# COVID-19 and the move to online teaching: impact on perceptions of belonging in staff and students in a UK widening participation university

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## Keywords

## Article Info

## Abstract

Belonging within higher education benefits students, staff and institutions. The COVID-19 pandemic necessitated campus closures at short notice, with teaching and assessment moving online. Understanding the impact of this upon belonging from both staff and student perspectives, and exploring whether demographic or study characteristics have an impact, is needed to inform future educational provision. A bespoke questionnaire collecting quantitative and qualitative information was administered online to staff and students at a UK university with a strong widening participation focus. A total of 208 students and 71 academic staff responded. Staff were significantly more likely than students to recognise belonging as important. Lockdown reduced feelings of belonging in both groups, and physical presence on campus was highlighted as important by both. Despite considerable diversity, student responses showed a high degree of homogeneity. Although advantages to future online teaching were identified by both staff and students, almost half of students disagreed that they would learn better if future teaching remained online. A greater proportion of staff identified teacher online presence and facilitating active learning as essential in helping students to belong, but what students consider essential in online teaching to enhance belonging is less clear from this data.

## Introduction and literature review

The rapid onset of the COVID-19 pandemic and the risks of transmission posed by usual social contact have resulted in unprecedented changes to global higher education, both in terms of scope and pace. The so-called 'securitization' of face-to-face education in an attempt to flatten the curve of Covid transmission and to support social distancing (Murphy, 2020; Fauci et al., 2020), necessitated the movement of teaching online at short notice, the replacement of many assessments with online equivalents and cancellation of graduations. By mid-April 2020, an estimated 94% of learners enrolled in 200 countries were affected by school and college closures (UN, 2020). In the longer term, it is likely that much face-to-face teaching will be replaced with online provision, potentially impacting on both staff and student experiences. Emergency moves to online teaching are not unknown. Within the USA, damage as a result of Hurricane Katrina resulted in a semester of free online courses offered to affected students, the so-called 'Sloan semester' (Lorenzo, 2008). The potential for spread of infection on university campuses through the multiple social networks students share both within and out of class is recognised (Weedon & Cornwell, 2020), and the provision of online classes is part of contingency US flu pandemic emergency planning for many institutions (Allen & Seaman, 2010). However, the extent and scope of COVID-19 are unprecedented, and its impact longer lasting.

Much of the writing so far on pedagogy and pandemic has focused on the financial implications for institutions (e.g Bolton & Hubble, 2020), and the efforts being made to support meaningful online provision (e.g. Bao, 2020; Crawford et al., 2020; Wyres & Taylor, 2020; Longhurst et al., 2020; Huddart et al., 2020). The challenges of moving, virtually overnight, to pedagogically sound online provision have been documented (e.g. Longhurst et al., 2020; Marinoni et al., 2020; Wyres & Taylor, 2020), as well as the additional challenges posed by meaningful vocational or creative provision online (e.g. Fowler-Watt et al., 2020; Longhurst et al., 2020). Advantages and disadvantages of the move to online teaching have also been outlined (Longhurst et al., 2020; Watermeyer et al., 2020). In all, an impressive data base detailing the effects of pandemic on pedagogy in different countries has been compiled (Butler-Henderson et al., 2020a; Crawford et al., 2020), although their quality is considered to be variable (Butler-Henderson et al., 2020a,b). Although some writing has considered the impact on the mental health and wellbeing of staff and students (e.g. Sahu, 2020), little has focused on their experience and perceptions, caught up as they are in a very real human drama, experienced in the day-to-day life of an educational institution. How the pandemic may impact on perceptions of belonging for example, is unclear. Belonging, or social identity, is an important part of how we see ourselves (SIRC, 2007). Within the context of higher education, it is recognised as multi-dimensional and has been proposed to include four dimensions: social and academic engagement, surroundings and personal space (Ahn & Davis, 2019). It is known to positively impact upon student engagement and attainment (Hausman et al., 2009; Freeman et al., 2007), so enhancing feelings of belonging is important for educational institutions as well as individuals. The physical space of the campus affords students opportunities to meet each other and to develop and strengthen social relationships with each other and academic staff (Samura, 2018), which is intrinsic to developing a sense of belonging and a secure learner identity (Kahu & Nelson, 2018; Read et al., 2018).

This project aimed to explore the perceptions of staff and students in light of the closure of the campus and the move to online provision, particularly with regard to their feelings of belonging, using a bespoke questionnaire to gather qualitative and quantitative data. For context, the institution in which the data were gathered is a post-92 UK university with a widening participation focus and a diverse staff and student population. The theoretical frameworks within which this work are situated are the 'Community of Inquiry' model outlined by Garrison (2017) and Garrison et al (2000), and the four dimensions of belonging outlined by Ahn and Davis (2019). The 'Community of Inquiry' model suggests that three elements are required for meaningful online provision; namely teacher presence, social presence and cognitive presence. Ahn & Davis (2019) suggest that academic and social engagement, surroundings and personal space are all fundamental to belonging. Surroundings were fundamentally altered as a consequence of the pandemic, also impacting upon social and possibly academic engagement, while teacher presence in an online world will differ greatly from that offered on campus. We wish to explore these aspects and the impact on belonging of staff and students.

## Methods

### Questionnaires

Ethics approval for this project was obtained from the Faculty Research Ethics Committee. Bespoke questionnaires were developed for staff and students using Qualtrix XM to explore their experiences of emergency online teaching in the final two weeks of term. Their opinions regarding possible future online provision and the impact of this on feelings of belonging were also explored. Both qualitative and quantitative data were collected. Each questionnaire had one section collecting demographic and study/work information likely to impact upon perceptions of belonging. For students, this included age, gender, ethnicity, disability status, commuter status, living circumstances, whether or not they were first-in-family to university, year and mode of study. For staff, gender, ethnicity, disability status, mode of work, length of time spent working in higher education and level of teaching were collated.

Participants were asked whether belonging at university was important (yes, no, unsure, prefer not to say (PNS)), and to rate their personal sense of belonging and whether their feelings of belonging had changed since lockdown. Participants were asked to indicate whether being physically present at university was important for belonging. All three questions were rated using 5-point Likert rating scales (e.g. from 'yes, very important' to 'not at all').

