

Peer-to-peer phone calls as a method of providing proactive and personalised support to enhance student engagement

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Abstract

Disruptive changes to the lives of students and running of universities, due to the COVID-19 pandemic, has forced institutions to adapt their approaches to supporting students (Crawford et al., 2020; Frampton & Smithies, 2021). Student engagement has long been regarded by universities as an important indicator for other aspects of student success (Kahu, 2013), but with many varying approaches and definitions (Ashwin & Mcvitty, 2015). Furthermore, the potential involvement of current students to provide peer-to-peer support has received much attention in previous research (Stigmar, 2016; Raisanen et al., 2020; Ala et al., 2021). What has not been thoroughly investigated is how different communications channels, such as phone calls, can be utilised as methods to provide supportive interventions to students. This article provides insights into how supportive peer-to-peer phone interventions within a context of blended learning can have an impact on both students' levels of engagement and their confidence levels. This was achieved through a mixed-methods approach utilising results of a student questionnaire, targeted at those who had received such supportive interventions, and a detailed analysis of student engagement and progression data. The results show that phone call interventions by peers can lead to increased short-term levels of student engagement, especially when targeted nearer the start of an academic year. Meanwhile, multiple phone call interventions throughout the year leads to a cumulative effect where students continue to see an increase in engagement beyond the months of individual interventions. It is only when students received multiple phone call interventions that they had a significantly higher likelihood to progress in their studies. The process of attempting to call, but not reaching, students also helps to identify students who are then likely to exhibit lower levels of engagement throughout the rest of the academic year. Students who received a phone call intervention reported increases in confidence levels and awareness of support. Almost nine in ten students reported taking at least one proactive action following their supportive call with a peer.

Introduction

The COVID-19 pandemic has presented a two-fold challenge to students; both in introducing a series of new issues that negatively impact students and also through disrupting the methods of support that universities would have previously offered (Crawford et al., 2020). Students have faced additional pressures on their mental health (Zhai & Du, 2020; Deng et al., 2020; ONS, 2021), have struggled with living

situations not ideal for remote learning (Oliveira et al., 2021) and showed growing concern over their career prospects (Aristovnik et al., 2020). These concerns over their future professional careers has partly been influenced by the restricted access to part-time jobs that many students rely on to support them financially (Frampton & Smithies, 2021). This has led to an increase in the number of students considering dropping out or deferring due to these financial challenges (Frampton & Smithies, 2021). This is to be expected given the well-established connections in previous studies – across different subject areas and countries – between students' financial situations and likelihood of non-continuation (Breier, 2010; Cameron et al., 2010; Mestan, 2016; Bradley, 2017). Whilst we are yet to see the impacts of these concerns around higher student drop-out rates in official UK figures, this may be due to the alternatives to university – such as the jobs market – also being adversely affected by the pandemic (Hillman, 2021). Even if these challenges do not lead to an increase in students dropping out, what is clear is that throughout the pandemic students have consistently reported the need for increased support to help them study successfully (Allen & Parkes-Norris, 2021).

This paper will add to the literature around three overlapping areas: student engagement, peer-to-peer approaches and student communications. The purpose of this study was to test whether peer-to-peer phone call interventions could have a positive impact on student engagement, progression and confidence levels.

Student engagement

Before the start of the pandemic, many universities, especially within a UK context, had developed principles around student engagement to help classify between students who are sufficiently interacting with learning and those who may need additional support (Baron & Corbin, 2012; Kahu, 2013; Macfarlane & Tomlinson, 2017; McIntosh, 2017). Definitions around exactly what is meant by student engagement vary significantly across and even within institutions (Ashwin & Mcvitty, 2015), due to the potentially broad and vague concepts that it relates to (Geven & Attard, 2012). In this study, student engagement refers to students' depth of participation in learning on their course of study and how this can be both monitored and enhanced through supportive interventions. Such interventions have previously included: conversations with personal tutors and the creation of developmental action plans, referring students to wellbeing or learning support services, encouraging engagement with co-curricular or extra-curricular activities and provision of a buddy or mentor (Geven & Attard, 2012; Nelson et al., 2012; Thomas, 2012; Masika & Jones, 2016; Hammill et al., 2020; McIntosh et al., 2021A).

Almost all of these possible interventions needed to change within the context of the pandemic. Personal tutor conversations have had to move online in a lot of cases, however in some instances this has led to improvements with students appreciating the added flexibility of being able to meet with tutors online and staff appreciating the ability to meet students without needing to book rooms (McIntosh et al., 2021B). Students may have been able to continue to access in-person support services, such as counselling or disability support, but in a lot of cases these have been delivered

digitally (Hope, 2020A; Zhai & Du, 2020); meaning that students have had to re-learn how to access them. This presented an increased challenge for faculty members and academics who had to field a wider variety of queries from students than before the pandemic (Hope, 2020B). Many co-curricular engagement programmes had to be stopped entirely or moved to an online format, leading to a significant drop in engagement levels, with a disproportional impact on those from disadvantaged backgrounds (Montacute & Holt-White, 2021). The cancellation of these student events and experiences have left students feeling unfulfilled in their personal and professional milestones (Finnerty et al., 2021; Lederer et al., 2021)

Universities also had to change how they were measuring student engagement. Before the pandemic, in many institutions this was most closely monitored through student attendance levels (Cowell, 2021), however a number of universities had already begun looking how other engagement factors could have an impact on success (Foster & Siddle, 2019). This move away from solely relying on attendance data was accelerated during the pandemic, as students were learning through a mixture of online and on campus sessions. Other proxies for measures for student engagement include other behavioural tracking metrics such as virtual learning environment login and usage (Chaka & Nkhobo, 2019), surveys focused on student engagement questions such as the National Survey of Student Engagement (NSSE) in Australia (Kahu, 2013), and progress and retention data (Coates, 2005). However, surveys and progression data both have quite a long lag time (Kahu, 2013) so, whilst useful for measuring institutional student engagement levels, are not conducive to implementing timely interventions to support individual students. Furthermore, focusing on behavioural data has been shown to be a strong predictor of student engagement, especially when compared to relying on alternatives such as demographic variables (Seidel & Kutieleh, 2017).

