



## BEYOND COMPETENCIES: NEW CHALLENGES IN A DIGITAL SOCIETY

---

### Analysing roles as a tool for developing teamworking competence

Coughlan, Paul  
Trinity College Dublin  
Trinity Business School  
College Green, Dublin 2, Ireland  
coughlnp@tcd.ie

Oltra-Mestre, Maria José  
Universitat Jaume I de Castelló  
Department of Business Administration and Marketing. Faculty of Law and Economics  
Sciences  
Ave. Sos Baynat, s/n. 12080. Castelló de la Plana, Spain  
oltra@uji.es

García-Palao, Cristina  
Universitat Jaume I de Castelló  
Department of Business Administration and Marketing. Faculty of Law and Economics  
Sciences  
Ave. Sos Baynat, s/n. 12080. Castelló de la Plana, Spain  
palao@uji.es

#### 1. ABSTRACT

We propose a set of tools for the development of students' teamwork competence and explore their utilization through Action Learning. We analyze the learning outcome improvements related to the assignment of roles during two Operations Management undergraduate courses. Using Action Research, teachers analysed problems identified by students' teams and how they sought solutions and proposed improvements in the design of the course

#### 2. KEYWORDS: 4-6

Teamworking, Roles, Competence, Action learning



## BEYOND COMPETENCIES: NEW CHALLENGES IN A DIGITAL SOCIETY

---

### 3. DEVELOPMENT:

#### Purpose

Teamwork consists of collaborating in an organized way to achieve a common objective (Tranfield & Smith, 2002). One of the basic design tools for teamworking is the facilitation of team roles developed by the members which fit with members' predispositions to adopt specific patterns of behaviour in interpersonal interactions (Cardona & Wilkinson, 2006). Additionally, team members have to undertake tasks to achieve the team objectives which can be allocated by functional roles (Belbin, 2010; Launonen & Kess, 2002). The question explored in this paper is how do team roles, student practice and reflection in the classroom, and facilitation by teachers, influence the development of teamworking competence.

From the point of view of interpersonal relationships in the context of companies, based on the analysis of groups of managers, Belbin (2010), identified nine team roles and he categorized those into three groups oriented to People, Thinking and Action. He stated that balanced groups are associated with better results and quality of teamwork. A balanced group in which all roles are present will contain the characteristics needed for group performance (Partington & Harris, 1999). Forming groups based on a Belbin roles balance might enhance group performance, at least, in initial phases, and have persistent effects on the level of group cognitive complexity (Meslec and Courseu, 2015).

On the other hand, in the educational context, specifically in the university environment, Apodaca (2006) includes as one of the methodological strategies of cooperative learning, the development of various roles and tasks. Different options are possible, but he suggests three key roles necessary in all groups, the roles of coordinator, secretary and facilitator. The *coordinator* leads the group, distributes tasks, times and resources, requests supervision and advice to the professor and contrasts his/her impressions and work proposals with the facilitator. The *secretary* collects the contributions of the members of the group as well as the minutes of the meetings. The *facilitator* observes the dynamics of the group and the methodology used, advises the coordinator and the group on the problems and difficulties encountered, as well as on possible alternative solutions and seeks and proposes methodological resources for the development of tasks (Sweet et al., 2017).

Recently, Morgan & Stewart (2019) marked as relevant "and still an aspiration" for business and management program, the "development of skills allowing students to contribute to teams across functional areas, face to face, virtually, and in multicultural contexts". The argument used is that instructors have still not identified all relevant elements of the team assignment structure that ensure a good team experience, teamwork skill development, and significant content learning.

This paper tries to cover the research opportunity in combining the two sets of roles, each of



## BEYOND COMPETENCIES: NEW CHALLENGES IN A DIGITAL SOCIETY

---

which individually brings a different value to teamworking. Conceptually, it is of interest to consider the scope of a combination and to explore the process of combining in the educational setting of a classroom. Using as reference the roles proposed by (Apodaca, 2006), in this paper, we explore the content of the functional roles to be used with educational proposals. We also consider team roles in the students' teams having in mind the influence of balance on team performance (Belbin, 2010; Meslec & Curşeu, 2015). Several learning consequences derived from teachers experience.

### **Design/methodology/approach**

The study is based on the practical module of an undergraduate Operations Management (OM) course and its use action learning (AL) as the learning methodology for competence development (Coughlan & Coughlan, 2011; Garcia-Palao et al., 2019; Lizzio & Wilson, 2004). The use of AL by students delivers an experiential, collaborative and action-oriented approach to their learning process and extends their new knowledge beyond the content. To explore this educational intervention, teachers, using action research (Gibbs et al., 2017), act as facilitators of the learning process, monitoring the development of the activities proposed and the evolution of teams.