With regard to the last two weeks of term when teaching moved online at short notice, staff and students were asked

to rate their levels of agreement with eight statements, four of which were negative and reverse coded.

With reference to future online provision, staff and students were asked to rate their levels of agreement with 12 statements (seven of which were negative and reverse coded). Participants were asked to indicate the extent to which different issues (e.g. poor information technology provision, caring responsibilities) would represent problems for them in the event of future online provision (using a 3-point rating; 'major problem', 'minor problem and 'not a problem'). An example of the student questionnaire is shown in Appendix A, with reverse scored statements indicated by 'rev'.

Qualitative data including the advantages and disadvantages of online teaching, why belonging is important and training needs were collated using open text boxes.

## Administration of questionnaires

Questionnaires were generated using Qualtrics XM and administered online using personal email invitations with a link to the online questionnaire. They were sent to all under- and postgraduate students (n=1400) and staff (n=259) within the Faculty of Science, Engineering & Computing, the largest university faculty), using institutional email lists. Questionnaires were available for 8 weeks and weekly email reminders were sent to both staff and students.

## Data analysis

Quantitative data were downloaded into Excel spreadsheets (Microsoft Office 2016) and coded for entry into SPSS (version 26 IBM). Perceptions of the importance of belonging, levels of belonging prior to lockdown, changes to belonging since lockdown, whether physical space impacted upon belonging as well as levels of agreement with statements related to emergency and future online provision were all analysed by demographic and study/work characteristics using Kruskal Wallis tests adjusted for ties. If $p < 0.05$, posthoc Dunn's tests with Bonferroni adjustment were carried out. Reliability analysis were carried out on questions with multiple items using Cronbach's alpha (Q18, 19, 22 & 26 for students and Q13, 14, 17 & 22 for staff).

In order to compare responses between staff and students to similar questions, chi-square tests were carried out using a cut-off $p < 0.05$. Reliability analysis were carried out for groups of similar statements for staff and students. Qualitative data were collated, and basic thematic analysis carried out and descriptive data of the major themes and the number (%) of responses for each were derived.

## Results

A total of 71 staff and 208 students participated, response rates of approximately 27% and 15% respectively. Gender participation differed by group; 63% of staff participants were male while 64% of student participants were female.

Greater ethnic diversity was apparent in student compared with staff participants, in line with the widening participation agenda of the university. Up to 10% of participants declared a disability. Student participants from approximately 30 different courses were represented (individual programmes of study are not shown). Participant demographics are shown in Table 1.

Table 1. Demographic characteristics of staff (n=71) and student participants (n=208). Data is expressed as numbers (%).

| Gender[1] | | Male | | Female | |
|---|---|---|---|---|---|
| Staff | | 45 (63.3) | | 25 (35.2 | |
| Students | | 71 (34.1) | | 134 (64.4) | |
| Ethnicity[2] | White | Black | Asian | Mixed | Other |
| Staff | 49 (69.0) | 4 (5.6) | 4 (5.6) | 4 (5.6) | 5 (7.0) |
| Students | 71 (34.1) | 27 (13.0) | 68 (32.7) | 11 (5.3) | 26 (12.5) |
| Disability[3] | | Yes | | No | |
| Staff | | 5 (7.0) | | 65 (91.5) | |
| Students | | 22 (10.6) | | 182 (87.5) | |

[1]One staff member (1.4%) & two students (1.0%) did not respond; one student (0.5%) gave gender as 'other'; [2]Five staff members (7.0%) & five students (2.4%) did not respond; [3]One staff member (1.4%) & four students (1.9%) did not respond.

The majority of staff participants worked full time and taught both under and postgraduate students, with more than half having worked in higher education for more than 15 years. Work characteristics of staff participants are shown in Table 2.

Table 2: Work characteristics of staff participants (n=71). Data is expressed as numbers (%).

| Do you teach...... | | | |
|---|---|---|---|
| Undergraduates | | Postgraduates | Both |
| 17 (23.9) | | 1 (1.4) | 53 (74.6) |
| How long have you worked in higher education?[1] | | | |
| 1-5 years | 5-10 years | 10-15 years | >15 years |
| 8 (11.3) | 8 (11.3) | 16 (22.5) | 37 (52.1) |
| Do you work.......[2] | | | |
| Full time | | Part-time | |
| 61 (85.9) | | 9 (12.7) | |

[1]Two (2.8%) did not respond; [2]One (1.4%) did not respond.

Considerable diversity was apparent among the student participants. Just under half were aged 18-21 years, with one in five classed as a mature student (aged >25 years). All years of study were represented in study participants; the highest proportions derived from postgraduate students (26.0%) and Level 4 students (25.5%). The majority studied full time, and almost half were first-in-family to attend university. More than half spent at least 45 minutes travelling to the university, and approximately 40% indicated that they lived with other students, either in halls of residence or other accommodation. Study and additional demographic characteristic of student participants are shown in Table 3.

Table 3: Study and additional demographic characteristics of student participants (n=208). Data is expressed as numbers (%).

| Age[1] | | | |
|---|---|---|---|
| *18-21 years* | *22-25 years* | *26-29 years* | *≥30 years* |
| 101 (48.6) | 64 (30.8) | 23 (11.1) | 19 (9.1) |

| Year of study[1] | | | | |
|---|---|---|---|---|
| *Level 3 (foundation)* | *Level 4 (first year)* | *Level 5 (second year)* | *Level 6 (final year)* | *Postgraduate* |
| 19 (9.1) | 53 (25.5) | 47 (22.6) | 33 (15.9) | 54 (26.0) |

| Mode of study | |
|---|---|
| *Full time* | *Part time* |
| 200 (96.2) | 8 (3.8) |

| Are you first-in-family to attend university?[1] | |
|---|---|
| *Yes* | *No* |
| 97 (46.6) | 108 (51.9) |

| How often does it take you >45 mins (one way) to get to university?[1] | | | |
|---|---|---|---|
| *Never* | *Seldom (≤1)* | *Often (2-3)* | *Usually* |
| 63 (30.3) | 18 (8.7) | 18 (8.7) | 108 (51.9) |

| Do you live with other students?[1] | | |
|---|---|---|
| *Yes, in halls of residence* | *Yes, in other accommodation* | *No, not with other students* |
| 25 (12.1) | 59 (28.5) | 123 (59.4) |

[1]One student preferred not to state their age (0.5%); two students (1.0%) preferred not to state their year of study; three students preferred not to state if they were first-in-family (1.4%); one student preferred not to state their commute time (0.5%) & one preferred not to give their accommodation type (0.5%).

