Remote Teaching and Supervision of Graduate Scholars in the Unprecedented and Testing Times

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Supervisor of postgraduate research and education must ensure that scholars are professionally developed and made competent not only in their respective fields but also come out as graduates out of the institutions as useful members of the society and role-models. So far, a supervision that ensures mutual respect and the observing of office hours for learning, meetings, seminars and work has been considered useful and important. The current Covid-19 outbreak in the entire globe has disrupted all educational activities to happen in the educational institutions and research laboratories. The declaration, as public health emergency of international concern (PHEIC) by the World Health Organization (WHO), of the Covid-19, has required all governments and communities to contain, prevent and control this dreadful virus and infection. In this regard, people including students and teachers at all levels, have been forced to observe social distancing and establish working from their homes. This unique working situation has created the need to use alternative approaches to teaching and monitoring of learning and research activities. This writing aims to elaborate upon some aspects of remote teaching and supervision of graduate students. It is hoped that it will provide useful guidance both for supervisors and their students.

Every postgraduate scholar is required do an individual research project. However, no one could be expected to complete research entirely alone without the guidance of at least one supervisor.[1] An academic and research supervisor is a subject expert in the discipline of the graduate scholar, though not necessarily in the actual research topic of the scholar. However, it is understood that every supervisor does know what it takes to complete an extended postgraduate research project. Also, is the case with most scholars, none will usually have done the degree course before and also will not have got the kind of experience with which their supervisors have been accredited. Furthermore, without a strong positive supervisor-supervisee relationship, it is unlikely that a scholar could achieve a strong intellectual, emotional and successful career development. Therefore, during the entire period of graduate studies and even after the completion of studies, this mutual relationship can never afford to go wrong.[2] A recent publication on the intricacies of supervisee-supervisor relationship can provide a fair and reasonable understanding on the topic.[3] This publication, though addressed aspects of mutual relations and expectation in greater depth, it did not touch aspect of remote teaching and supervision of graduate scholars in the unprecedented and testing times like we are currently having due to the COVID-19 outbreak. This pandemic has imposed on us, an unusual working environment whereby both the supervisors and their students are isolating and working from homes. This has caused tremendous uncertainty, fear, desperation to all and interruption of studies and research activities. It has also forced both the supervisors and their students to resort to alternative educational and supervisory activities in order to minimize the adverse impact on the continuity of academics and research. Most supervisors and mentors have already resorted to using remote teaching and supervisory strategies during the current outbreak.[4-7] This writing, elaborates upon some consideration and strategies related to remote teaching, supervision and assessment of graduate students. It describes how to create an environment ensuring effective supervision of student from home, information technology online resources to use for remote supervision, monitoring and assessment of graduate students.

ENVIRONMENT FOR REMOTE TEACHING AND SUPERVISION FROM HOME

Face to face (F2F) learning has been managed under the constraint of time, space, high cost, politics and bureaucratic hurdles. In comparison, with the universal availability modern communication tools these days, distant and remote learning

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and its supervision has become fairly easy. In fact it has helped in creating new educational styles that serve the educational system in an innovative manner.[8] The current shutdown of institutions and laboratories has made the task of remote online teaching and supervision of research yet more demanding, with student and researchers confined to their homes to help suppress the spread of COVID-19. Although most supervisors despite having the necessary leadership and management skills, they will now be required to use these skills while mainly in a time not having F2F contact with their students and colleagues. This is because the whole routine nicely planned and under implementation has suddenly gone unprecedented and lost in the air with no preparation time given. In this time, supervision and guidance must be reorganized, well-focused, relevant and limited to only what is required. For example, if the student is required to get the degree by course-work and thesis or by thesis only as is the case with most universities, then remote supervision must only focus to provide guidance and support for these activities. However, if a student is to be awarded on the basis of publishing a certain number of research articles, or attendance and presenting in conferences, then help should focus on that. Multiple internet sources and webpages of universities and organization provide guidance and information on effective remote teaching and supervision during this unprecedented time which the supervisors and students may consider and find useful.[9-16]

The main thing to remember is that in such an unprecedented times, neither the supervisors nor the students can be expected to remain hyper-productive and hence, supervisors need to be realistic about what can be expected and achieved in a lock-down and isolated situation. Every supervisor is to learn staying flexible and leaning into uncertainty. It is also necessary to be hopeful that very soon, the issues faced will be overcome, getting back to normal life and yet remembering not to take things for granted again. Each of us as supervisor must be able to see the emotional toll that the outbreak has on everyone and hence to keep in mind that humanity exists by being all in it together. Supervisors are also required to mentor and provide a support system for students and encourage them to prioritize their health above their productivity. They must reimagine how to do mentoring in a time of closed institutions, laboratories and where healthcare providers are depleted and stressed and are socially distancing.[7] There is much need for unity, compassion, and empathy and a need for to be kind to each other. Everyone, especially the students are having a hard time. In a situation like this, supervisors must feel privileged to be part of the solution, help and support.

