GROUP ASSESSMENT IN LOGISTICS EDUCATION: DEVELOPING PROFESSIONAL SKILLS OR ENSURING FREE PASSAGE?

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Introduction:

Higher education has been transforming in the last decade from traditional knowledge based (summative) to more innovative problem based education (formative) (Bryan and Clegg, 2006). Professional skills and capabilities are urged to be developed through undergraduate education as educational institutions are strongly competing in developing students’ professional skills required by business employers (Fry et al., 2009). In order to ensure that higher education is providing students with an educational in addition to a simulated professional experience, assessment has to be carefully planned and developed (Noonan, 2012).

The choice of the appropriate assessment tools is considered one of the most contentious topics in higher education today (Elliott and Higgins, 2005; Bryan and Clegg, 2006; Noonan, 2012). A mixture of diverse assessment tasks, employing different learning styles and techniques, improves students’ perception of the programme which in return increases their engagement in the learning process and boosts performance. A combination of assignments e.g. group projects and examinations can considerably enhance learning, as opposed to examinations alone (Langrish and See, 2008). Assessment should not only focus on the outcome (product learning) but also on progression throughout the programme phases (process learning) (Gravells, 2012).

The use of group work/projects as an assessment strategy has been increasing in popularity in universities as it alters student attention from focusing only on outcomes (grades) to favourable citizenship attitudes that are highly valued by employers such as co-operation and group dynamics. Among other skills group work is a fundamental aspect of human experience thus it became an integral component of higher education and assessment (Noonan, 2012). However, a serious debate is currently taking place within higher education forums which presents the question: how to ensure that group work/project assessment is fair, developing skills and capabilities meanwhile not enabling free rider to be granted free passage?

The purpose of this paper is to propose a model of group assessment that integrates multiple learning techniques to develop social and professional skills while maintaining fairness in assessment. Thus, the structure of this paper is organized as follows: first, a literature review on the topic is presented. Then, a qualitative methodological approach is followed to evaluate the effectiveness of the proposed model. Next, discussion and findings are drawn. Finally, conclusions are outlined.

Literature Review

Occupations in logistics require capabilities and skills developed at different levels of the educational environment. As the increasing global trade led to the formation of global value chains and severe global competition, the possession of various skills to manage the different logistics activities, became a necessity. Apparently, globalization, economic and political trends, new information and communication
technologies and the networked value chain have elevated demand for advanced skills meanwhile raised competition for quality jobs (Stewart 2012; Yildiz, 2015).

As the logistics activities are an integral part of the global supply chain, thus, an organization with considerable logistics activities has to assess innovative solutions in communications, transportation, data collection and information processing on a global level. The global value chain context is becoming more dynamic and complex which is influencing the logistics field (Tong, 2011). Obstacles facing effective Supply Chain Management (SCM) are believed to be generated from the companies or supply chain players and the people in these companies (Fawcett et al., 2008). These challenges are represented in weak collaboration between the chains partners, lack of trust, and absence of training for new thinking and skills (Trautrim, Defee and Farris 2016).

Based on empirical study, supply chain and logistics professionals consider human behaviour a major cause for the majority of challenges to effective SCM. As the human factor is essential to successful collaboration practices, it is essential to integrate teamwork skills as a main part of supply chain and logistics education and training (Trautrim, Defee and Farris, 2016). Handfield (2004 as cited in Trautrim, Defee and Farris, 2016) emphasised that it is necessary to incorporate inter-organisational collaboration and teamwork skills into the curricula of logistics and SCM to properly equip future supply chain managers with the necessary skills.

During the last decades, an increasing number of organisations have started offering logistics courses worldwide as a result of the booming demand for logistics and supply chain professionals in various fields (Lancioni, Forman and Smith, 2001). Consequently, the discipline of logistics is becoming cross-functional which demands higher requirement from education to develop professional skills through continuously developing and improving instructional curriculum. Logistics higher education has also to integrate methodological, inter-cultural, social and analytical skills with professional skills (Engelhardt-Nowitzki, 2006 cited in Tong, 2011). In order to meet the mentioned requirements and fulfil the purpose of higher education logistics and supply chain instructors and lecturers have to teach and guide the learning process using multiple techniques.