The study explores the research question in two cohorts of students undertaking an Operations Management undergraduate course. The students differed in each cohort but the course content and learning objectives were similar. The delivery of the course to the two cohorts overlapped. As such, the research design enabled arising from engagement with one cohort to be considered for application in the other.

In the initial class session in each course, students are introduced to teamwork, both theoretically and through a practical activity which serves as the starting point for the self-creation process of teams. This initial session serves as an experiential example to the teamworking tools they are asked to experiment during the course (Garcia-Palao et al., 2019). Later, and in parallel with theoretical OM sessions, the teams perform four practical activities related to OM topics in a sequential way. The development of practical activities is self-organized by teams which are required to plan, organize and develop. Additionally, during the course, teams use and reflect on the application of the different teamworking resources, including roles. At the end of each activity, teams deliver an AL report on their reflections on the use of those resources, main problems faced in teamworking and proposes actions to improve them in the next cycle. Content of the stages of the actions taken was done using the word cloud generator Word it Out (Bouchrika, 2020)

The initial functional roles proposed to students were those adapted from Apodaca (2006). To differentiate from Belbin proposal, to adapt to our methodology and to emphasize some of the



## BEYOND COMPETENCIES: NEW CHALLENGES IN A DIGITAL SOCIETY

---

tasks to be developed, we re-named the coordinator and facilitator roles (Table 1). The coordinator, as the spokesperson, was the link with teachers, leading the articulation of concerns and questions within the team before being surfaced with teachers. The facilitator as the Action researcher, encourage the analysis of team working in each activity and is in charge of the formalization of the improvement actions. The secretary was responsible for maintaining the team agreements and formalizing them in the minutes. Those roles were self-assigned by teams and changed when they decided. Team members complete a survey base on Belbin's roles by Buchanan & Huczynski (2017) which is the base to known the team profile.

Teachers, as action researchers, monitored team practice and the performance linked to the teamworking action learning process. This is done, during the course, reviewing teams reports and through three team tutoring sessions. Additionally, teams develop a final report in which the reflection on team working during the course, which is presented to the teachers. Those activities helped to embed the student's training on teamworking.

In each course, individual data on the time developing the proposed charges, individuals teamworking roles and the perceived improvement on roles are gathered through a survey. The survey data analysis together with the team evaluation of problems faced during the course, allowed teachers to learn on the necessity to introduce changes in the next course design as assigning other roles, define in a more detailed way the tasks to be developed and the use of Belbin's roles.

### **Findings**

The engagement with the teams in the two OM courses yielded both descriptive and quantitative results. Analysis on improvement perceived by students on team roles shows higher improvement on Completer role followed by two People-oriented roles, Teamworker and Coordinator. Those results can be explained by the course design where students are asked to deliver the activities proposed on fixed dates. Additionally, during the four months of the course, the natural evolution of the teams, made students realise the importance of the social relations of the members.

Correlation analysis results show a significative and positive relationship between the time being Spokesperson and improvement on the role of Shaper and Coordinator. Time being Secretary correlate with improvement on the roles of Shaper, Implementer and Teamworker. Finally, the time being Action researcher correlate with improvement on Resource investigator and Teamworker. Those results show that the development of functional roles may influence teamworking competence through improvements in the development of team roles.



## BEYOND COMPETENCIES: NEW CHALLENGES IN A DIGITAL SOCIETY

---

AL reports of the teams informed about problems identified (Graphic 1) and solutions adoption (Graphic 2). One of the main group of problems was related to meetings assistance, communication and the members' knowledge. In a second level, we find problems related to tasks, planning, work division and fairly. Roles are marked in the following level. The global picture of the actions developed shows that are meetings and WhatsApps the main ways used to deal with the problems stated. We find a reference to roles as to practice them. The analysis of the actions taken shows very few assigned directly to a team member either by name or by the function in charge. Two teams referred to roles problems. In problem diagnosis and actions planned information, the reference was as follows:

“Difficulty in adapting the different roles. Better study each of the roles to adequately perform each one's corresponding task. (PR2 Supply Chain/1819)”

“The team has worked well together but needs to define their roles a bit more. Have better-defined roles for each of us for the next practice. (PR2 Capability/1819)”

A spider diagram was particularly useful in visualising balance in a team. The example in Graphic 3, illustrates one particular team. Here all roles are covered by at least one member. The teamworker role is the one with higher value and, with three people scoring in that level. It was a team that the work, especially in the initial stages, went smoothly. But it is the Resource investigator the role that get more diverse value, so that, the team was alerted about it.

