IMPROVING TEAMWORK WITH A ROTATING LEADERSHIP MODEL

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ABSTRACT

The Diploma in Integrated Events and Project Management (DEPM) course in the School of Architecture & the Built Environment recently started exploring using CDIO approach as a basis to enhance design of its curriculum. Teamwork and leadership are important interpersonal attributes desirable of graduates from the DEPM course. Events management work is multi-faceted in nature and requires event planners to work with various stakeholders to organise and implement events. Many times, event planners are also required to lead a team to complete tasks. The authors undertook an action research to investigate how teamwork and leadership can be integrated into a module in the DEPM course. The authors referenced the CDIO Syllabus for underpinning knowledge of teamwork and leadership; and use the relevant CDIO Standards to guide design of learning activities that enabled learners to work better in team settings and practise leadership skills necessary for planning and managing events (CDIO Standard 1). More specifically, the action research explore the use of a Team-Based Learning (TBL) strategy in an events marketing module coupled with a rotating leadership model to meet the intended learning outcomes (CDIO Standard 2) of working effectively in teams to complete tasks required in a marketing role. By providing opportunities for each learner to lead in the group coursework assignments, learners get to practise leadership skills in the context of events management (CDIO Standard 7). To evaluate students' learning experiences (CDIO Standard 11), an online survey, a reflection paper and a Self-and Peer Assessment (SPA/SAPA) from the Singapore Polytechnic's Teamwork Measurement Project were used to review learners' teamwork contribution; the online survey and reflection paper also provided insights on how learners could improve their leadership skills. Feedback garnered from these touchpoints showed that learners opined that the learning activities helped to improve teamwork, as they were more responsible with better contribution to the team and minimal free-rider issue. Learners also appreciated the opportunity to practise leadership skills through living the role as well as learning from others. This action research study also serves as an example to the DEPM course on how it could enhance its curriculum design guided by the CDIO Framework.

KEYWORDS

Rotating Leadership, Shared Responsibility, Teamwork, Team-based Learning, CDIO Standards: 1, 2, 7, 8, 11

INTRODUCTION

As part of continuous efforts to enhance its curriculum, the Diploma in Integrated Events and Project Management (DEPM) course in Singapore Polytechnic (SP) recently started exploring the use of CDIO Framework to strengthen its curriculum design. Although CDIO originated from engineering, it is a comprehensive educational model that can be used to design programs that better equip learners for professional work in any industries (Doan, Kontio, Leong-Wee, & Malmqvist, 2016). The DEPM course aims to equip learners who can function in the events industry which require interdisciplinary skills of teamwork and leadership; this is due to the multi-faceted nature of events management work that usually sees event planners working in teams comprising staff and volunteers. Graduates of this course have to work well in and/or lead a team. These competencies also resonate with SP's desirable graduate attributes of Competency & Versatility and Communication & Collaboration. As interpersonal skills in the context of professional work is one key element of the CDIO approach, it was opportune for the authors to reference CDIO Framework to improve learning of their module.

Marketing is a key aspect of event management work that usually entails a team planning, organising and executing event marketing strategies. The Marketing module in the DEPM course equips learners with the knowledge and skill sets for this role. Referencing the CDIO Syllabus for underpinning knowledge of teamwork and leadership, and the relevant CDIO Standards, the authors undertook an action research to better design learning activities in the module. The authors focused on team leadership within 3.1.4 Teamwork Leadership of the CDIO Syllabus due to limited time and curriculum space. The action research explored the use of a Team-Based Learning (TBL) strategy, coupled with a rotating leadership model, to meet the intended learning outcomes (CDIO Standard 2) of working effectively in teams to simulate planning and organising of marketing activities (CDIO Standard 7). Learners will be able to improve their competencies in a marketing role through working and collaborating in small teams.

LEADERSHIP IN TEAM-BASED LEARNING

Team-based learning is an active learning strategy that emphasizes individual and group accountability in small group settings to achieve intended learning outcomes. Carefully designed activities with feedback could lead to effective, self-managed learning teams (Michaelsen & Sweet, 2011).

Leadership in Self-Managed Teams

Self-managed teams are also commonly known as self-directed teams or autonomous teams. They refer to teams with diverse knowledge and skills, and who collectively take actions to decide how to achieve team goals (Magpili & Pazos, 2018; Hoch & Dulebohn, 2017). At first glance, it might be assumed that self-managed teams are leaderless; however, various literature has pointed out otherwise. A self-managed team does not have a formally appointed leader and as stated by Solansky (2008), it is "allowed to designate its own leader"; Taggar, Hackett, and Saha (1999) pointed to the organic emergence of a leader in autonomous teams. Literature had also posit that leadership is even more important in a self-managed team due to task-related issues and team development issues (Barry, 1991).

