Transitions to Online Teaching during the COVID-19 Pandemic: An Activity Theory Perspective

February 2022 – Volume 25, Number 4

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Abstract

Situated in a Japanese university ELT context, this qualitative exploratory interview-based study offers insights into how ten teachers responded to the challenges of transitioning to emergency remote teaching (ERT). The research was conducted to understand the implications of pandemic-instigated educational changes on teaching practices and perspectives towards effective teaching. An activity theory perspective accounts for the complex interlinking internal and external factors influencing teachers' experiences during and since the ERT. Data were obtained through semi-structured interviews with the ten teachers following the initial period of ERT and through reflective writing by the same teachers 12 months later. Key findings from a content analysis were that perspectives towards effective teaching were generally reinforced and that following reflection on pedagogical practices and professional learning directions many teachers were able to respond effectively to ongoing educational changes. We argue that the implications of the study may reveal important areas of comparison with other systems of activity in heightened states of transition and reveal pathways to the development of new practices.

Keywords: activity theory, emergency remote teaching, qualitative educational research, ELT

Due to the COVID-19 pandemic, many educational institutions switched from face-to-face instruction to online emergency remote teaching (ERT) (Hodges et al., 2020). Teachers' responses to such changes may vary with some experiencing stressors in responding to change, seeking to approximate their classroom teaching practices in online settings, or in responding to changing policy directives. However, others may display a preference for remote instructional delivery, particularly if supported by past professional experiences. Variations in response may also be based on differences in perspectives towards effective teaching, i.e., orientations to transmission of knowledge, student development, and scaffolding for student achievement around course objectives (Pratt, 2002). The role of context is also critical in how teaching perspectives are individually formed (Pratt et al., 2012) with differences likely to be particularly pronounced in periods of educational change.

Recent research has investigated teachers' responses to such emergent transition from face-to-face to online instruction, focusing on various educational aspects (e.g., Abduh, 2021) including the challenging preparation required for ERT (Kitishat, Al Omar, & Al Momani, 2021). In Japan, the setting for this research, Cowie (2021) investigated how teaching staff supported each other through the impact of the pandemic; Gorham and Ogata (2020) as well as Nae (2020) addressed the issues teachers faced during ERT in terms of accessibility and motivating students and maintaining engagement. As Moorhouse and Kohnke (2021) indicated, however, there exists a gap in understanding the personal and professional factors affecting whether teachers have thrived during the shift to ERT. While some studies have highlighted the advantageous aspects of remote lectures (e.g., Ahmed, Henari, & Maklef, 2021; Kalaichelvi & Sankar, 2021), more research is needed to investigate the potential implications of ERT as now many teachers are largely used to online instruction (Anthony & Noel, 2021), though to varying degrees.

To help address this research gap, this study provides a qualitative examination of teacher navigations of, and responses to educational challenges in switching instructional approach from face-to-face to ERT. The research was conducted to understand implications of ERT experiences on perspectives towards teaching and professional development for the education context and beyond. Given the significance of change at the time, the fluidity of the situation, as well as the varied responses evident among teachers, we wanted to understand how these experiences interconnected. Insight from this study may have important implications for teachers and institutions reflecting on the effectiveness of their own pandemic responses and educational transformations, the long-term impact of their experiences, as well as the potentially permanent adjustments to blended learning.

Theoretical Framework

Activity Theory

Activity theory (AT) (Engeström, 2001) provided a means to examine individuals teachers' thoughts and behaviours within a collective system (i.e., a group of teachers working together, adapting to ERT), as well as any emerging contradictions and transformations. AT pays explicit attention to mediating tools (i.e., tech-based instructional resources), impacting on and creating a tension within a system of activity (i.e., what people are in fact doing towards an outcome), and recognises the developmental process in which problems and conflicts among individuals and their social contexts move a system forward towards an outcome (i.e., meeting learning objectives using ERT) (Engeström, 2001). AT is useful, therefore, as a resource to examine transformation in response to the ERT period and longer-term educational changes.
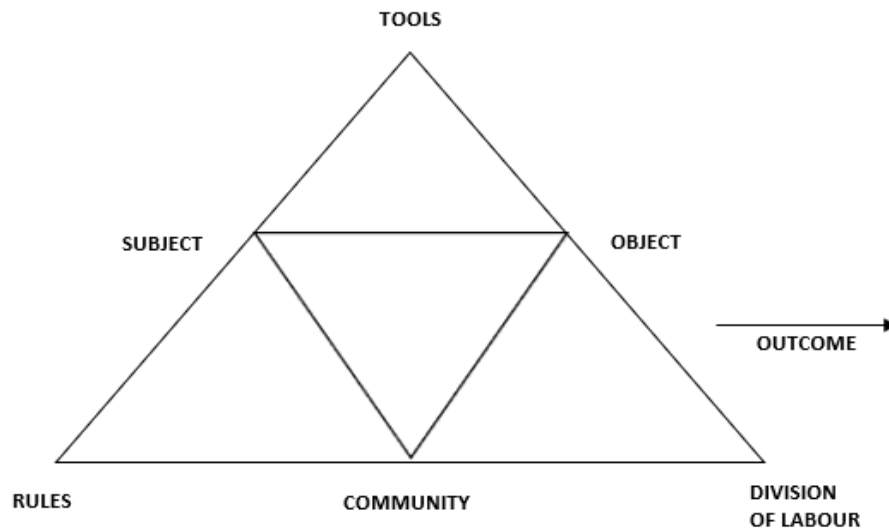
Figure 1. Model of Activity Theory (Engeström, 2001)

