

# The Role of Teacher and Peer Interaction in Online Learning

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## Abstract

What is the role of peer and teacher interaction in online learning? This research paper explores motivation in online education through the lens of ten online learners studying with six different universities, across different subjects, age groups, and levels of experience. The findings showed that social interaction, though not always deemed essential for successful learning, was valuable in motivating students. Peer interaction was found to be more prominent than teacher interaction, overall. The impact of interaction upon self-efficacy beliefs was highlighted, as well as the importance of structure, sense of community and the specific medium of interaction. The rich data shed light upon the complex ways that interaction influences students and on the many sources of motivation that come together to form successful online learning. I conclude that while well-designed content is of primary importance, even a little (quality) teacher and peer interaction can go a long way in improving motivation and enhancing the learning experience. Much is to be gained by researching how to fully harness the benefits of social interaction for online learning.

## Introduction

Online learning is becoming ubiquitous (Veletsianos et al. 2021). However, if it is to be the new 'normal', it must be made accessible to all kinds of learners and learning styles, for it is still characterised by high attrition (Ng 2019; Trespalacios et al. 2021; Vayre and Vonthron 2017). Considering the importance of human interaction for learning according to socio-constructivist understandings (Vygotsky 1978; Wenger 2000), how do students negotiate this altered form of interaction?

From this research, I hoped to gain insight into the influence of teacher and peer interaction on motivation, the driving force that enables students to begin, sustain and complete online/distance courses (Ng 2019 p. 470). This may be useful for understanding the intricacies of motivation and for designing online courses that provide the most effective learning environments.

Thus, I interviewed or sent questionnaires to ten undergraduate/graduate students following online courses from six universities, some of whom had more than ten years of experience in online/distance learning. I then analysed their answers to better understand their sources of motivation and views/experiences on peer and teacher interaction.

## Literature Review

Moore (1989) defined interaction in online/distance learning (ODL) as encompassing interaction between learner and content (LC), learner and instructor (LI), and learner and learner (LL). All three have been deemed to be valuable for learner satisfaction, (or

engagement), academic achievement and higher-order learning (Abrami et al. 2011; Chang and Smith 2007; Joksimović et al. 2015; Swan 2002;). Some studies have shown that out of three, LC is the most significant (Ping 2011; Zimmerman 2012; Ekwunife-Orakwue and Teng 2014), others emphasise the role of LI (Kang and Im 2013; Kuo et al. 2014; Vayre and Vonthron 2017), and sense of community afforded by LL (Kurucay and Inan 2017; Rovai 2003). However, this is a simplistic categorisation; in reality, many researchers (for example, Abrami et al. 2011; Joksimović et al. 2015; Vayre and Vonthron 2017) describe a more holistic picture where different factors come together to provide an ideal ODL experience.

Alqurashi (2019) for example, conducted a survey to determine which factors impact student satisfaction and perceived learning, from self-efficacy, LC, LI and LL. Perceived learning is the individual's belief that knowledge has been acquired, and self-efficacy is a learner's sense of being capable of working towards and achieving a desired goal (Bandura, 1995, p. 2). Self-efficacy is very relevant to understanding motivation in learning and is related to self-regulation, an extremely widely cited concept in ODL studies which describes the proactive self-directed aspect of online learning (Zimmerman 2008, p. 166). Alqurashi (2019) discovered that LC had the strongest relationship with student satisfaction, and that self-efficacy had the most impact on perceived learning. LI was also important (second-highest predictor of perceived learning) and the teacher's role in motivation was acknowledged. However, no significant relationship was discovered for LL, for which she suggests more research is required to understand its role. Although her sample was large (167 students) and diverse across ages, levels, subjects and experience with ODL, the participants were all taking courses from the same university, which could present a potential flaw. If, for example, this university did not place much emphasis on or opportunities for LL, it would explain why that variable was the least significant.

