Synergies through Blending 'On Site' Learning with E-learning Internationally - Evaluating the Global Seminar on Environment and Sustainable Food Systems

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Abstract

The Global Seminar is an international course, which builds on the premise that knowledge construction occurs when students explore real global issues and dilemmas, take positions in relation to these, discuss those positions in an argumentative format and finally, reflect on and re-evaluate their positions. To accommodate such a constructivist learning environment, students at participating universities around the globe shift between normal on-site classroom activities and virtual international classrooms, the latter being achieved via different novel forms of E-learning. The content of the Seminar is research-based case studies covering global themes on environment and food systems from around the world. The primary objective of this piece of research was to conduct an in-depth evaluation and research into the potentials and limitations of this type of course as a novel form of education. For this purpose, students enrolled at The Royal Veterinary and Agricultural University (KVL) in Denmark, one of the partners in the Global Seminar, were surveyed for the past three years. Findings show that students appeared satisfied with the course and felt that it should be a regular offering at KVL. Five major learning outcomes were identified: 1) factual knowledge about environment and sustainable food systems, 2) communication skills, 3) ability to incorporate multiple perspectives on issues – i.e. skills towards systemic thinking, 4) skills in learning to learn more self-directed and, 5) increased action competency. Further, it was identified how different course components were crucial for achieving these learning outcomes. On-site classroom components and E-learning components supplemented each other, however, our students found on-site activities more important for their overall learning outcome. The most challenging Elearning component was the international student groups (ISG), where small groups, comprising of students from the participating countries and universities, collaborate entirely online on carrying out a problem-based project.

Key words: E-learning, on-site classroom learning, problem-based learning, constructivism, global issues.

1 Introduction

The Global Seminar course is a transnational project founded on the premise that issues related to global themes such as sustainability of food production and the environment are best advanced if young learners at universities, as future leaders, discussed these themes in a global setting and in the context of interdisciplinary education. The belief is that information technology (IT) can be used to create such global communities of learners and facilitate the interactions and activities necessary. Thus the Global Seminar offers students within the field of agricultural and environmental studies a combined international and national forum for debate and critical knowledge construction via the use of IT. Students at participating universities in different countries around the globe are shifting between normal on-site classroom lecturing and discussion and virtual international classrooms. The virtual linking of students

across the different universities happens through various computer-mediated communication (CMC) technologies – i.e. synchronous (real-time) chat rooms, asynchronous (delayed) discussion boards and e-mail communication and interactive videoconferences (VC). Additionally, the course information platform (Blackboard) offers supplementary facilities needed for a virtual connection between the universities. For example, a personal homepage for each student is provided. In addition, the course information platform holds the case studies, a file archive, some general information and a news bulletin.

The conceptual framework for the Global Seminar is based on a constructivist approach to teaching and learning. This constructivist approach emphasizes the importance of context in cognition, sees collaboration and conversation between individuals as essential in any learning experience and promotes critical reflection and experiential learning based on real world problems (e.g. Jonassen et al., 1995, 1999). The contrasting learning and teaching approach, often referred to as the 'sponge method' of instruction, implies teachers transmitting their knowledge to the learners, who then absorb it. The constructivist sense of learning is not listening, memorizing and then mirroring a 'correct' view of the world at examinations, but rather participating in and interacting with the surrounding environment in order to create a more reflective and personal form of knowledge.

Emphasizing the constructivist beliefs about the need for embedding learning in real-world situations, a very central element in the Global Seminar is the use of selected research-based case studies of real events and people, to investigate key concepts and policy issues that are embedded in real world global dilemmas. Examples of global themes covered in the case studies are population, waste management, global warming, food safety, biodiversity and water quality. These case studies are discussed in turn, in three-week cycles, and students are encouraged to approach each case study from multiple perspectives. Further, students work to resolve the dilemma presented in the case working towards a consensus view. For this students have to identify relevant facts, analyze them, and draw conclusions about the cause of the problem and about actions that might be taken. This process often allows for several equally plausible and compelling conclusions, each with different implications for action. Real life is ambiguous and complex and the case studies all reflect that reality. A 'right' answer or 'correct' solution is rarely apparent. In a certain sense, one can say that Global Seminar students, through the case study work, function a community of practitioners, who through collaboration, help to solve real-life problems.