The framework has evolved from Vygotskyan-based sociocultural theory (Vygotsky, 1978), initially presented in a simple triangle of *subject*, *object*, and *tools* (mediational means). Engeström (1993) incorporated the additional elements of *rules*, *community*, and *division of labour* to this structure. In this revised model (Fig. 1), *subject* refers to an individual or a group of individuals "whose agency is chosen as the point of view in the analysis" (Engeström, 1993, p. 67). A subject undertakes an activity using *tools* to achieve an *object*, with the understanding that "object-oriented actions are always, explicitly or implicitly, characterized by ambiguity, surprise, interpretation, sense-making and potential for change" (Engeström, 2001, p. 134). These *tools*, or mediating artefacts, may be physical tools which mediate outside the subject, or symbolic tools which mediate internal thought processes. Cole and Engeström (1993, p. 6) mark the differentiation between these as "outwardly oriented" artefacts, such as a dictionary or "inwardly oriented" artefacts such as language knowledge (Cole & Engeström, 1993, p. 6). The element of *community* consists of one or more individuals that share the same object with the subject (Engeström, 1993). The *rules*, which mediate between the subject and community, are the explicit rules and implicit conventions that govern interaction within the system. In turn, the community and the object of the activity are mediated by the *division of labour*— "the horizontal division of tasks between the members of the community" and "the vertical division of power and status" (Engeström, 1993, p. 67).

Within a system of activity, the concept of contradiction is central. According to Engeström (2001) contradictions are "the driving force of change and development" (Engeström, 2001, p. 135). These contradictions may occur within an individual element of an activity system (primary); between elements of the same system (secondary); between an existing system and itself in a more progressive mode (tertiary); and between related, interacting systems (quaternary). Engeström and Sannino (2011) noted various types of contradictions within systems as teachers attempt to meet the demand of curriculum and institutional policies. Feryok (2009) has examined contradictions within teacher development, while Jones, Dirckinck-Holmfeld, and Lindström (2006) have reviewed issues relating to computer-supported learning. All of these contradictions are relevant to the current context.

Within a dynamic system of activity there is constant change, which leads to tensions and contradictions that require resolution. These "contradictions generate disturbances and conflicts, but also innovative attempts to change the activity" (Engeström, 2005, p. 95). Given the transformation to ERT, and subsequent "rare opportunity for reconsidering pedagogy and

change" (Ng & Renshaw, 2020, p. 636), AT offers an important framework for understanding these changes and the resulting contradictions. Prior to the pandemic, AT has been employed extensively to understand how emerging technologies can mediate teaching and learning in a variety of educational contexts and illuminate how periods of enforced change have impacted systems of activity and educational objectives (Batiibwe, 2019). Studies such as Trust's (2017) have demonstrated how new technological tools have transformed practice. Others, such as Ng'ambi, Gachago, Ivala, Bozalek, and Watters (2014), have found that many educators are inclined to replicate traditional teaching practices or objectives in spite of significant changes to other aspects of an educational system.

AT is applied to this study to account for potentially complex and connected factors within an examined system in a particular context. Its use enabled a focus on the contradictions and tensions which characterised many experiences of ERT. While AT has been studied in relation to educational change in the research cited above, it has not to our knowledge, been used in studies relating to teaching perspectives around ERT during the pandemic period.

Research Questions

The study addresses the following research questions:

1. How did teachers respond to educational changes brought about by the COVID-19 pandemic?

2. What factors were influential in teachers' responses to educational changes?

3. What are some implications and possibilities of these teachers' experiences on perspectives towards effective teaching?

These three questions aimed for an AT-guided picture to emerge of the transition to ERT in a particular educational setting in Japan. We focus on teachers' individual responses, around the ERT period and subsequent educational changes, as well as looking to the future and some potential implications.

Method

Educational Context

The specific context was an English communication programme at a technical and science university in Japan. First- and second-year students at the university take two 90-minute classes a week as a compulsory adjunct to their core degree courses. At the start of the 2020/21 academic year, teaching commenced using synchronous online learning for a four-week ERT period after which lesson delivery was changed to blended face-to-face and asynchronous online classes. The transition to online teaching during this initial four-week period required teachers to build new materials as well as refine and adapt existing materials for online use. Online classes were conducted through Moodle (online learning management system) which was already in use at the centre offering some continuity with online learning features. BigBlueButton, a free web-conferencing system, was utilised for the synchronous lessons which included video and text chat functions, presentation space, and breakout rooms. Given potential issues in student understanding, technical issues, and teacher monitoring, lesson format could be adapted to include a teacher explanation of activities leading to students working at their own pace although some teachers selected to incorporate group work. Following the initial ERT, a blended face-to-face and asynchronous format was set up involving halved classes so that each student attended one class in the physical classroom with their second class taking place "on demand" as a series of tasks completed using Moodle or other platforms selected by individual teachers.

Research Participants and Procedures

The qualitative and interpretive research (Silverman, 2014) was conducted within a curriculum team of ten teachers, including the four researchers, at the institution. The motivation for this investigation emerged from our own experiences transitioning to ERT, with the initial idea developing from discussion between two members of the research team. All other curriculum team members were invited to participate as researchers in this project, of whom two elected to take part. There was parity in the collection and analytical involvement of all four research team members, and all were involved in organising ideas and authoring this paper. We emphasise our own participation as both subjects of inquiry and collaborators in the research process, with our involvement contributing to the research reflexivity we sought (Richards, 1999). The research adopted some principles of self-study (e.g., Vanassche & Kelchtermans, 2015), triggered by a desire to examine our own practices in context at the time the research was conducted. The approach, therefore, necessitated a switch between our roles as researchers and teachers. When the four researchers were interviewed, as teachers, by other research team members, any discussion around the research process was excluded from the analysis. The use of interview guides also assisted in keeping the interviews relatively structured.

