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Editorial note

The papers included in this 10th issue of *Excavations, Surveys and Heritage Management in Victoria* were presented at the annual Victorian Archaeology Colloquium held on-line via zoom webinar between 1 and 4 February 2021. This allowed even more than our usual number of people to register as participants, including some from interstate and overseas: their commitment and involvement testifies to the importance of this fixture within the local archaeological calendar. Many were fortunate to be able to meet in person, under appropriate protocols, for an outdoor boxed lunch at La Trobe University on 5 February.

We have taken the opportunity of celebrating our 10th anniversay by looking back over the last decade, both through a more formal analysis and through a less formal panel discussion of the history of the Colloquium and this publication. Another panel discussion transcript allows space for some Traditional Owners to reflect on particular examples that they feel have been of value in the complex process of cultural revival through a form of experimental (perhaps better experiential) archaeology.

The other papers published here deal with a variety of topics and approaches that span Victoria's Aboriginal and European past. While some papers report on the results of specific research projects others focus on aspects of method, approach, education and the social context of our work and approach. These call demonstrate how our Colloquium continues to be an important opportunity for consultants, academics, managers and Aboriginal community groups to share their common interests in the archaeology and heritage of Victoria.

In addition to the more developed papers, we have continued our practice of publishing the abstracts of other papers presented at the Colloquium, illustrated by a selection of the slides taken from the PowerPoint presentations prepared by participants. These demonstrate the range of work being carried out in Victoria, and we hope that many of these will also form the basis of more complete studies in the future. Previous volumes of *Excavations, Surveys and Heritage Management in Victoria* are freely available through La Trobe University's institutional repository, Research Online <www.arrow.latrobe.edu.au:8080/vital/access/manager/Repository/latrobe:41999> and through Open at La Trobe (OPAL) <https://doi.org/10.26181/601a321a11c0d>. We hope that this will encourage the dissemination of ideas and information in the broader community, both within Australia and internationally. We have also now set up a website for the Colloquium <https://victorianarchaeologycolloquium.com>

For the first time we have included an obituary to mark the passing of a member of our community: David Rhodes of Heritage Insight, a long-time supporter of our activities. Here we should also mention that we have also lost Ron Vanderwal who made importatnt contributions to archaeology and the curation of heritage, although he was unable to participate in the Colloquia.

Once again we have been fortunate in the support given to the Colloquium by many sponsors: ACHM, Ochre Imprints, Heritage Insight, Biosis, ArchLink, Christine Williamson Heritage Consultants and Extent, while La Trobe University continued to provide facilities and a home for our activites, even if this year it was a virtual one. We would like to thank them, and all others involved for their generous contributions towards hosting both the event and this publication. Yafit Dahary of 12 Ovens was, as always, responsible for the catering, despite the limitations on her usual spread.

All papers were refereed by the editorial team. This year Deb Kelly managed this process and the sub-editing of this volume. Layout was again undertaken by David Frankel. Preparation of this volume was, like so much else in the last year, undertaken during the severe restrictions imposed because of the COVID-19 pandemic. We hope that 2022 will be a better year for all.

The presenters, editors and authors acknowledge the Traditional Owners of the lands and heritage discussed at the Colloquium and in this volume, and pay their respects to their Elders, past, present and emerging.

Learning archaeology online: student perspectives on the most effective activities and resources delivered remotely

Ian Walkeden[1], Maddison Crombie[1], Marcel Teschendorff[2,3], Melita Rajkumar[3], Elisa Scorsini[4], Lucinda O'Riley[1], Timothy McLean[1], Iona Claringbold[4] and Rebekah Kurpiel[1*]

Abstract

Archaeology is in many ways a hands–on and materials–based discipline, which presents specific challenges for online teaching and learning. Online and 'blended' teaching modes have been available to archaeology students for some time but, in March 2020, Australian universities were required to switch all content to online delivery to reduce COVID–19 transmission in our communities. Enormous efforts were made by university teaching staff to swiftly accommodate these changes. This paper presents student perspectives on learning archaeology online in 2020 and beyond. It outlines obstacles associated with learning archaeology online, shares student feedback on the pros and cons of undertaking different types of online activities and considers the role that online learning may be able to play in the longer–term. The differences between in–person and online learning are pedagogical as well as practical. We hope that sharing student experiences will help elucidate what makes certain activities and resources effective for learning archaeology online, and that this information can be used to inform future online resource development.