The pandemic has also been disruptive in how academics can monitor engagement at a more anecdotal and personal level, as the nature of online teaching has meant “poorer immediate feedback due to a lack of visual contact and social presence” (Iglesias-Pradas et al., 2021; Oliveira et al., 2021). Furthermore, this online method of interaction may particularly disadvantage students who don’t show proactive tendencies of interaction or have lower confidence levels (Coman et al., 2020; Zheng et al., 2020).

Peer-to-peer approaches

Within the academic realm, students have often been utilised to support the learning of their peers. There are multiple examples of students being grouped together into clusters or teams as part of curriculum design to aid in learning (Stigmar, 2016; Raisanen et al., 2020; Ala et al., 2021), including in online settings (Watts et al., 2015; Youde, 2020; Krause & Moore, 2021). Many universities also have schemes that train up a specific set of students to support their peers in learning (Stigmar, 2016). Peer-to-peer support is so common amongst undergraduate and postgraduate taught teaching approaches that it is something specifically noted by Devenish et al. (2009) as missing from the postgraduate research student experience.

Beyond the classroom, peer-to-peer schemes have taken the form of mentoring and goal setting (Terrion & Leonard, 2007; Campbell, 2015;) and, more recently, to support student wellbeing through schemes such as supportive networks or mental health first aiders (Fenton & Lambert, 2019; Mantzios, 2020). Beyond the setting, the efficacy of peer mentoring schemes depends on the thought given to how to match mentors and mentees (Terrion & Leonard, 2007) and also how mentors will be trained and remunerated for their efforts (Terrion & Leonard, 2010). A meta-analysis by Stigmar (2016) found no statistically significant difference in grades or attainment when students have access to peer-to-peer learning support, but that it helps in the development of general skills. This was supported by further research from McIntosh around the role that peer-assisted study sessions can have in the nurturing of students' proficiencies and attributes (2017).

Student communications

Whilst there is much academic literature around the topic of digital engagement with students within the classroom (Jones & Wilkie, 2014; Childers & Levenshus, 2016; Dobbins & Denton, 2017) there is less documented work around how institutions communicate with students on wider topics of support and engagement. When students are consulted by their institutions about their preferred communication method, email is frequently the most popular channel that students request. However, when students are asked to think more abstractly about their ideal method of communication, channels such as mobile apps, social media, and direct messaging platforms are far more popular (Tribal, 2016; Cortez, 2017). There is an increasing body of research showing the importance of developing belonging and connectedness amongst students to ensure success (Thomas, 2012), and communications can play an important role in this through the setting of institutional culture and promotion of extra-curricular opportunities (Stoller, 2015). Increased expectations amongst students around both student support and use of digital technologies has led to many universities taking a more strategic approach to student communications (Temple et al., 2014).

Whilst some universities and students' unions do utilise telephone calls as a method for engaging with students, there is little research into its effectiveness. Phone calls likely do not appear as a preferred channel of communication when asked in surveys, as it is more invasive than other methods, such as email. There is a precedent for phone calls to be used to contact students who are not engaging with the National Student Survey – a nationwide survey of students conducted by Ipsos Mori in the UK every year since 2005.

Middlesex University as a case study

Middlesex University is a post-1992, widening participation institution based in London, UK. We introduced our principles of student engagement (McIntosh & Mahony, 2020) at the start of the 2020-2021 academic year with a move away from monitoring attendance. This was primarily due to the need for a swift pivot to a blended

model of online/on campus delivery of learning and teaching. Our updated student engagement measurement moved to focus on access to course-related (asynchronous) learning resources and support materials, held within the Virtual Learning Environment. We focused on two primary indicators of student engagement:

- Logins to virtual learning environment. As a minimum, it is expected that students will log in at least 3 times per week (12 times per month) in order to fulfil the requirements of their course, unless separate arrangements for accessing learning content is in place, e.g. via a Zoom channel.
- Logins to student portal. As a minimum, it is expected that students will log in at least once per week in order to make sure that they keep up to speed with University communications, updates and access information which is of relevance to them during their studies.

In addition to introducing our principles of student engagement, we also launched a new supportive intervention at the beginning of the 2020-2021 academic year to provide peer-to-peer support for students. Through our Student Callers scheme, we recruited and trained a dozen students and recent graduates to proactively reach out to students that we could see were experiencing some early challenges. Students were called when their primary indicators of student engagement dropped below our agreed thresholds. We purposefully decided to introduce this as a peer-to-peer intervention due to an already-existing strong culture within the university of working with students and based on previous studies suggesting students are often more willing to share their challenges with peers (Longfellow et al., 2008).

Our callers, also referred to as ambassadors, were trained on a number of topics, including learning more about the support on offer from the University, basic training in how to reassure students who seem overwhelmed and, most importantly, safeguarding training in how to identify when students might need to be signposted to crisis or emergency support. In addition to this, ethical consideration was given to how the callers would have access to student data. All callers, as part of their contract for their role, agreed to a set of data protection conditions. Furthermore, we limited data that the callers could see about students to basic contact and course information, and access to this data was removed once the callers had completed their roles for the academic year.

The callers are provided with a script, which helps them to cover all the most important topics to student success, but they are encouraged to ask questions so that the call can focus on what would be most helpful to the individual student they are calling. Our ambassadors follow up on all calls with an email to the student that summarises useful links and next steps. Details of each call are logged and callers can refer students onto a relevant support team.

Research Methodology

We decided to use a mixed-methods approach to quantify any possible impact that the calls have had with students. Our research is therefore split into two parts: a survey

that was sent to all students who were contacted by the callers throughout the academic year and an analysis of students' engagement and continuation data and how this changed in the months after their interaction with a caller. We took this approach so that we could see whether and how the calls had any significant impact on their engagement levels, but also to measure if the students perceived any impact on their own confidence as a student.

We focused our analysis on student engagement data because this was how we prioritised students to be targeted for our caller intervention. The limitation of this approach though would be that any subsequent changes in engagement levels will only be able to be correlatively linked to the phone call interventions. This is why we also included the survey aspect of our analysis, as this would help provide an indication from the students themselves as to how helpful the calls were. We did also include a brief analysis of progression and awarding data.

Ethical approval for this research project was sought and given by Middlesex University.