One-to-one semi-structured interviews were conducted soon after the initial four-week ERT period with the researchers interviewed by other research team members. All team members took part voluntarily in the interviews following a written explanation of the research rationale and procedures. Interview guides were developed and shared with interviewees before the interview (Appendix A); however, teachers were encouraged to talk on items of individual importance as the research was open to new directions (Rose, McKinley, & Baffoe-Djan, 2020; Silverman, 2014). The interviews were conducted and recorded online using Microsoft Teams (online communication platform) and auto-transcribed using Microsoft Stream (video platform). Subsequently, the researchers reviewed and modified the transcripts and then shared the transcription with interviewees for further accuracy and validity checks (Rose et al., 2020). 12 months later, the same ten teachers were invited to write a reflection on their teaching perspectives and practices, and professional development trajectories, since the ERT. Eight selected to contribute reflections; two did not respond. Submitted through Microsoft Forms, instructions were provided to help focus ideas and ensure responses linked with the research area (Appendix B).

Interviewees varied in age (29-49); gender (two female teachers; eight male); nationality (one Japanese; one Taiwanese; one Australian; four British; three U.S.); length of teaching experience (three to 20 years); experience using tech-based instruction (minimal to extensive); length of time working at the institution (two to ten years); teaching positions (three managers and seven instructors); personal circumstances; and personality. While other background information may be salient to the reflexivity, the inclusion of more specific information risks the identification of individual teachers; as such, to maintain anonymity, we have not included an illustrative table of this variation. In general terms, however, there did not appear to be a pattern in levels of teaching experiences and ERT response; some established teachers reported more challenges than newer teachers, and vice versa. However, in terms of familiarity with tech-based instruction, those who prioritised simplicity may have experienced a smoother transition to the educational changes. Teachers' interview and reflective data were stored privately, referenced using pseudonyms, and deleted on completion of the analysis. Although all teachers were familiar with the use of technology to facilitate in-class instruction, only one was familiar with the type of tech-based instruction required here, and that in a non-ERT capacity.

Analysis

We wanted to enable multiple perspectives and experiences of the ERT to be captured and represented as complex and individual from which thematic connections could be made across the data set (Silverman, 2014). The data were analysed inductively using a content analysis and adhering closely to the texts as they were produced by the teachers (Vaismoradi, 2013). Having reviewed transcripts individually, initial themes and codes were then collaboratively established. Then, we coded transcripts individually before reviewing coding practices and developing a coding framework (Silverman, 2014). The coding framework is presented within the findings. We then reviewed the codes and discussed examples of content that would fit within labels before arranging them in the final framework (Dörnyei, 2007). The process culminated with each team member reviewing all coded transcripts, with disagreements later discussed in-group to reach a consensus. As with the interview data, the reflections were worked with using a content analysis involving individual then collaborative coding and coding reviews. At this point it became apparent that a framework such as AT would provide the most suitable avenue for examining points of connection and contradiction. We then looked for thematic connections across the individual accounts and formed theoretical interpretations based on AT. Data-driven insight was, therefore, based on multiple interpretations of the researcher team. To avoid placing particular weight on any code or relegating points made by any one teacher, analytical discussion focus was on coding references over numeric coding. This collaborative analytical process facilitated reflexivity of the data (Richards, 1999).

Results

Organisation

In organisation of the findings, we first focus on the ERT transition and illustrate how AT was operationalised for our study. After, we offer qualitative interpretations of the data with excerpts from the teacher interviews organised in relation to teacher responses, factors of influence, and possibilities, and a final section on the later reflective data.

Operationalising AT for this Study

In this activity system (Fig. 2), two objects – the implementation of ERT and the achievement of the course goals – were isolated. Under the *subject* component here, the teachers themselves and related factors were found to have relevance to the system. These included teacher personality traits, beliefs about pedagogy and trajectories in relation to teachers' past experiences including professional learning. In this data-driven model, there is a focus on the outwardly oriented artefacts connected to the technology used in the course. In the lower half of the structure, the *rules* that govern the system include institutional rules or conventions that govern teacher-student interactions in the classroom, implemented either by teachers or the institution. Further relevant here is uncertainty surrounding institutional policy. References to the *community* centred around communities of colleagues within the institution, interactions with students, and relationships with university management. *Division of labour*, in this system, can refer to both classroom roles of teachers and students, and the way that teachers divided and shared material creation.
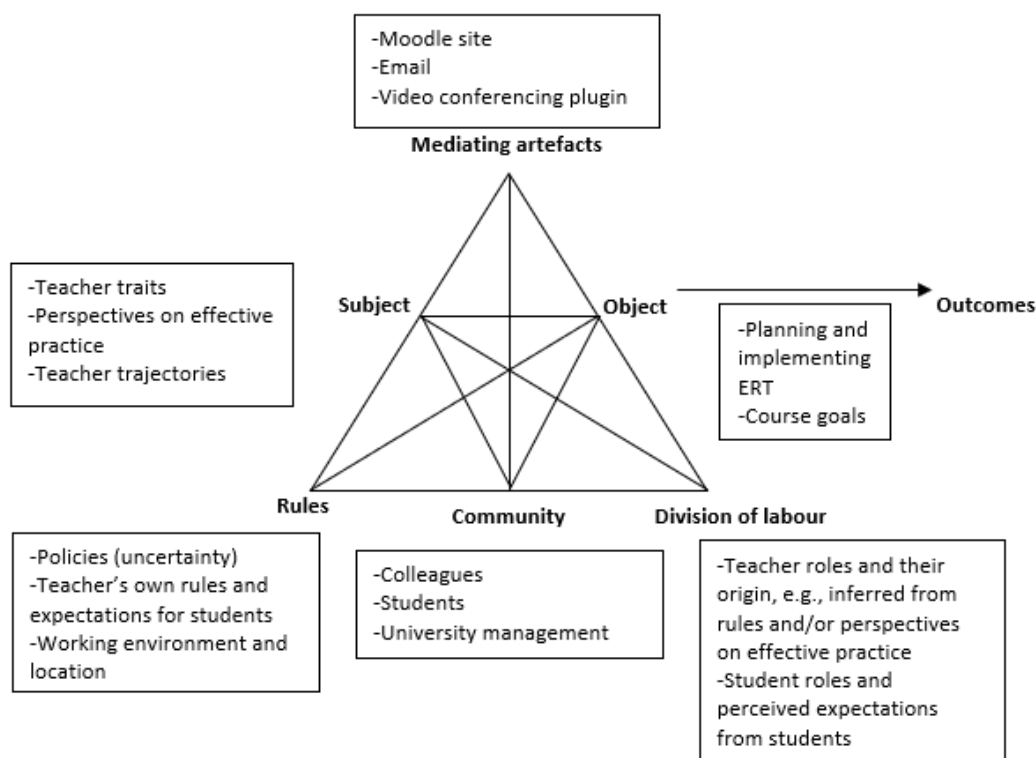
Figure 2. Expanded AT Model