Introduction

The boundaries of what constitutes archaeological practice have continued to expand since the formation of archaeology as an independent discipline. Once considered an auxiliary discipline of history (Kristiansen 1996), archaeology as an independent discipline experiences a close relationship with the natural, physical, and social sciences. Today, archaeology would be unrecognisable without the inclusion of anthropology, biology, chemistry, geology, geophysics, oceanography,

and zoology, to name a few. The multidisciplinary nature of contemporary archaeological practice, which typically requires high–level technical expertise, is reflected in the curricula of archaeological university courses in Australia and around the world.

The increasingly broad range of skills and knowledge required by professional archaeologists probably contributes to the perceived gap in skills and knowledge of Australian archaeological graduates identified in recent years (e.g., Colley 2004; Gibbs et al. 2005; Mate and Ulm 2016; Ulm et al. 2005). Government and private sector employers have highlighted the importance of practical, field–based training in university archaeology programs (Mate and Ulm 2016:179). To facilitate the development of practical skills, field schools have become a core component of Australian archaeology degrees, which was not always the case (Colley 2012). Some universities also offer work–integrated learning programs in an effort to ensure graduates are work–ready (Colley 2003; Staniforth 2009). The importance of practical skills has led to ongoing discourse surrounding the pedagogy of archaeological field schools (Dufton et al. 2019; Lydon 2002; May et al. 2017; Mytum 2012) and to novel strategies for overcoming the challenges of teaching practical skills on 'real' sites (Colley and Gibbs 2013; Cosgrove et al. 2013; Getchell et al. 2006; Hall et al. 2005).

The COVID–19 global pandemic saw the closure of Australian university campuses and the cancellation or postponement of practical, field–based archaeological training. As a result, archaeological classes were rapidly shifted to an online–only format. A range of synchronous and asynchronous activities were delivered, whereby some activities were scheduled at the same time for the whole class (synchronous), and some had flexible access times (asynchronous). It should be noted that Australian tertiary archaeology programs have, for many years, included online lectures and/or other materials in a 'blended' learning context. The COVID–19 global pandemic, however, necessitated the shutdown of every Australian university campus, for various durations. As such, all archaeology classes in Australia were delivered electronically for a period, with no face–to–face learning whatsoever, which represented a drastic departure from

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the usual circumstances.

Previous studies have found that electronic learning modes have both advantages and disadvantages (e.g., Azeiteiro et al. 2015; Goold et al. 2008; Mukhtar et al. 2020; Salamat et al. 2018; Smith et al. 2011). Online learning has been described as a genuine alternative to face–to–face courses in a 'flexible, collaborative and interactive way' (Azeiteiro et al. 2015:318), despite concerns about poor communication and participation in group–work scenarios (e.g., Salamat et al. 2018; Smith et al. 2011:127).

Past research into online learning has not focused specifically on the discipline of archaeology, which requires the development of a range of practical skills, particularly for students who intend to gain employment as archaeologists. This study aims to build on previous research into online learning by exploring the experiences of archaeology students who completed online classes during 2020. Understanding student perspectives will provide information about how archaeology students were impacted by the 2020 campus closures and inform strategies for improving student experiences and learning outcomes. This study, which has been undertaken and written up by a group of archaeology students under staff supervision, also provides a basis for developing student–led recommendations about the future of online learning in the discipline of archaeology.

Methods

A series of survey questions were designed to collect information about each respondent and specific aspects of their online learning experience (**Table 1**). The questions were presented in a variety of formats, including 'yes/no' or other pre–set options, numerical scales, and free text (**Table 1**). The focus was on understanding the strengths and weaknesses associated with online delivery modes from students' perspectives, and whether this feedback varied for students in different year levels. In addition to general feedback, respondents were required to provide information about their experiences completing both practical tasks and group work online. Respondents were also required to rate their learning experience before and after the switch to the online environment, and to reflect on if/how they would like to see online learning incorporated into their degree beyond the mandated online learning period.