The central feature of each case study cycle is a synchronous and interactive VC. All classes at the different universities participate in this VC and in this way construct a virtual multi-nation, multi-university classroom. Prior to this VC, the students at the different national universities are introduced to the case study and its broader theme in their on-site classrooms. This happens through lectures given by the on-site course instructor, and through a guest lecture given by an expert in the particular area of study, followed by analysis and discussion. In addition, a synchronous international chat session on the case study theme forms part of this preparatory phase. Then, a group of students at each partner location is allocated a specific role representing a particular viewpoint for which they in collaboration with their class have to prepare a presentation representing that role at the VC. All roles are then presented at the VC followed by an open debate. A case study cycle is finalized with reflections in the different classrooms on-site and with students writing their individual reflection as an essay assignment. While role play is one approach for bringing out a debate around the central issue in the case study, other discursive techniques are also used to achieve the same result.

In addition to the cyclical case study work outlined above, all students are collaborating in International Student Groups (ISGs). An ISG consists of a number of students from different universities, who collaborate on carrying out a problem-based project on a subject within the different case study themes. This work is entirely online and each ISG is expected to complete a project, make a Power Point presentation of their work at a specific VC designed for this purpose and conclude the project with a group report. The course information platform (Blackboard) offers specific facilities – a file archive, synchronous chat rooms and asynchronous discussion boards, needed for a virtual connection between members of each ISG. Further, each ISG has its own facilitator, a role taken up by the international group of teachers responsible for the course.

2 Objectives

The overall objective of the present piece of evaluation research was to conduct an in-depth evaluation and research into the potentials and limitations of this type of course as a novel form of education. The

following specific objectives have been formalized: 1) assess the innovative aspects of the course resulting from the combination of E-learning and on-site classroom based learning, 2) identify significant learning outcome resulting from the combination of E-learning and on-site classroom based learning, as reviewed by learners, and 3) establish areas for further improving the Global Seminar.

3 Methodology and methods

Students enrolled at The Royal Veterinary and Agricultural University (KVL) in Denmark, one of the partners in the Global Seminar, were surveyed each year for the past three years. Thus, in 2002 and 2003, the Global Seminar was systematically evaluated through a standard written course evaluation form and through oral evaluations. In 2004, a more comprehensive evaluation was conducted, using a triangulation of enquiry methods. In total, the number of students particpating in the evaluation exercise was 7 in 2002, 8 in 2003 and 15 in 2004. Briefly described, the methods applied for the evaluation conducted in 2004 were a workshop exercise, two ranking charts and a total of four questionnaires. Of these four one was an electronic questionnaire and involved all students and not just KVL students. Here the number of responding students was 15. All numerical data has been processed in Excel.

4 Results and discussion

In all three years, a very high proportion of students (71-88%) taking the course felt that that the course met their expectations and that it should be a regular offering in their education. The reasons given were that the course was challenging, educative, broadening students' knowledge base and that it involved a high level of student participation. Students also liked that the course simulated a 'mini' global world. Discussing global themes in a global setting and in the context of interdisciplinary education - and doing this by using technology, seemed to attract most students. Further, students liked that the Global Seminar helped confront reductionist ways of thinking and provided ways of taking multiple perspectives into account, moving towards systemic thinking. The fact that by participating in the Global Seminar one learns to have 'an open mind' towards different ways of thinking, other people's perspectives, other disciplines etc. was highlighted by students many times during the various evaluation exercises, as one of the most valuable aspects of the course.