In terms of belonging, significantly more staff than students thought that belonging at university was important (93.0% vs. 66.8% respectively; p<0.000). By contrast, significantly more students than staff were unsure if belonging was important (20.2% vs. 2.8% respectively; p<0.000).

Significantly more students than staff felt they belonged 'a lot' at the university prior to lockdown (26.0% vs. 0.0% respectively; p<0.000). However significantly more staff felt totally at home prior to the lockdown (47.9% vs. 15.9% respectively; p<0.000). Sense of belonging was found to be reduced in both staff and students after lockdown. Both populations felt that being physically present on campus mattered in terms of belonging; a greater proportion of students than staff thought it was very important (48.6% vs. 38.0%; NS); but significantly more staff than students thought that it was a bit important (32.4% vs. 14.4%, p<0.000). Full data on belonging is shown in Table 4.

In terms of the rapid emergency move to online teaching in the last weeks of term, the structure of online classes was a useful coping mechanism for both staff and students (46.5% vs. 32.2% respectively; NS). Approximately one in five staff and student participants preferred online to face to face provision (NS), and over a third of students found online classes during lockdown reassuring. However almost half of students disagreed that they learned better online than in face-to-face teaching, and a preference for being physically present in class as opposed to online classes was expressed in both staff and students (52.1% vs. 43.3% respectively; NS). Positive aspects of the emergency online provision are

Table 4: Perceptions of belonging at university, its importance and the impact of physical presence on campus, among staff and student participants. Data is expressed as numbers (%).

| Is belonging at university important?[1] | | | | | Staff vs. students chi square test results |
|---|---|---|---|---|---|
| | | *Yes* | *No* | *Not sure* | χ² 18.8, df 3, p=0.000 |
| Staff | | 66 (93.0) | 2 (2.8) | 2 (2.8) | |
| Students | | 139 (66.8) | 20 (9.6) | 42 (20.2) | |
| How much did you personally belong to the institution BEFORE lockdown?[2] | | | | | |
| | *Yes, totally at home* | *Yes, a lot* | *A moderate amount* | *A little* | *Not at all* | χ² 62.1, df 5, p=0.000 |
| Staff | 34 (47.9) | 0 (0.0) | 32 (45.1) | 5 (7.0) | 0 (0.0) | |
| Students | 33 (15.9) | 53 (25.5) | 56 (26.9) | 21 (10.1) | 5 (2.4) | |
| Has your sense of belonging changed since lockdown?[3] | | | | | |
| | *I feel totally at home* | *Moderately at home* | *Belong a little* | *Do not belong at all* | | N/a |
| Staff | 14 (19.7) | 38 (53.5) | 15 (21.1) | 4 (5.6) | | |
| | *Lot less now* | *Little less now* | *Not changed* | *Little more now* | *Lot more now* | |
| Students | 31 (14.9) | 50 (24.0) | 60 (28.8) | 19 (9.1) | 9 (4.3) | |
| Is being physically present on campus important for belonging?[4] | | | | | |
| | *Yes, very important* | *Yes, a bit important* | *Maybe, maybe not* | *Not very important* | *Not at all important* | χ² 29.2, df 5, p=0.000 |
| Staff | 27 (38.0) | 23 (32.4) | 7 (9.9) | 10 (14.1) | 3 (4.2) | |
| Students | 101 (48.6) | 30 (14.4) | 18 (8.7) | 9 (4.3) | 40 (19.2) | |

[1]One staff member (1.4%) & seven (3.4%) students gave no response; [2]40 (19.2%) students gave no response; [3]39 students (18.8%) students gave no response; [4]One staff member (1.4%) & ten students (4.8%) gave no response.

shown in Table 5a, while negative aspects are shown in Table 5b.

Table 5a: Positive impacts of emergency online provision in staff and students. Data are expressed as numbers (%).

| I found it reassuring to have classes online[1] | | | | Comparison of staff & student responses; chi square test results |
|---|---|---|---|---|
| | *Agree* | *Neither agree nor disagree* | *Disagree* | |
| Students | 78 (37.5) | 40 (19.2) | 50 (24.0) | N/a |
| The structure of online classes helped me cope with the lockdown[1] | | | | |
| Staff | 33 (46.5) | 29 (40.8) | 9 (12.7) | χ² 25.4, df 3, p=0.006. NS post Bonferroni adjustment. |
| Students | 67 (32.2) | 50 (24.0) | 51 (24.5) | |
| I learned better in online classes compared with classes on campus[2] | | | | |
| Students | 25 (12.0) | 44 (21.2) | 98 (47.1) | N/a |
| I preferred online classes to being physically in class[2] | | | | |
| Staff | 16 (22.5) | 18 (25.4) | 37 (52.1) | χ² 17.1, df 3, p=0.006. NS after Bonferroni adjustment. |
| Students | 42 (20.2) | 35 (16.8) | 90 (43.3) | |

[1]40 students (19.2%) did not respond to this question; [2]41 students (19.7%) did not respond to this question

Students were more likely to agree that they did not know what was happening or where to go for help; by contrast significantly more staff than students disagreed to the same enquiry (56.3% vs. 33.2%; p<0.000). Approximately one in five staff and students struggled with inadequate online provision; no significant differences between staff and students were seen. Over a third of staff and just over a quarter of students found it difficult to cope with online learning due to their home issues (e.g. childcare; p=0.06).