Ethics approval was obtained from La Trobe University (Ethics Reference Number HEC20395), the University of Western Australia (File Reference 2020/ET000039) and Flinders University (Project ID 2886). The anonymous and voluntary student questionnaire was circulated directly to students at these universities via email and/or Learning Management Systems. A link to the survey was also circulated via the social media pages of the student archaeology societies associated with each university. The circulation via social media resulted in the survey reaching students from universities that did not participate in the preparation of the survey, which allowed a broader range of student experiences to be captured. The survey remained open for completion via the REDcap platform between 21 October to 30 November 2020. Responses were exported in CSV format. Microsoft Excel was used to prepare summary tables and graphs for data interpretation. All quantitative data were investigated via frequency graphs and qualitative data (free text responses) were explored manually.

Results

Many archaeology students in Australia were unprepared for the shift to online–only teaching methods brought on by the COVID–19 pandemic. After an initial campus closure period, universities in some Australian states were able to return to face–to–face learning, while others persisted with online–only methods for the entirety of the 2020 academic year due to ongoing COVID–19 restrictions. These results provide insight into the experience of undergraduate and postgraduate archaeology coursework students in Australia during 'lockdown.'

The survey was completed by 42 archaeology students, including 34 undergraduates and 8 postgraduates. The number of students enrolled in archaeology in Australia in 2020 is unknown, but the number of respondents is considered to represent a small portion of the relevant population. Respondents were enrolled at La Trobe University (n=24), the University of Western Australia (n=8), Flinders University (n=7), the Australian National University (n=1), Macquarie University (n=1) and the University of New England (n=1). No differences of note were apparent in the feedback provided by students from different institutions, so results have been pooled. The relatively small sample size limits the extent to which these results should be considered representative, particularly since the survey was completed by volunteers, and is thus likely to include the views of more dedicated students.

Attitudes towards online learning

The survey respondents were asked to rate satisfaction with their studies both before and after the switch to online learning. Greater satisfaction was reported for the period prior to the switch for 1st and 2nd year undergraduate students, and postgraduate students, but 3rd year students reported greater satisfaction after the switch to online learning (**Figure 1**). This may be because 3rd year students are more experienced and better able to adapt to the asynchronous, learner–directed nature of online–only learning models, which place responsibility for knowledge building primarily on the student (Azeiteiro et al. 2015). The significant drop in satisfaction seen at postgraduate level appears to relate to their need

Survey question	Parameters for response
What institution (university) are you from?	[free text]
What degree are you currently studying?	[free text]
What year level are you currently in?	1st year; 2nd year; 3rd year; Masters/ Honours; Other (please specify)
Has your institution resumed face–to–face classes?	Yes, No
Rate your level of engagement during the online learning period on a scale of 1 to 10 (with 1 being poor and 10 being excellent).	1; 2; 3; 4; 5; 6; 7; 8; 9; 10
What are the benefits of learning archaeology online?	[free text]
What are the drawbacks of learning archaeology online?	[free text]
Please provide an example of a class or task that translated to online learning well.	[free text]
Why do you think this class/task translated well?	[free text]
Please provide an example of a class or task that did not translate well online.	[free text]
Why do you think this class/task did not translate well?	[free text]
Have you been required to undertake group work as part of learning archaeology online?	Yes, No
What do you think are the benefits associated with completing group work online?	[free text]
What do you think are the challenges associated with completing group work online?	[free text]
Have you been required to undertake what would be considered practical tasks online (e.g., artefact identification, map drawing)? Briefly describe the task.	[free text]
Did you find this to be a useful exercise? Please explain why or why not.	[free text]
On a scale of 1 to 5, 1 being poor and 5 being excellent, how would you rate your overall learning experience in Semester 1 2020 prior to the shift to entirely online–based teaching methods?	1; 2; 3; 4; 5
On a scale of 1 to 5, 1 being poor and 5 being excellent, how would you rate your overall learning experience in Semester 1 2020 following the shift to entirely online–based teaching methods?	1; 2; 3; 4; 5
What elements of the online–based teaching implemented due to covid–19 restrictions would you like to see permanently incorporated into your archaeology degree/experience as a student?	[free text]

Table 1. Learning Archaeology Online survey questions

to access on–campus facilities, such as archaeological laboratories, for either specialist coursework activities or the research they are completing along their coursework, as indicated by some of the free text responses provided.