This leads us to the idea that not all frameworks for peer and teacher interaction are equal – there must be such a thing as 'quality interaction' (Nandi, Hamilton and Harland 2012). Rhode (2009) found that students do not value all forms of interaction equally, and Abrami et al. (2011) stress the fact that just because interaction is available, does not mean students will use it effectively (p. 87). To counter this, they argue that the next generation of interactive distance education should facilitate more 'guided, focused and purposeful interaction' (p. 88). Kanuka (2011) takes up the recommendations of Abrami et al. (2011) and addresses the question of 'How important is interaction in online learning and what kinds are most effective?' In her study, she identified forum-based learning activities that were most effective: those that had structure, clearly defined student roles and responsibilities, and opportunities to debate opinion (p. 151). While this detailed account is certainly valuable due to its specificity, this also means that its scope is narrow. For instance, other forms of interaction are not examined, nor is motivation discussed directly. However, she provides a theoretical contribution relevant to motivation: an outline of Moore's (1990, 1973) theory of transactional distance (cited in Kanuka, 2011 p. 154), which describes three variables in distance learning: dialogue (between instructors and students), structure (course design) and autonomy (making decisions about how to use the dialogue and structure). Increasing the degree of structure and dialogue leads to shorter transactional distance and deeper learning, but autonomy needs to be considered as a third, more complex and human variable which affects the other two.

Indeed, when we analyse motivation, we quickly realise that it has internal and external sources (Cho and Kim 2013). Across all of these are various instances of autonomy, dialogue and structure influencing motivation. However, because motivation enablers are so varied and diverse, a more detailed framework would be useful to categorise all of them. Ng (2019) proposes a means for mapping the multifaceted nature of motivation by applying Engeström's (1987) Cultural Historical Activity Theory (CHAT) model. The framework is summarised as follows (pp. 483-485):

- 1) **Subject-related motivation.** This is the motivation that the learner brings to the learning process: goals, beliefs, values, and preconceptions, but also self-efficacy, confidence, and previous experiences.
- 2) **Object-related motivation.** Also called intrinsic motivation, this is derived from interest in and enjoyment of the subject matter of study.
- 3) **Outcome-related motivation.** This springs from desire for the end rewards and benefits of the study, such as a degree, career progress or social acceptance.
- 4) **Tool-mediated motivation.** The media of instruction, such as course materials, technology, and assessment design can also be a source of stimulation if they are engaging, relevant and easy to interact with.
- 5) **Rule-based motivation.** This stems from the structure of learning: the rules and norms which carry the learner along. This may include explicit rules around submission deadlines and extensions, and implicit rules around forum-based interaction.
- 6) **Community-based motivation.** This is the support received from members of the community who hold roles in the online or distance course.

He argues that 'motivation within a distributed learning environment is multiple, interactive, and shared. It is located on material, individual and social planes' and that it 'spreads over time and its configuration at each stage may change' (p. 481). His concept of distributed motivation provides more nuance and thus better captures the complexity of human motivation.

Although Ng (2019 p. 470) argues that socio-cognitive theories are limited by their emphasis on individual enablers of motivation and that this places the blame for drop-out on the individual alone, Bandura (1995) does explicitly address the role of social influences on motivation in his theory of self-efficacy. Indeed, two of the four main influencers in efficacy beliefs are social in nature: vicarious experience, and social persuasion (the other two are mastery experiences and emotional and physiological states) (Bandura, 1995, p. 3-4). He goes on to clarify that:

*Another common mistake is to assume that if people's lives are hampered by a low sense of efficacy the problem is exclusively an individual one and that the solution lies solely in personal change. (p.34)*

From this it can be concluded that internal and external sources of motivation are in constant dialogue with each other, and teachers/peers can help struggling students. This supports the statement of Hickey and McCaslin (2001) that self-regulation need not be excluded in a socio-constructivist perspective, only framed within its wider context of engagement in learners' communities of practice (in Abrami et al. 2011, p. 90). In this regard, Bandura (1995, p.34) explains that self-efficacy is again at the root of successful collective efforts, for they depend on the personal efficacy of each member of the community. This is supported by Xie and Ke (2011) and Giesbers et al. (2014). Thus, it seems that self-efficacy is dynamically involved in a two-way relationship with social structures: people around us can enhance or undermine our personal efficacy, and our personal efficacy beliefs influence in turn the community's efficacy.