Survey design

The survey was sent out to all students who were contacted by the callers throughout the academic year up to May 2021 (n=4230). At the start of the survey, students were asked to confirm whether they had received a call or just an email. For all students who the callers attempted to reach but could not get through to, they would be sent an email with resources covering similar topics to what would be talked through on the call. Overall, the survey was designed to help provide an insight into how the calls had helped with students' confidence levels towards different aspects of their studies. Most questions provided students with a 5-point Likert scale, as this is quite common amongst other HE surveys (e.g. the National Student Survey) and so allows for better understanding and chance to draw comparisons. The survey also asks students about any follow-up actions they took and how satisfied they were with the call.

Engagement and progression data analysis methodology

Five 'cohorts' of low engaging students were identified at different points throughout the academic year: in November, December, February, March and April. For each of these five cohorts, we have separated out students into three groups:

- Those who the callers were able to successfully get through to on the phones
- Those who couldn't be successfully called, so only received an email afterwards
- Those who the callers did not attempt to call – who we treated as a baseline / control group.

We separately looked at students from any of the five cohorts who received multiple interventions (i.e. they were successfully reached by a caller in more than one month

through the year) and compared their month-by-month average online engagement against a baseline set of students who also appeared within the low engagement data in more than one of the cohorts.

We analysed the engagement and progression data for single-intervention students in four ways.

1. Comparing average changes in engagement data, when controlling for prior engagement levels

As the callers also prioritised the order of their calls based on students who had the lowest levels of engagement within the low engagement group, we compared each of the intervention types when controlling for average engagement in the academic year prior to the intervention. This was calculated by taking the data in a particular month and then subtracting from it the averaged engagements in all months prior to the intervention. To be able to look at each intervention type independently, we also then normalised this change in engagement for intervention type compared to the average change in engagement across the whole cohort. This helps to normalise for the fact that some months had lower than average engagement than others (as natural fluctuations in the academic year).

2. Comparing average changes in engagement data across cohorts for set intervals after intervention

To see how any impact from interventions lingered over time, we compared how engagement levels changed a set number of months on from the intervention across all intervention types. Similarly for method 1, we compared change in engagement data for each intervention type with the average change in engagement across all intervention types in that month. This again helps to normalise for the fact that some months had lower than average engagement than others (as natural fluctuations in the academic year).

3. Analysis of data for students with multiple interventions

Our analysis here looked at how engagement levels in each month varied with their October engagement (before any interventions took place) and then compared this to a control group of students who appeared in the 'no intervention' cohorts multiple times across the academic year.

4. Analysis of student progression and awarding results

To see if the changes in engagement levels had any impact on subsequent student progression, we looked at all students within the research and analysed their progression decisions at the end of the academic year. In particular, we focused on the proportion of students within each cohort and intervention type who either progressed or received a degree award. We also looked at the proportion of students who progressed without any credit deficits into the next academic year.

Findings

Our findings are split into two sections below:

- Analysis of our student survey
- Analysis of our engagement and progression data

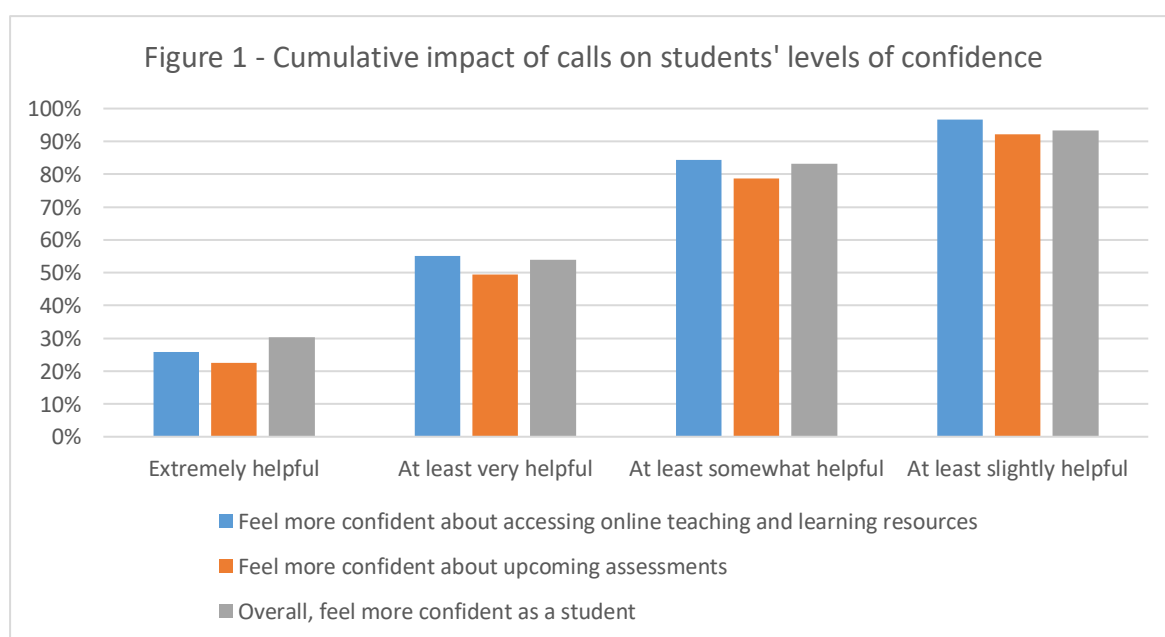
Analysis of the survey

Overall, exactly 100 students responded to the survey with 73 saying that they had received a call and 27 having received a follow-up email but missing the call itself. Unfortunately, these numbers therefore represent a small proportion of all students who were contacted by the student calls (<3% of all students reached). Due to the low numbers of respondents, especially with the 'follow-up email' group, results have been combined for both of these groups to give a picture of how students who received any intervention felt about it.

Student confidence

Across the three types of student confidence that we asked about in the survey, the calls had the biggest impact on helping students to feel more confident about accessing online teaching and learning resources. 55% of students said that their interaction with the callers was either extremely helpful or very helpful towards feeling more confident about this topic (compared to 49% for helping students to feel more confident about upcoming assessments).