Benefits of online learning

Across all year levels, survey responses indicated that most of the benefits associated with learning archaeology online were related to time management. Specifically, respondents lauded the reduced time spent commuting to campus and the flexibility associated with being able to work at their own pace. Examples of relevant responses include:

> Flexibility of study time. Less expenses.

> Time to work at [your] own pace when engaging with materials, readings, etc.

> Better time management.

> Increased hours to study, not wasted on travelling. $180 a fortnight saved in not driving and the benefit to [the] environment.

Other respondents reported that online classes resulted in access to a broader range of learning resources because these were made available to students to compensate for the loss of face–to–face support. The increase in resources available to students was a common feature in free text responses, and it was reported that the combination of extra resources and more scheduling flexibility allowed students to engage more effectively with readings and other learning material than would have been possible otherwise:

Ian Walkeden, Maddison Crombie, Marcel Teschendorff, Melita Rajkumar, Elisa Scorsini, Lucinda O'Riley, Timothy McLean, Iona Claringbold and Rebekah Kurpiel
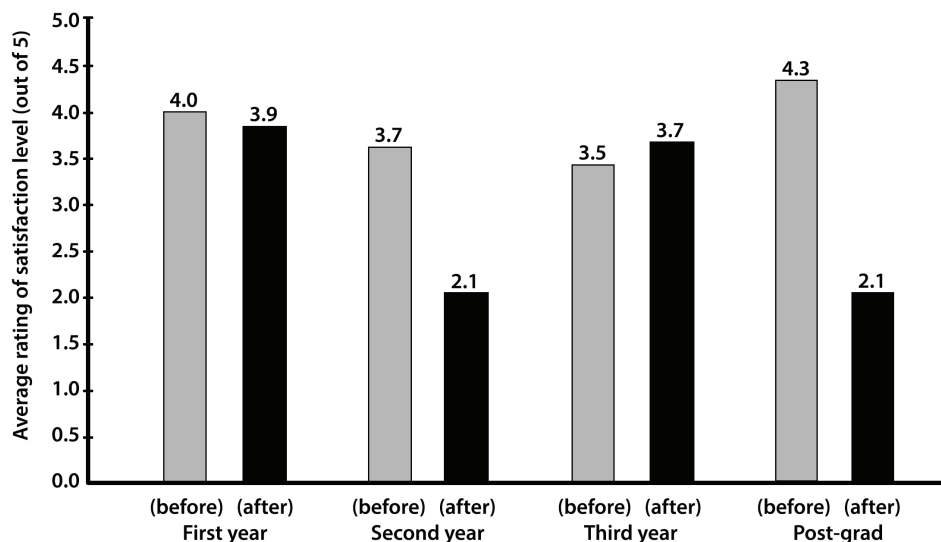
Figure 1. Average rating of satisfaction level (1 [poor] to 5 [excellent]) before and after the transition to online learning for respondents from different year levels

The lecturer is willing to take different approaches to learning and I found that the online resources that were provided on LMS were more helpful as they were trying to compensate for not having other resources available to us.

As someone with a disability, EVERYTHING! I can participate as I can and not be forced into classes etc.

Chiefly flexibility, which does allow you to deal with the subject material more deeply some of the time, which can be really relevant for archaeology.

The benefits of increased flexibility and accessibility in online–learning modes have been documented in other studies (Azeiteiro et al. 2015; Goold et al. 2008; Mukhtar et al. 2020; Salamat et al. 2018; Smith et al. 2011). The results of this study show that these benefits are also relevant to students of archaeology.

Disadvantages associated with online learning

Positive responses to online learning were significantly outweighed by negative responses. Archaeology, more so than many other disciplines, requires the development of practical skills, often in fieldwork contexts, particularly for aspiring professionals. The challenges associated with developing practical skills in an online–learning environment featured prominently in the survey responses:

Much harder to engage, less hands–on learning, harder to get to know classmates and teachers, very difficult for students with… anxiety surrounding technology.

