



**Manchester
Metropolitan
University**

Blair, Garry ORCID logoORCID: <https://orcid.org/0000-0003-0861-3429> and Pagano, Rosane (2021) Virtual cells for collaborative and experiential learning in distance education. In: Learning, Teaching & Student Experience 2021 (LTSE 2021), 29 June 2021 - 30 June 2021, Virtual.

Downloaded from: <https://e-space.mmu.ac.uk/629169/>

Version: Published Version

Publisher: Chartered Association of Business Schools (CABS)

Please cite the published version

<https://e-space.mmu.ac.uk>

VIRTUAL CELLS FOR COLLABORATIVE AND EXPERIENTIAL LEARNING IN DISTANCE EDUCATION

Dr Garry Blair, Principal Lecturer, Manchester Metropolitan University

Dr Rosane Pagano, Principal Lecturer, Manchester Metropolitan University

Introduction

Project management is an applied discipline and the use of simulations provides the opportunity to allow experiential learning to occur, focused on selected academic themes. An artificial project 'reality' can be created that affords learning opportunities within defined boundaries.

Specified learning objectives can be utilised, enabling the student to experience the activity of running a project, under simulated conditions that approximate a defined 'real world' environment.

Virtual teams were allocated from students in three countries, with each team having a member from each country

Several formats for the simulation were used for the postgraduate students. The actual project management simulation software is licensed by a private company. The different forms of organisation, used were:

- The teams were located in a classroom with each team having a separate workspace, comprising a set of adjacent tables
- Virtual teams were allocated from students in three countries, with each team having a member from each country
- The teams collaborate via a web communications platform, using 'breakout rooms' to house each team, constituting the 'virtual cells'. These are separate virtual spaces, utilised to permit team collaboration and experiential learning by engagement with the project management simulation
- The students in the virtual teams were spatially separate, in several instances they were in different countries thus comprising global teams. The delivery of teaching was the 'distance education' mode with sessions provided online and no reliance on campus attendance, thus suited to the constraints of the pandemic.

Links to theory

One of the principal objectives of the virtual project management simulation was to demonstrate links to academic themes, hence validate theory via experiential learning. The key theories were taught on the postgraduate courses and the simulations provided the opportunity to develop a practical understanding of these concepts by engaging with the project management simulations.

The intention was to operationalise the theories, thus demonstrating the link between cause and effect through the simulation. The student teams' actions and reactions all had quantifiable consequences for the project outcomes. These sessions also provided valuable experience for the participants in a 'safe', controlled environment. The usual risks of running an actual project could therefore be avoided. This also afforded the opportunity to develop their portfolio of skills and hence enhance their employability in many cases.

The simulations required the application of both 'hard' and 'soft' skills: the former comprising technical skills, such as planning, that can be developed by formal courses; and the latter, 'people' skills such as negotiation, that are usually acquired experientially. The simulation allows both types of skills to be developed, via the project process. A plan is required in the project scenario and the ability to manage and make decisions within teams is needed to successfully negotiate the exercise. The opportunity for experiential

The simulation activities could help to overcome the problem of learning not being applied and help to develop skills for utilisation within organisations.

learning is afforded (Kolb, 1984): decisions are required and taken by the participants; feedback received and reviewed; alternatives are offered and discussed; then a course of action selected and executed. The cumulative outcomes of these decisions are converted into 'scores' on key project indicators, which permit the relative success of teams' performances to be assessed.

The intention is to encourage learning at different 'levels', including process and teamwork (McClory et al, 2017), creating the opportunity for systematic knowledge acquisition and retention (Duffield and Whitty, 2016; Drechsler and Breth, 2019) at various 'layers' of a project, such as strategy, governance and operations in a virtual environment (Winch and Cha, 2020).

The requirement for a suitable blend of team roles can be stated. The 'Business Chemistry' research by Deloitte business consultants can be utilised to illustrate this team aspect (Johnson Vickberg et al, 2017). The team needs members to take specific roles to work effectively (and members can assume several styles). The requirement is to reconcile conflicts and obtain a contribution from all members. This assists in understanding the operation of the team for the simulation and analysing the outcomes.

A model of virtual project teams is used to illustrate the formation of the team in terms of the required communications (Henderson et al, 2016). These can be assigned to the team formation stages (Tuckman and Jensen, 1977). The team formation is prepared by 'prelaunch' communications, including the project and task definition. The establishment of team roles and responsibilities then occurs as norms are defined and trust developed. Team performance is established as communications norms are aligned within the team. Team outcomes should be delivered, with accompanying team and individual performance satisfaction. The result should be the successful execution of the required project tasks for the simulation.