Nowadays, techniques such as project work, case studies and practical exercises are used to convey logistics knowledge and develop the required skills. The teaching methods used in logistics higher education in various institutions today include: lectures (principal lecturer or guest lecturer), individual and group projects, case studies, seminars, excursions and internships (Tong, 2011). The interrelationship between the mentioned teaching methods and the expected generated competences and skills are shown in Table 1.

One of the most popular teaching learning method in logistics higher education today is group work/projects. Bormann and Henquinet (2000) define group project as “an assignment of two or more people, acting interactively and interdependently, to achieve specific objectives”. Through group work/projects students are believed to develop essential skills such as teamwork, practical knowledge, interpersonal communication, social competence, management, self-initiative, resourcefulness and conflict management (Quinn and Hughes, 2007; Gagon and Roberge, 2011, Tong, 2011). Educators strive to ensure that working in groups results in a quality learning experience for students. Usually students like being part of a group work and appreciate learning from and with each other (Elliott and Higgins, 2005).
<table>
<thead>
<tr>
<th>Teaching method</th>
<th>Learned skills and competences (examples)</th>
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</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>Expert knowledge, theoretical background</td>
</tr>
<tr>
<td>&quot;Guest&quot; lecture</td>
<td>Up-to-date practical knowledge and experience</td>
</tr>
<tr>
<td>Exercise</td>
<td>Applied knowledge</td>
</tr>
<tr>
<td>Individual and group projects</td>
<td>Self-organisation, teamwork, practical knowledge, social competence</td>
</tr>
<tr>
<td>Case studies</td>
<td>Decision-making ability, practice in identifying priorities, interdisciplinary skills</td>
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<tr>
<td>Seminar</td>
<td>Generating ideas, presentation skills, discussion skills, research skills</td>
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<tr>
<td>Internship</td>
<td>Social competence, practical knowledge</td>
</tr>
<tr>
<td>Excursion</td>
<td>Practical knowledge and experience</td>
</tr>
<tr>
<td>Discussion</td>
<td>Skill of discussion, skill of communication</td>
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</table>

Table 1: Teaching methods and skills  
(Tong, 2011)

Group work/project is, however, criticised as unfair to individual students who participate more than others. It is sometimes hard for educators to evaluate the individual’s contribution to the group project when putting the mark to the final product (Kench et al., 2009). It might grant free passage to students who do not contribute equally to the process and required outcome which might create tension within the group and hinder the collaborative benefits initially thought of. From the lecturer perception it might also be time consuming and difficult to fairly evaluate individual students’ contributions to the project (Quinn and Hughes, 2007). Nevertheless, according to literature based on empirical studies free riding challenges can be overcome via appropriate assessment criteria.

Although a number of studies have addressed this research field and provided thoughtful insights on the benefits of using group assessment to develop professional skills in logistics education, given the paucity of research there is clearly a need for further research to provide models enabling skills developments while maintaining a level of fairness in group assessments. The next section presents the methodology of proposing a new group assessment model that utilises multiple teaching/learning techniques to deliver required results while ensuring fairness.

**Research methodology**

Logistics and SCM research has often been criticized for mainly following positivist approaches, while qualitative and interpretative research is rather scarce (Kotzab, 2000; Kovacs and Spens, 2005). This study follows qualitative techniques to generate insights on the appropriate methods to conduct group/team projects in logistics higher education that improve students’ professional capabilities while reducing the level of unfairness in assessment.

It follows action research as action research is conducted with and for people rather than on people. It attempts to solve the instant and daily problems of practitioners and concerned with analysing a specific context problem aiming at solving it in that context. Action research is conducted in social situations by researchers aiming at improving their own practice, their understanding of the practice and the context in which the practice occurs. Action research helps reduce the probability of the research being mainly scholastic separated from real practice by offering a mutual collaborative relationship between the researchers and practitioner who collectively decide on the problem and plan the action to deal with it.
(Elliott and Higgins, 2005). In this context higher education logistics students were engaged in professional group projects and observed. Certain measures and criteria were followed to ensure fairness in assessment. At the end of the assessment selected students were collectively interviewed in a focus group to identify the skills they acquired and evaluate the fairness of the assessment process.

