



Students' reflections on collaborated project-based learning in the Department of Ecotourism

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Abstract

The students at Universities of Technologies (UOTs) often come from previously disadvantaged communities. The schools they come from often are not well resourced. The level of academic depth in the curricula in these schools is uneven. UOTs have to bring the academic level of these students on par with national and international benchmarks using appropriate pedagogical techniques that ensure the students have the sound quality education as they would receive from any reputable university. This paper sought to find out the reflections on learning, using Gibbs Reflective Cycle (1998) for 120 undergraduate Ecotourism management students at the Durban University of Technology. Gibbs reflective cycle was also used to analyse the findings. The students' reflections were centred around their major marketing project (developing a marketing plan), on how the section was taught and assessed. In the past, this marketing module has been one of the most challenging for students to grasp, apply the theory and to pass. Using sticky notes/post-its' to encourage participation in student focus groups, the paper reflected the effectiveness of a collaborated project based learning (CPBL), using sequential phases in grading the assignment to help improve students' learning of the selected marketing concepts. The paper also sought to examine how difficult or easy it was for the students to apply marketing theories, and how helpful the teaching methods used were in achieving their final project grade. The findings suggest that the marketing plan is not just any project, but it is a form of industry training. Project based learning (PBL) prepared and empowered them about challenges in the marketing industry for ecotourism initiatives. Good team collaboration, growth in students' confidence, and being able to work under pressure, were some of the best benefits students expressed. They felt they obtained 21st century skills which they did not have prior to the project's commencement.

Keywords: Reflective learning, collaborated project based learning, sticky notes/post-its', teaching and learning.

Introduction

Educators strive for richer classroom learning experiences that centre on building collaboration and coordination skills necessary for success in dynamic environments (Parent & Lovelace, 2011). Higher Education (HE) institutes are increasingly focused on efforts aimed at measuring, documenting, and improving student learning (Mummalaneni, 2014). Above this, HE institutions across the world are under growing pressures from external factors such as growing numbers of students, internationalization and changes in world economy (Huber & Harvey, 2016). Programmes offered at HE are also condemned for misalignment with industry needs and the overproduction of graduates that battle to find employment once they graduate (Mchunu & Hlengwa, 2018). It is due to these pressures that Dahms and Stentoft (2008) propose (PBL) as a possible approach to improving the quality of education and competencies of students in African universities. One of the major solutions for HE is collaborative project-based learning (CPBL), a pedagogical method that aims to facilitate students' inquiry and knowledge gain for intellectual goals (Karpudewan, Ponniah & Zain 2016). CPBL helps students improve understanding of a particular topic through the collaborative investigation of realistic problems (Blumenfeld *et al.*, 1991). As such, CPBL is increasingly adopted in HE.



Parent and Lovelace (2011) state that students can be better prepared through reflective learning. Reflective learning is a process of linking theory and practice through engaging one's knowledge, sense of self, and the world as experience by them, this takes a cyclical sequence of activities (Gibbs, 1998 and Brockbank & McGill, 1998). The practice of reflective thinking is crucial to a deeper learning experience as it reinforces the learning process with students exploring their personal engagement with subject content, the individual learning processes and practical applications (Xiao, 2017).

Like in many HE institutions, marketing educators are often faced with the challenge of making the material they cover relevant to their students. Rather than seeing market behaviour and interactions as something that happens "out there," marketing education should seek to help the students see themselves as part of the marketing exchange (Muncy, 2014). An academic debate exists when revising the state of marketing education in terms of pedagogy, curriculum, assessment and developing students with applicable skills and knowledge for employment (Barn, 2016). There has also been a remarkable revamp of marketing education since the turn of the century (Black & Kassaye, 2014) to make the material more accessible and meaningful to the students.

Marketing-related projects can act as a form of experiential learning to develop industry skills and employability attributes for students in HE (O'Leary 2017). Without a rich background of experience, many marketing topics are difficult to grasp through traditional teaching methods of pure lectures and in-class discussions, hence learning is better when it takes place via a process of learning by doing or experimentation and practice (Xiao, 2017). O'Leary (2017) affirms that the initiatives embracing experiential learning have helped students enhance their confidence and team-working skills.

