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Capabilities Associated with University Group-work Activities: Experiential Benefits, Personal Attributes and Practically-acquired Skills

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Capabilities associated with university group-work activities: Experiential benefits, personal attributes and practically acquired skills

Abstract

This paper reviewed the contemporary literature to identify and document the benefits that an undergraduate student might expect to acquire as a result of participating in group-work activities. The benefits associated with student group-work projects were partitioned into three distinct types of student capabilities— experiential, personal and skills related. Experiential capabilities were found to be holistic in nature, tending to shape student persona and allowed the student to derive benefits that embodied elements of socialisation, role playing and interactive learning. The personal capabilities noted to be derived from group-work participation allow the individual to develop as an independent entity, whilst practically acquired skills embodied important elements of activity that potentially enhanced student collaboration, resource and time management, leadership and conflict resolution. The paper is an important contribution to the literature noting and documenting the benefits of group-work and segmenting these benefits into distinct areas of student capabilities.

Introduction

Group-work activities have been used increasingly in the university setting in order to promote team-related activities, foster social interaction and derive benefits that have been categorised as either general or practical in focus (Sellitto 2009). Sellitto further expands on these two group-work domains noting that holistic benefits tend to be applicable to the wider realm of both life and work, whilst vocational benefits embrace teamwork elements that are commonly encountered in the commercial world. Participation in group-work tends to enhance the development of basic student skills (Bourner *et al.* 2001)— skills that are acquired through an active learning approach, in contrast to the more passive learning that might be encountered in the traditional lecture room. Another noted, but less documented reason for the increasing use of group-work projects by higher education educators, is that this approach provides a mechanism for educators to reduce the time associated with assessment and corrections (James *et al.* 2002; Grajczonek 2009; Sellitto 2009)— particularly in units of study that have a large number of enrolled students.

The benefits associated with team or group activities have been widely reported in the literature, however, various studies fail to further categorise the types of benefits that students might experience. Arguably, the perceived benefits experienced by students when undertaking group-work activities can be interpreted from a capability perspective— capabilities that have practical and personal application. This paper examines the contemporary literature to identify and document the benefits that an undergraduate student might expect to acquire as a result of participating in group-work activities and segments them into three spheres of student capabilities— ones that might be experiential in nature, those that develop personal attributes and others that relate to practical skills.

Literature Review

Student group-work benefits

Understanding the dynamics of student group-work activities has been associated with both disciplines of organisational behaviour and anthropology (Gatfield 1999). Garvin et al (1995) indicates that university-based team-orientated projects can provide positive experiences for students that allows them to acquire new skills, as well as be part of a cohesive and collaborative project. Zeegers and colleagues (2006) examine various aspects of group-work pedagogy to propose several areas by which group activities can be evaluated— an evaluation approach that reflects the basic tenets of group dynamics and project effectiveness. These group-work evaluation areas relate to participation in meetings, contribution of ideas, sourcing and dissemination of project resources, group-process activities and end-product contribution. Some of the experiences under each of the areas associated with group-work effectiveness included:

- Group-meeting participation— members regularly attended and were punctual, flexible and active.
- Contribution of ideas— members needed to have relevant ideas themselves as well as respect the ideas of other group members. Discussion and expansion of proposed ideas would ideally be further explored.

- Sourcing and dissemination of project resources— members undertook activities that allowed them to find, analyse, interpret and subsequently share relevant project resources with others.
- Group-process activities— members potentially undertook different tasks and responsibilities during the project. Task-related processes included encouraging others to contribute and participate in project work, active listening, collaboration and taking noted group-work roles. These group-process activities had implied roles or role-playing that included being a leader, scribe, supporter and/or devils advocate.
- End-product contribution— members exhibited a willingness to assist and contribute with the preparation of the final report/deliverables forming a component of their assessment.