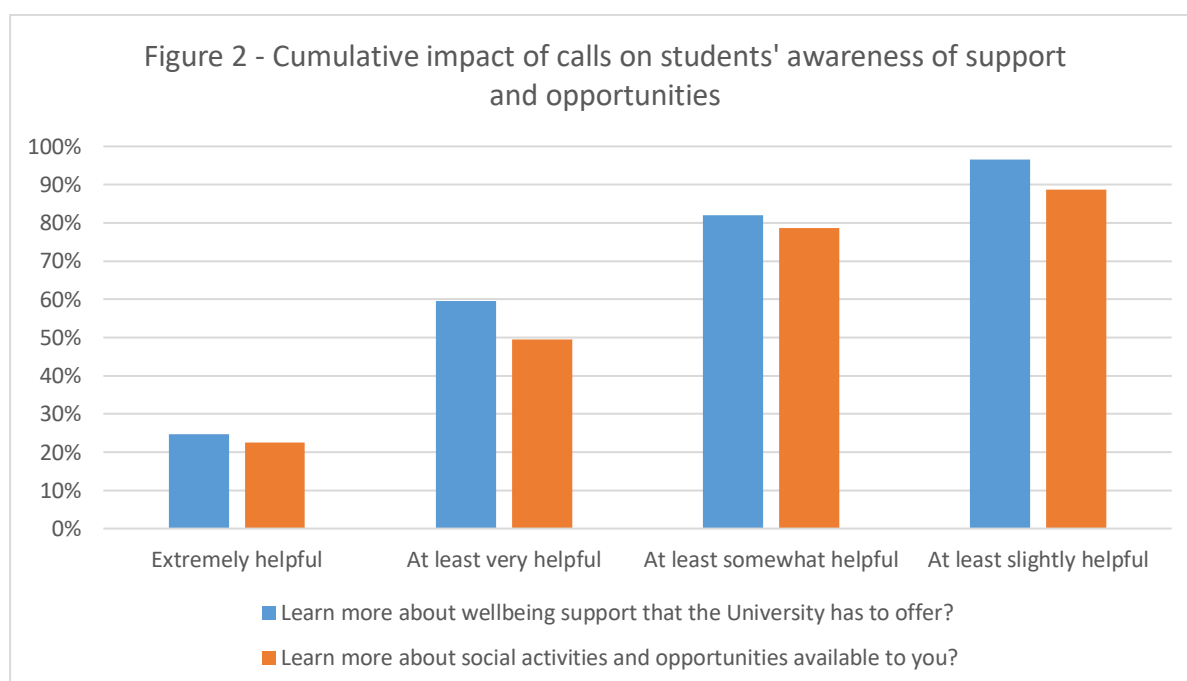
A vast majority of students agreed that the calls were at least somewhat helpful for increasing confidence on all of these topics (97% for online resources, 92% for upcoming assessments and 93% for overall confidence).



Increasing awareness of support

60% of survey participants found the calls either extremely helpful or very helpful in helping them to learn more about wellbeing support that the University has to offer. This was significantly higher than the 49% who agreed that the calls were either extremely helpful or very helpful for them to learn more about social activities and opportunities.

A vast majority of students agreed that the calls were at least slightly helpful for learning about these topics (97% for support and 89% for social activities).



Helping students to take proactive next steps

89% of all survey participants confirmed that because of their interaction with a student caller they took at least one action or next step to help themselves in their studies. A breakdown of what types of actions students took can be found in figure 3. Students had the opportunity to provide open text comments with anything that they did beyond these multiple-choice options. Other proactive steps reported by students included using other campus facilities, such as the gym, or investing more time in getting to know lecturers or fellow students on their programme of study.

Figure 3 - Categories of next steps and actions that students took following their call	
Accessed additional learning support resources	30%
Asked for additional IT support or resources	16%
Accessed a University wellbeing service / resource	23%
Signed up / took part in a University or students' union social activity	11%
Anything else	19%

Overall thoughts from students on their call

70% of survey participants were either very satisfied or quite satisfied with their experience of being called and 3% of students were either quite dissatisfied or very dissatisfied. Furthermore, 87% of students either strongly agreed or agreed that the caller's scheme should continue into the future.

In qualitative feedback, students recognised the hard times that the pandemic had created: "I appreciate the proactive approach taken by the University to support students during a pandemic. It was very helpful during a challenging period for me." Several comments were left about how the call allowed them to solve issues faster than they would have been otherwise able to. Some students also noted that even when the call didn't lead to any immediate improvements, it still helped them feel better: "I think the call scheme should keep going as it can help a lot. I didn't benefit a lot, but it was a good chat and uplifted my mood to keep going with Middlesex. It felt supportive." Finally, one student commented on how even though they didn't feel like they needed the call, they liked knowing that it was there for other students who may need it more: "I don't feel I need this service but I understand some students will so it is useful for them." This suggests that the awareness of the supportive intervention make those contacted feel a sense of belonging and connectedness with other students.

When asked about possible improvements, one student commented on how the call still assumed a certain level of digital literacy from them, "I did not engage with this call or pay close attention to the email. There is an assumption that everyone is completely 'E-literate'. This does not account for my generation and background." Another student commented on how the call felt too free flowing and could have benefited from more structure: "If the call would have asked the student what they needed instead of being a "check-up" call we would have benefitted more." One commented on a lack of personalisation, "The caller did not know anything about me or my course. It would be good if the caller actually knew things about me (for example, I was on placement at the time of my call)."

Analysis of engagement and progression data

1. Basic comparison of engagement data, month-by-month

For each of the five cohorts of students who were called by the ambassadors, the figures below show the average engagement levels split by the different types of interventions. Average engagement levels are a composite of the number of times that students used our primary indicators of engagement in that month (i.e. either logging into our student portal or virtual learning environment). Cohorts are split into our three intervention types:

- Those who were called by the student ambassadors and had a conversation over the phone. Callers then also followed-up with students in this intervention

category by sending them an email afterwards with useful links, resources and answers based on what they talked about in their call

- Those who the ambassadors attempted to call, but couldn't reach. For all of these students, our callers followed-up with an email letting them know that they tried to reach them and providing generic useful links and resources
- Those who the ambassadors did not try to reach – who act as a control group.

