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What is the role of social interaction in a distance-learning course?

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Abstract

Background and Aim: The Principles and Practice of Clinical Research (PPCR) is a distance learning program for clinical researchers that provide a variety of interactive opportunities during the course. From 7 years experiences, PPCR showed that satisfied students' demand of active learning and successfully promoted the understanding and adherence.

Conclusion: The collaborative learning with people with diverse background is enhanced by social interaction and may increase the future research collaboration even within the web-based virtual classroom.

Keywords: Distance learning, social interaction, collaboration.

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INTRODUCTION

Distance learning is a novice tool developed in the field of education in clinical research. Distance learning appeals to many for its accessibility and openness, both of which make it relatively easy to implement for health professionals at any working environment. However, paradoxically, this flexibility is also associated with disadvantages of the platform, causing learners to experience feelings of isolation, therefore, reducing motivation and increasing dropout rates. As it differs from face-to-face instruction or conventional style of on-site lecture, web-based learning must have methodological limitations with regard to communicating to other participants or teachers, or building leadership in a large research society.

The format of future web-based learning should work to amend these shortcomings. Moreover, considering the growing expansion of the medical industry and the complexity of developing evidence based medicine, distance learning programs should offer higher levels of learning materials in to challenge and develop professionals so they are ready to meet future medical needs.

The question is: what kind of advancement is needed in this next generation of distance learning programs?

WHAT IS PPCR?

Principles and Practice of Clinical Research (PPCR) is a global web-based online learning program for clinical researchers. The Program uses a wide variety of web-based resources that are delivered each year through the website to international participants located around the world. The course is directed by Dr. Fregni of Harvard University, and began in 2008 with around 42 students from 5 countries. Most recently in the 2015 session, 294 participants registered through 25 international sites from different regions (South America, Europe, Africa, and Asia) and 49 enrolled individually as only web-based students because the site is not accessible (1).

What sets PPCR apart from other online courses is its unique method of social interaction that involves all of course components. The course offers many different types of interactive tools throughout the 9 month-learning period. The main components of this interaction are 1) 2), 1) forum discussions, 2) live lectures, 3) group project and workshops, and 4) teaching assistant support (2).

1) Forum discussion:

Weekly interaction takes place on the web-based discussion board. Participants are divided into small groups consisting of about 30 students. Students post their comments on each week's case study and respond

to questions addressing important concepts of clinical trials. Approximately 150 comments per group are posted every week. This exchange of perspectives develops collaborative partnerships among colleagues and deepens each participant's understanding of course materials.

2) Live lecture:

A weekly web-based videoconference enables the synchronous communication of professors to students. The lecture is broadcasted at the end of the week, from the learning center in Boston to all participants. The students attend the lecture at the international site centers or in a virtual classroom using visual-conference software (Adobe Connect®). This live virtual classroom allows interactive discussion through a variety of methods such as direct questions to speakers, pop quiz and opinion polling with immediate feedback, and group chat to allow questions and breakout discussions of the topic among group peers.

3) Group project and 5-day course workshop:

One goal of the collaborative learning in PPCR is to develop a hypothetical research. This is assigned in the form of a research grant application. Group projects are developed throughout the course, finalized, and presented during a 5- day workshop. Four optional workshops are provided by PPCR that any participants can join; Introductory Workshop and Evidence based medicine, 2-day study coordinator workshop, 2-day statistical workshop and 5-day course workshop. Among those optional workshops, the 5-day course workshop is considered special as a course finalization that planned at the end of the course in a beautiful site in Brazil. The 5-days course workshop also provides the opportunity to finally meet in person with virtual research collaborators with whom participants have spent the last 9 months completing many demanding assignments and intensive discussion as they formulated their research questions.

4) Teaching assistant (TA) support:

Select alumni will continue with the course works serving as TAs to support student learning throughout the course. More than 5 TAs including at least one experienced senior TA are assigned to each group where they will monitor student participation and individual and group learning performance. TAs utilize a wide range of tools for immediate feedback to each student, including blogs, chat, emails and face to face meetings at the international site centers. Some TAs provide web-based optional sessions to complement the course context and supplement student understanding by answering questions during the session. Another unique opportunity for communication between TAs and students is an open chat room called "Office Hours." At

least one TA staffs the chat and the room is usually open to respond to student needs. Students can visit the room asking for help related to the week content, for example, to complete a particularly challenging statistics assignment, or to help prepare for the module exam, or to discuss their own research interests with a welcoming and knowledgeable audience.

The role of social interaction in PPCR

In PPCR, collaboration offers a remarkable opportunity for powerful information sharing among a large and diverse learning community. The heterogeneity among participants in terms of the nationality, culture, and professional backgrounds is an essential component of the course. Even within the imaginary confines of the group project, participants learn the practical complexities of completing a research grant with peers of such diversity in academic backgrounds and research environments. This interaction among the students serves to foster nonhierarchical teamwork and build a sense of leadership that contributes to the fundamental skills of a clinical researcher especially when working in a global setting (2,3).

The collaborative learning model found in PPCR helped to enhance student motivation and was advanced by a variety of social interactions throughout the course work. Having adapted a variety of communication tools such as email, chat, wikis, blogs and face-to-face meeting at the live workshops, PPCR provides many opportunities to be involved in the interactive learning of health-related professionals. For instance, a shy Japanese student could find a way to interact with overseas peers by exchanging emails individually to group TAs or colleagues having similar research interests. A busy neurosurgeon working in a far off time zone could be saved by the "Office Hour" chat room since there would always be at least one TA ready to support them as they complete the weekly assignments. Non-medical professionals may feel uncomfortable to ask questions during the live lecture, but personal contact with an on-site TA before the session could give them confidence and encourage them to speak out. The issues of one-directional education such as little student's engagement can be avoided in all of these scenarios (4).

The positive impact of the collaborative learning is obviously not limited to the 9-month course period. Some alumni develop study groups and other activities after successful graduation of the course. Continuing friendship is certainly fostered by attending on-site workshops or personal visits and leads to the real possibility for future research collaboration. And in the case where a PPCR lecturer has the opportunity to visit an

international site in person, students and alumni are motivated and affirmed as part of the PPCR family by these visits, which in turn helps to encourage further participation in the program as TAs who will pass this motivation on to current students (2).

Recent studies indicated that, student satisfaction with a distance learning course is determined by the use of both online and face-to-face instruction and distance learning is as effective as the traditional school teaching when provided with close interaction and adequate feedbacks. Students seek a combination of both these interactions at any education level to further develop and enrich their professional opportunities (3-4). Relying on the strengths of social interaction for establishment of collaborative learning, PPCR was developed to combine the positive aspects of web-based online learning with the close relationships among students and between students instructors that stem from conventional face-to-face education.

OUR CHALLENGES AND GOALS

Although challenges such as more technical improvement are remain, the whole idea of collaborative learning through social interaction in distance learning, though new, has already seen success with the PPCR approach. Still, the final measure of the extent to which social interaction can play a crucial role in distance learning programs, and of the ultimate success of this program, will be the growth of PPCR participants as professional clinical researchers and the contributions they make to the advancement of their fields.

Conflict of interest and financial disclosure

The authors followed the International Committee or Journal of Medical Journals Editors (ICMJE) for disclosure of potential conflicts of interest. All listed authors concur with the submission of the manuscript, the final version has been approved by all authors. The authors have no financial or personal conflicts of interest.

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