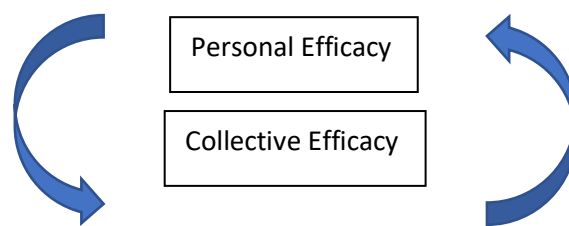


Illustration of Bandura's (1995) collective efficacy

Sense of community is a unique contribution of peer presence – it cannot be provided by instructors alone. Two very useful frameworks for understanding the role of community in learning are Lave and Wenger's (1991) community of practice and Garrison, Anderson, and Archer's (1999) application of Dewey and Lipman's (1991) community of inquiry (cited in Ng 2019, p. 479). A community of practice is, simply put, a group of people united by their common commitment to a practice, who support each other and collaborate to further that goal (Wenger, 2000). A community of inquiry is one specifically geared towards the pursuit of 'deep learning and interaction, through the facilitation of cognitive, social and teacher presence.' (Ng 2019, p. 470). According to Rovai (2002), sense of community can be achieved in virtual classrooms. A good example of a study that integrated sense of community is that of Vayre and Vontron (2017). Their survey of 255 students confirmed that self-efficacy had a positive impact on engagement, that teacher support was very important for academic engagement (but not for self-efficacy), and that peer support had no significant effect on engagement (which, again, does not seem accurate) (p. 212). Their most interesting finding is that sense of community plays an important role in student engagement (enthusiasm) and enhances self-efficacy.

Thus, this review provides a glimpse of the most influential theories in ODL and some recent studies that illustrate current attitudes and conceptions about motivation and interaction.

## **Methodology and Methods**

### ***Epistemology and Ontology***

This study attempts to gain close insight into the experiences of learners, and how they interpret and view those experiences. It is with a desire to dig deeper behind the facts that I undertook the research, in much the spirit of Bernard et al. (2004, pp. 414-415) that we must find out how and why something works, not just that it works. To do this, I decided to ask the learners themselves, as recommended by Sharpe and Benfield (2012, p. 196). Thus, this study is based upon a constructivist, interpretivist perspective of education research (Waring 2012, p. 16).

### ***Research Question***

Although I approached the research topic with an inductive mindset, not really seeking to test a hypothesis but to cast the nets widely, my main driving interest can be formulated in the following question:

*What roles do teacher and peer interaction play in supporting learner motivation in online education?*

Based on the literature, further sub-questions have arisen:

- 1) Is lack of peer and/or teacher interaction a significant disadvantage in online learning?
- 2) What are the main sources of motivation in online learning?
- 3) How are personal beliefs, such as self-efficacy, affected by peer and teacher interaction?

These questions are important because they may help to better understand how motivation functions in ODL, and how peer and teacher interaction can best support this. This, in turn, can be used to improve practice and to design increasingly effective online courses.

### ***Methods***

Ten participants were found through personal acquaintance and snowballing (Rowley 2012, p. 265). They were given a list of questions (see Appendix) and the choice of answering them through a Skype videocall interview or through email. Their gender, age group, subjects, duration, location, and levels of study (including previous ODL or home-schooling experience), as well as their main reasons for choosing ODL are listed in the Appendix. The students were following online courses as their main study from six different universities in total.

Internet-based methods were chosen for convenience and to limit risks associated with Covid-19 (The University of Sheffield 2020a). Moreover, semi-structured interviews (Rowley

2012) are suited to gaining insights into people's situated experiences and interpretations (Mears 2012, p.170), which may help elucidate the nature of motivation, which is a personal and complex entity. Questionnaires were offered as a choice because they are less time-consuming and more flexible than interviews. They provide more time to think about and better articulate answers (Wellington 2015, p.198). The same questions were asked in the interviews and questionnaires (although the interviews allowed further questions) and consisted of a mix of closed and open-ended questions (Tymms 2012, p. 231). Thus, this study can be qualified as a form of mixed-methods research (Biesta 2012, p. 149).