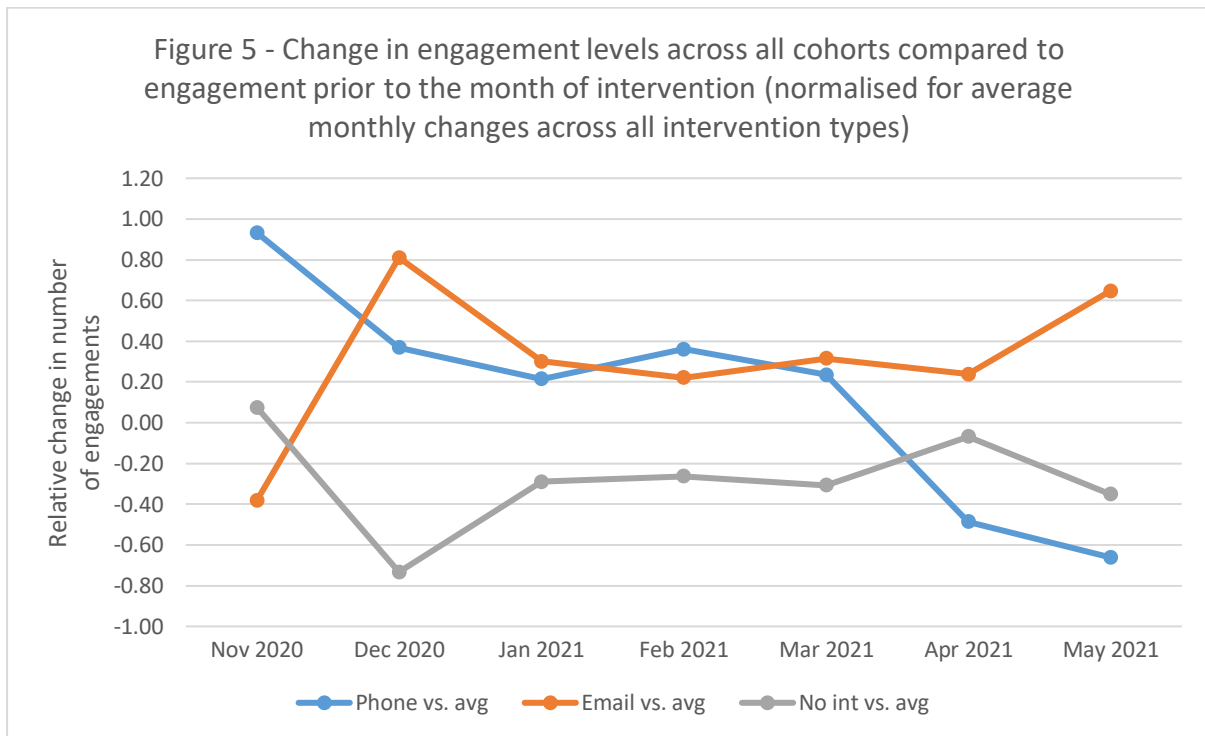
To better evaluate *changes* in engagement levels for each cohort, two other variables were taken into account and controlled for:

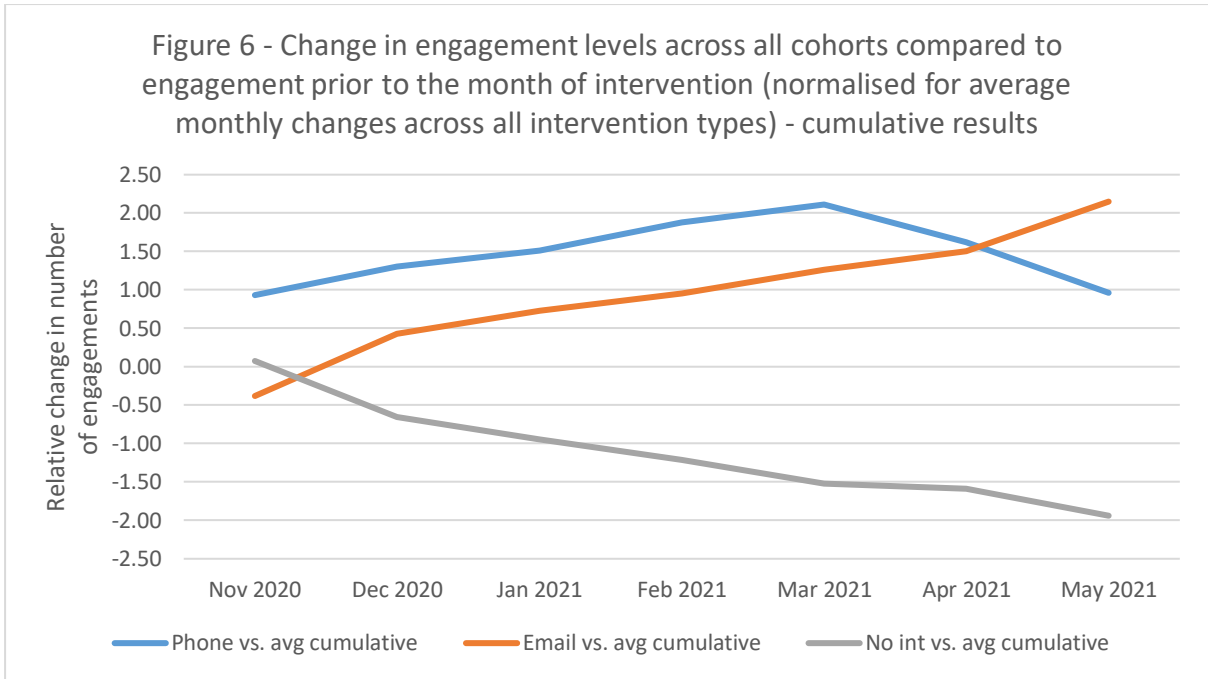
1. The average engagement levels of that cohort in the month(s) prior to the intervention (this helps to reduce the impact that students within one group may have had a higher than average level of engagement prior to the intervention)
2. The average change in engagement levels from each month to month across all intervention types in that cohort (this helps to focus the data on relative changes in engagement levels, acknowledging expected changes in engagement across all cohorts across the academic year).