A common theme in literature on leadership in self-managed teams centers on shared leadership in such teams. The traditional notion of leadership sees an individual who is more

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superior exerting a top-down influence in the team. Shared leadership, in contrast, sees leadership distributed among individuals in the team, with the aim to lead one another to achieve team goals. Influence within the team exhibits facets of peer, upward and/or downward hierarchy (Pearce & Conger, 2002). Hoch (2013) sees shared leadership as reflecting "a situation where multiple team members engage in leadership and is characterised by collaborative decision-making and shared responsibility for outcomes". In essence, this resonates with the concept of team-based learning and self-managed teams. Shared leadership has existed since ancient times but has gained traction as organisations moved from hierarchal structures to team-based structures (Kocolowski, 2010). Its prominence, in part, could be due to literature reviews, which indicated that shared leadership is able to improve team and organisational performance and team effectiveness (Hoch, 2013). As shared by Pearce and Sims (2002), "poor-performing teams tend to be dominated by the team leader, while high-performing teams display more leadership patterns, i.e. shared leadership". However, shared leadership is not a mutually exclusive leadership approach; it can co-exist with other forms of leadership such as the traditional top-down approach.

Rotating Leadership

The most probable type of leadership models in learner teams is the designated leadership where the team leader is appointed by the lecturer or the learner team. Occasionally teams might use an emerging leadership model whereby a learner with potential leadership qualities and who is personally motivated would emerge to be the informal leader (Seers, Petty, & Cashman, 1995). More exception than norm, learners might deploy a leadership model whereby each member takes turn to be the leader; this is known as the rotating leadership model, which sees leadership being distributed or shared among team members (Carson et al., 2007). In the first two leadership models, the leader is accorded with responsibility to get the team rolling, set directions and guide the team to complete the task, make decisions and is accountable for the team's success. He/she usually also receives the most credit should the team do well. In the rotating leadership model, however, these tasks rotate to the learners who takes on the leadership role at designated/agreed juncture (for example, rotate after every three weeks or based on skills set required). Credit is also likely to be shared due to the rotation of leadership.

Research on rotating leadership yields mainly positive reviews; Mohrman, Cohen, and Mohrman (1995) stated that rotating leadership generates a climate of shared ownership and positive contributions to team's performance. Echoing Pearce and Sims (2002), research by Cohen, Chang, and Ledford (1997) found that learners would be more involved and engaged using a rotating leadership model, possibly resulting in better team performance. A quasi-experiment conducted by Erez, Lepine, and Elms (2002) showed that team members were more motivated to make effort and cooperate towards achieving team goals when given the opportunity to experience the leader's role and responsibilities. Markulis and Sashittal (2006), however, reported that while the rotating leadership model was more effective for better communication and cooperation among team members, the designated leadership model was more useful for ensuring equitable contribution towards team goals; in addition, their study found that there was no statistically significant difference in the three team leadership models (designated, emerging and rotating) and team project performance.

Beyond the classroom, shared leadership through a rotating leadership model have found favour in organisations the likes of Huawei and Zappos; given today's increasingly disruptive business environment, it is suggested that organisations with such rotating leadership models are likely to be better positioned to thrive (Ismail, 2018).

Given the benefits of a rotating leadership model on better teamwork as well as the opportunity for all learners to practise team leadership role, the authors decided to implement it with the team-based learning strategy in an action research study in the Marketing module.

IMPLEMENTING ROTATING LEADERSHIP IN TEAM-BASED ASSIGNMENTS

The Marketing module in the DEPM course, offered in Year 1 Semester 2, equips learners with the knowledge and skills to plan and organise marketing activities in the events industry. Learning activities included case studies and a team-based assignment in the form of a marketing plan that required learners to conduct market research for a target audience, brainstorm ideas, design features and activities to meet needs and/or wants of the target audience, prepare a communications plan and set prices for a proposed event. In previous runs of the module, teams were self-formed and leaders decided based on consensus or volunteered.

In the action research study, the authors re-designed some learning activities whereby learners will work in teams to complete tasks that better simulate what graduates will likely do in a marketing role (CDIO Standard 7). Some learning activities added include designing of marketing posters and planning of activities to engage class in the form of a teaching assignment. Learners will discuss and agree on their roles and responsibilities within the team, as a team member and as a team leader; and be committed and accountable to achieving team goals. Learners would also have the chance to practise and improve on their leadership skills.

