (74) said these continued even after the shift to online. Teacher interviews also corroborated this. One instructor acknowledged the need to make adjustments "... to work around the fact that [they] had to stay home". A thesis instructor assumed students were collaborating because the thesis was, by nature, collaborative. A chemistry course instructor asked his class to complete a group experiment that the students started prior to ERT. After the shift, everything was already done individually. Student presentations were also quite common prior to ERT (135 (42%)), but only twenty-six (7%) of the students said these continued after the shift. Teacher interviews showed that thesis defenses and live presentations were cancelled. In lieu of actual presentations, students were asked to prepare and submit PowerPoint presentations and/or pre-recorded presentations. However, an instructor shared that their attempt at a virtual presentation "didn't go very well". Scheduled office hours or consultations continued after the shift to remote teaching, but designated hours were no longer followed. These were done either synchronously or asynchronously. Some instructors shared that they made themselves available for synchronous consultations, but no student took advantage of this.

Because of the cancellation of many planned assessment activities, instructors became more lenient and flexible with assessments that did continue. Due dates were extended; late submissions did not merit any deductions. As one teacher put it, "I was more lenient with them in terms of submissions; even if they submitted late, I really didn't deduct grades." Assignment and project specifications were also changed to better suit the online environment and to consider students' limited access to resources such as the school library.

Three weeks into the ERT period, the school administration cut the semester short and mandated an "auto-pass" policy for all students for the semester. While this decision was deemed the most compassionate way to resolve students' grades for the semester, it also resulted in a marked drop in student engagement with course content. Teachers observed the decline despite their efforts to continue providing course content. One teacher said, "they [the students] did not want to go to class anymore". Thus, ironically, while the auto-pass policy was implemented for humanitarian reasons, this might have also inadvertently increased transactional distance.

3.2 Dialogue

In transactional distance, dialogue encompasses both asynchronous and synchronous forms of communication (Moore, 2012). In this light, students were asked to describe their understanding of communication synchrony in an online learning environment. The majority (82%) said that this was a combination of synchronous and asynchronous communication. This figure implies that students expected teachers to avail of a range of communication channels to maintain contact with them, while

8% stated that this was either purely synchronous or asynchronous. This student perception is corroborated by the teachers' use of a wide range of online communication tools, primarily in the form of broadcast email to the entire class, and course announcements on an internet-based bulletin board or the department's learning management system (LMS). Other course instructors posted announcements on Facebook or transmitted updates through the class beables. However, at this point, very few knew how to use video conferencing platforms like Zoom; this is evident in Figure 2 below.

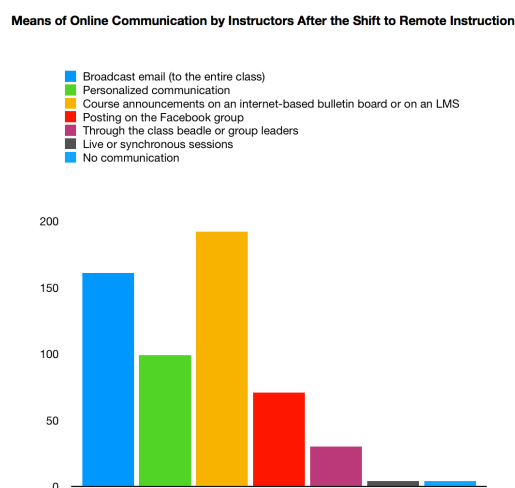


Figure 2. Means of Online Communication During ERT.

In the light of the sudden shift to ERT, dialogue must also be open and authentic; it has to include care for students' personal and socio-emotional needs. Teachers have to go beyond their role as mere course instructors and act as friend, coach and counsellor, setting up virtual spaces where listening is both encouraged and appreciated (Bozkurt, et al, 2020). Actions such as this help close the psychological gap between student and teacher. It is worth noting that, beyond the digital classroom, other course instructors communicated more personally with their students through email, Zoom or Skype, phone calls, the LMS messaging feature, and FB Messenger. A few faculty members even took to SMS and Discord. Figure 3 shows a summary of these figures.

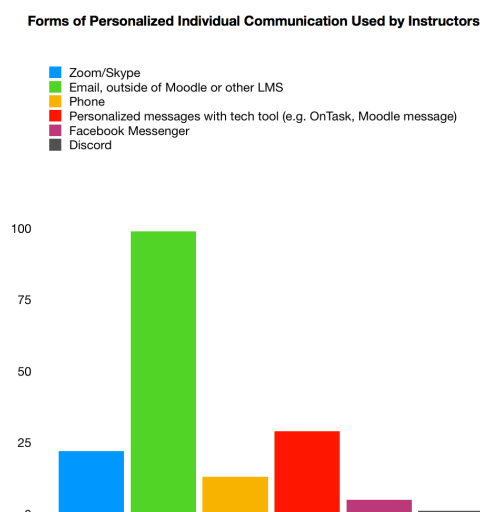


Figure 3. Means of Personalized Communication During ERT.