Figure 4 - Average change in engagement levels compared to the average engagement level prior to the month(s) of intervention, split by intervention type and normalised for average monthly changes across whole cohort

Cohort	Intervention Month	Average change in engagement levels compared to engagement prior to the month of intervention (normalised for average monthly changes across whole cohort)			Variance	
		Students successfully called (N = 195)	Students not reached / only emailed (N = 368)	No intervention (N = 87)	Phoned vs. emailed	Phoned vs. none
Cohort A - Nov	Nov 2020	3.40	-2.39	2.49	5.79	0.91
	Dec 2020	0.94	0.25	-3.13	0.69	4.07
	Jan 2021	1.44	-0.10	-2.77	1.54	4.21
	Feb 2021	1.36	0.28	-4.20	1.08	5.56
	Mar 2021	1.67	-0.76	-0.51	2.43	2.18
	Apr 2021	-0.94	0.98	-2.05	-1.92	1.11
	May 2021	-0.69	0.27	0.44	-0.96	-1.13
Cohort B - Dec	Dec 2020	0.68	4.44	-1.91	-3.76	2.59
	Jan 2021	1.03	2.65	-1.29	-1.63	2.32
	Feb 2021	1.63	2.03	-1.19	-0.39	2.83
	Mar 2021	0.08	3.49	-1.39	-3.40	1.47
	Apr 2021	-2.35	2.28	-0.33	-4.63	-2.02
	May 2021	-1.61	3.51	-1.00	-5.12	-0.61
Cohort C - Feb	Feb 2021	-5.75	-0.57	6.51	-5.18	-12.26
	Mar 2021	-3.55	-0.21	3.75	-3.34	-7.29
	Apr 2021	-4.86	-0.14	4.87	-4.72	-9.73
	May 2021	-2.90	-2.26	6.84	-0.64	-9.74
Cohort D - Mar	Mar 2021	0.66	0.61	-2.23	0.05	2.89
	Apr 2021	1.51	0.74	-3.52	0.77	5.03
	May 2021	0.55	0.44	-1.70	0.11	2.25
Cohort E - Apr	Apr 2021	1.80	1.33	-2.38	0.47	4.18
	May 2021	-1.43	1.03	-0.47	-2.46	-0.95

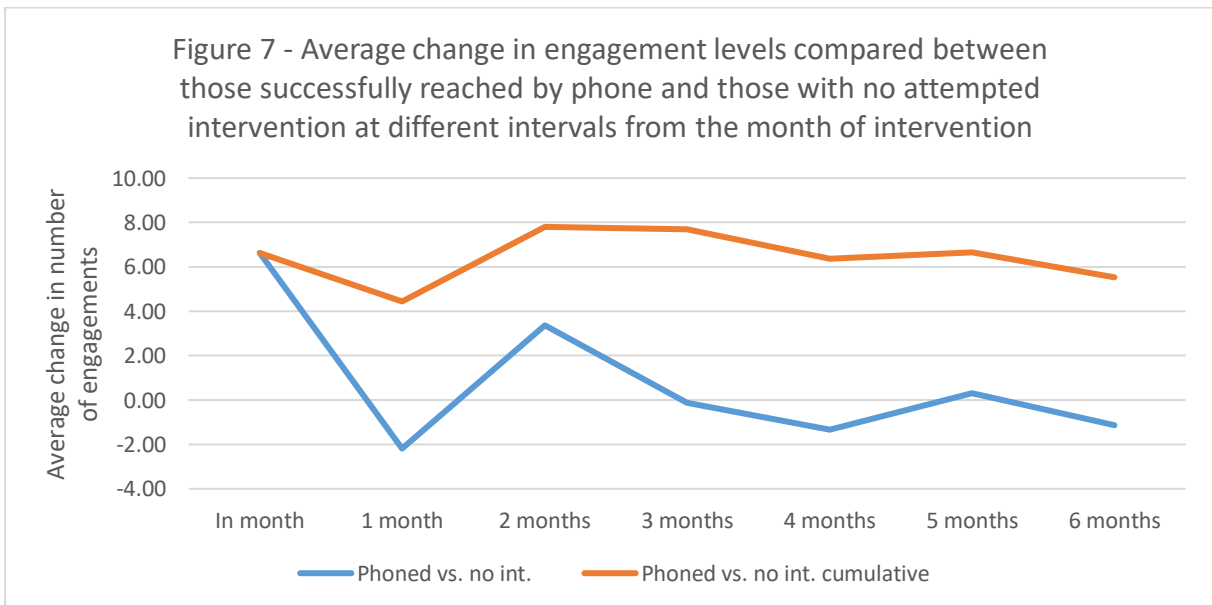
Figure 5 shows the results of the five cohorts in the above tables plotted as a line graph. Here, it shows how across all the cohorts, students who had a phone call intervention had a positive change in engagement compared to average changes in engagement for the first five of the seven months of data analysed. Students who received an email intervention saw relative increases in their engagement levels after the first month of intervention. Students who had no intervention saw relatively negative changes to their engagement levels in almost all months of the analysis (which would be expected given the positive results of those who were called and emailed). This analysis is further depicted in Figure 6 when showing the cumulative effect across the academic year.





3. Comparing average changes in engagement data across cohorts for set intervals after intervention

To consider how long-lasting any changes in engagement levels were following on from a phone call intervention, Figure 7 shows the absolute and cumulative variance in engagement levels between those who were successfully called and those with no attempted intervention. There was a positive change in engagement levels in the month of the intervention itself, with limited change in subsequent months. This resulted in a cumulative positive change for those who were called compared to those with no intervention.



4. Analysis of data for students with multiple interventions

To analyse the group of students who appeared in our datasets multiple times through the year, we plotted those who received multiple phone calls against those who received no interventions, even though they appeared within the low engagement datasets multiple times.