Thomas et al. (1995) define a focus group as “a technique involving the use of in-depth group interviews in which participants are selected because they are a purposive, although not necessarily representative, sampling of a specific population, this group being ‘focused’ on a given topic”. Interviewees in focus groups are selected to fulfil certain criteria related to the investigated topic i.e. purposive not random sampling is used. They share similarities and that makes them comfortable talking to the interviewer and each other (Richardson and Rabiee, 2001). In this research approach the participants are selected because they possess knowledge of the investigated area. Focus group technique was chosen over one to one interviews in this study as focus groups generate more in-depth and richer data due to its group dynamics and social interaction among the interviewees (Thomas et al., 1995).

Moreover, a Human Resources (HR) specialist at an anonymous multinational company, ranked in Gartner top 25 supply chain companies for 2016, was interviewed to investigate the skills and qualification they value in fresh logistics and supply chain major graduates and compare these skills to the skills acquired by the students. A semi-structured interview format was followed as semi-structured interviews are guided, intense, focused, but at the same time open-ended communication takes place between the interviewer and interviewee.

A roadmap to the methodology used in this study is illustrated in Figure 1.

**Figure 1: Methodology roadmap**

**Multiple learning/techniques group assessment model**

A multiple learning/teaching group assessment model has been developed and is being implemented in third year undergraduate subject “marketing logistics” at the College of International Transport and Logistics (CITL), Arab Academy for Science, Technology and Maritime Transport – Egypt. The model has been developed 7 years ago and witnessed continuous improvement. The module duration is 16 weeks.
where the group project starts at week two with assigned group tasks to be delivered weekly or biweekly in the tutorial and discussed. Students self-select teams of three to five individuals to undertake the assigned project. Students get informed of the assessment’s tasks and are given all instruction of the required work with a timeline verbally and in writing at week two. A team leader is voted for to coordinate tasks and submit progress report with each assigned task of what was done and dissemination of tasks among team members. The project ends with the submission of a written report and an oral presentation at week 14.

Scholars such as Mangan and Christopher (2005) argue that supply chain and logistics managers should understand other disciplines and their cross-functional relation to logistics and SCM. Moreover, Trautrim, Defee and Farris (2016) emphasise that curricula should not only be focused on developing in-depth expertise in logistics and SCM but also capabilities that enable logisticians to succeed in such an interactive cross-functional field. Building on these views curricula developed at CITL reflect this cross-functional perspective. The module presented here for instance is a cross-functional module focusing on the link between marketing and logistics. The group assessment model here clearly reflects this phenomenon. The students at the beginning of the project are expected to gather secondary data about a chosen company such as its mission statement, profile, location, coverage, structure, history etc. Further in research the students collect primary data about the company’s marketing plan, strategies and link to areas of logistics and supply chain management i.e. distribution, product design, quality, labelling and packaging etc. The students apply and compare the learned theoretical concepts to the acquired information from the companies. The tasks are divided among the team members and reported publically in class at its due date.

The assessment is based on the progress reports, the written report and the oral presentation. The mark of the written report is given equally to all group members as the final product or the outcome of the project where the mark of the weekly assigned tasks and the oral presentation are given individually to each student based on their accomplishments, understanding and ability to apply and explain the knowledge gained in class to the practical context.

Table 2 demonstrates the multiple learning/ teaching techniques used and explains their application in the proposed group assessment model.

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<thead>
<tr>
<th>Teaching /learning technique applied in this group assessment model</th>
<th>Explanation of integrating the technique in the group assessment model</th>
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<tbody>
<tr>
<td>Lecture</td>
<td>Concepts taught in the lecture are to be compared to the chosen company</td>
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<tr>
<td>Group/ team work</td>
<td>Students work in self-chosen teams, vote for a team leader and assign tasks</td>
</tr>
<tr>
<td>Case studies</td>
<td>Students select a company as a case study, make contact and compare and apply the learned concepts to the real life situation of the company</td>
</tr>
<tr>
<td>Excursion</td>
<td>Students visit the company’s premises, make a tour and interview its employees</td>
</tr>
<tr>
<td>Discussion</td>
<td>After each phase of the project progress is discussed in class and feedback given</td>
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Research and data collection

Primary and secondary data are collected about the company and methodological techniques followed to report findings (orally and in writing).