The team assignments were conducted using Team-based Learning (TBL) coupled with a rotating leadership model. TBL is an active learning strategy (CDIO Standard 8) widely used by various educational institutes as well as one of SP's key initiatives. The rotating leadership model was implemented for the suite of team-based assignments spanning the whole semester. The module team discussed and grouped the various assignments into separate coursework packages based on the expected amount of work (effort and duration); each package comprised assignments that spanned a few weeks or would have assignments that were scheduled at different weeks throughout the semester. The intent was for learners to be more committed and stay on their leadership role as far as possible rather than be the leader for just one assignment for one week. This design provided room for learners to learn from each other in the process with opportunities to improve themselves.

Each learner was required to lead a package of assignments as shown in Table 1.

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Table 1. Distribution of Learning Packages for Teams of 4 or 5 Members

	Teams of 4 Members	Teams of 5 Members
Leader 1	Marketing Plan Project (content & presentation) *[week 1 - 12]*	Marketing Plan Project (content & presentation) *[week 1 - 12]*
Leader 2	Team documentation *[week 1]*+ Teaching assignment *[week 3, 4, 10 or 11]* + escape games 1 & 2 *[week 2 & 6 resp]* + assistant Project Leader (executive summary) *[week 12]*	Team documentation *[week 1]*+ Teaching assignment *[week 3, 4, 10 or 11]* + assistant Project Leader (executive summary) *[week 12]*
Leader 3	TBLQ1 *[week 1]* + Poster 2 *[week 3]* + Poster 4 *[week 14]*	TBLQ1 *[week 1]* + escape game 2 *[week 6]* + Poster 3 *[week 9]*
Leader 4	Poster 1 *[week 2]* + Poster 3 *[week 9]* + TBLQ2 *[week 14]*	escape game 1 *[week 2]* + Poster 2 *[week 3]* + TBLQ2 *[week 14]*
Leader 5	-	Poster 1 *[week 2]* + Poster 4 *[week 14]*

Learners were grouped using the SP-recommended team-based learning framework as explained in previous work (see Soo-Ng & Tao, 2021). Team composition was formed by using the GRumblr software that distributed learners into diverse teams based on criteria such as their Grade Point Average and gender. Tutors briefed learners on objectives of the team-based learning framework with the rotating leadership and the criteria for effective team learning. This information was also put up on the school's learning management system (Blackboard) for their reference. Thereafter tutors explained what each assignment entailed. Learners were given some time to discuss and decide on who would lead which coursework package as well as consensus on each team member's role and commitment to the tasks. The distribution was then documented and sent to learners for reference.

The authors used a variety of assessment tools (reference CDIO Standard 11) to evaluate if the rotating leadership model could lead to better teamwork. In addition, the assessment tools could elicit information on how learners could have improved their leadership skills using this model. Learners had to complete:

- an online survey which asked learners to rate the use of the rotating leadership model, provide information on what they like/dislike about it and how their rate their commitment to teamwork
- a reflection paper where learners reflected on the use of the rotating leadership model on their teamwork contribution
- a Self- and Peer-Assessment (SPA) tool using SP Learning Activity Management System (LAMS), which provided information to learners on how they had performed on their teamwork competencies as well as areas of improvement. As explained in length in other works (see Cheah, 2021; Soo-Ng & Tao, 2021), learners gave each team mate a score of 1-5 for five categories of teamwork competencies – Contributing to the teams work, Interacting with teammates, Keeping the team on track, Expecting quality and Having relevant knowledge, skills and abilities – as well as provided feedback on what they appreciated of each other and areas of improvement for their team contribution. Two rounds of SPA were conducted. Tutors provided feedback to learners on possible areas of improvement based on the results generated. While the SPA scores do not directly provide information on leadership, it sheds some light on what learners appreciated of good leadership.