Table 5b: Negative impacts of emergency online provision in staff and students. Data are expressed as median with IQR and means with standard deviations ($\bar{x}$ (SD))[1].

| Item | Student scores expressed as median (IQR) & $\bar{x}$ (SD) | Staff scores expressed as median (IQR) & $\bar{x}$ (SD) | Staff vs student comparison; chi square test results |
|---|---|---|---|
| I did not know what was happening or where to go for help[2] | 3 (2) $\bar{x}$ (SD): 2.5 (1.4) | 4 (1) $\bar{x}$ (SD): 3.4 (0.8) | $\chi^2$ 22.3, df 3, p=0.000. |
| I struggled with inadequate online provision[2] | 3 (2) $\bar{x}$ (SD): 2.7 (1.5) | 4 (1) $\bar{x}$ (SD): 3.4 (0.8) | $\chi^2$ 17.1, df 3, p=0.001. NS post Bonferroni adjustment. |
| I did not attend the online classes[3] | 4 (2) $\bar{x}$ (SD): 2.8 (1.6) | N/a | N/a |
| My home issues made it difficult for me to manage[4] | 3 (2) $\bar{x}$ (SD): 2.5 (1.5) | 4 (1) $\bar{x}$ (SD): 3.3 (0.8) | $\chi^2$ 18.4, df 3, p=0.000. NS post Bonferroni adjustment. |

[1]Five point Likert rating scale from strongly agree (1) to strongly disagree (5); [2]40 (19.2%) did not respond; [3]43 students (20.7%) did not respond; [4]42 students (20.2%) did not respond

With regard to future online provision, almost two thirds of staff indicated that developing a relationship with students would be a major problem. The majority of both staff and students agreed that online provision would be at least a minor problem in terms of meeting with other academic staff/ their friends (87.3% vs. 66.4% respectively; p=0.12). Similarly, for 54.9% of staff and 43.8% of students, a major problem would be missing meeting other academic staff/ their friends (p=0.25). Data are shown in Table 6.

Table 6: Perceived social impacts of moving to online provision according to staff and students. Data is expressed as medians with interquartile range (IQR)1 & means with standard deviations ($\bar{x}$ (SD)).

| Item | Student scores expressed as median (IQR) & $\bar{x}$ (SD) | Staff scores expressed as median (IQR) & $\bar{x}$ (SD) | Staff vs student comparison; chi square test results |
|---|---|---|---|
| I would find it harder to develop a relationship with my students | n/a | 2 (1) $\bar{x}$ (SD): 1.5 (0.7) | n/a |
| I would miss interacting with academic staff (students)/ being in class with my students (staff)[2] | 2 (1) $\bar{x}$ (SD): 1.7 (0.9) | 2 (1) $\bar{x}$ (SD): 1.4 (0.7) | $\chi^2$ 17.4, df 3, p=0.001. NS post Bonferroni adjustment. |
| I would miss being with other staff (staff) / my friends (students)[3] | 2 (1) $\bar{x}$ (SD): 1.7 (0.9) | 2 (1) $\bar{x}$ (SD): 1.5 (0.7) | $\chi^2$ 22.4, df 3, p=0.000. NS post Bonferroni adjustment. |

[1]Data collected as major problem (2), minor problem (1) & not a problem (0); [2]42 students (20.2%) did not respond; [3]44 students (21.2%) did not respond

In terms of what would help them belong if future provision were online, 86% of staff and 60.1% of students identified hearing the lecturer's voice as either essential or helping a lot. Significantly more staff than students thought this

was essential (59.2% vs. 29.8%; p<0.000). Seeing the lecturer online was identified as essential by a significantly greater proportion of staff than students (50.7% vs. 21.6% respectively; p<0.000). Taking part in online quizzes was identified as essential by 22.5% of staff and 17.8% of students, while 42.3% of staff and 30.3% of students thought they would help a lot (p=0.08). Similarly, a greater proportion of staff than students identified participating in online activities as being essential (35.2% vs. 15.4% respectively; p<0.000) or helping a lot (45.1% vs. 25.5% respectively; p<0.000). By contrast, significantly more students than staff felt it would not help at all (20.2% vs. 2.8% respectively; p<0.000).

Significantly more staff than students thought that pre-recorded lectures would help a little (50.7% vs. 16.3% respectively; p<0.000), a similar proportion thought they would help a lot and there were no significant differences in the proportion of staff and students who thought they would be essential (9.9% and 25.5% respectively; p=0.41). Data are shown in Table 7.

Table 7: What would help aid belonging in an online world? Perceptions of staff and students. Data expressed as median (IQR).

| Item | Students Scores expressed as median (IQR) | Staff Scores expressed as median (IQR) | Differences between staff & student responses; chi square test results |
|---|---|---|---|
| Hearing the lecturers voice | 3 (3) | 4 (1) | $\chi^2$ 28.4, df4, p<0.000 |
| Seeing the lecturer online | 3 (2) | 4 (1) | $\chi^2$ 40.7, df4, p<0.000 |
| Taking part in online quizzes | 2 (2) | 3 (1) | $\chi^2$ 29.1, df4, p<0.000 |
| Taking part in online activities | 2 (2) | 3 (1) | $\chi^2$ 41.1, df4, p<0.000 |
| Listening to pre-recorded lectures | 2 (3) | 2 (1) | $\chi^2$ 46.1, df4, p<0.000 |

[1]Data scored as essential (4), would help a lot (3), would help a little (2), would not help at all (1)

## Was sense of belonging impacted upon by student demographics?

There were no differences in perception of the importance of belonging by demographic (age, gender, ethnicity, disability, commuting status, first-in-family or living situation) or study characteristics (level or mode of study). Similarly, there were no effects of demographic or study characteristics on personal sense of belonging before lockdown, feelings that belonging had changed since lockdown or opinions on whether physical presence on campus was important for a sense of belonging (data not shown).

Looking at potential future online delivery and whether home issues would make it difficult, age had a significant impact ($x^2$ 8.04, df 3, p<0.05). Posthoc analysis showed that older students were significantly more likely to indicate this to be a major problem (p<0.05).

## Qualitative data

Belonging was recognised as important by both staff and students and related to motivation and attainment in both. Reducing loneliness and supporting mental health through connection with others was mentioned by students, whereas for staff feeling part of a community with shared goals was described. For both groups, an increased sense of detachment as a result of the lockdown was apparent. The importance of social aspects of learning and working was highlighted by both groups. Both groups highlighted the loss of the commute, flexibility and convenience of online teaching as potential advantages, while loss of the immediacy and spontaneity of face-to-face sessions were disadvantages. Student responses are shown in Table 8 and those of staff in Table 9.

