
Virtual International Learning Experience in Formal Higher Education – A Case Study from Jordan

Wissam Tawileh

*Technische Universität Dresden, Chair of Wirtschaftsinformatik –
Information Management*

Structured Abstract

Purpose–International experience is important to prepare university students for successful career in the globalized knowledge economy. However, learners in developing countries have limited access to international educational experiences due to travel costs and constraints, political instability that prohibit academic visits from foreign students and instructors, societal restrictions on certain groups like female students, or old educational systems that resist didactical and organizational changes. The emergence of Social Media enabled the development of interactive learner-centered virtual learning environments that enable collaborative knowledge building in online social communities. This empirical study aims to explore how to provide Jordanian university students with international academic experience during their regular study programs without travelling abroad. Virtual Collaborative Learning has been introduced and examined in this specific context due to its reported high potential for developing countries.

Design/methodology/approach–Following an educational design based approach, a Virtual Collaborative Learning arrangement has been re-designed to involve Jordanian students in a formal masters' course with German students at the Technische Universität Dresden. Factors that affect participated Jordanian students' perception of this experience have been examined using deep interviews and qualitative content analyses methods.

Originality/value–The value of this study lays in the innovative approach to provide Jordanian university students with international learning experience by integrating them in a virtual community with peers from Germany using Social Media application.

Practical implications–This study delivers empirical evidence on the potential of well-designed Virtual Collaborative Learning arrangements to provide students with enjoyable, high-impact, immersive international learning experience at their home university. This helps universities, especially in Arab and developing countries, to grant their students a new learning experience using affordable easy-to-use Social Media solutions.

Keywords–Virtual Collaborative Learning, Social Media, Online Learning, Internationalization at Home

Paper type–Academic Research Paper

1 Introduction

Providing university students with international experience is becoming more important in the globalized economy. However, this can be challenging, especially in developing contexts, where academic exchange of students, researchers, and teaching staff is restricted by multiple factors like travel costs, visa regulations, security concerns, conservative traditions, and renovation-resistant educational systems. Modern information and communication technologies offer affordable, flexible alternatives for location-independent knowledge exchange in the virtual space.

While technology-enhanced learning applications were implemented widely, also in developing countries, over the last decades to enhance learning processes, classical elearning applications often focused on learners' interaction with digital learning materials (Gulati, 2008). The emergence of Web 2.0 shifted the users' role to be the key contributors using online collaborative applications (Gillmor, 2006). Interactive learning settings, like "Online Collaborative Learning", benefit from new participation chances to implement effective pedagogical approaches and integrate students in virtual social learning environments that facilitate intensive interaction within and between students' groups (Selwyn & Grant, 2009). This paper presents an empirical case study of integrating Jordanian students in an international Virtual Collaborative Learning course at the Technische Universität Dresden in Germany using interactive Social Software.

2 Virtual Collaborative Learning (VCL)

Within the constructivist learning paradigm, project-based learning scenarios concentrate on the role of students' self-regulated knowledge construction and exchange, which can be facilitated by interactive information and communication technologies. Computer-Supported Collaborative Learning (CSCL) aims at utilizing these technologies to enhance learning processes with benefits including: skills improvement, positive impact on atmosphere, positive attitude towards learning, acceptance to deal with more difficult problems, effective group dynamics, and enhanced students' performance (Lehtinen, Hakkarainen, Lipponen, Rahikainen, & Muukkonen, 1999). Virtual Collaborative Learning integrates these benefits in the Virtual Classroom as an effective group-learning environment (Hiltz, 1988). The Chair of Information Management at the Technische Universität Dresden develops and implements Virtual Collaborative Learning arrangements in formal higher education

to improve students' professional competence, team competence, media competence, and intercultural awareness (Schoop, Bukvova, & Gilge, 2006). Through cooperation with international partner universities, students have the chance to collaborate with peers and instructors from other countries and gain international academic experience during their regular study program at their home university.

Virtual Collaborative Learning has a considerable potential to enhance teaching and learning practices and outcomes in developing countries, as it can (1) increase access to educational materials and the educational experience in the virtual classroom, (2) increase cost efficiency by allowing flexible location-independent tutorial support and optimizing workload, (3) increase gender equity by enabling female learners and instructors to actively participate in the learning process in the virtual social environment from their own place, (4) increase employability by improving learners' interpersonal and professional skills and prepare them for the modern labour market, and (5) foster capacity building on teachers' side by enhancing their media competence and teaching practices (Tawileh, Bukvova, & Schoop, 2013).