A different and changed approach, including a different type of "to do" list and not forgetting to just listening during this period is needed. As there will be many times the need for live video chat between the supervisors and students as well as colleagues, none should expect to be in formal dress. Similarly, during such live video chats, it should be acceptable to see each other surrounded by children and pets.[7,17] As said, a different type of 'to do' list, during the period of social distancing may be suggested to students. While it may be great to involve students in learning and doing quite new things including: mastering a computer language, writing a manuscript from scratch or developing a new way to data analysis, but learning new skills should be a bonus, not an expectation. Rather supervisors should better engage their students in some non-lab activities and to focus on smaller and more easily manageable tasks that would help their overall productivity. These could include: doing a review of literature; writing in detail the outlines and a background section for a manuscript; reading the recommended articles; preparation of research summaries; practicing in live talks and presentations; preparing fellowship and grant applications; and analyses of collected data. The focus should be on keeping students engaged and productive and to reduce the causes of stress and vulnerability of mental health which many students are likely to be experiencing. Suggested approaches may include: acknowledgement of the full range of their emotions by knowing what they are feeling is quite natural and acceptable; reminding them the benefits of hosting virtual entertainment events like, virtual coffee and party hours, and considering discussion of non-scientific topics.

For some, the lockdown situation has made it somewhat impossible to manage being an academic supervisor and researcher as some have to also supervise their own children while working from home. However, a most recent survey of about 3,000 ResearchGate users, also showed that almost half of the researchers believe they had been spending as much, or even more, time collaborating with fellow academics as before the crisis. Furthermore, >40% have found more time to read and write academic articles or peer reviewing of others' work, and the forging of new partnerships.[5]

MANAGING REMOTE TEACHING AND SUPERVISION

There is clear and meaningful difference between well-planned online learning experiences and courses offered online in emergency in response to a crisis or disaster like COVID-19 Outbreak. A recent article provides an in-depth insight to know the differences between the two.[18] All involved in this abrupt shift to online teaching and supervision must realize that these crises and disasters also create disruptions to student, staff, and faculty lives, outside their

association with the university. So all of this work must be done with the understanding that the move to emergency teaching (ERT) will likely not be the priority of all those involved. Instructors and administrators are urged to consider that students might not be able to attend to courses immediately. As a result, asynchronous, or perhaps hybrid teaching activities might be more reasonable than the real-time live and synchronous ones. Flexibility with deadlines for assignments within courses, course policies, and institutional policies should be considered. A high level example include; the US Department of Education relaxation on requirements and policies in the face of COVID-19.[19] Challenges faced and experiences of emergency remote teaching (ERT) in Afghanistan Bosnia Herzegovina, Cambodia and Liberia have been described by Davies and Bentrovato (2011).[20]

Remote supervision, also called tele-supervision, or more recently e-supervision, is defined as the use of video conferencing technologies to supervise graduate students. Todays' teachers and supervisors, are required to be familiar with the seven domains of digital literacies (Dls). DLs are essentially a set of academic and professional situated practices supported by diverse and changing technologies.[21] User is required to be familiar with the use of available online technologies. Furthermore, it is also important to be aware of using several strategies that assist learning, teaching, supervision, guidance and assessment and feedback. Strategies to use include: holding virtual real-time online video-conferences, journal club meeting, web-lectures; providing and / directing students to pre-recorded lectures and tutorials to access on-demand; putting content onto a digital teaching environment (DTE) or platform for students to access; emailing learning materials or mailing them in print form. In the vast majority of cases, digital technologies can be used to extend remote teaching, learning and supervisory support via the internet. However, it needs to be ensured that students are informed not to go ahead with the wider uses of the content they receive as this may cause harm to copyright owners. It is better to provide them web-links of the teaching material rather than sending copies of the materials in both soft or hard or print forms to students.[22-23]

When doing online teaching and supervision of students, the focus should be on the two most important aspects including: how to best support and engage students in an online teaching event or meeting, and what approach, tools, or delivery ideas to use. The material / content to be delivered to student must have: received proper planning in consideration of students' needs; been designed to be student-centric; been built on content and media: considered rich resources and activities for teaching and learning; involved active teaching and learning; and have also considered the processes of feedback, review and evaluation. In any group teaching or discussion, irrespective whether it is occurring as F2F or as remote online, a recommended approach to follow is a 5-step sequence.[24] This sequence can be summarized as: starting with some recap; introducing things slowly with practice after each part; checking on how students are getting on and picking up on any misconceptions; giving models and scaffolds; reviewing how students are doing. Aside from all the other strained resources available to the less privileged students, one needs to be also mindful of the common student support challenges including: space and comfort; bandwidth / connectivity; noise and disturbances; time (time zones) and schedules; and safety and pastoral duty.