Teacher Educational Challenges

Shown in Table 1, the data revealed that teachers were particularly concerned with student engagement and student-teacher communication and how to adapt their teaching practices to an unfamiliar environment, mediated primarily by online technology.

Table 1. Coding Table on Educational Challenges

Educational challenges	f
Student engagement	20
Communication	22
Feedback	8
Technology	18
Adapting practices	30

*f indicates the frequency of statements relating to each code

Student engagement. In terms of implementing ERT and expectations of students, despite minor difficulties, all the teachers were generally very positive about the levels of student engagement during ERT and noted that many students seemed happy working independently. Teachers also suggested that some of the stresses of face-to-face learning, particularly the need to engage communicatively in a second language with other students or the teacher, may have been reduced during this time due to the largely self-paced and self-directed design of the online learning environment. As Alex noted:

Alex: The task completion is a lot higher … which indicates more engagement, which implies that many students are happy ... engaging with content independently. I think that's especially true given that English is the only course where these

students have to engage in tasks like these in another language, and so it is quite stressful for some students.

Although the teachers expressed overall satisfaction with student engagement, four of them mentioned some difficulties in terms of accessing materials, monitoring students and providing assistance or feedback to individual students, as Terry explained:

Terry: … [some students] logged in and started to participate in the live class … but when I asked them to return, some students hadn't completed the work, saying they didn't have enough time or had difficulty to access [materials] … I don't know if it was just neglect by some students. I couldn't really monitor.

Communication and feedback. There was some overlap between the codes of *communication* and *feedback,* with the former focused more generally on communication between teacher and student and the latter specifically on feedback from student to teacher. During the ERT period, the primary means of student-teacher communication were email and the video teaching plugin. In terms of communicating with students, both within and outside class times, teachers were also positive. Many, including Alex, admitted that they had been apprehensive about this aspect of online classes but were surprised with how things evolved:

Alex: I expected it would be more difficult getting in touch with students via email.

Although all students have university email accounts, the use of these had been irregular, with many departments implementing other systems of communication. Teachers such as Jo felt that establishing a consistent channel of communication with students was particularly important:

Jo: It was an issue with the wider university and beyond about using emails for communication. You know they have had different systems, but if we have that as an established way of communicating with our students then that would be very useful.

In terms of in-class communication, teachers also mentioned that students seemed more comfortable using audio or text chat rather than the traditional face-to-face communications they had been used to, as Sam commented:

Sam: I think my students feel more comfortable asking me questions or expressing their concerns when they know that they don't have to talk to me face to face.

Despite the largely positive experience in communicating with students, teacher experience of receiving feedback from their students was more nuanced. As students had to enter the online classroom with videos turned off, teachers reported that their usual methods of gauging students' reactions to activities were now obsolete, as described by Robin:

Robin: We were giving feedback in different ways … in this situation you had to give other feedback that you wouldn't have in a classroom. You could ask short questions, but you didn't know why they didn't answer, maybe they weren't there or maybe they had technical problems.

Instead, teachers had to explore new data-driven channels for feedback, including the yes/no polling function of the video teaching plug-in, and activity completion monitoring within Moodle. Teachers expressed a lack of faith in these data and reported that the data were not sufficiently illuminating, as Jay remarked:

Jay: I would ask them if they understood, if the level was correct, but just yes or no questions. Not a very good gauge of how students interacted with the tasks.

Technology. As an "outwardly-oriented artefact" (Cole & Engeström, 1993), *technology* mediated teacher experiences of this period. Three of the ten teachers reported uncertainty about the technological tools before the start of the course but as illustrated by Kim, later reported that these concerns were unfounded:

Kim: I thought students were going to have trouble logging in … I thought there were going to be a lot of technical issues that didn't actually bear out.

In implementing ERT, teachers took various approaches to the activities and resources used in class towards meeting course goals, reflecting differences in teaching perspectives (Pratt, 2002). A couple of the teachers were enthusiastic about embracing the potential that technology offered, whereas the majority preferred to stick with what they felt they knew. Teachers generally reported learning more about the online system through the four-week period, a desire to develop this aspect of their practice, and becoming "more comfortable and confident in using these online resources" (Terry).