Gatfield (1999) intimates the importance of group-work participation in contributing to the development of the individual's personality and refining of social-interaction skills— arguably, a significant socialisation experience for the student. Furthermore, several reported benefits of student involvement in group-work project have an experiential learning element associated with them and include the development of critical thinking, improved individual decision-making, as well as being exposed to a diverse range of viewpoints. Moreover, the group-work processes and environment encountered by students tends to serve as preparation for to their entry into the commercial world. Grajczonek (2009) captured the perceptions of students undertaking group-work activities at a high education institution using a peer-to-peer assessment approach. The author highlights the rationale associated with setting group work activities at university level as reflecting a participation process that potentially results in the development and acquisition of skills that are associated with:

- The student being able to gain direct insights in group and team interaction and dynamics.
- The deliverables associated with the final assignment submission being much more comprehensive than if only an individual had undertaken the project.
- Students being exposed to a diversity of viewpoints.
- The student having an exposure to a situation that is reflective of the broader life— exposure that includes real-world and work scenarios.

Group-work participation can also be important in promoting the development of time management skills that directly contributes to student autonomy (Bourner et al. 2001). Lejk and Wyvill (1996) propose that by working in a group setting, students achieve competence in tasks directly associated with learning about being an effective member of a team—potentially allowing the students to develop skill-sets that prepare them for the wider realm of both life and their future vocation. The opportunity for university students to engage and study in a collaborative manner has been directly correlated with enhanced learning— which is one of the basic objectives associated with higher education (Devlin 2007). Jackson (1996) described the potential positive consequences that an individual might experience in the short term as a result of being involved in a relatively diverse group-work environment. These consequences were noted across different application points, focussed on the individual and included:

- Being to engage in project activities that involved sourcing, giving and receiving task related information.
- Seeking, applying, considering social support and information from other group members.

- Procuring aid and tangible resources for group-work tasks.

A common complaint of students participating in team or group-work projects is that they are not able to easily gauge exactly what each individual's contribution will be to the project. Geske (2008), suggests that part of the explanation behind this conjecture is that projects might not be carefully designed or explained to students beforehand. The author further elaborates on his approach to projects requiring a team-generated solution where an assessment component allows for an enhanced student confidence in their contributions to the project— noted under the rubric of professional and effort evaluation. Sellitto (2010) documented several areas of peer evaluation that were suited to describing and documenting student performance when engaging in group-work activities. Seemingly, these evaluative areas also reflect the important collaboration, communication, leadership and social interaction that individuals potentially experience as part of their group-participation. These evaluative areas included:

- Supporting of others in group-work activities,
- Interaction with other students in the project,
- Showing leadership characteristics,
- Planning project outcomes and goals,
- Proposing solutions project aims/problems

Tu and Lu (2005) examined group-project activities associated with information and communication technology (ICT) education. The authors indicate that a cooperative project embracing team and group work provides the appropriate experience for many students in information systems courses. Arguably the group-work environment tends to mimic many of the team-orientated and practical tasks encountered in the computing profession— tasks that may embrace computer systems requirements such as business analysis, software design, hardware architecture and implementation. Kennedy (2005) also highlights that many university computing and science course utilise group-work projects— a practice that reflects the extent that this mode of working interaction is encountered in the real world operating environment. Furthermore, a common project evaluation technique observed amongst the ICT profession involves a peer-review of an individual's project contribution by team colleagues (Lejk and Wyvill 1996)— this evaluation technique is commonly referred to as a 'walk-through' approach to project evaluation. Geske (2008) indicates that part of the important group-project experiences noted amongst computing students relates to having clearly defined deliverables associated with each stage of the project design— stages that can be directly related to computer systems requirements tasks. Group-work is also an important activity that can be used to introduced students to team-orientated and collaborative practices that are encountered in the professions such as engineering (Rafiq and Fullerton 1996). The authors further propose that the use of group-work can potentially build individual student confidence as well promote respect and responsibility toward other team members in a simulated engineering environment. Berzines and Sofo (2008) evaluated critical thinking amongst a cohort of first year Australian University students which was in part achieved through the creating of communities of student enquiry— a group-work situation. The authors used different dimensions of assessment to determine critical thinking perceptions in a pre- and post-testing setting— dimensions that included leading and managing, thinking critically and practical achievement. Notably, various aspects of the items assessed across each dimension are pertinent to also assessing the benefits of group-work participation at the individual level and included:

- The systematic exploration of different team perspectives as well as gaining new individual viewpoints.
- Encouraging others and communicating with impact.
- Team contribution and interaction through questioning and playing a devil's advocate.
- Using one's imagination, as well as potentially adopting new possibilities.
- Dealing with diversity, conflict and change— arguably perceived or actual as a result of group interaction.
- Learning from mistakes that might be made as part of being a member of a group.