Table 8: Main themes from student qualitative responses.

| Theme | Numbers (%) | Illustrative quotes |
|---|---|---|
| **Is belonging important? (n=96 responses, with 147 subtheme mentions)** | | |
| Helps motivate & engage | 32 (21.7) | 'It is important as it can help motivate the student in completing their studies' |
| Part of community, reduces loneliness | 17 (11.6) | 'A sense of community can help the university experience and really help propel students in their studies' |
| Fitting in, connection, inclusive | 17 (11.6) | 'It gives you a sense of stability and connection with your peers' |
| **How has your sense of belonging changed since lockdown? (n=106 responses, with 149 subtheme mentions)** | | |
| Reduced interactions, connection & spontaneity in class | 29 (19.5) | 'I think literally I don't belong to the university now since there is no good connection between the staff & students, we see very few faces of people now at home, and cannot share ideas' |
| Need face to face interaction | 24 (16.1) | 'Without face to face interaction, the sense of belonging is slowly decreasing' |
| **Advantages of online learning (n=143 responses with 259 subtheme mentions)** | | |
| Recorded so access in own time, convenient | 44 (17.0) | 'I can record the lecture and learn at my own pace. At times face to face teaching doesn't fit everyone's learning speed' |
| No commute | 37 (14.3) | 'Not travelling for 2 hours to and from university every day' |
| Saves time | 29 (11.2) | 'Saves time which can be used in revision and making notes' |
| Comfortable in own home | 24 (9.3) | 'Comfortable in your own home while studying and listening' |
| **Disadvantages of online learning (n=149 with 318 subtheme mentions)** | | |
| Need live interactive sessions | 44 (13.8) | 'Considerably less flow & engagement than with a normal lecture, partly due to the detachment and the idea of not being physically present and therefore not mentally present (I find this hinders my ability to learn and take in information as active learning and teaching is much more effective)' |
| Need immediate responses to questions, feedback from staff | 38 (11.9) | 'Our lecturers are also less able to fully understand and help with our questions' |
| Lack of social interaction, contact with friends & staff | 33 (10.4) | 'Major disadvantage is the lack to face to face interactions with my peers and lecturers' |
| Need access to physical resources e.g. library, labs | 26 (8.2) | 'Less access to labs, library very difficult to do projects and other works' |
| **What help would you need? (n=87 responses, with 142 subtheme mentions)** | | |
| Support, clear instructions for IT & course materials | 21 (14.8) | 'Clear instructions as to where I can find my lecture content and extra additional resources' |
| Ongoing regular support from academics | 14 (9.9) | 'I would need to ensure I have regular contact with my lecturers to clear up any questions' |
| IT hardware & software | 13 (9.2) | 'More information on how to access specific software like GIS and SPSS' |

| Who did you ask for help? (n=134 responses) | | |
|---|---|---|
| Friends, classmates | 67 (50.0) | 'My friends and I have supported each other all the way through, in addition to good communication across my course' |
| Lecturers | 55 (41.0) | 'I've developed a good rapport with one of my lecturers who I've always gone to for help' |
| Personal tutor | 14 (10.4) | 'My personal tutor' |

For staff, working online from home as most were forced to do, resulted in a blurring of the lines between work and home. An increased workload as a result of emergency changes to teaching, assessment and the loss of demarcation between work and home was highlighted with some staff feeling that their efforts were neither recognised nor appreciated.

Table 9: Main themes from staff qualitative responses.

| Themes | Numbers (%) | Illustrative quotes |
|---|---|---|
| **Why belonging is important (n=45, with 82 subtheme mentions)** | | |
| Common goals, shared experience, connection | 32 (39.0) | 'It's one of the fundamental needs, isn't it? Something that defines you as a person' |
| Improves commitment, motivation | 8 (9.8) | 'Being part of a team to which you have an allegiance and identity is important for both morale and productivity' |
| **How has your sense of belonging changed since lockdown? (n=52 responses, with 68 subtheme mentions)** | | |
| Little difference; I can stay in touch online | 19 (36.5) | 'It's familiar, don't really feel it's changed - in some cases I am seeing more of people at online meetings than I did at physical meetings' |
| Extra work, no appreciation | 11 (21.2) | 'There has not been much thanks or understanding offered to staff despite us working very hard and in difficult conditions; there has also been a lack of listening to staff's views and concerns about teaching changes' |
| Lack of connection, feel disengaged | 6 (11.5) | 'Being physically disconnected from the university, one's office and one's colleagues leads to a certain level of disenfranchisement. It's hard to feel a real connection' |
| **Advantages of online teaching (n=71 responses with 116 subtheme mentions)** | | |
| No commute | 32 (27.6) | 'Could save a lot of time (e.g. commuting)' |
| More control, convenience, flexibility | 14 (12.1) | 'Giving all students opportunity to learn at their own pace (by providing recordings of online lectures and other taught sessions' |
| Improved student engagement, attendance | 10 (8.6) | 'I feel it can benefit attendance at classes, which some students may otherwise not be able to attend/choose not to attend' |
| **Disadvantages of online teaching (n=59 responses, with 151 subtheme mentions)** | | |
| Will be difficult to form relationships | 21 (13.9) | 'Students would be more difficult to get to know online and relationships between students more difficult to form' |
| Far less engagement, involvement in class | 20 (13.2) | 'My style of teaching reacts with the students this is difficult online - in class I can see if someone isn't coping / being involved on line they can just mute their microphone and they disappear' |
| Face-to-face more effective for some sessions | 20 (13.2) | 'Face to face contact and immediacy of response and community spirit' |
| **Your training needs (n=55 responses, with 67 subthemes)** | | |
| Creating effective interactive engaging online sessions | 16 | 'Camera and mic 'craft' to ensure engaging material online (it can't be as simple as delivering the same lecture online)' |
| Use of appropriate hardware & software for teaching online | 13 | 'On tap support with software without patronisation' |
| **Have your responsibilities/boundaries of work changed since lockdown? (n=50 responses, with 86 subtheme mentions)** | | |
| Lack of distinction between work & home life | 19 (22.1) | 'My work station has dominated my living space, I can never escape it' |
| Lots of emails | 12 (14.0) | 'Email is now the main form of communication and it feels like emails need to be read and acted on more rapidly than before' |
| Increased workload | 9 (10.5) | 'The working hours have extended, and have expanded to include more weekend hours' |

## Reliability analysis

For multi-item questions, levels of reliability were generally high, particularly within the student questionnaires and for staff: student comparisons.