Recent studies encourage this kind of inquiry for this area of research. For example, Yang and Kortecamp (2020, p. 39) state:

*More experimental studies applying qualitative methods, such as in-depth interviews, [...] could explain how students deploy their self-regulatory behaviors in the course of learning. [...] It may be that focusing on the individual would provide deeper insights into self-regulation processes.*

Similarly, Ng (2019, p. 480) highlights the need for efforts to understand motivation in a community of learners, and Trespacios et al. on how 'roles (i.e. faculty, staff, and students) impact community and connectedness' (2021, p. 17).

### **Data Analysis**

The recordings of the interviews were replayed in full, and every separate point was transcribed in simplified sentences. The questionnaires eliminated the need for transcription and have thus undergone no interpretation.

The sentences were then organised in themes. Three tables (see Appendix) were created to compare the data: the first lists the scores the participants gave to teacher and peer interaction on a scale of 1 to 10. The second identifies the sources of motivation each participant mentioned, according to Ng's (2019, pp. 483-485) CHAT model. The third lists the positive and negative experiences of online learning that the participants described.

### **Ethical considerations**

This study underwent an ethical approval process provided by the University of Sheffield, whereby participants could give informed, signed consent. All data was gathered online to avoid risks associated with Covid-19 (The University of Sheffield 2020a).

Six participants (of which five chose to be interviewed) were personally known to me as friends or classmates. Some possible implications are as follows:

- Self-disclosure – due to the sense of comfort and security engendered by friendly conversation, both the participants and the researcher may reveal too much, which they may later regret (McConnell-Henry et al. 2010, p. 4). To mitigate this, I strove to make my role as researcher more apparent by being formal, asking questions and not sharing my own experiences until after the recording ended.

- Pre-existing knowledge – participants give consent only for obtaining information gained during the interview; this may pose a problem when the researcher already has information about the participant’s experiences due to their previous relationship. In this case, McConnell-Henry et al. (2010, p. 6) advise framing the questions by acknowledging what is already known and asking for development, which I put into practice.

One advantage was the established rapport, which meant participants were more relaxed and spoke freely (possibly with greater depth and detail) (McConnell-Henry et al. 2010, p. 3). Since we related as friends/peers, there was more of an atmosphere of power equality (Karnieli-Miller, Strier and Pessach 2009, p. 280).

I was also bringing thirteen years of experience with ODL to the research, thus, my beliefs, values and preconceptions have coloured the research design, execution and data interpretation (Mears 2012, p. 174). I strove in this regard to remain self-reflexive throughout the process (Berger 2015, p. 224; Karnieli-Miller, Strier and Pessach 2009, p. 287). Fortunately, I held no strongly emotional beliefs about ‘what is right and wrong’, so I was able to accommodate varying viewpoints with a spirit of curiosity, not of challenge. An advantage of the insider position is that I could better understand/visualise some of the participants’ descriptions, having experienced them myself and sometimes even followed the same courses (Berger 2015, p. 223).

During transcription, the same choice of words as the interviewees was kept (Karnieli-Miller, Strier and Pessach 2009, p. 287). Academic jargon was avoided (Wellington 2015, p.195), for it can make the participant feel ignorant or intimidated, or simply reinforce the feeling of being ‘an object’ of study. I was heavily conscious of the power I had to misrepresent and distort my data, so took extra care in relistening to the recordings. However, this remains a human, subjective and therefore potentially flawed endeavour.

## **Analysis and Discussion**

The findings will first be described according to theme, and then analysed in terms of the research question.

### ***Teacher Interaction***

Teacher interaction (TI) was considered important for both academic (guidance) and emotional reasons (encouragement). Live video lectures were a popular medium of interaction, considered in a positive light whenever mentioned; email, phone and assignment feedback were others. Table 1 (Appendix) provides an overview of the opinions.

One participant (C) did not value TI because he considered that other kinds of interaction could fulfil its academic role. He would rely on YouTube professors when in need of help at secondary level, and in university he would rely on peer discussion to arrive at a solution.

*Personally I don't think it's important because you just have to understand what they teach, but it doesn't mean you have to ask more questions. I mean there are many*

*other people who can answer these questions and who may give a clearer explanation. (C)*

Most participants had had very little TI: only six had a personal relationship with their instructor (one-on-one time, having regular feedback from a single teacher), three complained of lack of TI and one complained of rude teachers. Participant D mentioned that despite the limited teacher interaction, it was of high quality and thus satisfactory. Some said that one tended to become more independent and rely less on TI over time (participants B, C, D and E) because of having developed research skills and knowing where to look for information: at primary level, these participants (who were home schooled) had at least a parent or tutor to help them, but at secondary level, they gradually needed no adult supervision.