Can't touch the rocks/minerals, use magnifying glass or other equipment, can't discuss with peers, can't go on field trips, etc.

Anything practical such as fieldwork, artefact analysis, comfortable discussions on archaeological

theories and practices becomes more stilted and difficult when online.

Not being able to do the practical parts and learn those new skills. It is hard to get a real understanding from just watching YouTube demonstrations.

If there is no face-to-face engagement this makes it much more difficult to stay engaged. I imagine online is not that great for subjects that are highly practical like learning about stone tools.

Another major concern for respondents was the loss of the social aspect inherent in face–to–face learning:

Lose the class dynamic and socialising before and after, and no lab or physical learning opportunities.

Reduced access to unexpected opportunities such as on–campus and interdisciplinary activities, networking, engagement with academics outside of class settings.

Lack of peer contact, it's a practical subject so missing out on lots of hands–on experiences.

Lack of personal interaction and physical interaction with the subject material. Both significantly decrease engagement.

Practical activities

Opportunities to complete practical activities during 'lockdown' were limited. When respondents were asked if they had completed a practical activity during online learning, 38 percent (16 of 42) reported that they did not have any practical component at all included in their online classes (**Figure 2**). Many respondents also indicated, in free–text responses, that when practical components were included, that these did not translate well to an online experience.

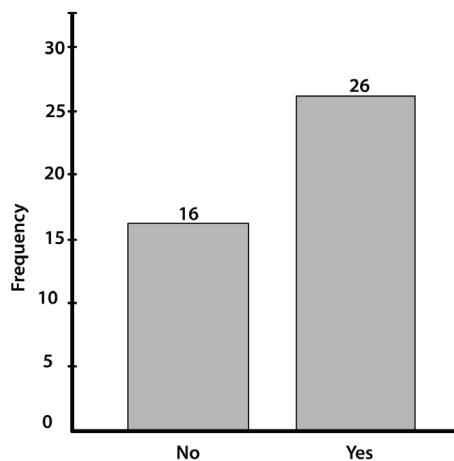The practical 'lockdown' tasks, reported by

Figure 2. Frequency of respondents who were required to complete practical activities via online learning (Yes) and those who were not (No)

respondents, included artefact identification and artefact illustration/sketching. Respondents were encouraged to describe why the activity was, or was not, an effective learning exercise. Several respondents indicated that practical tasks were more difficult to complete online as they could not interact physically with the artefacts:

> It was useful but ultimately difficult as the artefact is only two dimensional and ambiguous size/material on a computer screen.

Some respondents reported that online practical activities did not replicate face–to–face practical activities adequately:

> I found myself already familiar with these introductory–level tasks and would rather a more academic and thorough explanation of methods, tools, and theory.

> [I] was unable to access proper tools or materials to do these tasks.

Some respondents enjoyed their experience with online practical activities, despite not being able to physically interact with the materials they were studying:

> Useful yes as many old reports contain only photographs so learning to identify with limitations was good to learn, however it would have been great to handle the sherd.

> It was still an interesting opportunity to apply what knowledge [we] had to a photograph at face value.

Students did report concerns about self–motivation when completing practical activities online, as tasks were either not assessed and/or provided as a supplementary activity. This feedback aligns well with the findings of previous studies, which have found that a successful transition to online–learning modes requires a shift from teacher– to learner–centred pedagogy, placing greater responsibility on the student for knowledge building (Azeiteiro et al. 2015):

> It was also up to the student to participate or not, and it was easier not to participate in these tasks online than

it would have been in a face–to–face setting. The time to complete these tasks would have had to have been undertaken outside and independent of the tutorial time, whereas some of these tasks would have been undertaken during the allocated tutorial time in a face–to–face setting.

Some respondents also indicated dissatisfaction because the practical component of their class was unable to be delivered at all:

> To a degree the Research Methods class just because we couldn't do the excavation part due to COVID. I missed out on learning how to handle a dumpy level, using a trowel, using the pH levels and soil kit. I feel I didn't grasp the level measuring that well.

> The subject I was involved in this semester was experimental archaeology which has a lot of hands–on components, and I don't think this translated particularly well.