The novelty of the course both in terms of its blending of E-learning and classroom-based learning, and its constructivist pedagogical framework were reasons for most students being satisfied with the course. The evaluation also indicated that students agreed with the founding premise of the Global Seminar that issues related to global themes such as sustainability of food production and the environment are best advanced if young learners at universities, as future leaders, discussed these themes in a global setting, in the context of interdisciplinary education and by using newer technologies. Based on his work on the potential of distance education in the light of global issues and concerns, Visser (2003) sees increased networking around the globe as an important condition for the formation of dynamic learning communities that are sufficiently global in outlook to become a basis for learning to live together with the global concerns of our time. In terms of learning process, Visser (2003) emphasizes a focus on problems, trans-disciplinarity and consilience. All this is very much in line with the premise of the Global Seminar.

The main motivations for students taking the course in Denmark were the course themes and the intercultural, international, and interdisciplinary discussion forum that is built into the course. This seemed coupled to, and in a certain sense also overlapping with, the third most frequently expressed motivation for taking the course – that the course was seen as 'a new way to study' – referring to the combination of on-site classroom based learning and virtual learning. One student expressed that 'it looked interesting with the combination of universities', and with reference to the constructivist way of learning stated that 'the challenge of participating in a course where you have to act instead of just listen and learn'.

When comparing students' motivations and expectations with their realized learning outcome and competence development, the main finding is that the Global Seminar apparently attracted students with an interest in the specific themes of the course such as water and food systems, but also students who are interested in developing other competencies than just factual knowledge about these themes. The main learning outcomes claimed to have been derived from the Global Seminar could be summarized into five kinds: 1) increased knowledge about the actual themes and their global implications, 2) improved

communication skills (virtual and on-site, oral and written), 3) ability to incorporate multiple perspectives on issues – i.e. skills towards systemic thinking, 4) skills in learning to learn and be more self-directed, and 5) skills in learning to take action. Some of the claimed highlights for students included 'learning what others thought about the same global issues' and 'richness in discussion, meeting different backgrounds'.

Concerning the means to achieving these learning outcomes, the evaluation conducted in 2004 showed that the on-site classroom based components and E-learning components supplemented each other, however, as can be seen from fig. 1, students generally ranked the E-learning components lower.
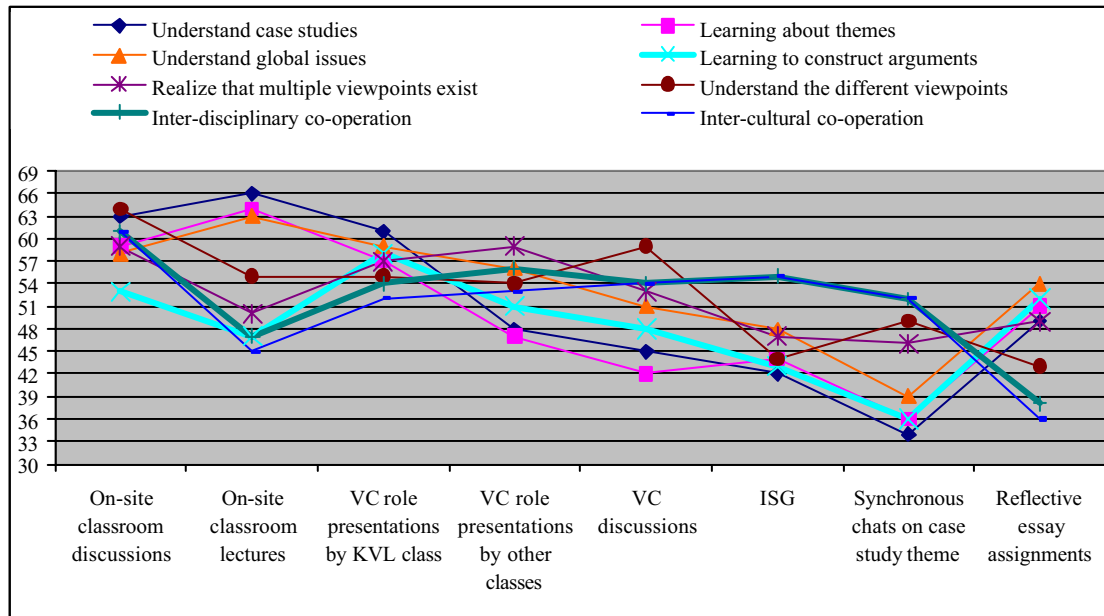