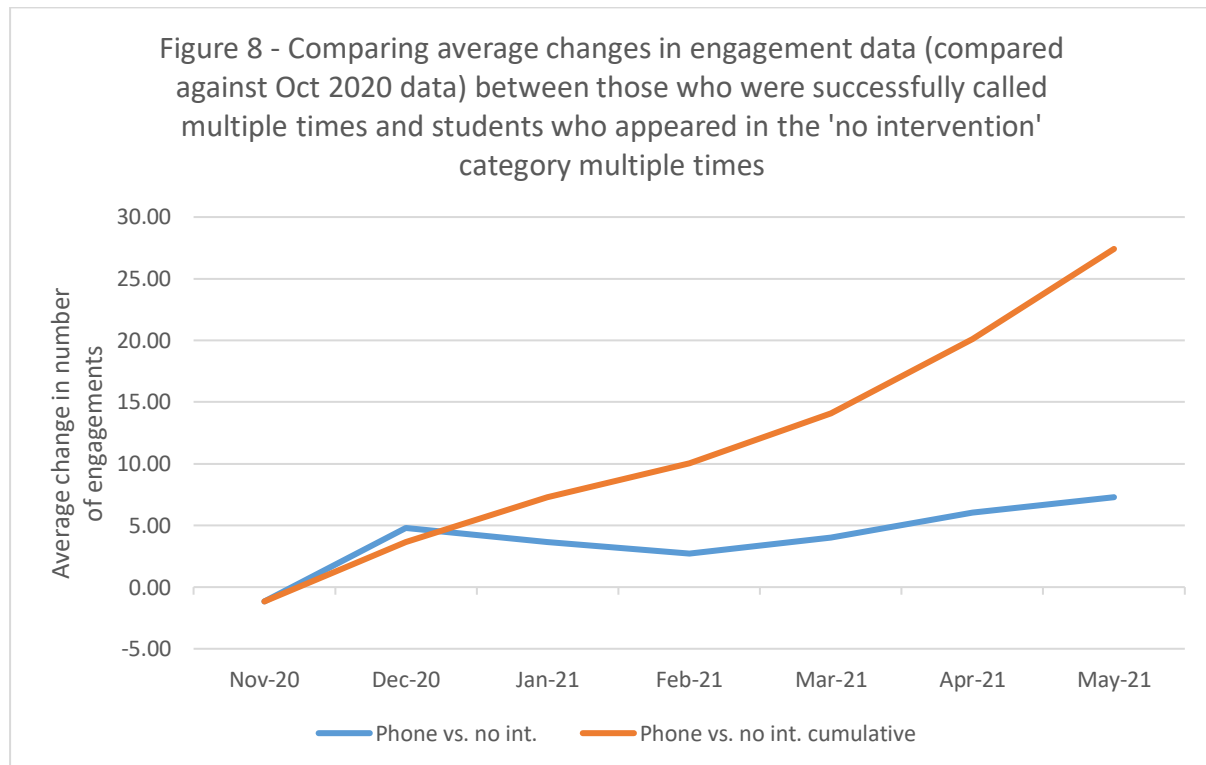


Figure 8 shows that those who received multiple phone calls had on average more than 27 additional primary engagements (with either our virtual learning environment or student portal) compared to students who received no such interventions.

5. Analysis of student progression and awarding results

Finally, to analyse whether the calling intervention had any impact on progression and degree awarding, we categorised the progression decisions for all students within our analysis for the end of the 2021/22 academic year (including after resit decisions had been taken into account). This allowed us to look specifically at any difference between students who successfully received a phone call and those who received no intervention.

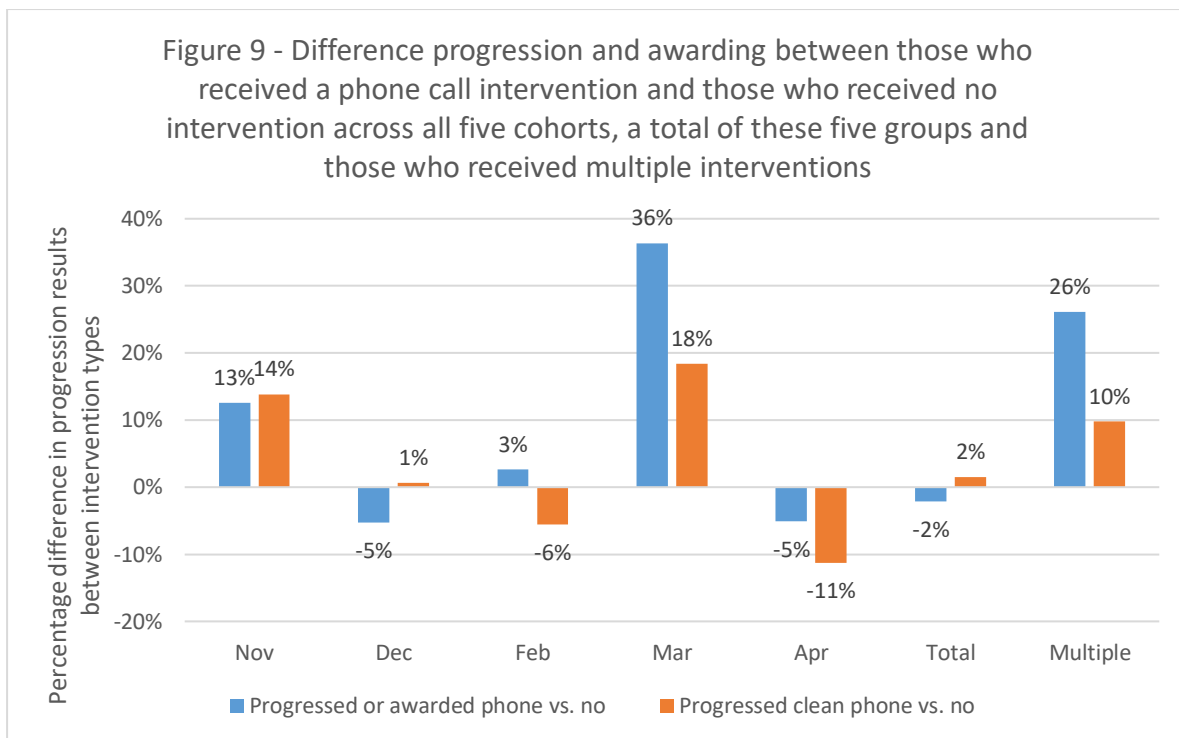


Figure 9 shows no consistent evidence of a positive difference in progression results between those who received one phone call and those who had no intervention. This is the case when looking at the difference in overall progression and awarding results (shown in blue in Figure 21) and also when looking specifically at the proportion of students who progressed without any credit deficits into the next academic year (shown in orange). However, for students who were contacted multiple times vs. those who appeared in the low-engagement dataset multiple times, there was a statistically significant positive difference for both types of progression results; based on a p-value of <0.00001 for there being a statistically positive difference for those who received a call being more likely to progress and a p-value of 0.0108 for there being more likely to progress without any credit deficits (clean progression).