Table 10: Reliability analysis for similar items within the student and staff questionnaires, and for similar questions in student compared with staff questionnaires. Data expressed as Cronbach's alpha.

| Student question & items | Student | Staff questions & items | Staff | Student: staff questions & items | Student vs. staff comparison |
|---|---|---|---|---|---|
| Q18: 8 items | 0.967 | Q13: 11 items | 0.696 | Q18 vs. Q13: 4 items | 0.925 |
| Q19: 11 items | 0.973 | Q14: 7 items | 0.834 | Q19 vs. Q14: 5 items | 0.925 |
| Q22: 9 items | 0.965 | Q17: 10 items | 0.796 | Q22 vs. Q17: 8 items | 0.947 |
| Q26: 5 items | 0.926 | Q22: 6 items | 0.609 | Q26 vs. Q21: 5 items | 0.916 |

## Discussion

The main findings of this study related to the recognition of the importance of belonging, the strong sense of belonging felt by both staff and students, and to the impact of online teaching on social aspects of learning, namely relationships with staff and peers. Both staff and students expressed concern about the difficulty of forming relationships virtually. However, while staff could see the benefit of establishing their social presence online using their voices and faces, and encouraging active engagement of students using online quizzes and interactive sessions, students were less likely to perceive the benefits of such approaches. The move from the physical campus and the associated changes to surroundings and social engagement (Ahn & Davis, 2019), and the alterations to teacher presence (Garrion, 2017; Garrison et al 2000), were all issues highlighted by our participants.

Despite considerable diversity among participants in terms of demographic and study/work characteristics, overall there was remarkable homogeneity in their responses. A large proportion of both staff and students agreed that belonging was important, although students were less sure about this. Staff clearly recognised the importance of belonging and their qualitative data related it to motivation and attainment, explicitly linking benefits to the individual and to the institution. The literature supports this, linking students' engagement and attainment positively with a sense of belonging (Hausman et al., 2009; Freeman et al., 2007). In staff, enhanced work satisfaction was associated with opportunities for contact with students and other staff (Szromek & Wolniak, 2010), which relates to the social dimension of belonging described by Ahn & Davis (2019). This data suggests that it is important to help students develop a sense of belonging and to understand the benefits of a sense of community, and to enhance belonging in staff.

Generally, less attention is paid in the literature to belonging in staff and what may facilitate that. 'Belonging' for staff may be represented by the degree of alignment between the role within the organisation and the personal needs of the employee (Brion, 2015), and similarly to students, belonging in staff results in a feeling of acceptance, inclusion and identity (Generation Schools Network, 2019). In secondary schools, teachers with a strong sense of belonging are more likely to develop stronger connections with students than those without (O'Brennan et al., 2017). In schools, the relationships between staff members feed into the culture and ethos of the school and thus have a major impact on student achievement (Barth, 2006). There is no reason to suppose it would be different in higher education, and in university students, relationships with academic staff are highly valued both as part of student belonging (Dwyer, 2017), and as a marker of institutional quality (Dicker et al., 2017, 2018). Ensuring that relationships may be nurtured without face-to-face contact will be a challenge, especially for new students starting in September with whom entirely new relationships need to be formed.

Personal sense of belonging (feeling totally at home) was significantly higher in staff than students, perhaps unsurprising given that 52% of staff respondents had worked in higher education for at least 15 years. However, significantly more students than staff had a strong sense of belonging and this did not differ by demographic or study characteristics. This is positive in such a diverse student group, given the literature which suggests that atypical students find it more difficult to develop a sense of belonging and legitimacy within higher education (Reay, 2010; Wainwright & Marandet, 2010; Waite, 2013; O'Shea, 2015, 2016; Southall et al., 2016). Both staff and students in this study felt that being physically present on campus mattered in terms of belonging; and both groups reported a reduction in their sense of belonging since lockdown, when the campus closed and teaching and learning was forced to move online. This is unsurprising; seismic changes to the structure of the day, physical environment in which individuals worked and ability to socialise occurred at very short notice within an environment of widespread fear.

Mixed satisfaction with the current teaching and supervision arrangements made by the institution was expressed by our participants. Almost half of the student participants disagreed that they would learn better online than face-to-face, which bodes ill for the new semester. What will be put in place and how teaching and learning will be managed must be clearly communicated to students, more than quarter of whom in this study agreed that they did not know what was happening or where to go for help when teaching and learning first went online in March. This may have been in part a reaction to the sudden change in provision from that which was expected. Nonetheless, such altered arrangements in higher education provision were justified; although young people such as students are not thought to be personally at high risk from severe symptoms of COVID-19, the risk to others of community transmission especially from asymptomatic carriers is high (Kluge, 2020). The university campus is no stranger to outbreaks of illness; so-called 'Freshers flu' is common in UK institutions each new academic year (Gatherer, 2015).

Young people typically move away from home, mixing socially and academically with a wide and diverse group, and living together in communal housing. Their eating behaviours, sleeping patterns, physical activity levels and use of alcohol often deviate from recommendations (Dodd et al., 2010). As such, they are recognised as being at high risk from conditions such as meningococcal disease and are a group prioritised for vaccination against it in the UK (PHE, 2019; Hagell, 2017). COVID-19 is different however, in that the closure of university campuses was largely undertaken to protect others, to reduce community transmission at a time when whole populations were asked to make huge sacrifices to protect those at high risk. How and when institutions may safely reopen is unclear, but it is a topic with which we should engage. The difficulties of democratic engagement in 'desecuritization' of education have been highlighted (Murphy, 2020), and qualitative feedback from some staff in this project noted the disenfranchisement they felt, seeing themselves reduced to producers of educational materials dictated to by senior leadership, rather than active participants in decision-making. A longer-term victim of the COVID-19 pandemic on higher education may be this detachment of dedicated academics from their institutions because of the emergency decision-making mechanisms utilised within their institutions. We would suggest this risk is important and should be recognised and mitigated against; the greatest resource any higher education institution has is its people.