In the AR cycle of the teachers, several actions emerge from the learning developed. Concerning roles, two types of roles have to be considered, team and functional roles. For the students, the consideration of team roles is more difficult, but reflections about them enhance teamworking competence. Teachers consider that the analysis of team roles by teams should be done at the beginning of the course. It would facilitate the knowledge of the team members and actions related to teams' balance could be stated in the early stages.

The information also shows a scarce use of functionals roles further the specifications given. Teachers consider to enhance the assignment of the monitoring of the actions by a team member could broaden the content of the functionals roles and would help to broke the idea that teamworking means to do everything by all members.



## BEYOND COMPETENCIES: NEW CHALLENGES IN A DIGITAL SOCIETY

---

### Relevance / contribution

In this work, the use of action learning to develop teamwork competence extends the frameworks of Apodaca (2006) and Belbin (2010) in an educational context. Practically, students have continued developing their skills related to teamwork. It has become clear to them that there is a need to achieve a balance in work teams and to design the team composition and distribution of roles. The learning practices described are developed in an OM course. We considered they can be easily translated to any other courses and in different contexts.

Teachers, as developers of TW competence, have introduced the use and reflection on team roles in students activities. Teachers act as facilitators for the development of the functional roles within the team. In the case of the secretary role, teachers train students, for example, on minutes content, selecting the relevant information to be formalized. In the spokesperson role, students are trained on how to communicate with their colleagues and teachers using different IT tools, as well as being trained in the use of team diaries where they practise the planning and distribution of tasks among the members considering tasks process flow and deadlines. In the case of the Teamworker role, students monitor the team state and its performance, considering possible improvements actions in the AL cycles.

This action on the part of the teaching staff can be a reference practice for the development of teamwork competence in other academic contexts. This would only imply the adaptation of the activities proposed to the students to the specific content of the subject. In this way, we contribute to the identification of relevant practices elements “the team assignment structure that ensure a good team experience, teamwork skill development, and significant content learning” (Morgan & Stewart, 2019).

In the Operations Management professional activity, team management is a competence required in different specific contexts (Launonen & Kess, 2002). Teams are an organizational resource used in quality management, lean processes and project management. In those situations, team members bring to the team not only their knowledge expertise in a specific area but also their competence for team working derived from their predisposition to develop different behaviour teamworking.



## BEYOND COMPETENCIES: NEW CHALLENGES IN A DIGITAL SOCIETY

---

### 3.1. TABLE 1

| Roles in educational context (*) | Roles in OM course | Assigned tasks in OM course                                 |
|----------------------------------|--------------------|---|
| Coordinator                      | Spokes person      | Liaison with the environment<br>Coordinate the team         |
| Secretary                        | Secretary          | Agenda management<br>Convene meetings<br>Writing of minutes |
| Facilitator                      | Action researcher  | Analysis of teamwork through AR                             |