3 Methodology

This study aims to integrate Jordanian university students in an international Virtual Collaborative Learning course and investigate their perception, as natives of an Arab developing society, of this innovative approach to gather an international academic experience virtually while they are still at their home university. Jordanian students from Princess Sumaya University for Technology in Amman attended a Virtual Collaborative Learning course at the Chair of Information Management in Dresden and were interviewed to explore the factors that affected their perception of this experience.

3.1 Course description

The course "Collaboration in the Virtual Classroom" is a regular masters' module at the Faculty of Business and Economics of the Technische Universität Dresden and is offered as a Virtual Collaborative Learning arrangement. Students from Germany and international partner universities work in small groups on a case study with a given illstructured problem they should solve collaboratively. During their work, they practice: virtual team work, critical thinking, problem solving, collaborative decision making, professional negotiation, presentation skills, cross-cultural communication, and academic English language. Eighteen (10 Female and 8 Males) students from the Technische Universität Dresden and eight (4 Female and 4 Male) students from Princess Sumaya University for Technology participated in this course in the summer term 2015.

In five groups of 5-6 members, the participants had the main task to develop an intercultural communication training concept for a fictive company. A closed Social Network was created using the open source software “elgg.org” as a central communication platform for the course. In a written team agreement, each group documented its organization, skills, responsibilities, and communication rules. Selected readings and e-lectures were provided as self-study preparatory materials on: Virtual Collaborative Learning, Performance in the Virtual Classroom, Project Management, and Cross-Cultural Communication. The intensive virtual collaboration phase lasted of four calendar weeks and the final outcome was a virtual presentation of the recommended solution and its rationale developed by each group.

3.2 Data collection and analysis

To explore the factors that affect Jordanian students’ perception of Virtual Collaborative Learning, a guideline for standardized semi-structured in-depth interviews was developed to address: previous e-learning usage, previous international experience, participation motivation, course structure, teaching method, problems and difficulties, the technical learning environment, perceived learning impact, tutoring and support, overall satisfaction, and enhancement recommendations. Seven (4 Female and 3 Male) participants accepted to attend the evaluative interviews. This data collection method was selected to gain an in-depth understanding of participants’ perception of the program (Patton, 1990). The seven interviews of 38-55 minutes were conducted in June 2015 using the online conferencing tool AdobeConnect and were recorded and transcribed with the permission of the interviewees. Interviewees’ names were replaced with codes to protect their privacy (F=Female, M=Male). The smooth verbatim transcription method was selected to produce an understandable text in the original wording (Howitt, 2010). For this explorative study, the inductive category formation procedure of the qualitative content analyses method was applied to code the interview transcripts using the online software qcamap.org (Mayring, 2014).

4 Results

The seven interview transcripts were inductively coded and a set of twenty-four distinct categories represented the factors that affected the interviewees’ perception of the Virtual Collaborative Learning experience. These were clustered in the three main categories: contextual factors, design factors, and individual factors. Table 1 lists the categories in a descending order of their absolute frequencies. It also displays the number of interviews they were mentioned in (fifth column) and the categories’ frequencies according to interviewees’ gender (sixth and seventh column)