An important question is how a sense of belonging may be instilled and maintained if teaching remains online, which appears increasingly likely at least into the start of the next academic year. It is clear that the development of social relationships with students and staff, is an intrinsic part of belonging, for both groups. Interpersonal relationships including those with peers are important determinants of belonging in students (Katanis, 2000; Johnson, 2012; Read et al., 2018; Meehan & Howells, 2019), and the potential negative impact of the pandemic on relationships has also been highlighted by others (Longhurst et al., 2020). Developing relationships is easier on campus where informal and spontaneous face-to-face contacts with others are possible (Tinto, 1993; Simpson, 2003; Strayhorn, 2012). How this sense of connection may be facilitated in an online environment is less clear (Fowler-Watt et al., 2020), but belonging will only be possible if individuals feel cared for (Matheson & Sutcliffe, 2017), and compassion should be at the heart of pedagogy (Auerbach & Hall, 2020). Designing opportunities to enable collaboration, as well as offering assessment tasks which encourage structured online social interaction have both been suggested as important (Thomas et al., 2017), allowing students to become and feel part of a community of learners (Garrison, 2017; Garrison et al., 2000). Participants in this study were asked to rate the importance of active learning opportunities and teacher presence online in facilitating belonging in students. Approaches to establish a social presence online (e.g. seeing the lecturer or hearing their voice), and taking part in online activities and quizzes were all identified as essential to encourage belonging by a greater proportion of staff than students. Others have shown that students are reluctant to use microphones and to actively engage online (Kedraka & Kaltsidis, 2020), and it has been suggested that different personality types may find the switch to online learning more difficult (McNulty et al., 2006). Although guidance to enhance student engagement online in response to the pandemic have been produced (e.g. Bao, 2020) or in online teaching more generally (e.g. Fiock, 2020), exactly what students consider essential in online teaching to help them belong is not clear and evaluation of any strategies used including synchronous (McBrien & Jones, 2009) and asynchronous sessions, should be undertaken.

While our participants recognised many of the potential advantages of online teaching, it is important that the difference between provision of emergency online sessions virtually overnight, and the longer term move to online or blended teaching is recognised. Even within the emergency scenario, when it might be assumed that students would recognise the extraordinary efforts being made by staff and institutions, mixed responses to online teaching provision in both this project and others have been shown (Adusei Amoah & Moh, 2020; Kedraka & Kaltsidis, 2020). It is likely that students will have high expectations of the provision in the new academic year, in particular since UK tuition fees have not been lowered in response to the pandemic (Hubble & Bolton, 2020). Students will also perceive that staff have had months to prepare for such provision, but institutions may fail to recognise the extra time, support and resource required to produce excellent active online learning. Increased workload was identified as an issue by several staff in this study, even before the development of new blended learning resources, and difficulties in separating work and home lives when working at home were highlighted, similar to other studies (Watermeyer et al., 2020; Longhurst et al., 2020). The dedication of staff should be acknowledged and rewarded, and a great deal of support in the new academic year will be needed by both staff and students.

Potential advantages of online learning include greater access and opportunity especially for those with long commutes or who struggle to manage multiple responsibilities (Muse, 2003; Simpson, 2003; Karalis & Raikou, 2020; Longhurst et al., 2020), and these were also identified by our participants. However, it is not a given that inequalities in education will be reduced by online learning and in fact they may be exacerbated (Farhadi, 2019). Digital divide has been highlighted as a particular concern (Sahu, 2020; UNESCO, 2020), and technical issues may impact on student engagement (Wimpenny & Savin-Baden, 2013; Ilgaz & Gülbahar, 2015). In addition, some online tasks (e.g. online discussions), may feel alien to some (Whittaker, 2015), and will need to be clearly explained to students as will signposting to additional support. Our participants highlighted concerns such as inadequate information technology provision or internet access, and a total reliability on online provision would only be of benefit to those who could access it. Nor are these just an issue for students; difficulties with inadequate information technology resources were identified in similar proportions of staff and students in this study. Both groups expressed concerns about the impact of online teaching on social relationships, as well as the possibility that face-to-face teaching will be more suitable for some sessions, and both expressed a preference for face-to-face teaching. This has also been found in other studies (Karalis & Raikou, 2020; Longhurst et al., 2020). A blended learning approach in which

online and face-to-face sessions are integrated (Garrison & Kanuka, 2004), would help ensure that staff and students could form relationships and a community of learning, while managing social distancing requirements. Where possible, incorporating a mixture of synchronous and asynchronous online teaching would enhance flexibility for staff and students, while allowing both maximum opportunities to develop and maintain relationships.

This study is relatively small and was carried out in a single institution. Nonetheless participants were diverse in demographic and study/work characteristics, and many of the findings are similar to those of other studies, suggesting that our findings may be generalised beyond our institution. From a practical perspective we would suggest:

- Using a mix of asynchronous and synchronous learning so that safety of staff and students is maximised but both teacher and social presence are possible;

- Enhancing teacher presence using audio and video facilities;

- Encouraging active student engagement with clearly communicated 'netiquette' guidance;

- Allowing those who find online engagement more difficult to participate at their own pace (e.g. using chat functions);

- Ensuring that clear guidance is given to students, so that they understand how and why they may participate, as well as what asynchronous tasks they need to complete, and by when;

- Evaluating all aspects of online teaching and learning to understand which aspects are more or less successful, and the possible impact of demographic or learner characteristics in order to inform the literature;

- We would also encourage engagement within and between institutions to enable academics to form supportive collaborations as well as to develop and share resources.

The COVID-19 pandemic has placed enormous strain on staff, students and managers in higher education, but it may also represent an opportunity to incorporate mixed methods into teaching and learning, to maximise student involvement and participation in their own learning (Fiock, 2020; Longhurst et al., 2020; Peters et al., 2020). It may also be an opportunity for academics and institutions to work collaboratively, and to gain new digital skills (Longhurst et al., 2020). While necessary change in higher education may be encouraged, effective blended learning will not be as simple as putting lecture notes online. Time, support and resources will be needed to enable optimal teaching and learning, and evaluation of all approaches used including their impact on staff and student experience will be needed.

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# Appendix

## Appendix A: 'Belonging' at university in an online world: Staff & student perspectives.

*Student Questionnaire*

*Part 1: About you.* Please tick one option for each of the following questions.