Adapting practices. Despite the teachers' positive feelings towards student engagement and their communication with students as well as their increasing comfort with technology, five of the teachers interviewed, including Kim, encountered a pedagogical dilemma when trying to apply an approximation of their usual practice to a new set of conditions. Those attempts were often felt to be unsuccessful, necessitating regular re-evaluation of what would be effective online:

Kim: The main thing I have to offer is giving students opportunities to speak, and that was really hard online. I tried breakout rooms once and it didn't go well; it was just a lot of silence. Maybe if I had given them a clearer task or something to do in there, but even then, I don't know how much they would have talked to each other.

This dilemma embodied a tension between the teachers' existing teaching behaviors, in terms of *object* and *division of labour*, as well as mediating artefacts both internal (knowledge of online teaching techniques) and external (limits of the software and hardware).

Based on these concerns, the teachers appeared anxious in dealing with the unfamiliar, seeking greater control over learning through an approximation of their face-to-face teaching practices. The role of technology as a mediating tool could be considered ambiguous in both supporting and challenging teaching efforts.

Factors of Influence

There were several factors which appeared to influence how teachers responded to the change to ERT, presented in Table 2. These included internal factors such as teacher traits and perspectives on effective teaching. External factors were also identified as relevant, including institutional policies relating to online or face-to-face teaching, and the physical working environment.

Table 2. **Coding Table on Factors of Influence**

Factors of influence	f
Teacher traits	17
Teacher perspectives on effective practices	24
Policy	7
Trajectories	5
Uncertainty	17
Environment	8

Teacher traits and teacher perspectives on effective practices. We identified teacher traits as one of the factors that affected teachers' adaptations to and satisfaction with ERT. Teachers showed diverse preferences for interaction with students. The distance created by online interaction felt especially appropriate to two teachers, including Alex:

> Alex: I suppose class activity is a bit of a reflection of the atmosphere a teacher creates. I'm probably not the most outgoing of teachers ... I try to remain a little distant from my students in terms of my personal life or their personal life. But I think that's appreciated.

However, other teachers such as Francis were frustrated by the lack of in-person contact with their students:

> Francis: I really enjoy interacting with the students ... that's what I've missed most.

Teacher traits also affected the teachers' perceptions on other aspects of teaching, such as planning and working with colleagues. The teacher community appeared to enhance collective efficacy. Sharing a workload in a team with ideas shared and support available was significant for perceived effectiveness during this time, represented in the expanded AT model in Fig. 2 around *community*. Jo illustrates this point:

> Jo: What was good as well was the sharing of resources ... it's independent work with teamwork.

Another factor which influenced teachers' ERT experience was their perspective on effective practice. Relating to *rules* and *subject* and in how the *object* was worked towards, and in dealing with the unanticipated, teachers sought to prioritise what was important in their jobs, reflecting on what it meant to them to be a teacher and where they thought they could make the most impact, as expressed by Sam:

> Sam: There are so many things that I cannot anticipate and if I focus on what is crucial then and keep everything else simple it can be more effective … if I keep things simple and focus on what I think really matters then probably I can be more flexible.

Half of the teachers experienced "complete failure" (Jay) or found it "unrealistic" (Francis) in their attempt to approximate their ERT to well-designed and well-planned online instruction or even their usual face-to-face teaching, prioritising real-time communication and interactive feedback. They doubted if they had "really done any teaching" (Jordan) when these priorities could not be achieved. Jordan further explained:

> Jordan: There'd be tasks to do throughout the lesson like we'd go to a breakout room and have some questions to discuss or something, so I was expecting something more like that and was a bit disappointed that we weren't able to do that.

There were clear secondary level contradictions here between *subject* (beliefs about effective practice) and *mediating artefact* (technology). Having worked through these contradictions, the teachers developed various degrees of adaptive practices; those who were more adaptable, including Kim, sought to adopt assorted communicative activities, and they settled in an easier-to-follow system prioritising students' individual needs and processes:

> Kim: I had a pretty good system going with some minutes at the beginning and saying, you know, "everybody, this is what we're going to do today". Give them a quick explanation of the tasks. And then maybe some minutes at the end. And then in the meantime, I'm just going to sit in there and be available to them if they have any problems …

Such contradictions could also lead to longer-term changes in individual and institutional practices, discussed later as implications.

Trajectories. Teachers' *trajectories* were a paradoxical personal factor of influence. The teachers who had experience with online education may have shown more confidence in planning and implementing ERT; however, they did not necessarily perceive ERT as positive. The teachers who reported experience of online classes expressed discomfort or disappointment with the ERT in the present study context, especially regarding online classroom interaction. Teachers such as Terry seemed to have expected a little more "back and forth" between teachers and students, or students and students:

Terry: I have experience as a student taking web course. It was showing a camera and seeing each other, and we had more interactive like discussions or pair work, things like that, so I expected that we can use more, view each other, and see each other and we can use chat room or in discussion.

However, teachers who reported prior professional experience of online materials writing and development expressed more comfort and confidence in their ability to create and adapt engaging content for students, as suggested by Jordan:

Jordan: I thought I can make something good here. Because I'm experienced as a student, I know what I want - I wanted what works for me and what didn't work for me as a student. And I've made materials before, so I can do this definitely, right? So, they worked well and I'm pretty happy with them.

Similarly, Sam perceived that their past professional experiences had been useful preparation for the transition to online teaching:

Sam: I think content development went OK because it's relevant to my past experience. I worked in material development before … content development went OK.

In terms of more immediate experience, especially with the technology, most teachers felt comfortable with at least the basics of the institution's Moodle site, though some expressed a desire to improve, and some such as Jo reported improving as they went along through the four weeks:

Jo: I think that's been effective … I should have done some personal research to develop my own ideas on online learning … it's become very useful to me … because we use Moodle as much as we do, we were probably better placed than many other universities to go online.