FINDINGS AND DISCUSSIONS

Key summary of findings and discussions are as follows:

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Online Survey

The response rate was 90% (90 learners). Quantitative and qualitative responses are tabulated in Table 2:

Table 2. Summary of Findings and Discussions for Online Survey

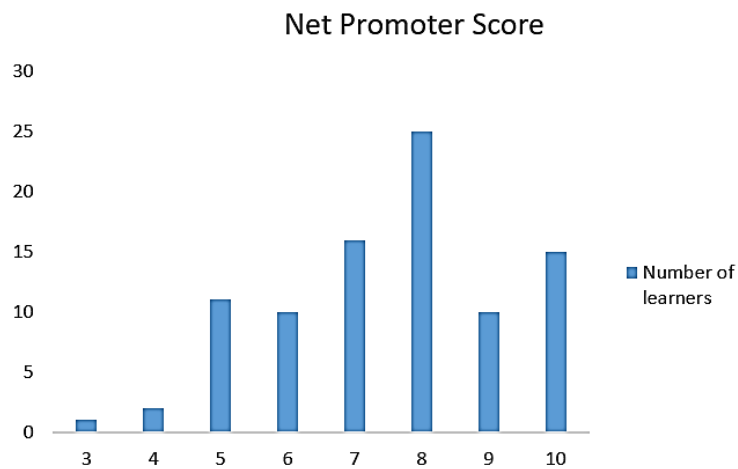| Questions	Findings and discussions
Rate the method of rotating leadership roles among team members (1-5 stars; 5 stars being the best).	An average rating of 4.17 showed that learners were very receptive of the method.
What do you like about the rotating leadership model? (open-ended)	67% of learners cited that they welcomed the opportunity to have a go at leadership; the balance were either neutral or did not directly answered the question. Insightful responses suggesting better teamwork &/or leadership are as follows: • Reduce issues of slackers; shared responsibility and commitment (33%) • Reduce burden and stress on one person (10%) • Good experience – engaging, better learning experience (8%) • 20% of learners liked that the model enabled them to showcase or improve their leadership skills. About 5% of learners felt that the rotating leadership model has no significant impact as it was not an efficient method due to possible confusion; one learner felt that it was not necessary as there was "coordinated group effort" within the team.
Are you more committed to the team after you had a chance to be a leader and a member? Briefly state reasons for your answers. (open-ended)	An estimated 55% of learners felt that their commitment to the team were similar regardless of their roles, possibly due to a strong sense of accountability. However 45% of learners felt that their commitment were higher due to more responsibilities as a team leader.
Would you recommend that all team-based activities should have rotating leadership? (Net Promoter Score of 0 – 10; 0 being Not at all likely & 10 Extremely likely)	Interestingly opinion was split equally between those who would recommend (Promoters; 28%) and those who would not (Detractors; 27%); the remaining 45% of learners whose responses were 'Passive' gave a rating of between 7 – 8 (Figure 1). This suggested that learners were quite receptive to the idea of rotating leadership and its intent.
Any comments / suggestions on the rotating leadership model for team-based activities? (open-ended)	Of the 17 responses received, some might shed light on why learners were not in favour of using the model for all team-based activities: • Might be confusing or chaotic as learners do not remember which package of activities they were in-charge of (29%) • Suggestions on different ways to rotate leadership – i.e. rotate by month, in sequence or by assignment type (17%) • Have feedback on leaders after activities (12%) • Let teams decide who lead instead (6%) • Highlight flaws of learner who could not lead (6%)

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Net Promoter Score

Figure 1 - Breakdown of NPS

Reflection Paper on Implementation of Rotating Leadership

As mentioned prior, learners wrote a reflection paper on the use of the rotating leadership model on their teamwork performance; below summarised common themes synthesized from a review of the reflection papers:

- Active engagement in discussions

Learners felt that the model gave everyone a "voice" as everyone had to step up, took initiative and speak out. This was especially welcomed by learners who were more introverted or who were weaker in communication skills. Although forced out of their comfort zone, they were motivated from positive feedback on their contributions. The model thus set the stage for everyone to be heard and as no one was dominating the team, learners were more comfortable with each other, creating a more amicable learning environment.

- Learning about oneself and learning from others

Most learners cited that they had to improve on their communication skills and active listening to work well in teams. By observing others and reflecting on their own team and leadership skills, learners felt that they could contribute better to the team.

- Fair method

Majority of learners felt that there was better teamwork with shared responsibilities, equal distribution of workload and fewer slackers or free-rider issues as everyone had to take on the leadership role. Some learners noted that this method sent the message that everyone is of equal importance and the collective empathy acquired.

The following are examples of extract from the reflection papers (name removed for confidentiality reasons):

Student A, class 1B02:
"All of us had a chance to be in charge of either an assignment/ project, this not only helped to ensure all of us are contributing, but also made members feel more involved"

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Student B, class 1B03:
"Personally for me my leadership style is more of autocratic whereas my friend she's more of a democratic so I actually learn from her that sometimes we should give others the opportunity to take part in decision making, we should learn to trust our teammates and give them an opportunity to grow"

Student C, class 1B04:
"During the meeting discussions, everyone was participative and continuously giving opinions, I greatly feel that this is because everyone was given a chance to be the leader and that our team take everyone in the team as leader. This led to us being open-minded to everyone's opinions and evaluate it accordingly instead of the leader calling for the decision him or herself and everyone just listen with minimal comments as we are afraid to step up"

Student D, class 1B04:
"Occasionally, I would feel a little confused about whose turn it is to take the lead because there were so many tasks to differentiate between and we eventually lost sight of the rotating leadership aspect of tutorials and projects. So, eventually the "natural" leaders slowly went back to taking charge because things were not progressing as quickly or efficiently as it could be…."