Sweeney et al (2008) investigated a cultural perspective to student group-work participation and reported that groups that included overseas students from different countries facilitated a form of cross-cultural collaboration. The study also noted that some local students, after participating in a multi-cultural environment, changed their feelings toward students of different nationalities— being more considerate of the contribution such students made to projects. Furthermore, the research noted the cognitive and attitudinal changes associated with student group-work activities that supported the development of interpersonal skills and higher-level learning. Grajczonek (2009), drawing from the work of Lejik and Wyvill (2001), proposed various categories that could be used to map the potential benefits and skill-sets associated with student group-work practices and experiences. These groupings included:

- Adaptability— a grouping that incorporates student attributes that reflect how students might be able to engage in constructive criticism, accept change and learn new skills.
- Creativity/Originality— this grouping relates to attributes associated with student abilities in problem solving, being able to come up with new ideas and engage in team decision-making.
- Motivation/Responsibility/Time Management— attributes noted as part of this group had a practical application and included team meeting punctuality and attendance, timely completion and submission of delegated tasks, and taking on responsibilities for project-related initiatives and activities.
- Technical Skills— attributes noted in this grouping were technical in application and focus, and were associated with addressing or solving project tasks. Arguably, the experiences and benefits under this category would directly rely on project requirements.
- General Team Skills— a grouping that notes student activities that are associated with the development and exhibition of positive attitudes to project participation, encouragement of others and supporting team decision-making.
- Communication Skills— groups the diverse requirements generally associated with team participation that includes attributes reflective of writing, listening, discussing and presenting capabilities.

Sellitto (2010) attests that the noted benefits associated with undergraduate students engaging in group work activities can lead to the individual becoming aware of team-orientated participation and collaboration, as well as understanding the responsibilities they have toward fellow group-members. Furthermore, through group-work participation students gained significant benefits by being exposed to different viewpoints, thus tending to enhance interpersonal skills and improved decision-making capabilities. Jones and McMaster (2004) indicates that student group-work alters the education knowledge mix— with student learning in the group-work environment

being one of knowledge acquisition through experience. This is in direct contrast to knowledge transfer as might be commonly conveyed in the classroom through the lecturer-student interaction. James and colleagues (2002) explored the issue of group-work activities improving the overall quality of student learning. Group-work participation was found to facilitate overall learning by promoting cross-peer interaction through the articulation of relevant project themes, as well as the clarification and refinement of concepts through peer discussion. Another element of group-work activities proposed, relates to the development of specific generic skills applicable to the workplace. Workplace related skills that are imparted through group-work activities potentially include the development of leadership qualities, exposure to analytical and evaluative techniques, effective collaboration (embracing elements of negotiation, critical appraisal, conflict management and compromise) and an appreciation of time management.

Not all group-work activities related to positive experiences resulting in well defined student benefits. It has been noted that group-work experiences might be influenced by individuals with assertive personalities who controlled and directed group-work projects— with an increased potential to undermine the beneficial participation of other group members (Sweeney et al. 2008; Sellitto 2010) . Another group-work challenge that has been documented is the insidious advent of the non-contributing group-member that not only disrupts group dynamics, but potentially results in low quality project deliverables and significant challenges for the supervising educators (Bourner et al. 2001; Sellitto 2009). The different cultural backgrounds of students also potentially might influence the dynamics of group-work activities— for example, students of Asian origin, with limited communication skills, might find it challenging to participate and express their viewpoints clearly in a group situation (Sweeney et al. 2008). Peer-and-self evaluation has also been noted as being problematical when evaluating group-work performance, with numerous techniques and assessment regimes having been proposed and critically dissected (Lejk and Wyvill 2001; Kennedy 2005; Tu and Lu 2005; Sellitto 2010). Although peer-and-self evaluations are commonly used by educators to grade performance, these approaches have limitations that might mitigate student benefits associated with group-work participation. Given these noted challenges that might arise with student group-work activities, most can be successfully managed by the educator with potentially minimal impact on project outcomes and student performance (see Sellitto 2010 for selective viewpoints on the important educator practices associated with group-work).