GADGETS AND ONLINE TEACHING AND MEETINGS MANAGEMENT SOFT-WARE SYSTEMS

Remote supervision and collaboration and even the learning, in the first place requires not only a decent conducive environment but this environment should be supported by an efficient online learning and meeting management software and technology gadgets.[25] These certainly include, the very basic infrastructure including a designated space, computer, digital camera, smart TV, XBox, smartphone, internet connectivity, lighting system. These days, both students and the faculty in higher education sector are required to have digital skills and to be more creative and active learners.[26]

As we all know that online educational communication activities including virtual classroom and workshops, real-time meetings and video-conferencing has become a big industry operating globally. Many available systems provide very efficient management of online teaching and meeting and conferences and webinars. It will be difficult to elaborate in detail and to compare the so many of them available. Many of us whether academics or students in institutions, universities, or working in offices and organization will have been familiar with one or more of them.[27-28] A list of the some of these (in alphabetical order) including their web-links is given in Table 1 for those interested in exploring and learning more regarding their navigation and use. These systems requires payment and subscription with some on monthly basis. They also vary in their features necessary for managing learning and meeting and conferences and webinars. Therefore, a careful selection can only be made on the basis of how many management features of learning a particular soft-ware or system can offer and which ones are important for a particular learning and meeting event. Some important learning management features, to keep in mind include: price and subscription; attendee arrangement; board meetings; committee meetings; internal meetings;

invitation management; agenda management; action item tracking; legislative meetings; materials management; meeting preparation tools; meeting room booking; minutes management; post-meeting tools; scheduling; travel management; voting management including assessment of outcome and reflection on the learning and meeting. For some soft-wares, a comparative information is given in Table 2.

Table 1: Some popular online learning & meeting management software systems & platforms

1. Adobe Connect: https://www.adobe.com/products/adobeconnect.html
2. AnyMeeting: https://www.intermedia.net/anymeeting-video-conferencing
3. Cisco WebEx: https://www.webex.com/
4. ClickMeeting: https://clickmeeting.com/?a=homepage
5. Doodle: https://doodle.com/en/
6. EVoice: https://www.ereceptionist.co.uk/geo/evoice
7. Google Hangouts:https://hangouts.google.com
8. InterCall: https://www.intercallonline.com/IOL.action
9. Join.Me: https://join.me/
10. Kahoot: https://kahoot.com/
11. Microsoft Teams: https://products.office.com/en-us/microsoft-teams/group-chat-software
12. Moodle: https://moodle.org/
13. Skype Meeting: https://techcrunch.com/2016/07/05/skype-meetings-video-conferencing/
14. Skype Premium: https://skypelogin.net/skype-premium/
15. Skype: https://www.skype.com/en/
16. StartMeeting: https://www.startmeeting.com/
17. Yugma: https://www.elearninglearning.com/yugma/
18. Zoho Meeting: https://www.zoho.com/meeting/login.html
19. Zoom: Video Conferencing, Web Conferencing, Webinars: https://zoom.us/meetings
20. Electa Live LMS: https://www.e-lecta.com/learning-management-system
21. Other Meeting Software: GoToMeeting, TeamViewer, Cvent, Samepage, ReadyTalk, BoardPAC, Diligent Boards, 24sessions, Boardable, Azeus Convene, Vectera, eyeson (https://www.softwareworld.co/top-meeting-software/ . (Accessed 19 April 2020).

Table 2: Comparison of Top Meeting Software (Modified from Reference Number 28).

Meeting Features	GoTo Meeting	Team Viewer	Cvent	Same page	Ready Talk	Board PAC	Diligent Boards	24 sessions	Board able	Azeus Convene
Price US$	19/ month	Not provided (NP)	NP	7/ month /user	25/ month /user	NP	NP	21/ month /user	49/ month	NP
Attendee Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Board Meetings	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Committee Meetings	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Internal Meetings	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Invitation Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Agenda Management	✓	x	✓	✓	x	✓	✓	✓	✓	✓
Action Item Tracking	✓	x	✓	✓	x	✓	✓	x	x	✓
Legislative Meetings	✓	✓	✓	✓	✓	✓	✓	✓	x	✓
Materials Management	✓	x	✓	✓	x	✓	✓	x	x	✓
Meeting Preparation Tools	✓	x	x	✓	✓	✓	✓	x	✓	✓
Meeting Room Booking	x	✓	✓	x	x	✓	x	✓	x	x
Minutes Management	✓	x	x	x	x	✓	✓	x	✓	✓
Post-Meeting Tools	✓	x	x	✓	x	✓	✓	✓	✓	✓
Scheduling	✓	✓	✓	✓	✓	✓	✓	✓	x	✓
Travel Management	✓	x	✓	✓	x	x	x	x	x	x
Voting Management	x	x	✓	✓	✓	✓	✓	x	✓	✓