The simulation activities could help to overcome the problem of learning not being applied and help to develop skills for utilisation within organisations. This should provide a virtual learning platform to personalise the learning experience; encourage socialisation through forming networks to engage in teamwork; contextualise this learning, in order to stimulate professional development; and authenticate the process by recording the participants' engagement and outcomes, ultimately leading to the award of a qualification validated by the university (Moldoveanu and Narayandas, 2019).

Simulation setup

The virtual simulations have the following main phases to prepare and execute the exercise:

3.1 Preparation

A pre-meeting is arranged and the documentation distributed beforehand in order to ensure all participants are briefed. The objectives and format of the event are discussed. The simulation usually occurs over the course of a single day.

3.2 Event

An initial briefing is delivered to the whole group in one virtual classroom. The Planning Phase then commences, with each team collaborating in a separate virtual room (breakout room or virtual cell).

The teams have to plan a project to develop an E-commerce website using the available staffing resources in the simulation software. Teams have to make resourcing decisions, using the stated information in the virtual office of the simulation. The execution phase

is then enacted in these separate virtual rooms. The project commences and decisions are required from the teams while planning continues, with the opportunity to make adjustments as the project progresses. Students can access project tools, such as the risk analysis and project plan, to review progress. The team's 'real-time' scores of key criteria, comprising cost, planning, quality and motivation, are displayed. There is a break for lunch, followed by review of progress in a virtual classroom for all teams. The planning and execution phases are then repeated, with each team in its own virtual room.

3.3 Review

There is a final performance review at the end of simulation, with all the teams assembled in one virtual classroom. The results are given and prizes presented to the winners. A final summary of the potential learning from the project is provided, illustrating links to theory;

3.4 Configuration

The sessions were delivered via a web communications platform with a single virtual room for full class briefings and individual virtual rooms for the team activities. Each team had a leader who ran the simulation and shared the screen. Ideally all team members' cameras and microphones should be switched on in these sessions.

The organisers can check on progress dynamically, throughout the simulation, via a special link showing a summary of the scores and components. Organisers can respond to questions via the message facility, directly in the briefing sessions and in the team rooms. The simulations can be recorded in order to facilitate a review of the principal 'learning points'.

Summary of learning

The virtual project management simulations develop ability and knowledge in the discipline of project management and stimulate learning in other areas. The ability to multi-task, manage technical issues and work in a virtual and global team are all developed by these exercises. Communication skills are especially emphasised, with other 'soft' skills such as negotiation and leadership being required for a successful team. The acquisition of knowledge was verified by a survey instrument in research conducted into the simulations (Pagano and Blair, 2014). A perceived increase in learning was demonstrated by the respondents.

Further research could be enacted into the benefits of these exercises considering a range of different scenarios and configurations, for example, regarding global virtual teams in respect of their operation and outcomes.

References

- Drechsler, A. and Breth, S. (2019), "How to go global: a transformative process model for the transition towards globally distributed software development projects", *International Journal of Project Management*, 37: 941-955
- Duffield, S. and Whitty, S.J. (2016), "How to apply the Systemic Lessons Learned Knowledge model to wire an organisation for the capability of storytelling", *International Journal of Project Management*, 34: 429-443
- Henderson, L.S., Stackman, R.W. and Lindekilde, R. (2016), "The centrality of communications norm alignment, role clarity and trust in global project teams", *International Journal of Project Management*, 34: 1717-1730
- Johnson Vickberg, S.M. and Christfort, K. (2017), "Pioneers, Drivers, Integrators, & Guardians", *Harvard Business Review*, 95 (2) March-April: 50-56
- Kolb, D.A. (1984), *Experiential Learning*. Englewood Cliffs, NJ: Prentice Hall
- Easterby-Smith, M., Thorpe, R. and Lowe, A. (1991), *Management Research: An Introduction*. London: Sage

Communication skills are especially emphasised, with other 'soft' skills such as negotiation and leadership being required for a successful team.

McClory, S., Read, M. and Labib, A. (2017), "Conceptualising the lessons-learned process in project management: Towards a triple-loop learning framework", *International Journal of Project Management*, 35: 1322–1335

Moldoveanu, M. and Narayandas, D. (2019), "The Future of Leadership Development", *Harvard Business Review*, 97 (2) March-April: 40–48

Pagano, R. and Blair, G. (2014). "Virtual project management: Evaluation of an e-learning environment." In *Proceedings of the European Conference on e-Learning, ECEL Vol. 2014-January* (pp. 378-384). Aalborg University, Denmark.

Tuckman, B. and Jensen, M. (1977), "Stages of Small-Group Development Revisited", *Group & Organization Studies*, 2 (4) December: 419–427

Winch, G.M. and Cha, J. (2020), "Owner challenges on major projects: The case of UK government", *International Journal of Project Management*, 38: 177-187