Table 1: Category frequencies in the analyzed interview transcripts

Main Theme	Category/ Code	Sub-category Title	Absolute Frequency	Occurs in n Docs.	F	M
Contextual Factors	CF1	Classical teaching style	26	7	15	11
	CF2	Limited use of e-learning	18	7	9	9
	CF3	Low extrinsic motivation	18	6	11	7
	CF4	Limited access to international experience	10	7	6	4
	CF5	Limited connectivity	3	3	1	2
Design Factors	Groups Characteristics					
	DG1	Effective virtual teamwork	19	7	10	9
	DG2	Multidisciplinarity	18	7	9	9
	DG3	Mutual peer support	18	7	11	7
	DG4	Familiarity with group members	7	4	5	2
	Content and Organization					
	DC1	High workload	18	6	8	10
	DC2	Tutoring and support	14	6	6	8
	DC3	Initial anxiety and confusion	9	7	5	4
	DC4	Materials and tasks	8	5	3	5
	Technology Characteristics					
	DT1	Useful / Easy-to-use tools	18	6	11	7
DT2	Structure and design	11	4	6	5	
Individual Factors	Anticipated Benefits					
	IA1	Flexibility of online learning	29	7	12	17
	IA2	Preparation for study and work	15	6	12	3
	IA3	Learning from foreigner peers	13	5	9	4
	Interest in New Experience					
	II1	New teaching/learning methods	27	7	19	8
	II2	New people and cultures	15	6	8	7
	II3	New technology use for learning	12	7	6	6
	Personal Perception					
	IP1	High satisfaction	43	7	28	15
	IP2	High intrinsic motivation	21	7	15	6
IP3	High enjoyment	13	7	7	6	

4.1 Contextual Factors

The contextual factors that affected Jordanian students' perception of Virtual Collaborative Learning are mainly related to local academic conditions in their country as described in this section supported by anchor examples from the interviews (Table 2).

Table 2: Anchor examples of the category Contextual Factors

Code	Anchor examples
CF1	“in our regular study it was like just ,here are the books, here are the sources, here are the references, read and study and come to write traditional exams” (F41)
CF2	“Now E-Learning is practically available in all countries, but in Jordanian universities you do not feel that it has a role or that it plays an important role in teaching” (F51)
CF3	“their fear from the local instructor, that he tells them like ,work with the Germans and I will not calculate it, it is your work in your option’ this is how they were afraid” (F61)
CF4	“at the university no, I did not have relationships to foreigner instructors or students” (M21) “I never traveled abroad and never worked with someone aboard, I did not see people aboard” (F51)
CF5	“challenges or difficulties, like the internet [connection] sure (laughing), that it was always disconnecting so you may miss a part of the meeting or so, like these technical issues I guess” (F51)

Classical teaching style (CF1): All interviewed students assume that the teaching practices at their home university are old-styled and limited to frontal teaching. They never tried teaching approaches similar to the one they experienced in this course before.

Limited use of e-learning (CF2): Despite the existence of a Learning Management System (LMS) at their university, all interviewees considered the use of teaching and learning technologies to be very limited or absent. They connected this to technical issues in the installed system, instructors’ attitude, and students’ commitment.

Low extrinsic motivation (CF3): Although local instructors have an essential role to motivate their students for active participation in international learning activities, Jordanian students attended this Virtual Collaborative Learning course developed a feeling of not being supported by their local responsible instructor. Four Jordanian students withdrew from the course just after it began to avoid unjustified bad evaluation.

Limited access to international experience (CF4): Although most Jordanian masters’ students have to work to finance their studies, none of the interviewees reported a considerable international experience. The majority has never been abroad of never had a direct communication with foreigner people neither at the university nor at work.

Limited Connectivity (CF5): Students’ access to the Internet in Jordan has increased rapidly in the last years as the connection costs keep decreasing. Only three students mentioned Internet connectivity as a source for technical complications during the virtual collaboration phase, mainly when joining videoconferences from mobile devices.

4.2 Design Factors

In addition to the contextual factors described above, a set of factors related to the design and organization of the Virtual Collaborative Learning course that affected the perception of the Jordanian attendees were identified in the interviews as described in this section. Table 3 presents supporting anchor examples from the interviews.