Categorising benefits associated with student group-work activities

Clearly the perceived benefits experienced by students when undertaking group-work activities can be interpreted from a capability perspective. Arguably, not all students that partake in group work will possess equivalent expectations and skill capability— indeed, each will have different expectations when forming or joining a group (Birmingham and McCord 2004). It might be expected that the performance of each student in a group would be directly commensurate with a degree of participation in a group-project, skills that they might bring to a project, opportunities to interact with different students, expected skill developments as a result of project inclusion, or a combination of all of these. Furthermore, the group-work participation process appears to instill a general set of benefits that potentially reflect areas of student capability— capabilities that will hold them in good stead for future team assignments and ultimately for workforce participation.

In examining the literature, this research paper allows various student capabilities to be identified and subsequently assigned to student capability spheres— spheres that reflect benefits that appear to have an experiential nature, others that are noted as developing the student’s personal attributes and, some that serve to directly enhance a student’s skills set. The student capabilities noted from the literature are summarised in Table1 whilst Figure 1 depicts the major grouping of the student capabilities across three identified focus points.

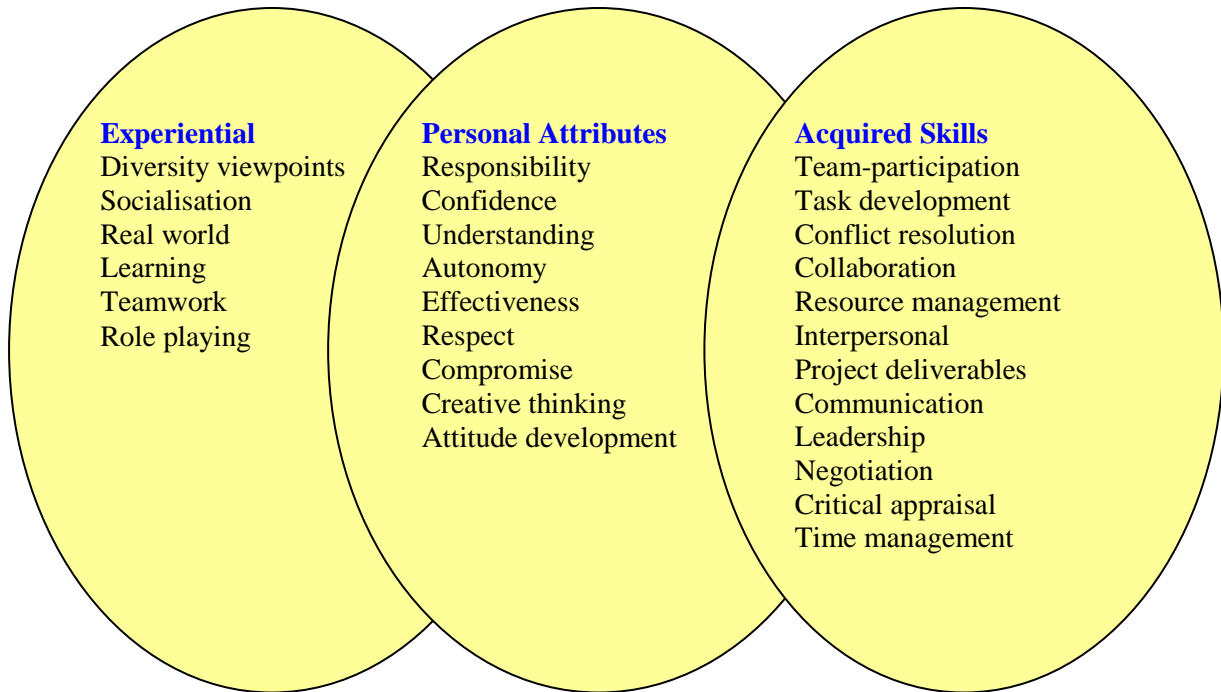


Figure 1 Areas of student capabilities associated with group-work

Notably, the experiential capabilities are holistic in nature appearing to shape the over-all student development by embracing elements of socialisation, role playing and learning. Furthermore, the exposure to group-work allows a student to appreciate not only working with different individuals, but also to be exposed to diverse viewpoints that facilitate a relatively more creative environment in which the student interacts. The personal capabilities noted to be derived from group-work participation allow the individual to develop as an independent entity— allowing them to modify innate features such as respecting other people’s viewpoints and considering that their own methods and ideas might have alternatives (compromise). Personally derived attributes through group-work participation also can potentially further the individual’s outlook by promoting aspects of being more responsible, confident and autonomous when interacting with others. The capabilities noted as acquired skills have a practical application and tend to be the easily noted outcomes of group-work activities. These skills include collaboration, team participation and task development. Moreover, various important everyday skills such as resource and time management, leadership, negotiation and conflict resolution represent an important element of this grouping.

Table 1 Noted student group-work capabilities

Experiential	Personal attributes	Acquired skills