Fig.1 Students' evaluation of how selected Seminar components (horizontal axis) contributed to realizing eight learning objectives defined by the course instructors at KVL. The highest possible score that a course component could gain for its contribution to a particular learning outcome was 84, while the lowest possible score was 14.

The lower ranking of the E-learning components compared to the on-site classroom based components can be explained by familiarity of students with the classroom based components and their comfort level with face-to-face discussions combined with inherent difficulties with CMC. The latter includes difficulties related to lack of confidence with IT, difficulties with time coordination, the impersonal nature of the interaction and the occasional break down in connectivity. This view is supported by Schrum (2001), who points out that learning preference (on-site face-to-face versus virtual CMC), study habits and experience with using technological tools are some of the dimensions that may impact the success of adults in learning online.

As can be seen in fig. 1, the highest score (66) was given to the on-site classroom lecture component for its contribution to helping students to understand the different case studies. A score of 64 was given to the same course component for its contribution to more in-depth learning about the broader themes of the case study. The high ranking of the classroom lectures could reflect students' wish to get more factual knowledge to support discussions and decisions. Each oral evaluation conducted at KVL for the past three years have brought out a discussion about the depth versus breadth of coverage of the themes in the course. It seems that despite the fact that students already experience that knowledge about these themes is a central learning outcome, they want more in-depth knowledge about these themes and see more lectures as one way of accomplishing this.

Despite the focus on the on-site activities like lectures and classroom discussions as major learning sources, the different evaluation activities in the different years show that if the course had only involved guest lecturers and classroom discussions, some of the essential learning outcomes would not have been realized to the same extent. For example, awareness that there are many ways in which the same topic can be understood and argued for is brought to life by participating in debates and role plays across classes. As can be seen in fig. 1, VC presentations by fellow students in classes at other universities received high

scores as a course component contributing to KVL students realizing that multiple viewpoints exist, while the discussions at the VCs scored high as a component helping students to actual understanding of the different viewpoints. The students' own presentations at the VCs received high scores as a course component contributing to their learning about the different case studies and to helping them to understand how some issues are of global concern. Improved skills in communicating virtually is another learning outcome, which may not have been realized, had the Global Seminar only consisted of on-site activities.

In all three years, the ISG was the course component most criticized by KVL students and they were sharp in suggesting ways in which ISG could be improved. Further, in the electronic survey conducted in 2004 involving all students, 87 % of the respondents stated that they found the ISG work problematic. Getting students situated in different countries and universities to work together in an online group carrying out a problem-based project has proven difficult given a range of reasons. It is encouraging, however, that 73 % of the respondents in the electronic survey stated that they found advantages in working in an ISG. Major advantages put forward were related to getting multiple viewpoints on the case study topics and developing communication skills. Student comments like - 'it (the ISG) was a great challenge and I learnt a lot about making compromises with people I have never seen' and 'I have learned a lot about international communication and the problems of this communication. I think in the future I will be better prepared for such work' illustrate the positive albeit problematic attitude towards the ISG! Further, the electronic survey showed that students were quite satisfied with their finished ISG work and presentation of this work at the special VC designed for this purpose. Finally, as fig. 1 shows, KVL students ranked the ISG course component as the most important for increasing their understanding of the different case studies. All this may demonstrate that working within an ISG online is a troublesome task, but also to some extent rewarding.