The provision of teacher support through dialogue was indeed felt by the students. The majority (76%) stated that their instructors directly provided virtual learning support during the anxiety-filled days when face-to-face classes migrated to remote learning, attesting to the high level of guidance that students received from their teachers. Furthermore, after the migration to remote learning, teachers

more frequently reached out to their students -- around two to three times a week on average -- and used class time as an opportunity to check in on their students in the form of *kamustahan* ("how are you?") sessions. As one teacher put it, "I did a lot of check-ins." Another teacher said, "I was more compassionate and patient with the students." This type of interaction was much appreciated by the students. One said, "My prof was a very consistent source of guidance and empathy throughout the rest of the course". Another one remarked, "She (the course instructor) was very motherly to initiate that kind of [kamustahan] session, and it really made me warm and more excited & open to attend the online sessions." A third student quipped, "My instructor was very compassionate about the uncertainty during the transition while mindful of us wanting to learn. Couldn't ask for more."

However, although teachers made massive efforts to maintain dialogue, students dearly missed the real-time feedback and the guidance that were once present in their previously face-to-face courses. One student remarked, "The discussion made it fun and understandable. Without that, the essence of the subject was taken away." Moreover, some students decried the lack of learner-learner interaction caused by the shift to remote learning, especially for those involved in group work. As one student remarked, "I usually work better with a group." Another student said, "I couldn't lean on/communicate with my classmates as much which made it hard to enjoy the course more. A third commented that there was "no one to share the things I learned in this course. Honestly, online classes deprive one of the hallmarks of an educational experience which is the "damayan" part of going to class (i.e. sharing the learning experience)." With the lack of real-time interaction and feedback, students also experienced a loss of engagement with the course, thus experiencing the sense of isolation and loss of motivation prevalent in remote learning scenarios (Le & Truong, 2021). One student quipped, "Keeping motivated to study was definitely a challenge for me. Another said, "In online classes, it felt suffocating and anxious because I lost contact with my fellow students." This implies that where dialogue is concerned, the immediacy of instructor feedback and peer interactions are crucial in minimizing transactional distance, consequently increasing the success of remote learning (Baker, 2004).

3.3 *Autonomy*

The final critical element in transactional distance is autonomy, or the degree to which a learner can self-manage pedagogy. This implies knowledge of oneself and self-strategies to manage both academic learning and the process of learning (Chen & Willits, 1999). The sudden pivot to ERT in the academic term caught students off-guard and imposed a paradigm shift from class-paced learning to self-paced learning. Students now had to make learning decisions for themselves, and many found this degree of autonomy disconcerting. One student said that remote learning "entailed studying on my own. Since the number of [a]synchronous sessions had dramatically increased, I had to rely on navigating through the course materials by myself." Another one said, "It was hard having to sometimes rely on learning things mostly on my own." Students had to digest material by themselves and do their own research. As a result, many felt unsure about the accuracy of their interpretations, discovering that the downside of self-paced learning was the lack of real-time feedback. One student remarked, "It was hard to clarify some things right away, since the professor wasn't there physically." Another said, "The fact that the instructor was not there to guide the students, and it was up to us on how we interpret and learn through the materials [was challenging]". Yet a third student commented, "In online [learning], everything needs to be scheduled, and sometimes when feedback isn't immediate it gets forgotten or addressed differently, hence the specific skill that might have been learned, wasn't." As a result, 81% of the students felt personally overwhelmed by the transition, with the majority (82%) feeling that course concepts were more difficult to learn independently. As a consequence, more than half of the students (53%) felt that coursework took more effort to complete.

4. Discussion

4.1 *What ERT practices increased transactional distance?*

The results above show that the sudden pivot to ERT within the academic term dramatically changed the structure, dialogue and learner autonomy of courses that had been previously planned and taught as

face-to-face. For structure, many course features such as lab work, field visits and service learning had to be dropped because they could not migrate to an online format. This affected course content, resulting in the dropping of academic topics. Face-to-face lectures and discussions, originally enriched with class activities and spontaneous interaction and feedback, were migrated online in the form of asynchronous written material, video lectures and internet links. While this ensured the delivery of course content, it also came with a cost. The largely asynchronous delivery was stripped of real-time feedback and left students bereft of instructor and peer guidance. As a result, students had to try and understand material on their own. This imposed learner autonomy was good for some, but disconcerting for most, affecting their level of engagement and motivation. The Transactional Distance theory predicts that less course structure and more autonomy begets increased transactional distance (Moore, 2012). This certainly seemed to be the scenario that prevailed at that time.