Participants B, C and E studied several years with hardly any TI. Despite this, they still valued it (except participant C). Participant B observed that when one truly enjoys the subject of study, TI is no longer as necessary for motivation. Participant E studied for her French baccalaureate (secondary school completion diploma) without any teachers and without a course (she chose her materials).

Participant G had a lot of TI and appreciated it, but it did not figure as a source of motivation. Content and course design were more important to her than teacher and peer interaction, which confirms the findings of Ekwunife-Orakwue and Teng (2014).

### **Peer Interaction**

As shown in Table 1, peer interaction (PI) was generally considered more valuable than TI. PI was facilitated through forums, live video lecture chat boxes, and unmoderated student-created social media groups, which were by far the most popular.

Some of the reasons PI is important were expressed thus:

*From my high school experience I would say it's possible to learn without it because the subjects are not that complicated yet. But when you come to something much more advanced you need that peer interaction. It's very useful for comparing different methods of solving a problem and choosing the most efficient one. (C)*

*You can bounce things off a whatsapp group and nobody is judgemental. People respond as they care and the responses are quicker than the tutors, sometimes you just need reassurance which is more readily available from peers. (F)*

*Having the group helped enormously. It was useful for clarifying things, morale-boosting and you feel you can ask anything. (H)*

One participant, however, disagreed:

*I don't think it's necessary to discuss your study materials with others [...] you don't need peers to say 'Hey, that exercise is really hard, isn't it?' [laughter] (E)*

Another (D) felt that though it was a welcome 'bonus' it wasn't vital.



Participants B, C and E underwent many years of study with hardly any peer and teacher interaction (even at primary and secondary levels). All three shared the view that some people need more interaction than others.

### **Motivation**

In general, motivation was understood in three ways: the reasons for study, the techniques that helped sustain study, and the external support which encouraged study. The majority displayed some form of core inner motivation, such as goal orientation and self-efficacy:

*To achieve, and it doesn't have to be anything about your day-to-day job, for me a sense of – I did that – I am capable. (F)*

*My main motivation is the fact that I chose this course. I will be the only person to blame if it goes wrong. I don't want to disappoint the most important person in my career, which is me. Making parents proud does play a role, but I feel that online is more personal, it's more about proving it to yourself. (D)*

Other sources of motivation mentioned were sense of duty towards studies, interest in the subject, career prospects, enjoyment of the freedom/flexibility of ODL, personal study techniques, course design and social support from teachers, peers and family.

### **Summary and Analysis**

For some learners, peer and teacher interaction is not essential to successful online/distance learning, but it is generally appreciated. (Question 1) For some, it is deemed vital, so ODL courses must provide opportunities for interaction to remain inclusive of all learning styles.

The fact that PI was overall rated more important than TI is significant as it contradicts the findings of previous researchers (Vayre and Vontron 2017; Alquerashi 2019). This shows that peer interaction must not be underestimated as a source of motivation. The two participants that did not consider peer interaction essential still appreciated the sense of community.

Regarding motivation (Question 2), it is noteworthy that sense of duty was described by three participants. It seemed akin to a habit, something done without thinking, just because it must be done. Duty often goes with routine; and structure seemed important to many as a support to motivation and self-discipline:

*The structure of the course helps. You know what you need to do each week. (H)*

*I do think that assignments whether you like them or not are a great motivator and I know that is how I learn the material. (G)*

*[...] being in the study environment. There's a lot more distractions at home. At uni even if I'm sleepy I know I have to study. (A)*

Another form of structure that traditional universities offer is the strength of the collective focus:

*The university pressure is good because you just have to do it, everyone's doing it and you just have to get it done and that's it. But on your own sometimes you don't know the level of importance of certain homework! The toughest part in online is keeping up with the schedule. (B)*

This can be remedied to a certain extent in course design, for example by providing a weekly checklist of learning tasks, framed by sharing with peers, which could create the feeling of 'everyone's doing it'. Thus, Moore's theory of transactional distance (1990, 1973 cited in Kanuka, 2011 p. 154) comes to mind, as dialogue, structure, and autonomy seem to create a motivated learner. The CHAT framework used by Ng (2019) proved useful in categorisation and encompassed all types of motivation encountered. Overall, motivation was proven to be multi-faceted, dynamic, and often in the process of reinventing itself, which converges with Ng's (2019) conclusions.