The major problem with the ISG seems to be that it is very problematic to generate good group dynamics ensuring commitment, adequate task management and optimal conflict resolution. This was experienced by students as difficulties in getting all group members to participate in arranged synchronous ISG chats and on the discussion board, leading to submission of incomplete project proposals and poor quality in Power Point presentations. Another possible contributor to the ISG challenge could be differences in learning style primarily between European and US students. It seemed that the European students had more experience with carrying out problem-based project work and with collaborative learning in groups, and therefore also different expectations and understanding of this way of learning. The employed CMC technologies did not seem to be able to overcome this difference. An immediate solution to this problem could be to work with more directed learning in these groups, providing groups with more fixed objectives and cases to work with.

Another E-learning component subjected to much critique in the different evaluation exercises was the synchronous thematic chats taking place in the beginning of each case study cycle. It seemed that students generally found this course component somewhat confusing and disorganized. Brief one-hour encounters based on broad open-ended questions were not conducive for deep and meaningful discussion, but may allow raising of differences in worldviews. When considering the comments students brought forward about the synchronous chats – for example that they were 'unproductive´, 'irritating' and 'problematic', that they 'didn't know what is really going on', and wanted to 'be told what group to be in so that one can prepare beforehand', it is interesting that almost word-for-word, these are the characteristics which Chou (2001) describe as central for what she terms 'ill-prepared synchronous communication'. Ill-prepared synchronous communication can be characterized as non-linear, chaotic, unfocused, an unproductive. As preparation for helping students to get ready for synchronous communication, Chou (2001) suggests that students are divided into small groups and that guidelines for discussion are provided. Both form part of the Global Seminar course chats, but apparently not adequately the way it has been practised so far in the clusters of universities to which KVL belongs. One possibility would be to name the chat-groups early enough, so that students can update their knowledge base, prepare questions etc. Another, perhaps additional possibility would be to provide more specific guidelines for the discussion and appoint one of the students as a moderator of the group discussion. The student moderator could come to the chat with questions to discuss and possibly these questions could be sent to the other chat-group members by e-mail as part of the pre-chat preparations. These ideas are all being incorporated in the current form of the Global Seminar course.

The student responses to chat sessions also spark curiosity about the value of synchronous versus asynchronous means for creating learning communities online, including their ability to support academic

discourse and knowledge construction, as well as their ability to support social aspects. As outlined by Chou (2001), most of the existing research focuses on the effectiveness of asynchronous CMC groups and studies have indicated that these can support both the cognitive and the social aspects of learning. The myth that goes around is that synchronous chats are impossible to manage. The research from Chou (2004) shows, that there is a higher percentage of social-emotional interactions in the synchronous mode (as compared to the asynchronous modes). This suggests that that a particular strength of the synchronous mode could be its ability to create interpersonal relationships. We believe that synchrounous chats shall remain a component of the Global Seminar course and become a more central component of the ISGs, strengthening the social milieu among the group of learners here. This idea is also being incorporated and tested in the current form of the course.

5 Conclusion

In conclusion, the evaluation conducted indicates that students agree with the founding premise of the Global Seminar - that issues related to global themes such as sustainability of food production and the environment are greatly advanced when discussed in a global setting, in the context of interdisciplinary education and by using technology. CMC technologies and tools create the global setting by facilitating the direct contact between students and teachers from different universities in different countries in different continents and provide the space for working inter-culturally and inter-disciplinarily. The on-site classroom based activities ensure that the global themes are introduced and discussed to a level where the students feel prepared to make informed arguments and discuss these in a global setting. Such blending of the benefits of on-site exploration of complex issues and the awareness gained by students about additional dimensions of such complexity through international discourse sets this course apart from the usual distance education approaches. Achieving all this in a pedagogically sound and technologically sophisticated way with the students not having to travel anywhere on exchange is a bonus indeed.

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