Oral presentation

Results are to be presented orally to the whole class and discussed with the other students.

Written report

Results are presented in writing following the set guidelines, reference and demonstrating the used methodology.

<table>
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<th>Table 2: Multiple learning techniques applied in the group assessment model</th>
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<td>Focus group</td>
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As this model has been introduced at CITL for the past seven years, a collection of nine participants were invited to the focus group. The participants were not only students who just completed the module but also who completed the module last year and undergone an internship and graduates who completed the module two years ago and started their careers. The participants discussed the skills developed through the project and whether they perceive the assessment as fair or free riders were granted free passage. As some of the participants already undergone an internship or started working in the field, the expressed that they developed skills that were looked after by the employers. Four of the participants reported that during the some reputed companies use group interviews as their selection process for choosing interns or hiring. The participants explained that during these group interviews they experienced, employers put them in groups to discuss a certain business problem and observed them demonstrate market knowledge, analytical skills, teamwork, leadership skills and interpersonal communication skills. Moreover, they emphasised that they were able to demonstrate such skills in the group interviews and later on the job.

Regarding fairness, the assessment through continuous progress reports by the team leader on the dissemination of weekly or biweekly tasks, enables the lecturer follow up and creates the potential to meet free riding the challenges. To avoid subjectivity in peer evaluation which has been reported in literature, a team leader is democratically chosen. He/she can be trusted, by the team members, to submit frequent feedback to lecturer based on project outline phases reporting individual contributions on assigned tasks. Moreover, the dissemination and completion of tasks is reported publically in class which according the focus group participants urged them to complete their tasks. In addition, they stressed the final group oral presentations that was graded individually based on each member’s knowledge, understanding and presentation skills, was a fair tool to ensure prevention of free passage. It has generated evidence to be an appropriate tool for educators to evaluate the contribution and understanding of each member separately.

HR specialist interview

In order to verify the focus group results a semi-structure interview was conducted with an HR specialist at a multinational company that is ranked among Gartner’s top 25 supply chain companies in 2016. The HR specialist supported the notion that logistics and SCM are multidisciplinary and candidates need to
possess the ability to interact and collaborate cross-functionally with other departments and even other players in the supply chain. He also emphasised that among the important skills they are looking for in the potential candidates are analytical thinking, teamwork, leadership skills, social and communication skills and practical knowledge. He explained that such skills are necessary and are spotted during the personal and group interviews they hold during the recruitment process.

The empirical study proved that the proposed group assessment model can help develop the required professional skills for quality jobs in the logistics and supply chain sectors. This model is effective as it links educational experience with workplace experience when the students observe organisations’ behaviours, visit the companies and conduct personal interviews with the relevant employees.

Thus, this model presented an interesting and effective way of learning while reducing free riding the main drawback of group assessments.

**Conclusions**

This model introduced a tool to ensure process learning rather than only product learning. Moreover, methods and procedures that ensure fairness in evaluation are demonstrated. The model may help educators when conducting group assessments. Furthermore, skills and capabilities gained by students in logistics higher education from the proposed team/group assessment model are exploited and match market requirements. The study highlights that through this multiple learning techniques group work/projects students develop essential professional skills such as team learning, interpersonal communication, management, self-initiative, resourcefulness and conflict management which are skills required by logistics employers.

To conclude, careful moderation of group work/projects by the educators is essential to prevent free passengers from being equally rewarded and to enable students to develop to their full potential when undertaking group work. The ultimate performance grade should be partially granted based on the collective outcome and partially on the individual contributions throughout the project. The collective skills that are sought to be improved should be observed and rewarded as part of the assessment process.

**References**