1. Which option best describes your gender? (tick one option)

| Male | Female | Other | Prefer not to say |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

2. What is your age (years)? (tick one option)

| 18-21 | 22-25 | 26-29 | ≥30 | Prefer not to say |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

3. Which category best describes your ethnicity? (tick one option)

| | |
|---|---|
| White (e.g. British, Irish, any other white background) | 1 |
| Black/Black British (e.g. Caribbean, African, any other Black background) | 2 |
| Asian/Asian British (e.g. Indian, Pakistani, Bangladeshi, other Asian background) | 3 |
| Mixed (e.g. White & Black Caribbean/African, White & Asian, any other) | 4 |
| Other ethnic groups (e.g. Chinese, any other ethnic groups) | 5 |
| Prefer not to say | 6 |

4. Do you consider yourself to have a disability?

| Yes | No | Prefer not to say |
|---|---|---|
| 1 | 2 | 3 |

5. What is your course of study?.................................................................

6. Are you in:

| Level 3 | Level 4 | Level 5 | Level 6 | Postgrad |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

7. Do you study:

| Full time | Part time |
|---|---|
| 1 | 2 |

8. How many times a week does it take you >45 mins to travel to university (one-way)?

| Usually (4-5 times a week) | Often (2-3 times a week) | Seldom (once or less a week) | Never |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

9. Do you live with other students?

| Yes, in Halls of Residence | Yes, in private accommodation | No, I don't live with other students | Prefer not to say |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

10. Are you the first in your immediate family (grandparents, parents or siblings) to attend university?

| Yes | No | Prefer not to say |
|---|---|---|
| 1 | 2 | 3 |

*Part 2: How can 'belonging' at university be facilitated in an online world?*

1. Do you think that belonging at university is important?

| Yes | No | Not sure | Prefer not to say |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

Please explain your
answer.......................................................................................................................................................................................
...................................................................................................................................................................................................................

2. **How much did you feel that you personally belonged at the university BEFORE the lockdown? (circle one option)**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| (not at all) | | (neutral) | | (totally at home) |

3. **To what extent have your feelings of belonging at the university CHANGED since the lockdown? (circle one option)**

| Feel I belong a lot more than before | Feel I belong a little more than before | Not changed at all | Feel I belong a little less than before | Feel I belong a lot less than before |
|---|---|---|---|---|

Please explain your
answer........................................................................................................................................................
......................................................................................................................................................................
......................................................................................................................................................................

4. **Is being physically present on campus an important part of belonging for you?**

| Yes, very important | 1 |
|---|---|
| Yes, a bit important | 2 |
| Neither important nor unimportant | 3 |
| No, not very important | 4 |
| No, not at all important | 5 |

5. **In the lockdown, the last two weeks of teaching were delivered remotely at short notice. Specifically with regard to your experience of this, please rate each of the following statements:**

(where 1=strongly disagree, 2= disagree, 3= neither agree nor disagree, 4=agree, 5=strongly agree)

| Statement | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| I did not know what was happening or where to go for information (rev). | | | | | |
| I found it reassuring to have classes online. | | | | | |
| Having a structure of online classes helped me cope with the lockdown. | | | | | |
| I struggled with adequate online provision (e.g. equipment, internet access) so online classes were difficult for me (rev). | | | | | |
| My home issues (e.g. caring responsibilities, childcare) made it difficult for me to manage (rev) | | | | | |
| I preferred online classes to being physically in class. | | | | | |
| I learned better in the online sessions compared with classes at university. | | | | | |
| I did not attend the online classes (rev). | | | | | |

6. **If social distancing remains in place and teaching moved to online delivery either completely or partially in the new academic year:**

Please indicate your level of agreement with the following statements (where 1=strongly disagree, 2= disagree, 3= neither agree nor disagree, 4=agree, 5=strongly agree).

| Statement | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Online teaching would make me feel less like I belonged to the university (rev). | | | | | |
| Online teaching would negatively affect my learning (rev). | | | | | |
| I don't mind either way; I am here to learn. | | | | | |
| Online delivery would benefit my learning. | | | | | |
| I would have difficulty making friends with online delivery (rev). | | | | | |
| Home issues (e.g. childcare, caring responsibilities) would make online delivery MORE difficult for me to manage (rev). | | | | | |
| Home issues (e.g. childcare, caring responsibilities) would make online delivery LESS difficult for me to manage | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| I would have difficulty keeping friends if teaching was online (rev). | | | | | |
| There would be advantages to online delivery. | | | | | |
| If lectures were available online I would become less involved with the university (rev). | | | | | |
| If I could not come to the campus, I would be MORE likely to attend timetabled online classes. | | | | | |
| If recorded lectures were available online, I would be LESS likely to attend timetabled online classes (rev). | | | | | |

8. **What are the advantages & disadvantages of online learning for YOU?**

| Advantages | Disadvantages |
|---|---|
| | |

9. **To what extent are the following issues for you, with regard to online delivery?**

| Statement | Not a problem | Minor barrier | Major barrier |
|---|---|---|---|
| Cost of access to the internet | | | |
| Cost of equipment (e.g. laptop) | | | |
| Reliable internet access | | | |
| Access to a quiet place to work | | | |
| Home issues (e.g. childcare, caring responsibilities) | | | |
| I don't know how to use the online resources (e.g. Canvas conferences) | | | |
| I don't know where to find the information I need (e.g. lecture notes) | | | |
| I would miss being in class with my friends | | | |
| I would miss interacting with academic staff | | | |

10. **What would your training needs be, if delivery were online (partially or completely)? (e.g. Canvas)**

11. **Who would you ask for help in an online academic world? Rate the following options from 1 to 5, where 1 is the first port of call, and 5 is the option you are least likely to choose. Please use each number only once.**

| In an online academic world, if I needed help with my studies I would approach: | Ranking |
|---|---|
| My lecturers | |
| My course rep | |
| My friends | |
| My Personal Tutor | |
| The IT helpline | |

12. **Who did you ask for help in the initial stages of the lockdown (the last two weeks of term)?**

| |
|---|

**13. What aspects of online learning would most help you feel that you belong at the university?**

| Option | Essential to help me belong | Would help a lot | Would help a little | Would not help at all |
|---|---|---|---|---|
| Hearing the lecturers voice | | | | |
| Seeing the lecturer online using video facilities | | | | |
| Taking part in online quizzes with my classmates (e.g. Kahoot, quizlet) | | | | |
| Taking part in short activities online with the class (e.g. in breakout rooms) | | | | |
| Listening to pre-recorded lectures and webinars | | | | |
| Other, please specify (add as many options as you like and please rank each one) | | | | |

**Thank you for your time**