It is therefore, important that one should not only get familiar with the use and navigation of the chosen learning and meeting software system but also get well-versed with the preparation of teaching, learning and supervisory material. While most of the already prepared and available material (articles, video tutorials) could be shared with students by sending these via email and WhatsApp and providing web-links and sources, virtual live real-time sessions will require one to be well-versed with the software and other requirements for arranging such sessions. Most institutions have already trained its faculty in this regard with many advising its faculty to conduct such live real-time sessions (Journal club meetings, lectures, practical demonstrations) within the premises of the campus. The benefit of this include the availability of the proper facilities and the support of trained IT personnel. However, those preferring to do the online activities from their home will need to be adequately trained and well-versed in the arrangement, use of learning management software, preparation of appropriate material (video lecture, tutorial and demonstration). Details of how to do these at home is beyond the scope of this article and will require self-study and / or attendance of necessary theoretical and hands-on training.[29-32]

REMOTE ONLINE EXAMINATION AND THESIS DEFENSE

Many supervisor are already familiar with the usual degree level course delivery format involving the four main parts: forum discussions; maintaining a personal portfolio; writing assignments; preparing for exams; taking exams. All these activities can he held and managed remotely and online.[33] The role of the supervisor and tutor is to guide, facilitate students about the content, topics, reading material, the scope and procedures to follow and modes of submission and examinations and their results.

Almost all universities including our local, have established and run some online teaching and supervision. They normally provide detail of all aspects related to teaching, supervision and assessment of outcomes of academic and research activities. However, as stated earlier, these have been developed for the already online running courses for times when faculty would be present at their campuses and as well as students coming to campus for learning, when needed. This is not the case now in the COVID-19 pandemic. An important consideration in emergency remote teaching (ERT) as compared to conventional online one is that one has to use a different assessment / monitoring mechanism. This is to consider a simple pass or fail criteria with no marking and grading as is done in the conventional online teaching outcome assessment. This is preferred as comprehensive monitoring and assessment in this unprecedented time is not feasible. Most universities abroad including, USA, UK and Italy have already adopted this

approach in their ERT programs / courses in the present COVID-19 emergency. Courses, their delivery and the intended outcome assessment including thesis defense nowhave to be taken as emergency remote teaching (ERT) by trained faculty and supervisors. As there is little opportunity for any face-to-face (F2F) interaction between students, their supervisors and examiners, therefore, all involved including faculty, students and examiners will need refresher courses for ERT including how to conduct virtual real-time thesis defense sessions.While there are many examples all-over the world, in UK, Oxbridge summer assessments have been shifted to online. Similarly, the Imperial College London, has made history by having successfully examined online, its 280 final year medical students in the 2nd week of March 2020.[34] There is a report of a remote virtual thesis defense activity held just before the start of the current pandemic.[6] This report provides very useful information and learning, to all including supervisors and students, regarding the preparation, rules, expectations, technology and what problems to expect and how to deal with them and even how to celebrate success. This method of online and remote defense of thesis to use by student is being recommended by many higher education institutions.[35] Some universities have prepared useful guidelines and training programs for faculty and students and hence encourage and facilitate them for the remote online defense of PhD thesis.for the remote online defense of PhD thesis.[36-38]

CONCLUSIONS

1. The concept, environment, requirements and management approaches necessary for effective emergency remote online teaching and supervision and educational outcome assessment have been examined in depth.
2. It appears that it is possible to continue with the teaching, supervision and examination of graduate students using emergency online platforms.
3. The current covid-19 outbreak does highlight building on approaches to emergency remote teaching and supervision. Institutions are advised to consider incorporation of courses related to emergency remote teaching and supervision in their faculty development programs and also to include similar courses in the graduate programs they offer to students.
4. Having supported the concept of remote teaching, supervision and assessment, on one side it is reasonable to agree with one of the most famous quotes of Her Majesty, The Queen Elizabeth - II, "I have to be seen to be believed." I am sure, it's unlikely she meant to be seen via Zoom. On the other side, we should not forget an old aged and famous saying of Socrates, 'The secret of change is to focus all of your energy, not on fighting the old, but on building the new'.

CONFLICT OF INTEREST

None declared

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