4.2 What ERT practices decreased transactional distance?

The pivot to ERT prompted many teachers to be more creative in the way they taught remotely. According to one teacher, “it shifted from ... what the lesson is to also constructing the materials as entertainment or media consumption. We became less of an educator and more of a content creator.” This shift in mindset was prompted by the need to reach out to students and keep them engaged in the course in spite of the physical distance. Some teachers learned to make podcasts, feeling that these were “like guided teaching but in a format that is more familiar but enjoyable for them [the students].” Others made use of online discussion boards and apps like Edmodo to help enrich the asynchronous learning experience. Some teachers also took advantage of the borderless environment by inviting speakers from other geographical locations to live online sessions. In short, faculty did not simply dump their materials online but made conscious efforts to enliven their course delivery for student engagement. These actions to maintain student engagement support Moore’s (1993) hypothesis that the technology used in online learning could help lower transactional distance and affect the overall learning experience.

More importantly, the need to reach out to students also changed the nature and the frequency of student-teacher dialogue. Faculty became more casual with their students to support their learning. As one teacher puts it, “My tone became... was much more casual. Of course the professionalism is still there but in the way that I interacted with my students. I don't call them “class”; I called them “chat” --, *hey chat!* -- [because] that's what the streamers call their groups.” Moreover, to maintain authentic dialogue, many teachers conducted more frequent and purposeful check-ins with their students, something which they had not done when classes were conducted face-to-face. As one teacher put it, “I was more compassionate and patient with the students compared to before. It was really a mindful effort on my part to hold them and I tried to do that by constantly updating them about what's going to happen, waiting for announcements, and then also... providing a space for online discussion with the group.” These interactions provided much-needed support for the students and may have helped decrease TD, supporting similar findings that dialogue is critical to minimizing transactional distance (Chen, 2001; Stein, Wanstreet et al, 2005).

5. Conclusion

In estimating transactional distance, it is the students’ perspective that is important (Goel, Zhang, & Templeton, 2012). Data from student interviews showed that during ERT, students were negatively affected by the sudden loss of face-to-face course features and a greater amount of learner autonomy, resulting in feelings of anxiety and loss of motivation. Teachers instinctively responded with increased dialogue, reaching out more frequently than they would have had during face-to-face instruction, perhaps in an attempt to close the gap. This critical action may have prevented even greater transactional distance. It also prompts us to examine implications for teacher professional development in closing the psychological gaps in online learning. For instance, in terms of course structure, curricula and teaching methods may be adapted so that these more readily reflect the physical separation between teachers and students. Much thought has to be given to detail in activity instructions and course material, so that students are empowered to act independently with minimal supervision. In particular,

faculty have to be conscious of word choices in written instructions -- since clear directions power healthy student autonomy. Faculty must be trained in the use of current interactive technology, and they must be supported in making sound pedagogic decisions about the use of such tools to help enhance online course delivery. Support can come in the form of faculty tutorial groups in which interested teachers can meet to discuss, practice and evaluate the use of online learning tools within a safe space. Faculty responsibilities in teaching online must also be clearly defined, and administrative protocols or procedures must be in place to support teachers and students who need help with maintaining dialogue. Finally, teachers can be taught research-based and clinical strategies to help bolster student socio-emotional wellness and maintain engagement in online learning. Knowledge and practice of these strategies can take place within the faculty tutorial group safe-space.

Successful remote teaching occurs when transactional distance is minimal. Ideally, this stems from a balance of appropriate teaching practices and opportunities for dialogue, both of which should encourage healthy student autonomy (Delgaty, 2018). However, the TD theory also characterizes transactional distance as a complex entity that occurs as a result of the dynamic and constantly evolving relationships among these three elements (Moore, 2012). The abrupt shift to ERT prompted faculty to transform their already-existing courses into online formats, stripping these of many face-to-face features and mandating student autonomy in the process. However, what was a bane also became a boon. The online format brought out teacher creativity and encouraged the learning of new technological skills to enrich asynchronous learning. More importantly, student-teacher dialogue during the ERT period took on an added dimension with the injection of casualness, care and compassion in the form of frequent and deliberate check-ins. Thus, while less structure and more autonomy may have caused an increase in transactional distance during ERT, this might have been insurmountable without the increase in dialogue. This goes to show that when remote teaching is sudden and unplanned, course structure can suffer and cause a greater degree of sudden student autonomy, resulting in increased transactional distance. It thus falls upon the teacher to increase dialogue in order to decrease transactional distance. For this, teachers need to switch psychological gears in an effort to close psychological gaps, and learn to take on the additional roles of artist, counselor – and friend.

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