Literature Review

There is research evidence and an educational theory – that argues strongly for the use of PBL with all students (Condliffe *et al.*, 2016; Buck Institute of Education, 2017; Holm, 2011; Larmer *et al.*, 2015). More and more educators around the world, both in and out of the classroom, believe that PBL is an important instructional approach that enables students to master academic skills and content knowledge, develop skills necessary for future success, and build the personal agency needed to tackle life's and the world's challenges (Megerndoller, 2018). The success or failure of educational tools ultimately depends on the educators skills and abilities and the extent of their desire and willingness to use these methods in their classrooms (Hugerat, 2016).

It has been shown that PBL is a more effective education methodology compared to traditional pedagogies (Fini *et al.*, 2018). Teachers, who motivate their students, stir their curiosity and their ability to research and explore will cultivate students who can contribute to local social and economic development. Thus, there will rise a generation which is capable of planning and inventing the appliances needed by the community and of becoming good citizens in their society (Hugerat, 2016). A collaborative learning environment can enhance students' social and problem-solving skills (Martinez, Herrero & De Pablo 2010). PBL allows different groups of students in a course to work together to solve practical problems and to present and defend their approaches and solutions. This promotes the intellectual and social development of students; it requires them to actively participate in the process of acquiring knowledge, improves communication and interpersonal/social skills, enhances leadership skills, and increases creativity (Fini *et al.*, 2018).

PBL contributes to better performance by students but equally important are learning styles, which must be taken into account when devising curricula for teaching at university (Peterlicean & Morar, 2013). Designing a project that directly relates to the course material being taught is likely to enhance learning and allow students to make meaningful and



significant contributions in the process (Xiao & Carnes 2017). It helps students also in the development of other skills needed in every-day life such as time management, team work, delegation of responsibilities and prioritizing (Peterlicean & Morar, 2013). PBL applications also contribute to equipping students with 21st century skills, identified as critical thinking, problem solving, creativity, access to and restructuring of information, usage of digital resources, taking responsibility, sharing ideas, self-control and reconciliation (Bell, 2010). Students themselves get the benefit of making a real, measurable contribution to the community and realizing their personal potential (Xiao & Carnes 2017). They are able to handle complex, real-life problems, and work (Coto et al., 2013).

When PBL is applied in undergraduate qualifications, it improves the applicability of theory and increase students' skills (Wiek et al., 2014; Sangestani & Khatiban, 2013). It has been shown that combining theory with practical projects can enhance students' learning and their satisfaction in a course (Friesel 2010). Incorporation of the PBL method into course material was shown to help students achieve a higher level of development in the cognitive domain and in social skills (Ahmet, Filiz, & Goktepe, 2015), which in turn enhanced higher-order thinking skills and learning (Prayoonsri et al., 2015). Education has to be applied in a way that is relevant to the real life of the student and the surroundings. We must therefore emphasise the importance of having students acquire the spirit of discovery and research. The use of projects is a primary means of structuring learning experiences as a means of mirroring professional practice (Hanney, 2018).

Reflective teaching methods can assist the growth of reflective thinking in students (Vaiyavutjamai, 2012). Davies et al (2011) suggest that since a landscape has changed, educational institutions should consider how to adapt quickly in response, and some directions of change include:

- Emphasising developing skills such as critical thinking, insight, and analysis capabilities;
- Comprising experiential learning that gives importance to soft skills such as the ability to collaborate, work in groups, read social cues, and respond adaptively;
- Integrating interdisciplinary education that allows students to develop skills and knowledge in a range of subjects.
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HE takes place within a social context that keeps changing. This changing context is characterised by ubiquitous connectivity, a shift from lack of available knowledge to knowledge abundance, a move from hierarchical towards networked forms of social organisation (Cronin et al., 2016). "Thinking on our feet" is a phrase synonymous with Schön's (1983) concept of reflection-in-action. Dewey (1933) puts it this way "we do not learn from experience; we learn from reflecting on experience". This is why critical reflection upon experience continues to be an effective technique for professional development (Kumari, 2014). It is a vital part of learning from experience and is central to developing and maintaining proficiency across a professional's lifetime (Paterson and Chapman, 2013). The idea of students being active learners, in which they are the producers of their own knowledge rather than just consumers of other people's knowledge, has been around for a long time (Healey et al., 2013). People construct knowledge and meaning from their experiences (Dewey, 1929; Bruner, 1961; Vygotsky, 1962; Piaget, 1980). Learners progress through various stages or phases in order to achieve higher levels of intellect (Brown et al., 2015). This involves building new understanding in the framework of the situation that is unfolding by observing inwardly and scrutinizing experiences, linking with feelings, and applying theories in use (Letch, 2012).