Besides what was clearly voiced by the participants, it was evident that what little input came from teachers and peers had a role in shaping the learner. For example, the simple act of receiving feedback impacts the learner's motivation, confidence, beliefs, self-efficacy, and identity (Question 3). In this statement we see that despite reporting no interaction, feedback had an important consequence:

*[...] also the fact that I was doing well – the results made me more confident. Because of that I was able to complete the Graphology course even without any teacher and student interaction at all. (B)*

Another example of how self-efficacy beliefs are shaped is seen here:

*I will be the first in my family to have a degree and I always thought I wasn't academically intelligent enough to be able to achieve it. I live in Northern Ireland where we have academic selection at age 11 to determine what school we are able to go to (either secondary or grammar school). I failed the test and went to a secondary school and I think that was the root of thinking I wasn't academic enough to pursue higher education. I am now hoping to attain a first-class honours if I continue to do as well in my final module as I have the others. (G)*

Indeed, one participant (C) who is now studying Microengineering and used to struggle with Mathematics, believed, from his experience tutoring a struggling ODL student, that people can be more or less disposed to the academic world depending on their past experiences, and that their motivation may change over time, which supports socio-constructivist understandings (The University of Sheffield 2020b). The fact that the participants who began ODL in childhood were more independent shows that past experience shapes the learner. Furthermore, participant E reflected on how early confidence later manifests as autonomous learning in university education:

*You give them a good curriculum but you let them learn something else by themselves. To make them autonomous. [...] I wish when I was that age someone had told me that you don't have to fit in anywhere – you are a person and you can do whatever you want with the rest –. That's when you should be able to choose what you want to study because you have an attraction for a subject, and that's when you can truly develop yourself as an individual. That's what is good about home schooling is that you don't get influenced. Like if your best friend is doing languages and you're like, 'Oh I don't know, maybe I should do languages too?' but then 5 years later you're like 'But I love maths.' [...] And after they'll do it themselves. For university they can do anything they want because they'll manage it anyway if they have that back-up already.*

Thus, it is important to acknowledge the intricate ways that the social world affects our inner world. When talking of individualistic sources of motivation such as self-efficacy, self-regulation, or goal-orientation, we must remember that people are not born determined, or high-achievers, or independent learners. Learning is a process of constant negotiation where external forces interact with internal forces to reinvent the present.

### **Research Limitations and Recommendations**

The main limitations of this study are its design (which should have included more precise questions) and limited scope. Further research in diverse contexts including more in-depth interviews on the role of teacher and peer interaction and what kinds are most effective would be desirable. There is certainly room for improvement in the wording of the questions. This was mitigated in the interviews, where I could ask more questions, but was more unforgiving in the questionnaire format.

### **Conclusion**

The findings show that motivation is complex, and influenced by a range of individual, social and material factors (Ng 2019), which themselves affect each other. For example, self-beliefs drive one's motivation, but they are constantly being influenced by external feedback and experiences. Teachers, of course, hold an important role in this. However, one of the more surprising findings was that many regarded peer interaction as equal to or greater in importance than teacher interaction. Peers were seen as sources of academic and emotional support, and as a community fostering sense of belonging. Although learning still took place in the absence of peer and teacher interaction, participants generally considered it valuable. In conclusion, while well-designed content is of primary importance in ODL, even a little (quality) teacher and peer interaction can go a long way in improving motivation and enhancing the learning experience.

To me as a teacher, this has given me a sense of direction in how to support student motivation and has reinforced my sense of responsibility, knowing how much one can impact a learner's experience and therefore, self-beliefs.