Many respondents lamented not being able to interact with their peers and lecturers during the completion of practical tasks:

> It was challenging as I felt unsure at many points on the right way to move forward. Doing it online made me feel more isolated and alone in my learning.
> Not really, I was too scared to even show my drawing in class because it was so bad. We didn't have to show it if we didn't want to anyway, so I felt like I did it for nothing.
> The thing that I found difficult was that I couldn't ask in real time if I was doing it correctly, so my confidence was low while doing the task and I probably didn't make good use of the time allocated.

Some respondents expressed appreciation of the effort made to provide practical skills via online channels. However, it is clear that it was not possible to adequately replace the experience of learning practical skills in–person. It was not possible to compensate for the absence of physical interaction with materials or the experience of co–operating with, and learning from, their peers and lecturers during practical activities.

Group work

Although technology (e.g., webcam software such as Zoom) is available to facilitate online group work, 40 percent of the survey respondents (17 of 42) reported that they were not required to undertake any online group work during 'lockdown' (**Figure 3**). Third year students were more likely to have completed group work than those in other year levels, which may reflect the types of subjects that are offered in the final year of undergraduate study, when students are close to entering the workforce. It may also be because 3rd year students were perceived by their lecturers as more prepared for remote collaboration with peers due to their additional study experience, when compared with 1st and 2nd year students.

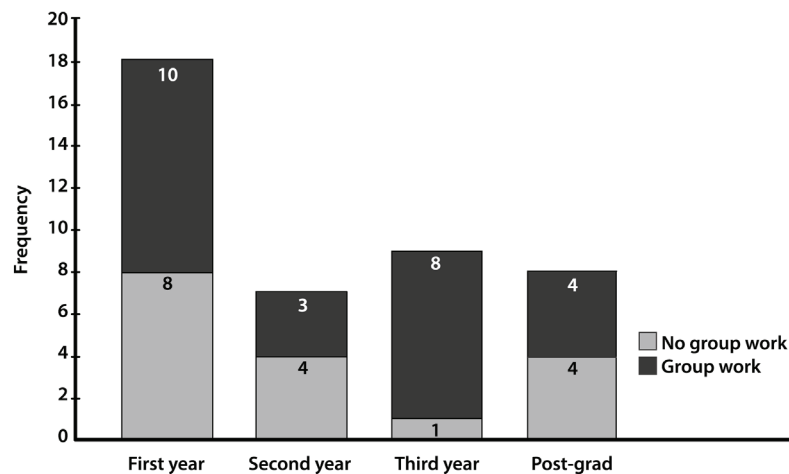Group work in any format is an important part of

Figure 3. Frequency of respondents from each year level who were required to complete online group work and those who were not

fostering communication between peers, while also preparing students for the workplace. When asked what benefits were associated with completing group work online during the campus–closure period, respondents suggested:

It can help you get to know your peers/classmates where you otherwise wouldn't have really gotten to know them.

Meeting new people, forced interaction but in a way that is good and effective in bringing about new ideas and discussions.

The social interaction, connecting to others and not being as isolated. As well as exchanging ideas and learning from other people's experiences in the field.

Many respondents appreciated the flexibility of online–meeting platforms, and suggested that more students attended online meetings than would have been the case with face–to–face meetings:

There's more flexibility with when people can meet up online.

You can catch up online more often than you could catch up in person on campus.

Access to everyone no matter when they decide to work, easy communication.

A substantial number of respondents felt that group work, in both online and face–to–face formats, is not a fair way to assess skills or knowledge, as some group members do not participate adequately. A number of respondents felt that there are very few or no benefits gained from group work:

Not much—group work is usually unfair.

I don't think there are any, I would never choose to do an online subject involving a group project again.

Very little, unless the system ensures equal quality work is submitted by all participants.

I have completed group–work projects on–line this year through my second major (Aboriginal Studies)

and have not found them to be beneficial to my studies. I have achieved good marks, but seemingly these activities are a way to direct more of the study burden to motivated students who carry the team burden in return for maintaining a good personal mark.

Respondents considered the problem of unequal workloads, and lack of accountability, during group activities to be exacerbated by online–learning modes:

Negotiating shared work is much easier face to face. Online is a bit isolating if you have not already formed a rapport with other students.