<p>Exposure to different and/or diverse viewpoints (Gatfield 1999; Zeegers et al. 2006; Berzins and Sofo 2008; Grajczonek 2009; Sellitto 2010).</p> <p>Improved decision-making (Gatfield 1999; Sellitto 2010)</p> <p>General life experiences (Lejk and Wyvill 1996; Sellitto 2009) as well as exposure to real-world scenarios or environments (Kennedy 2005; Grajczonek 2009).</p> <p>Work experiences that embrace elements of mapping activities to real-work scenarios (Lejk and Wyvill 1996; Gatfield 1999; James et al. 2002; Grajczonek 2009). Specific experience in select discipline such as engineering and computing (Rafiq and Fullerton 1996; Tu and Lu 2005).</p> <p>The group work facilitates a learning environment enabling either active or passive learning (Lejk and Wyvill 1996; Bourner et al. 2001; James et al. 2002; Jones and McMaster 2004; Zeegers et al. 2006; Berzins and Sofo 2008; Sweeney et al. 2008).</p> <p>General group work interaction (James et al. 2002; Zeegers et al. 2006; Berzins and Sofo 2008). Variants of this interaction might be reflected in experiences that potentially allow insights into teamwork (Grajczonek 2009).</p> <p>Social experiences that might be reflected through personal socialisation of participants or through member social support for others in the group (Jackson 1996; Gatfield 1999).</p> <p>Role playing and exposure to diverse group-work roles (Zeegers et al. 2006; Berzins and Sofo 2008).</p>	<p>Responsibility: Acquired attributes that allows students to exhibit responsibility (Rafiq and Fullerton 1996; Sellitto 2010).</p> <p>Confidence: Group-work and the structure of project tasks allows individual students to build confidence (Rafiq and Fullerton 1996; Geske 2008).</p> <p>Understanding: facilitates the opportunities to better comprehend various situations that an individual might find themselves in (Sellitto 2010).</p> <p>Autonomy: Focus is on self-actualisation and being able to foster a greater degree of working independence (Bourner et al. 2001).</p> <p>Effectiveness: This attribute was described in the context of group-work tasks facilitating individual effectiveness within the team project (Lejk and Wyvill 1996).</p> <p>Respect: Noted in computing projects that students as a result of group-work developed an inherent appreciation and respect for other students (Rafiq and Fullerton 1996).</p> <p>Change of Attitude: Group-work participation inherently involved attitudinal changes based on experiences (Sweeney et al. 2008).</p> <p>Creative thinking: Noted through the use of communities of student enquiry (Berzins and Sofo 2008).</p> <p>Compromise: Attitudinal values derived through group-work interaction with other students (James et al. 2002).</p>	<p>Team-orientated skills and tasks that might involve team-participation and teamwork (Rafiq and Fullerton 1996; Tu and Lu 2005; Zeegers et al. 2006; Sellitto 2009; Sellitto 2010).</p> <p>General noting of skills acquisition and development- either new in origin or consolidation existing ones (Garvin et al. 1995; Rafiq and Fullerton 1996; Bourner et al. 2001; Sellitto 2010) .</p> <p>Specific skills noted include:</p> <ul style="list-style-type: none"> • Task development (Lejk and Wyvill 1996). • Conflict resolution and management (James et al. 2002; Berzins and Sofo 2008) . • Collaboration (Garvin et al. 1995; Rafiq and Fullerton 1996; Zeegers et al. 2006; Sellitto 2009) . • General interpersonal skills (Gatfield 1999; Sweeney et al. 2008). • Resource management skills (Jackson 1996; Zeegers et al. 2006). • Project deliverables skills (Zeegers et al. 2006; Grajczonek 2009). • Communication skills (James et al. 2002; Berzins and Sofo 2008). • Change management skills (Berzins and Sofo 2008). • Leadership, negotiation, critical appraisal and time management skills (James et al. 2002).