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## Appendices

<b>Questions</b>	
1)	Please tell me about your distance education – what was the duration, level of study, and reason?
2)	How much teacher interaction were you able to have?
3)	Did you get the opportunity to connect or collaborate with peers?
4)	How did you motivate yourself?
5)	According to you, what are the main sources of motivation in studies? <ul style="list-style-type: none"> <li>a. On a scale of 1 to 10, how important do you think is teacher interaction as a source of motivation?</li> <li>b. On a scale of 1 to 10, how important do you think is peer interaction as a source of motivation?</li> </ul>
6)	How would you compare this to your experience with conventional education? <ul style="list-style-type: none"> <li>a. If you had to choose between the two, would you pursue your studies online or face-to-face?</li> </ul>
7)	If you could create your own online/distance course, what would you change?
	Any last thoughts you'd like to share?
<b>Questions asked in the interviews and questionnaires.</b>	

### Participant Profiles

Participant	Gender	Age group	Location during study	Duration of ODL (years)	Subjects (current)	Level (including previous)	Reason
A	Male	20-25	France	1.5	Languages	Bachelor	Covid-19
B	Female	20-25	France, India	7	Illustration	Primary, A-levels, 2 Under-graduate courses	Travelling, Social Anxiety
C	M	20-25	Switzerland	13	Microengineering	Primary, Secondary, Bachelor	Parents' occupation



							required flexibility, Covid-19
D	F	20-25	England	1	Law	Bachelor	To work while studying
E	F	20-25	France, Indonesia	15	Languages	Primary, Secondary, Bachelor	Flexibility (to travel, learn additional subjects), thirst for learning
F	F	60-65	England	6	Psychology	Bachelor	Personal achievement
G	F	36-45	Northern Ireland	6	Social Sciences	Bachelor	Personal achievement, career
H	F	50-56	Singapore	5	Psychology	Bachelor, Master	Interest, career
I	F	35-40	England	3	Education	Bachelor	Balance work/family/study
J	M	20-25	England	6	Social Sciences	Bachelor	Lower cost, less time-consuming

Table 1

Participant	Teacher Interaction 1-10	Peer Interaction 1-10	Comments
A	10	10	Equal
B	5	8	PI more important
C	6	10	PI much more imp. However, does rely on YouTube teachers.
D	10	7	TI more important
E	7	4	TI more important
F	8	9	PI slightly more imp.
G	7	7	Equal
H	5	10	PI much more imp.
I	10	10	Equal
J	8	9	PI slightly more imp.
<b>Total:</b>	<b>76</b>	<b>84</b>	<b>PI mostly preferred</b>

Table 2

Participant	Motivation Types	Further Detail
A	Subject-related, Rules-based, Tools-based, Community-based	<p>SR: sense of duty.</p> <p>RB: deadlines, structured time and learning environment.</p> <p>TB: well-organised online interface (Moodle), live video lectures, information send via email.</p> <p>CB: esp. socialising, making friends, sense of belonging.</p>
B	Subject-related, Object-related, Outcome-related, Tools-mediated, Rules-based, Community-based	<p>SR: self-regulation, self-efficacy, experience in ODL, daydreaming of future job.</p> <p>OR: interest in subject.</p> <p>OTR: desire for qualification, social pressure to graduate.</p> <p>TM: interesting course materials, videoconferencing technology.</p> <p>RB: general structure and teacher supervision. Enjoyment of self-organised schedule.</p>

		<p>CB: Teacher encouragement, guidance, approachability.</p> <p>Peer comparison, feedback, emotional support.</p>
C	<p>Subject-related, Object-related, Outcome-related, Rules-based, Community-based</p>	<p>SR: sense of duty, long experience in ODL.</p> <p>OR: interest in subject.</p> <p>OTR: desire to complete degree.</p> <p>RB: graduation deadline, teacher supervision.</p> <p>CB: teacher guidance (videos and videoconferencing)</p> <p>Peer collaboration, sharing of findings.</p>
D	<p>Subject-related, Object-related, Rules-based (lack of), Tools-based, Community-based.</p>	<p>SR: sense of responsibility, desire to prove oneself.</p> <p>OR: enjoyment of subject.</p> <p>RB: freedom to organise one's study (lack of structure).</p> <p>TB: Live video lectures and forums.</p> <p>CB: Teacher feedback.</p>
E	<p>Subject-related, Object-related, Outcome-related, Rules-based</p>	<p>SR: Achievement goals, sense of duty or pride, desire to prove others wrong.</p> <p>OR: Thirst for learning.</p> <p>OTR: Desire for qualification</p> <p>RB: Routine</p>
F	<p>Subject-related</p>	<p>SR: Achievement goals, technique of creating structure in study environment.</p>
G	<p>Subject-related, Outcome-related, Rules-based, Tools-based, Community-based.</p>	<p>SR: Achievement goals (desire to prove oneself academic enough, first in family to hold degree). Experience (mature student).</p>