Communication, presenting, it's a lot easier for members to not participate when it's online. In my experience one person always has to chase everyone else up to get the work done.

More opportunities to meet didn't in fact eventuate. The slack ones could hide easier and not be coerced into doing real work.

Some people just do not participate. Hardly makes for democratic approach and defeats the purpose of 'group' work!

Engagement, not knowing the students at all as you do not spend time with them, the group time being dominated by particular students who can now talk over other students much more successfully.

Respondents also indicated that technology itself sometimes created a barrier for effective communication between students working in groups online:

Using technology—so being trained up with understanding current software capabilities. For example, I didn't have any experience with using google docs to share documents amongst multiple people. I still don't really know; I was only exposed to it due to other people in my group using it to complete a task.

Technological problems, conversations don't go very well, especially when people aren't very confident in their work.

There are already obstacles when it comes to group work. Doing it online just makes it easier for things to get messy.

Since groups are randomly assigned, you might not know the people in your group. Or they might have inadequate access to the internet or a microphone, limiting their own contributions.

The free text responses relating to challenges associated with group work were far more detailed than responses to any other question in the survey. Despite some benefits associated with schedule flexibility, survey responses overwhelmingly indicated that online group work made an already–challenging exercise more difficult. These results align well with previous studies which have found that online group work is more challenging for university students (Goold et al. 2008:347; Fletcher et al. 2007; Smith et al. 2011:127). The study conducted by Goold et al. (2008) reports survey results from 2005, approximately 15 years prior to the current survey. Technological developments that have characterised the intervening period (e.g., faster internet, development of platforms for online collaboration such as Google docs and Microsoft Teams) have been insufficient to address the challenges associated with conducting online group work.

Communication issues were consistently highlighted by respomdents as one of the major challenges relating to online group work. Kim et al. (2005) suggests that the absence of face-to-face contact among students creates a communication barrier. The lack of a physical collegiate community diminishes group dynamics and opportunities to effectively facilitate teamwork (Koh and Hill 2009).

Is remote learning the future for studying archaeology?

These results suggest that fully online methods for teaching and learning archaeology are ineffective and unpopular with students due primarily to the difficulties associated with learning practical skills online. Indeed,

not a single survey respondent indicated a desire for their degree to be entirely taught online (**Figure 4**). However, most respondents indicated a preference for theory–based lectures to be delivered online:

The practical exercises that we did at home would still be beneficial as an extra task to complete/practice skills further.

The ability to choose. whether or not to do lectures, tutorials, and seminars online. For someone like myself who is extremely time poor, that gives me an extra hour to hour and a half of study time which made a world of difference.

Voluntary extra online resources inc. 3D interactive websites and content quizzes to test knowledge throughout the semester [would be beneficial].

Every class should be assessed to determine what else could be amenable to on–line delivery, and all practical activities that require students to be present should be bundled around two or three intensives on–campus days/extended–classes with group/team building as a secondary outcome.

Keep everything online as much as possible. The time gained by not having to drive for two hours each day just to attend a class means I can spend more time doing private study, which allows me to be a better student.

When asked about the types of online learning they would like to see continued in an archaeology degree, a number of respondents offered suggestions, primarily around the use of online content as supplementary material rather than as the sole means by which skills and knowledge are gained:

The practical exercises that we did at home would still be beneficial as an extra task to complete/practice skills further.

Also, voluntary extra online resources inc. 3D interactive websites and content quizzes to test knowledge throughout the semester.
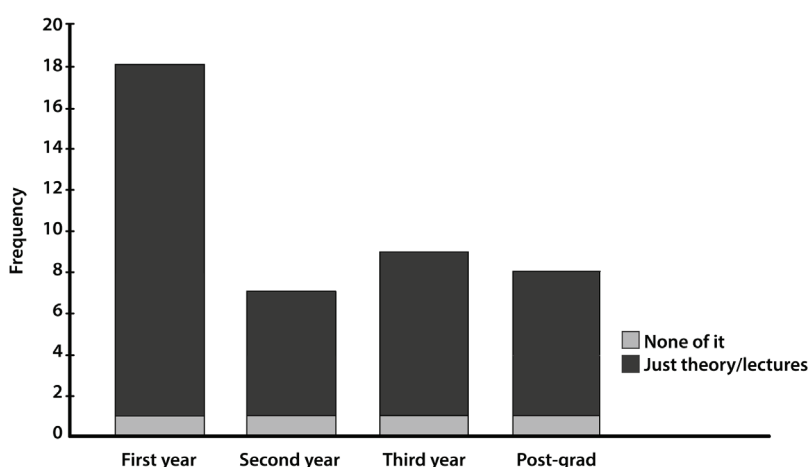