Discussion

Many of the calls started with a focus on helping students to navigate the online systems that are needed to access online teaching and learning resources. This was prioritised due to evidence that digital literacy skills and IT competence are important predictors of online student engagement (Heidari et al., 2021). It therefore could be expected that this topic, which received more focus, led to a higher improvement in student confidence levels than other topics. Given that there was a slightly higher percentage of students who felt that the calls were not helpful in increasing their confidence about assessments, this could indicate that messaging about assessments is more relevant to students at only certain times in the academic year, suggesting the need for a script that adapts to the student journey. This aligns with student diaries research that has shown how students' priorities change over time (Morrison, 2006). Furthermore, the slightly lower scores that students gave within the survey results with

regards to how the calls helped them to learn more about social opportunities, could be explained by flexibility in how the callers utilised the script. Callers did not always include this part within their calls, especially if they had already talked with the student about a lot of other issues within the call. Ultimately, the purpose of the call was to help identify and remove any barriers that students were facing to engagement, which is why the scripts needed to change according to the individual students' needs. It is the complexity of students' own lives that is the most cited cause of disengagement (Baron & Corbin, 2012).

89% of those who completed the survey confirmed that because of their interaction with a student caller they took at least one action or next step to help themselves in their studies. Whilst there aren't any other previous studies like this to compare against, the fact that almost nine in ten students reported taking some action following the call is very positive. Furthermore, the comments from students about their experience of the call suggest that it helped them to feel a connectedness to other students at the University, increasing their sense of belonging (Thomas, 2012). It is unsurprising that improvements in confidence levels were closely linked with students taking positive actions, as belonging, self-efficacy and confidence are often discussed as precursors to engagement within existing literature (Connell & Wellborn, 1991; Zumbrunn et al., 2014). This close connection between student support and subsequent engagement meant that these two aims of the work did not come into tension.

It is also interesting that the proportion of students who took some positive action is higher than the 70% of survey respondents who reported being either very or quite satisfied with the call. This could be related to the relatively invasive nature of receiving a phone call compared to other communications channels (Tribal, 2016; Cortez, 2017). As phone calls are so rarely used by universities, it could also be that the lack of expectation from students about receiving calls meant that they weren't as 'happy' about receiving one, but still found it useful in terms of leading to positive actions. This raises ethical questions about whether this approach to supporting student engagement is appropriate, especially when students are being called multiple times. Future practice and research could investigate whether there is any way to better set expectations that students may be called to provide support or to allow students to opt-out of such practices.

Once engagement levels prior to the interventions are accounted for, those who received a phone call saw more positive changes in engagement levels compared to the emailed students and no intervention students when targeted at the beginning of the academic year. However, those who had email interventions saw a higher relative increase in engagement levels compared to other intervention types as the academic year went on. This could be also due to those students starting with a lower than average engagement.

Beyond the month of intervention itself, positive impacts on student engagement and progression levels were only evident for students who received multiple interventions. This could be potentially due to the opportunity for the messages within the script to be reinforced to students. However, as we only have one cohort of students who

received multiple interventions, this needs further investigation and testing with a larger sample of students.

In summary, this indicates that to have the biggest possible impact on student engagement and progression, phone call interventions should start early in the academic year and be followed-up with further calls in subsequent months to provide additional opportunities to support students. Finally, students should be made aware of the inclusion of phone calls as part of proactive supportive interventions from the institution, to reduce the chance that students see them as unexpected or intrusive.

Conclusions and further research

In this paper, we have investigated the potential impact of supportive, peer-to-peer phone call interventions within the context of improving student engagement levels. Whilst attributing a causal link between the interventions and following increases in engagement levels is challenging (Baron & Corbin, 2012), we have shown that there are correlations and that these are supported by positive reported results from students within a survey. This indicates that phone call interventions can lead to both improvements in student engagement levels and confidence on a number of topics related to their studies, especially within the context of blended learning. This is especially important given the added pressures on students due to the COVID-19 pandemic (Aristovnik et al., 2020; Zhai & Du, 2020; Deng et al., 2020; ONS, 2021; Oliveira et al., 2021) and the disruption to universities' previous methods of supporting the most vulnerable students (Crawford et al., 2020). It would be interesting for further research to investigate whether there are similar benefits beyond the context of the pandemic, as teaching may return to a more predominantly in-person delivery method. Furthermore, as this research only considers the impact of phone call interventions individually, further analysis could consider how such interventions can benefit students once embedded into ongoing support. This could include considering how phone call interventions could be incorporated within wider institutional approaches to student engagement and personal tutoring (Kahu, 2013; McIntosh, 2017).

As this was a pilot project, there are a number of areas where decisions were made to try and maximise potential beneficial impacts on students, which have resulted in challenges for this evaluation. Firstly, within each of our five cohorts of students, when looking at their prior engagement levels for each intervention group, there are sizeable differences. Controlling for these varying engagement levels prior to intervention within this analysis meant assuming that a students' engagement levels at the start of the year is predictive or correlated to their engagement levels later in the year assuming no other changes. Whilst this seems intuitive, this hasn't been attempted to be proven within this analysis.

Our analysis of the impact of interventions on students who we reached multiple times was helpful to compare to the single intervention cohorts. This allowed us to show the positive impacts of multiple interventions throughout the academic year and how this can lead to continued improvements in engagement levels and progression. However, the analysis for this cohort was overly simplistic. we did not differentiate how many

times students were contacted nor how many times they appeared in 'low engager' datasets. Further research or analysis into this would be helpful, especially given the promising results around improvements in progression and awarding data for those who received multiple interventions.

Through this research project, our analysis has focused upon investigating what impact of phone call interventions for student engagement. Whilst the interventions have been delivered by peers, we did not focus our analysis on whether the inclusion of peers had an effect on the intervention. Therefore, there is a potential gap for future research to cover; investigating whether peer-to-peer phone call interventions result in different results compared to staff phone call interventions.

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