Student E, class 1B05:
".. empathy is my biggest takeaway as in the past, I would not really understand why the leader is acting this way as I'm often the team member rather than the one leading. Therefore, throughout this semester of working with my teammates, I had the chance to actually put myself into someone's else's shoes (of being a leader) before complaining about the leader nagging and rushing us to complete the assignments without noticing the due date"

Through the reflection papers, learners also provided insights on shortcomings of the rotating leadership model. As with the online survey, the key theme highlighted was the confusion on whose turn it was to lead the team due to constant changes in leaders; the confusion was amplified for some learners as their leadership role was not in sequential order. On some occasions, learners forsake the instructions as they felt that the method was not efficient enough. This resonates with the findings from Markulis and Sashittal (2006) mentioned prior although learners opined that rotating the leader could result in equitable contribution as well.

Self- and Peer-Assessment Feedback (SPA/SAPA)

A review of learners' self- and peer-assessments conducted yielded four key points:
- More than 70% of learners attained an average SPA score of above 4 (out of 5)
- When compared with the first round of SPA conducted, an estimated 45% of learners saw a slight improvement in their average SPA score (about 8%) in the second round; about 20% had the same score and the balance 35% saw a slight dip of about 5%
- Majority of learners with the highest SPA score in their respective team consistently received positive feedback for his/her efforts to remind on deadlines and ensuring the team was progressing/on track. This shows that learners value this competency in team settings
- For self-improvement, many learners highlighted the need to have better time management

Findings from the above three touchpoints are largely positive, suggesting that teamwork could be improved with a rotating leadership model in team-based assignments as the shared responsibilities lead to more commitment to team goals, reduce the issue of free-riders and active engagement leads to better team contribution. In addition, learners gained insights on how to improve their leadership skills by the leading opportunities and learning from each other.

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LEARNING POINTS AND FUTURE PLANS

As pointed out by some learners, rotating the leader within the team created some confusion that might hinder productive work. In addition, the rotating leadership model may put learners who are not as adept at leadership skills in a bad light. However, in the post-module review, the teaching team discussed and agreed that the current manner of packaging assignments and use of the rotating leadership was effective to achieve the intended learning outcomes of better teamwork. Coupled with the opportunity for each learner to explore and practise leading a team, this is a skill set valued by the workplace. Thus future iterations in the Marketing module in terms of teamwork would include coaching learners to better manage their time and "leadership schedule", such as creating a schedule and setting reminders. The teaching team will provide more guidance to foster a safe learning environment; besides activating prior knowledge on teamwork and leadership, learners could consider their strengths as well as organise themselves such that those who lack confidence or are not as skilled at leadership could take on the role for assignments due in later parts of the semester so that he/she could learn from others. The online survey would also incorporate more targeted questions to gain insights to help learners improve their leadership skills. As good teamwork and leadership skills need practice, suitable modules in each year of study in the DEPM course should include learning activities integrating these skills so that learners could build up these skills progressively. Examples of such modules would be the Integrated Project module in year 2 and Experience Management module in year 3, as these are modules with team-based assignments/projects that enable learners to work with industry stakeholders, providing them the platform for an integrated learning experience.

CONCLUSION

To better prepare graduates for their future, the CDIO approach to education recommends, among others, learning outcomes incorporating disciplinary knowledge with interpersonal skills such as teamwork and leadership. This resonates with the desirable graduate attributes of the DEPM course where event planners usually work in a team with responsibility to lead in some aspects of the event management process. The use of a rotating leadership model in a team-based setting could result in better teamwork and learners could benefit by improving their leadership skills through practice. It is also recommended that relevant modules in subsequent years of study develop suitable learning activities integrating teamwork and leadership skills so that learners could progressively build up such skills in an environment simulating the workplace. The action research, guided by relevant CDIO Syllabus and Standards, serves as an example of how the DEPM course could enhance its curriculum design using the CDIO approach.

FINANCIAL SUPPORT ACKNOWLEDGEMENTS

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