Figure 4. Frequency of respondent preferences for online content, showing a strong preference for face–to–face delivery for practical tasks

Ian Walkeden, Maddison Crombie, Marcel Teschendorff, Melita Rajkumar, Elisa Scorsini, Lucinda O'Riley, Timothy McLean, Iona Claringbold and Rebekah Kurpiel

Despite a willingness to see some aspects of online learning retained, strong views against the possibility of a fully online study experience were expressed:

> I liked that we have access to the lectures and lecture PowerPoints all the time but other than that I would rather switch universities than ever study online again.

Summary of results

While the survey responses did include some positive feedback, a substantial number of responses highlighted the disadvantages associated with online learning. The primary benefit of the move to online–only learning related to improved flexibility for students, resulting from a combination of asynchronous online activities, not needing to commute to campus, and a broader range of learning resources. The responses that detailed the disadvantages of moving to an exclusively online environment highlighted two main issues: the challenges associated with developing practical archaeological skills and the inherent difficulties of group–based assessment. Over one–third of respondents did not have any practical component at all included in their online classes and, of those who did, many considered it a poor substitute for learning practical archaeological skills in a face–to–face environment such as on campus or in the field. Issues relating to group work were more complicated, with some respondents enjoying the increased flexibility offered by online meeting software, and others finding the enforced use of technology a barrier to effective communication. In general, however, the responses indicated that whether online or offline, group–based assessment remains unpopular among students for its perceived lack of equality, particularly when distributing workloads amongst group members.

Discussion and conclusion

In a post–pandemic world, trends in university teaching in several European nations suggest a retention of several aspects of online learning. These include online file collaboration and sharing, pre–recorded lectures, and audio and visual communication (Tartavulea et al. 2020). This may be associated with attempts to reduce the cost of course delivery and may therefore be the preference for university administrators. In the workplace, however, archaeologists regularly undertake practical tasks and work in teams, so it makes sense that some aspects of archaeological practice are learnt most effectively under similar conditions.

The University of New England (UNE) has, for many years, delivered most of their archaeology course content in an online format. However, UNE students are still required to attend face–to–face practical intensives, where they learn archaeological field methods and other practical skills. So, even in circumstances where there has been extended time to develop and improve learning materials, it is recognised that some aspects of archaeological practice are learnt more effectively via hands–on experience.

The survey results presented in this paper show that, from a student perspective, some aspects of learning archaeology online work well and others do not. Survey responses from students at multiple universities were broadly similar, with overwhelming support expressed for the retention of face–to–face delivery for practical activities. The perceived challenges associated with group work were present in both online and face–to–face contexts. However, it was clear that issues relating to communication, and balancing contributions in group work, were exacerbated in the online environment.

The effective delivery of online learning requires a pedagogical shift from teacher– to learner–centred models. Many challenges reported in the survey were also reported in previous studies, going back at least 15 years. It is clear that difficulties with online learning cannot be overcome simply through technological development; the issues are more nuanced in this context. Recognising and accommodating the learner–centred nature of online learning, which requires students to take additional responsibility for their own learning, is likely to lead to better outcomes. The results of this study can inform strategies to help improve the learning experience of future archaeology students.

Ultimately, the most effective activities delivered remotely are those that do not contain practical elements and do not involve group work. Recorded or pre-recorded lectures (e.g., asynchronous activities) facilitate flexible scheduling for students, who can then avoid the need for potentially long commutes to and from campus. There is overwhelming support for the development of asynchronous learning material to teach non–practical aspects of archaeology. However, face–to–face learning is seen as critically important for learning practical skills, which are an essential component of archaeology degrees.

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