Table 3: Anchor examples of the sub-categories under Design Factors

Code	Anchor examples
DG1	“it would be the same I guess if we were a group in the same university” (M21) “what may motivate, or make the team more or less active is not if people see each other virtually or physically or if they meet or not, but the harmony among the team itself” (F11)
DG2	“If I had to do it alone I would not see the points of view I’ve seen [...] the points of view were a very useful thing, and important” (F51)
DG3	“we all were accepting each other, we all supported each other, we all worked, collaborated and helped each other” (F11)
DG4	“As we do not know the competences of each one, maybe one might add something he thinks it is useful but when the group looks at it and find it not related to the case we are talking about” (M51)
DC1	“there was a time pressure and time limitation that the task did not had enough time to be done, so we were in a challenge with time, that we want to finish fast and get to know each other” (F41)
DC2	“alone my feeling of the presence of the instructor with me was, reducing the fear very much or even destroy it, because practically you are not afraid, there is somebody who will help you” (F51)
DC3	“how big the tasks are and so, and if I will cope or not, I did not know that, I did not prepare myself that I will be stressed or surprised by the work volume and the sequential tasks” (F41)
DC4	“the tasks to be clearer than this, I do not know, I felt them a bit, not always clear enough” (F51) “when the tasks are posted, I mean to have a bit more detailed description” (M51)
DT1	“easy and straight forward and implemented in a right way [...] they are easy and dealing with them was normal” (F41)
DT2	“when I was posting comments when I was at work, I was suffering very much even with just posting a comment, but when you use it on a laptop it is better” (M21) “if it was a mobile application it would be better, as we practically in the mobile application era, that everything is coming to you as an instant notification on the mobile” (F51)

Group Characteristics:

Effective virtual teamwork (DG1): Despite their limited experience with e-learning applications, all interviewed Jordanian students experienced flexible, effective teamwork in the virtual classroom, that can be compared or even outperform classical teamwork.

Multidisciplinary (DG2): Another new experience for all Jordanian participants was to work on a learning assignment in an interdisciplinary group. This gave them the chance to consider different perspectives and connect their discipline to different others.

Mutual peer support (DG3): A facilitating factor of effective virtual teamwork was the mutual readiness of the group members to help each other. For the most of the Jordanian interviewees this was very important for successful, comfortable collaboration.

Familiarity with group members (DG4): This course required Jordanian students to work with foreigner peers they never knew or seen before. The previously mentioned mutual peer support helped them to overcome the barriers and get to know their partners.

Content and Organization:

High workload (DC1): As the Virtual Collaborative Learning project was introduced as a part of a regular masters' seminar in Jordan and assigned with only 40% of its total workload, the students reported a very high time pressure during the course alongside their other commitments and work. The differences in the academic calendar between the two universities required a strict time plan and increased this pressure even more.

Tutoring and support (DC2): Most of the interviewed students were satisfied with the presence of the instructor and the tutors on the platform. They felt supported and included in the virtual space just like in a real classroom experience.

Initial anxiety and confusion (DC3): Before this Virtual Collaborative Learning course, an academic visit by the instructor from Germany was conducted to prepare Jordanian students for the course. However, they were still confused at the beginning before they knew their group members and understood the tasks and the requirements.

Materials and tasks (DC4): The teaching method of this course is based on an authentic case study and self-regulated group work. This was new for Jordanian students, who requested more detailed tasks' description and a demo of the collaboration platform.

Technology Characteristic:

Useful/Easy-to-use tools (DT1): The interviewed students valued the technical arrangement of multiple Social Software functions as an important enabler for effective virtual collaboration. They could deal with the most of the tools easily and efficiently.

Structure and design (DT2): As students of Computer Science, some Jordanian participants had an eye on the collaboration platform and reported some technical and navigation issues that should be enhanced by restructuring the user interface. They also recommended having a mobile application for permanent flexible interaction.

4.3 Individual Factors

The subjective students' perception of the Virtual Collaborative Learning experience is the most important aspect for this study. The individual factors identified in the interviews are described here, supported by the anchor examples presented in Table 4

Table 4: Anchor examples of the sub-categories under Individual Factors

Code	Anchor examples
IA1	"it was more flexible than the class at the university [...] I sit the way I want at the place I want, this was nice and at the same time I did not feel that there is a problem in commitment" (F11)
IA2	"when you enter the job market it is not a must to work in a company and all in it are Jordanians like you, so no, you have to have learned something like this" (F51) "one of the ideas was continuing with a PhD, one had like fear to continue a PhD outside the country or fear to interact with people from outside, to study in universities abroad" (M52)
IA3	"I felt it very important for us as a society to take from them the seriousness in everything they do. I mean we miss this things very much here in Jordan as a culture in general" (F11) "I saw how Germans are committed more than us in work, how they know things we do not know, how they search for resources we did not learn how search for them" (M51)
II1	"it was something nice, that you are discussing to solve a problem, not like we are attending just to solve assignments or we have to solve a quiz" (F41)
II2	"you deal with people from another culture, from another country, maybe from another religion and from another mentality, this adds the thing I said, that it enhances student's competences" (F11)
II3	"the platforms and these things I knew them for the first time [...] using these things was new and it was useful very very much" (F51)
IP1	"It was very beautiful, I thank you so much that you offered our university the chance to try it [...] I advice to create a dedicated course for it, and all the students visit it" (M52)
IP2	"I would like to learn, the mark from the instructor would have not concerned me" (F61)
IP3	"enjoying because this is the internet era and technology era, so all students who study who are mostly in youth age, they enjoy these things" (F11)