This excerpt from Jo also demonstrates the resilience of certain parts of a pre-COVID-19 activity system, related to *community*, *division of labour*, and *mediating artefacts*, already in existence within the university. However, it also demonstrates a further secondary level contradiction, between *subject* (represented by trajectories and experiences) and *rules* or expectations set by the institution regarding classes, and further contradictions between *subject* and *mediating artefact*.

Policy. While these factors of influence mainly related to internal factors, the following are more concerned with factors external to the teacher and largely beyond their control. The first of these is *policy*, both within the department and the university-as-a-whole. Four teachers, including Alex, felt that policies related to the shift to online teaching, or the lack of clarity in terms of how policy decisions were reached, contributed to the confusion and became a source of frustration:

Alex: Quite apart from whatever decision is eventually made on almost any aspect of what we do, I think people feel far more comfortable if a decision is being arrived at through some clearly observable system, through clearly observable procedures.

Other teachers felt that certain inconsistencies and uncertainty were unfortunate, but inevitable by-products of the pandemic situation, as Jo noted when considering how the pandemic had led to stress in working practices:

Jo: Clearly this is a stressful time for everybody, and it's really affected how we work but I can understand why it's hard … and you have to adapt.

Uncertainty. The above excerpts also link to the code on *uncertainty* which reflected that ERT experiences during the COVID-19 crisis were affected by a combination of influences at personal, institutional, and policy levels. Changing plans caused uncertainty about both curriculum and pedagogy, i.e., what to teach and how to teach. Five teachers reported confusion in not having a sense of the full picture about how teaching would be organised through the period and struggled with the uncertainty, illustrated by Jordan:

Jordan: It's been difficult to get a picture of the whole semester … I don't know what it is … the next week could be completely different. You know at the moment we're going to go back to face-to-face teaching … but it's also possible that by the end of the week will be back online again … that's been the biggest challenge – not really fully grasping the whole picture.

In dealing with the uncertainty and decisions beyond the control of teachers, situated in *rules* on the expanded AT model, Sam reported:

Sam: It forced me to think a lot about the questions "what works?" and "what doesn't work?" And … try not to focus too much on external factors including, for example, technical problems and university management and focus on what matters between me and my students.

Environment. This leads to the final external factor of influence—*environment* which was related to *rules* on the model in Fig. 2. Five of the teachers reported that the online period had been perceived as comfortable:

Lou: I think for me, because I live on my own, it's been kind of easy to work from home.

Others, including Jordan, stated that teaching online had not been a stressful experience and that classroom management was perceived as less challenging:

Jordan: I'm a lot less stressed about classroom management. I don't have to deal with stuff.

Contradictions between various elements of the activity system - for example, between rules established by university policy around teaching online and teacher perspectives on effective practice, or teachers' personality traits and the limits of the technology - caused some teachers to react negatively to the change to ERT. While one-half of the teachers reported being quite anxious about how their working practices had changed, particularly those who had attempted to approximate their face-to-face teaching practices, others responded with less anxiety or reported that the period had been relatively straightforward. Moreover, almost every teacher reported that their anxiety or uncertainty decreased as the period of ERT progressed.

Possibilities

The third part of the coding framework (Table 3) looked at professional development and potentially long-term implications of these educational experiences with elements of overlap in the codes used.

Table 3. Coding Table on Possibilities

Possibilities	f
Professional development	12
Possible long-term outcomes (individual, curricular, institutional, etc.)	14

Professional development. When asked about future implications of the experience with ERT, a minority of teachers (2), including Jordan, viewed it as an isolated incident in their careers:

Jordan: I still envisage my role as being in the classroom rather than teaching online.

Other teachers perceived possibilities for professional development. For example, three teachers perceived a new value towards technology in teaching. Terry recognised a need for new knowledge and skills in instructional technology. They also considered the teacher community as a professional resource that provided support for implementation of technology:

Terry: I learned a lot about using technology … So that was helpful and useful, and in the future as well, I think.

Developing skills around using technology was reiterated by Jo, who reported regret about their perceived lack of learning around using technology for teaching:

Jo: I always had the feeling that we should minimise our use of tech, or just use it when it clearly had some advantage. Maybe I should have learnt more before this situation.

Such observations following reflection on this period may indicate that new professional development directions were opened up.

Possible long-term outcomes. An attempt to resolve the tensions outlined in the research could potentially lead to long-term outcomes in how the curriculum is delivered and received towards *outcomes* in the system. As described in the "Policy" subsection, four teachers argued that the confusion and frustration they experienced when teaching remotely were a result of a lack of clarity about how decisions on institutional policies were made. This point is illustrated by Alex:

Alex: I think it's important people can see that a system is being followed … by making things a little clearer in terms of protocol and procedures.

Finally, a few teachers (2) such as Kim reported new awareness of the importance of attending to students' individual needs and processes in terms of curricular and pedagogical practices:

Kim: I'm starting to think that maybe if we just kind of give the students a task and let them go to it and get out of their way, that they'll learn on their own.

Such a view as reported by Kim is an example of using the period as an opportunity to reflect on what may constitute effective language teaching.

Looking back 12 months later enabled reflection on the impact of ERT and subsequent educational changes on teaching perspectives and professional learning activities. Analysis of the reflective writing led to the inductive formulation of six codes, shown in Table 4.

