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Opportunities and constraints of presentation international virtual GDM-conference presentations

1. Introduction

The objective of this article is to present the opportunities and limits of international virtual conference (VC) contribution in the terms of a video presentations and discussions via a video conferencing system. The basis for this article is the positive experience made at international expert meetings in cooperation with the United Nations (UNOOSA) at the UN-Campus in Bonn organized by the University of Koblenz-Landau. The possibilities for international cooperation in the area of mathematics education with developing countries are visualised by the example of the spatial perception of risks. The basic principle of this virtual participation mode of a conference is a shift from high cost solutions to low cost solutions. On the one hand there might be always a drawback regarding to the performance and precision of the transfer of the content of the information and as well the acceptance of the audience might also not be given completely at the beginning as the options of interaction are limited by a certain degree. On the other hand the total cost of ownership can be reduced by a high amount and therefore the number of people who can afford to participate the conference can be increased especially for developing countries. The article will start with a comparison of the requirements and constraints of the conference and the benefits for authors and participants. Afterwards the concept of an open community approach will be presented. The results of the comparison and the ideas of the open community approach will then be summarized in recommendations and a conclusion for a VC mode for the GDM.

2. Requirements and Constraints

Resources, especially financial resources and time resources are always constraints for participants of a conference. Normally the universities or funders have the intention to keep the costs as low as possible. For VCs this objective is more driven by the participants, as they have to provide their time and their technical equipment to take part. Without the necessary technical equipment, i.e. a computer with Internet access and a microphone and speakers, it is not possible to attend a VC.

The time often is also limited by the VC time zone. This time zone has to be chosen in a way, that the majority of the participants can take part in the

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common office hours. If you have different local or regional meeting points all over the world, it is very difficult to determine an optimal presentation times for all time zones. Furthermore, if all participants join the conference with their own computer, there is no face-to-face contact at all for VCs. The tested concept at the UN-Campus in Bonn used a kind of “Public Viewing” scenario for the participants at different international meeting points. This facilitates at least face-to-face contact with other participants at same meeting points and international connectivity to other regional meeting points. Therefore the aggregation of participants at regional meeting points (RMPs) could be seen as a hybrid type of conference, that provides virtual connectivity and the face-to-face contact for the participants living in the same area. But also their resources, needed for regional travelling, could be a limiting factor and have to be considered. Another constraint is the provision of the video presentation material, which has to be available prior to the conference, in the right file format and a sufficient audio and video quality. Participants, who have never created a presentation video before might have problems to deliver the material according to the requirements.

Limitations for VCs are on the one hand a trusted network of people with one participant from the trusted network at least at every RMPs, which might not be the case in every countries that join the VC. The challenge of defining a proper conference time zone also has a security aspect, as only at office hours the security at the RMPs can be assured. Furthermore the number of participants is also limited in order to guarantee an interaction between everybody. For common video conferencing systems the limit is around 25 to 30 participants or RMPs per meeting room or session. If a larger number of participants or RMPs is necessary, the meeting room or session has to be divided. Additionally each meeting point should only have one computer with one sound system running at a time to avoid audio problems like feedback loops etc.

3. Benefits for the author and participants

The videos provided for the VC are at the same time contribution to the conference as a presentation but additionally they contribute to capacity building. As the videos are stored on a video streaming servers (e.g. Youtube), they are still available afterwards for people, who could not join the conference. Additionally, the regional meeting point structure provides face-to-face contact for the participants. Organizationally participants save time and travel expenses, as they could take part even from their home offices. For some participants the virtual participation mode just allows them

to join the conference at all, as the threshold of traveling to the conference would have been too high.

Selection of presentations of the conference allows joining in conference tracks or single presentation that are of interest for the participant. This avoids the participation of the whole conference and reduces the huge effort of time and money. In turn the selection of people that at gathering at RMPs with overlapping interest is of great importance to assure the face-to-face communication. Furthermore the authors of the presentation have a benefit because they have to be available for discussions after their video presentations only. This concept could lead to presentations of international experts at the GDM-conferences that would not join the conference due to dominating language German at the conference talks. Nevertheless the long-term impact is the reduction of the carbon footprint by decreasing travel efforts between the participating countries.

The following passage will explain the structure and process of a virtual conference on the example of the UNOOSA expert meeting. As any other conference the framework of a VC is also the agenda. For a VC the agenda must be provided on a homepage, in order to include hyperlinks to the flashmeeting sessions and videos. During the whole conference those hyperlinks guide the participants through the conference in a way that partial participation in single talks and discussions is fully supported. The authors were supported by tutorial for authoring the video presentations or creating screencasts for the video presentations. This support was developed for all common operating systems and created in a way that only Open Source software of freely available software could be used. The slides for the videos are created with common presentation software (e.g. LibreOffice) and then exported as images. Afterwards the author records the audio comments for the slides (in general one audio file per slide) with microphone and audio record software (e.g. Audacity). The exported slides as image foils and the audio files are finally combined in video authoring software and uploaded to the YouTube channel of VC. At the VC the videos are started simultaneously, which is coordinated via chat functionality of the video conferencing system by the organizers. As soon as the videos have stopped the discussions with the authors start in the video conferencing system. A central server provides access for all kinds of participants, single users, RMPs and local meeting points. So far, the two browser-based conferencing systems Flashmeeting and OpenMeeting were tested.

4. Recommendations

Derived from the experience of the conducted VC for UNOOSA it can be derived that a conference track for scientists that have established a trusted network of collaboration (e.g. in the area of spatial sense and risk perception) has been created. This trusted network can help to create a RMP at the GDM conference and in countries that would like to take part at the GDM conference. Furthermore, a virtual presentation is always better than no participation from developing countries, as the possibility to interact with scientists of the GDM is facilitated. Virtual sessions at GDM complement scientific face-to-face collaboration and lead to more interaction in the future. Another recommendation derived from the experience at the UNOOSA VCs is to extend discussion time to 2:1 for direct contact to the researchers from developing countries at GDM, that means for example ten minutes presentation and 20 minutes discussion with the authors afterwards. Furthermore the participants at the GDM conference had to be aware of the fact that they can join the VC just by coming to the announced room for the presentation. If participants do not have prior experience in VCs with RMPs they do not know that the announced conference room is the Regional Meeting Point they can go to similar to other presentations/talks at the GDM conference.

5. Conclusion

The following steps towards sustainable VCs have already been reached so far. An IT-infrastructure and collaborative environment on the basis of Open Source has been created and verified as a structure for VCs. A thematic conference track (“Sektion”) will be announced for Mathematics Education Subject for international collaboration. The track chair will organize an international RMP with 5-10 participants. Additionally there must be suggestions for the conference fee equivalent to the teacher’s day fee for presentations at the international RMP and respectively it should be free for virtual participants at the virtual session of the conference. Furthermore there should be separate flashmeeting rooms for special interest groups and the track language should be English.

References

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