Anticipated Benefits:

Flexibility of online learning (IA1): Although they reported a very limited use of elearning applications in their university, all Jordanian interviewees were aware of their benefits and repeatedly mentioned the flexibility and advantages of this virtual course.

Preparation for study and work (IA2): The use of modern collaborative technologies to work in an international team and the acquired communication, analysis, and problemsolving skills gave the Jordanian students confidence for future work or study abroad.

Learning from foreigner peers (IA3): Five interviewed participants considered it a good chance to deal with German students and learn from their working and studying style. This should positively affect their perspective and participation in the local society.

Interest in New Experience:

New teaching/learning methods (II1): One of the main motivations for all interviewed Jordanian students to participate in this course were new teaching and learning methods they expected to see at the organizing university in Germany.

New people and cultures (II2): Another important motivating factor was the interest in knowing new people from a different part of the world and explore their culture if possible. This was a “unique” chance as some Jordanian students mentioned.

New technology use for learning (II3): Although they are aware of the benefits of elearning applications and they use Social Media privately, all Jordanian interviewees considered learning new uses of technology for study and work a benefit from this course.

Personal Perception:

High satisfaction (IP1): All interviewees reported a high satisfaction with the benefits they had in the course and the overall experience. They all would attend and recommend the attendance of similar courses to all other students.

High intrinsic motivation (IP2): Despite the high workload and the limited extrinsic motivation and support by the local instructor, a high intrinsic motivation to continue in the course till the end was obvious in all interviews.

High enjoyment (IP3): Integrating the students in an enjoyable learning environment would enhance their attitude toward learning and facilitate their active participation, as all interviewed Jordanian students reported and acknowledged..

5 Conclusions and Future Research

In this empirical case study, Jordanian students were integrated in a regular masters’ course at the Technische Universität Dresden in a purposely re-designed Virtual Collaborative Learning arrangement to offer them an affective international academic experience without travelling abroad. To explore their perception of this modern approach, in-depth interviews were conducted with seven Jordanian students attended the course. Twenty-four factors that influenced students’ perception were identified in the three main categories: contextual factors, design factors, and individual factors.

Introducing Virtual Collaborative Learning on a regular basis in a developing context can face multiple challenges like local accommodation to classical teaching styles, limited exposure to technology-enhanced learning practices, non-motivating instructors, and technical infrastructure problems. These contextual factors identified in

this study highlight the importance of international cooperation to provide universities in developing countries with the required know-how to implement innovative collaborative learning settings and offer their students the important international academic experience at home. Virtual Collaborative Learning implements a project-based learning approach that requires intensive students' participation. Design factors like course timing and duration should be carefully considered when integrating international students for the first time in a similar experience. Extensive explanation and preparation are also essential to enhance the performance of this target group and increase its benefits in pilot courses. This should also reduce possible anxiety or confusion at the beginning of the course. Considering technical collaborative tools that work in a developing context, including low-bandwidth flexible mobile applications is another design factor that can enhance students' Virtual Collaborative Learning experience.

Virtual Collaborative Learning has a considerable potential to include students from developing countries in affective, motivating, enjoyable virtual social learning environments as an efficient and effective alternative to provide these students with valuable international experience they might not have the chance to collect otherwise. This can be concluded from the high satisfaction reported by the Jordanian students. One limitation of this study is the sample size and variation. As the participation in the evaluative interviews was voluntary, it is possible that most interviewees were satisfied motivated participants, who do not hesitate to share their positive experience with the instructor. However, the participation of seven students in the evaluation (out of a eight Jordanian course participants) reduces the chance to have reluctant opinions that significantly change the study results.

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