Table 4. **Coding Table on Reflective Data**

Implications and perspectives	f
Frustration	8
Increased student familiarity with tech-based approaches	4
New professional learning	6
Reinforced teaching perspective	6
Changes in teaching perspectives	4
Preference for blended synchronous and asynchronous approach	6

Some tensions persisted in a post-ERT blended approach. Four teachers were positive about the change and stated a desire to continue with this system.

Robin: I think a blended approach is highly beneficial for learning

However, two teachers described the experience as frustrating, particularly around creating asynchronous online material, linking to perceptions of ERT as ongoing.

Alex: Creating material has been a challenge, particularly when it's difficult to gauge what types of online materials students find useful or effective or enjoyable

The range of *artefacts* (e.g., tech-based learning and communication tools) utilised within the system were expanded among individual teachers during the post-ERT blended teaching period and shared within the *community*. However, this expansion was perceived by two teachers as a source of stress during the ERT and post-ERT blended teaching periods:

Jo: … task design should be simple … we run the risk of shutting out any interest in English through task complexity

Nonetheless, there were different views within the *community* with four perceiving how the *community* had used different *artefacts* as an effective aspect of required changes to the *activity* in the ongoing period of uncertainty. There were perceived longer-term successes, particularly around communication with students:

Alex: One major success … has been the ability to communicate with students … through university e-mail

Moreover, increased student familiarity working with tech-based approaches was perceived as a potentially longer-term outcome.

Robin: .… more noticeable is the students' ability to trouble-shoot and solve problems. They seem to have become more flexible and independent … I also think (some) students have become more proactive in communicating with me.

Other positive outcomes related to professional learning options, as part of the *subject*. These included tech-based learning ("I've become more adept at using the Moodle platform to create and organize content", Francis); educational management ("I've become more interested in management", Alex); and learner autonomy ("…one change is a heightened interest in learner autonomy", Kim).

In terms of teacher perspectives, several teachers indicated that their perspectives to effective teaching had been "reinforced" more than changed. On one hand, changes were perceived somewhat positively:

Robin: I don't think my perspectives about effective teaching have changed so much as been reinforced, and perhaps actually put into practice more than before

Other teachers, including Jay, however, were less positive and reported frustration towards the educational changes, uncomfortable about losing touch with familiar aspects of pre-pandemic physical classroom teaching.

> Jay: ... without the whiteboard, a teacher must have most everything planned to the tee (sic) and going off script becomes more difficult

In a further case, Francis reported a view, apparently reinforced by the educational changes, that the role of teachers involved more than setting up online tasks and measuring specific learning:

> Francis: Teaching and learning of very specific, measurable knowledge or skills can very effectively be taught and learned online … But there is a whole host of other constructs that are not easily measured

Elsewhere in the data set, however, some change was seen in teaching perspectives, including by Sam, who observed a change in lesson planning and attention towards students:

> Sam: I try to plan my lessons with focused and limited objectives and a bit more attention to students' individual and emotional needs

Another teacher (Kim) observed that students working effectively online had led him to reflect on how he had taught pre-pandemic, reporting change towards a more "hands-off" approach:

> Kim: In the past I've thought of myself mostly as a coach/facilitator in the classroom. Whereas now a more hands-off approach is necessary at times

Such changes may be positive, particularly given a preference for the blended approach which was expressed among several teachers in response to ERT and experiences since:

> Robin: … I've learned which things are best done online and which things aren't… wouldn't want to abandon either part of the blend

Discussion

Drawing on AT (Engeström, 2001) in this exploratory study, we found that the teachers' experiences during ERT (Hodges et al., 2020) and the factors that influenced these experiences could be identified and analysed as linked to certain contradictions represented on the expanded AT model in Fig. 2. At the primary level, contradictions within the *subject* were revealed in how the teachers acted on a shared object but their personalities and beliefs about what constituted effective teaching and their career experiences influenced teachers in a variety of ways. Some elements of previous activity systems continued under ERT without causing a disturbance, including in some aspects of *division of labour* regarding material creation and in the *community* and *rules* elements regarding communication. However, the continued existence of some elements relating to teachers' beliefs about effective practices caused tensions in the system (Engeström, 2001).

Some teachers were ambitious about what could be achieved with online features; other teachers were more fixed on maintaining their existing practices, as seen in other AT research findings (e.g., Ng'ambi et al., 2014). A tertiary contradiction was induced as some teachers are more ready than the others to embrace long-term changes in their pedagogy, especially the addition of an online component. In line with the findings reported by Ahmed et al. (2021) and Kalaichelvi and Sankar (2021), the teachers developed new remote learning objectives for their students, including tech-based learning and communication skills and self-reliance, in addition to specific, measurable English knowledge or skills. Parallel to the experiences of teachers who attempted to apply their face-to-face practice to the ERT classroom, teachers who had a background in online education also reported frustration, caused perhaps by a misdiagnosis of

the teaching context as an example of online learning, rather than as ERT (Hodges et al., 2020). These contradictions led some teachers to adapt their practices, and this process of adaptation caused new primary contradictions as teachers grappled with reconciling their perspectives towards effective practice with their new knowledge of what worked in their online classrooms.

There were secondary contradictions found between *tools* and *object* as well as *tools* and *subject*. Communication had been a concern for many teachers, but the use of a single consistent mode of communication was seen as beneficial. Like Abduh (2021), we found technical and logistical issues as well as issues in monitoring task completion and learning problems, reflecting other findings in AT research into transformed practice brought about by new tech-based educational tools (Batiibwe, 2019; Trust, 2017). New data-driven channels for feedback were required since it was not possible to gauge understanding "in the moment" in class. It was clear that practices and methods that were applicable in a face-to-face classroom could not simply be transferred to an online setting. Indeed, the findings suggest that ERT in our context is more effective when tasks are intuitive and simple, and that teachers may be more effective when they re-evaluate their expectations.