### 3.2. GRAPHIC 1



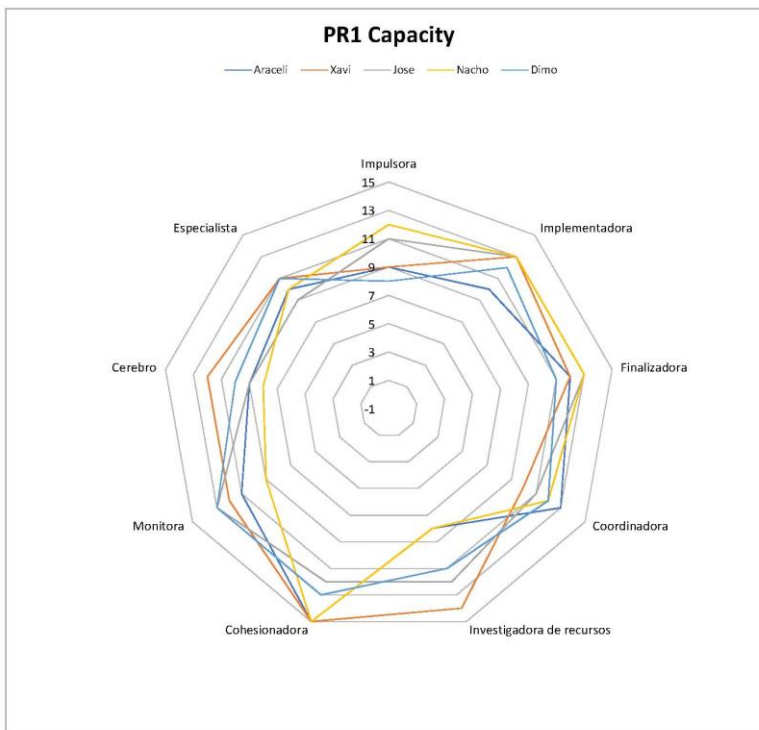


## BEYOND COMPETENCIES: NEW CHALLENGES IN A DIGITAL SOCIETY

### 3.3. GRAPHIC 2



### 3.4. GRAPHIC 3







## BEYOND COMPETENCIES: NEW CHALLENGES IN A DIGITAL SOCIETY

---

### 4. REFERENCES

- Apodaca, P. (2006). Estudio y trabajo en grupo. In M. de Miguel Díaz (Ed.), *Metodologías de enseñanza y aprendizaje para el desarrollo de competencias: orientaciones para el profesorado universitario ante el Espacio Europeo de Educación Superior* (pp. 169–190). Madrid: Alianza editorial.
- Belbin, R. M. (2010). *Management teams: why they succeed or fail*. Amsterdam: Elsevier.
- Bouchrika, I. (2020). 7 Best Word Cloud Generator Tools for School and Work. Retrieved from Guide2Research website: <https://www.guide2research.com/research/best-word-cloud-generators>
- Buchanan, D. A., & Huczynski, A. (2017). *Organizational behaviour* (9th ed.). Harlow, England: Pearson.
- Cardona, P., & Wilkinson, H. (2006). Trabajo en equipo. In *Business* (No. 07/10). Retrieved from [http://www.catedras.fsoc.uba.ar/ferraros/BD/jjf tee.pdf](http://www.catedras.fsoc.uba.ar/ferraros/BD/jjf%20tee.pdf)
- Coughlan, P., & Coughlan, D. (2011). *Collaborative strategic improvement through network action learning: The path to sustainability*. Edward Elgar Publishing.
- Garcia-Palao, C., Oltra-Mestre, M. J., & Coughlan, P. (2019). Improving teamworking competence through action learning. Experiences in operations management education. *Action Learning: Research and Practice*, 16(3), 205–222. <https://doi.org/10.1080/14767333.2019.1655391>
- Gibbs, P., Cartney, P., Wilkinson, K., Parkinson, J., Cunningham, S., James-Reynolds, C., ... Pitt, A. (2017, January 1). Literature review on the use of action research in higher education. *Educational Action Research*, Vol. 25, pp. 3–22. <https://doi.org/10.1080/09650792.2015.1124046>
- Launonen, M., & Kess, P. (2002). Team roles in business process re-engineering. *International Journal of Production Economics*, 77, 205–218.
- Lizzio, A., & Wilson, K. (2004). Action learning in higher education: An investigation of its potential to develop professional capability. *Studies in Higher Education*, 29(4), 469–488. <https://doi.org/10.1080/0307507042000236371>
- Meslec, N., & Curşeu, P. L. (2015). Are balanced groups better? Belbin roles in collaborative learning groups. *Learning and Individual Differences*, 39, 81–88. <https://doi.org/10.1016/j.lindif.2015.03.020>
- Morgan, S. D., & Stewart, A. C. (2019). Teams in Management Education. *Journal of Management Education*, 1–10. <https://doi.org/10.1177/1052562919864377>
- Partington, D., & Harris, H. (1999). Team role balance and team performance: An empirical study. *Journal of Management Development*, 18(8), 694–705. <https://doi.org/10.1108/02621719910293783>



## BEYOND COMPETENCIES: NEW CHALLENGES IN A DIGITAL SOCIETY

---

Sweet, B. V., Madeo, A., Fitzgerald, M., House, J. B., Pardee, M., Zebrack, B., ... Mueller, B. A. (2017). Moving from individual roles to functional teams: A semester-long course in case-based decision making. *Journal of Interprofessional Education and Practice*, 7, 11–16.

<https://doi.org/10.1016/j.xjep.2017.01.003>

Tranfield, D., & Smith, S. (2002). Organisation designs for teamworking. *International Journal of Operations and Production Management*, 22(5–6), 471–491.

<https://doi.org/10.1108/01443570210425138>