		<p>OTR: Need for qualification (career upgrade).</p> <p>RB: Assignment deadlines. (Also wants greater flexibility 'I am an independent learner')</p> <p>TB: 'Engaging material that is of personal interest and is written in a clear and easy to understand way.' Range of media.</p> <p>CB: Tutor feedback</p>
H	Subject-related, Outcome-related, Rules-based, Tools-based, Community-based.	<p>SR: Interest, technique of studying with a friend.</p> <p>OTR: Job prospects.</p> <p>RB: Deadlines.</p> <p>TB: Structure of the course, flexibility in general.</p> <p>CB: Teacher interaction can give confidence.</p> <p>Peer interaction 'useful for clarifying things, morale-boosting and you feel you can ask anything.'</p> <p>Studying with a study buddy.</p>
I	Subject-related, Tools-based, Community-based.	<p>SR: Goal oriented (really wanted to complete degree).</p> <p>TB: Flexible (balance work/family and study).</p> <p>CB: Family support.</p> <p>Peer collaboration enjoyable, peer interaction inspiring.</p>
J	Outcome-related, Tools-based, Community-based	<p>OTR: Academic success, career prospects, personal technique (treat after study session).</p>

		<p>TB: Flexible, saves time and money.</p> <p>CB: Teacher support and feedback.</p> <p>Peer moral support when drive is diminished.</p>
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Table 3

Participant	Positive experiences in ODL	Negative experiences in ODL
A	Live video lectures with chat, group projects, understanding and encouraging teachers.	Lack of structure, lack of f2f interaction, lack of study environment, group projects with unequal participation.
B	Live video lectures, approachable and caring teachers, interesting subject, flexibility (self-organised schedule, comfort of home, no anxiety), unmoderated Facebook group	Lack of structure (academic year goes by more slowly), stress to send assignments on time, lack of outside experiences (i.e. real-life collaboration, making contacts), lack of social life, lack of teacher interaction.
C	Subject interest, YouTube teachers, peer interaction, flexibility (being able to help parents simultaneously)	Lack of peer interaction.
D	Live video lectures, detailed feedback, forum discussions, flexibility, focus (no distractions from school environment), freedom to research as much as desired	Occasional technical difficulties, limited personal one-to-one interaction with teachers.
E	Flexibility (to study extra subjects, to travel, etc), preserving one's individuality, sense of accomplishment, fulfilling thirst for learning, unmoderated Facebook group	Unhelpful and rude teachers, negative comments in Facebook group
F	Flexibility, opportunity to defer and carry marks over, assessment (helps decide one is capable of progression), teacher feedback, Informal whatsapp groups, face-to-face tutorials	Unequal participation in group work, overwhelming assignment deadlines, Facebook groups (all about self-promotion), subject that killed interest.
G	Flexibility (fit around work, less regimented learning style, independence and freedom), teachers generous with their time,	Stressful assignment deadlines.

	group projects, face-to-face tutorials, encouraging feedback, course design (mixed media)	
H	Flexibility, challenge informal Facebook and WhatsApp groups	Lack of teacher interaction (time difference means online tutorials are missed unless held in morning, slow responses).
I	Flexibility (balance work/family and study) Group work, informal WhatsApp groups.	Lack of teacher interaction, Lack of subjects.
J	Flexibility (less time-consuming), encouraging feedback, face-to-face tutorials, forums, informal WhatsApp group	Insufficient teacher interaction (one-to-one interaction, tutorials, etc). Limited peer interaction (but this could be a distraction so maybe a good thing).