Looking back a year later, ongoing tensions in the activity system were observed in the reflections in the blended approach established as a measure to enable some physical yet socially distanced classes. The challenging circumstances of the pandemic highlighted the potential of a blended approach to ELT (Kalaichelvi & Sankar, 2021). As in Kitishat et al., (2021) an extensive amount of preparation was necessary and the complexity characterising this period was experienced by two teachers as frustrating, particularly around creating online material and the range of *artefacts* used. However, there were differing viewpoints within the community and some perceived successes in how they had managed the uncertainty within the context. These differences may be typical if we consider that teaching perspectives vary based on individual experiences as well as contextual conditions (Pratt et al., 2012). Perspectives towards effective teaching appeared to be consolidated rather than changed; however, there were differences in how the post-ERT blended teaching period was perceived. Four teachers were positive about the changes and keen to pursue a longer-term blended approach, while others reported frustration towards working online, implying a resistance to change.

Implications

First, implications of the study were related to a secondary contradiction between *rules* and *subject*. Some uncertainty in policy may be inevitable in a shift to ERT; however, it may lead to less uncertainty if future ERT scenarios involve openness surrounding decisions. In this context, several teachers, influenced by past experiences, had prioritised what they perceived as the most essential pedagogical aspects for ERT within their control. Those teachers, perceived more success around *mediating artefacts*, *subject*, and working towards *outcomes*, which meant their experiences were individualised within the activity system (Engeström, 2001). During ERT, with control and agency diminished, uncertainty may increase, and negative perspectives may form towards aspects of a system (*rules*); encouraging teacher agency within a system through consultation, individual reflection, and adaptation and flexibility in meeting learning objectives, may lead to more effective ERT transformations. The role of collaboration and teamwork in sharing resources, ideas and expertise was also highlighted as important for ERT effectiveness.

There were tensions and contradictions within the system; however, in terms of collaboration, teamwork, and individual professional learning decisions, perspectives towards effective teaching appeared to be consolidated rather than significantly changed, though some teachers appeared to resist change. Based on the findings, we argue that experiences of ERT in our educational setting have highlighted the importance of adaptability in educational change. As

a theoretical point, those who were resistant to change, focusing on a return to "normality" over longer-term adapted practices may continue to struggle longer term without support based on the new professional learning taking place around them. Given some perceived successes over the post-ERT blended period, the possibility of a transition to a permanent blended approach may be a possibility in the setting but it is critical for individuals and institutions to pause and reflect on how any benefits may be maintained, just as finding ways to act on perceived ineffective practices needs to be considered (Ng & Renshaw, 2020).

In the context of educational change brought about by the pandemic, experiences have made clear the importance of flexible responses to change in terms of new professional learning and views around what constitutes effective teaching, particularly if a blended approach is to be permanently adopted. Indeed, for some teachers, the powerful professional experience of pandemic-instigated teaching has, ultimately, led to some positive outcomes. Six teachers in their adapted practices developed new awareness of tech-based tools and their educational potential. This new consciousness may lead to positive outcomes in adapted practices particularly for those teachers who did not view the period in isolation, rather as an opportunity to reflect on pedagogical practices during a period of disruption.

Conclusion

The research has provided an important opportunity for teachers in the setting to reflect on how they worked within a system of activity in this educational setting and how they individually responded to ERT. The AT theoretical perspective enabled a focus on a detailed understanding of transitions to ERT and how teachers develop post-ERT in professional learning and teaching perspectives. The results showed some positive developments in new awareness of tech-based learning tools and the teachers who took a longer-term view of educational changes engaged in new professional learning. The research also showed reinforced perspectives towards effective teaching over changes with many taking the opportunity to think deeply about their own teaching practices and perspectives.

The use of AT helps to account for the varying and interconnected factors involved in the ERT; however, the framework may be problematic in that here it focuses on one system of activity with teachers as *subjects*. Other systems that interact with this system, from the perspective of students and university management, may have revealed further levels of contradiction or agreement, in terms of the *object* of activity. Clearly, our characterisation of the transition to ERT, shaped by AT, is partial given the absence of other systems and how they interact. As such, further qualitative research incorporating such data may provide important feedback on the effectiveness of responses to ERT enabling further implications for future periods of disturbance to be constructed. In addition, reflective research looking back at the ERT and considering its longer-term impact in other educational settings may reinforce findings generated in this study and build more understanding around implications of ERT experiences.

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Acknowledgements

To cite this article

Bollen, D., Humphreys, G., Shu-Wen Lin , S-W. & Donnellan, J. (2022). Transitions to online teaching during the COVID-19 pandemic: An activity theory perspective. *Teaching English as a Second Language Electronic Journal (TESL-EJ), 25(*4). https://tesl-ej.org/pdf/ej100/a11.pdf

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Appendix A: Interview-guiding questions

1. How would you describe your teaching experience this semester?
2. How did you expect online classes would go? What did you do in preparation?
3. Did things go as you anticipated?
4. What worked well? What challenges did you experience?
5. Is there anything you would do differently?
6. What did you discover that could be helpful in your future teaching practice?
7. How would you describe your overall experience this semester?

Appendix B: Reflection writing instructions

Looking back on the four-week period teaching online last year, please write a reflection (in any language) considering the following points:

- Any successes (or challenges) in your individual teaching practices following the shift to a blended online/face-to-face system of delivery
- Any changes in professional learning interests following ERT last year
- Any changes in your perspectives about effective teaching

This study has followed the ethical guidelines for research as outlined by The Ministry of Education, Culture, Sports, Science, and Technology (Japan) and the authors' institution.