Exploring group work capabilities

In order to examine some of the salient aspects of the benefits that might be derived by students engaging in group-work, a short set of open-ended questions was used with a group of undergraduate university business students. The students had just completed an 8 week group-work project and were consequently asked to note some of the *likes* and *dislikes* associated with

their participation in group-work. Of the 44 students in the undergraduate class, 32 voluntarily and anonymously, handed in their responses. It was assumed that the aspects of group-work that students liked reflected the perceived benefits that they felt they derived from participating in the project. Group-work dislikes were also noted and were assumed to represent impediments experienced by students (these responses are not reported in this paper). Table 2 records what students liked about participating in group-work activity (total of 36 statements recorded). This set of questions was not intend to be all encompassing, but to discern if the proposed capabilities proposed in the previous section were indeed valid as a starting point for any future work.

Table 2 What students liked about participating in the group-work project.

Group-work Capability	Perceived activity benefits	% (N=36)
Socialisation (N=16)	Meeting new people	19.4% (7)
	Working with others (interaction)	13.9% (5)
	Being able to seek assistance	5.6% (2)
	Introspection-understanding myself	5.6% (2)
Resource Sharing(N=12)	Able to lighten the workload	30.6% (11)
	Delegation of responsibilities	2.8% (1)
Skill development (N=2)	Helped me develop my communication	2.8% (1)
	Assisted with engagement with others	2.8% (1)
Creativity-Diversity (N=6)	New ideas/viewpoints/opinions	16.7% (6)

This small cohort of students noted that socialisation was one of the main benefits derived from their participation in group-work activities. Making friends with new people and interacting with others was an important element of group-work. Another benefit that students noted as a result of group-work participation was the perception that they were able to reduce the amount of work that they individually needed to do in the project. Clearly this can be viewed as a form of resource sharing, where the students appear to have collectively segmented the project into tasks— with a lesser workload being experienced by participating group-members. This issue of resource-sharing is not a commonly reported benefit encountered in the literature. Arguably, there is an assumption when setting group-work projects that the tasks, although potentially devolved to a nominated individual, all members will make a relevant contribution to each task as part of project deliverables. Indeed, if students have segmented project tasks into individual work units, with no collaborative engagement amongst all group members, there will be gaps in their learning. This appears to be the case here. Notably, no students identified any of the personal attributes that have been commonly reported in the literature as being one of the beneficial aspects of group-work participation.

Conclusion

This paper reviewed the contemporary literature to identify and document the benefits that an undergraduate student might expect to acquire as a result of participating in group-work activities. The benefits associated with student group-work projects were partitioned into three

distinct types of student capabilities— experiential, personal and skills related. Experiential capabilities were found to be holistic in nature, tending to shape student development and allowed the student to derive group-work benefits that embodied elements of socialisation, exposure to diverse viewpoints and role playing. Personal capabilities noted a potential benefit associated with group-work participation in contributing to the development of an individual's independence. Some of the personally derived capabilities were associated with attributes such as acting more responsibly, developing confidence and autonomy, respecting other people's viewpoints and considering that their own methods and ideas might have alternatives (compromise). The capabilities noted as acquired skills have a practical application and tend to be the easily noted outcomes of group-work activities. These skills include collaboration, team participation and task development. Moreover, various important everyday skills such as resource and time management, leadership, negotiation and conflict resolution represent an important element of this grouping.

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