Vaiyavutjamai (2012) specified authenticity and real-life experiences as associated with classroom learning activities that help students think reflectively by providing real situations and contextualized knowledge about new information being learned. That is why it is vital

for marketing educators to enhance student learning by providing experiences that go beyond the classroom and into the world of work. Students are encouraged to become lifelong learners where they observe the real world around them through the lens of what they have learned (Schaller, 2018). Barn (2016) expressed that learning and teaching marketing can remain both theory rich and industry relevant through an analysis of student reflections on their use of PBL to engage with live marketing content.

Gibbs (1988) reflective cycle was used for this paper's theoretical framework, as shown in Figure 1.

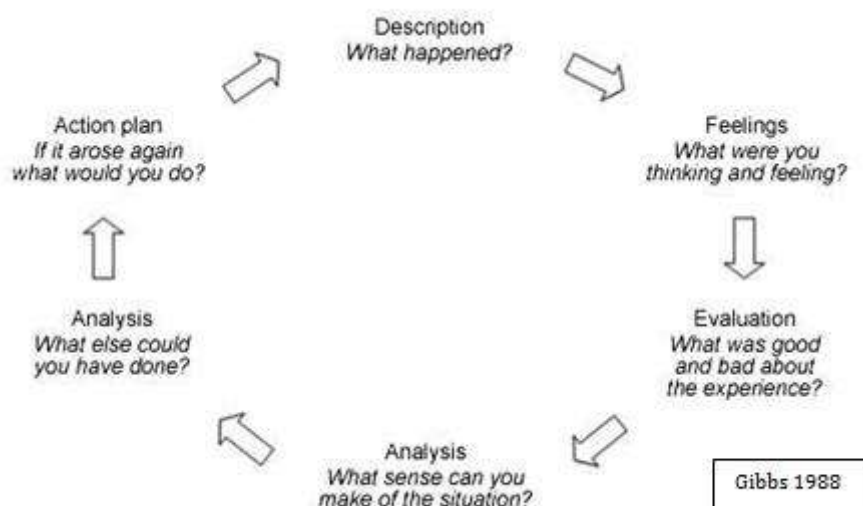


Figure 1: Gibbs' reflective cycle. Adapted from "Learning by doing: A guide to teaching and learning methods," by G. Gibbs, 1988, Copyright 1988 by Oxford Further Education Unit.

The idea was for students to systematically reflect on collaborated project based learning experience they had to ensure that all aspects have been considered and evaluated, as this would assist them in understanding what to do next time they are face a similar task. The reflective process follows the 6 steps of the model so that each step informs the next as shown in Figure 1.

Methodology

The project was conducted over a fourteen-week period, from inception (first lesson) to students submitting the assignment (final draft). Before these lessons started, students had to choose their group members, they had to be ten students per group. Once this was done, the group members had to decide on which organisation they wanted to develop the marketing plan for. All organisations had to be from the Ecotourism industry, inter alia, game reserves, botanic gardens, adventure based companies, as well as wildlife and biodiversity parastatals. Once this process was completed, lectures on marketing plans commenced. These lessons were conducted classroom style, which involved discussions and using case studies to help with application of theory. The second part of learning came in a form of a two-hour guest lecture from an industry expert who deals with developing marketing plans. The students then started working on their projects. There were various forms of support given to the students, among these were, but not limited to: unlimited consultations back and forth with the subject lecturer, tutorial assistance, library assistance and industry consultation (the organisations the students were developing the plans for).

The project was structured such that the students would submit a total of three drafts in sequential phases. Each draft was marked, graded, and extensive feedback given to each



group with corrections for the next draft. There were numerous consultations between drafts, some as long as an hour and half and others as short as thirty minutes. The second draft had to be submitted with the first draft, to assess improvement, and to give further feedback. By the time the final (third) draft was due, the student had polished their projects comparatively well.

Focus group discussions using sticky notes/post-its' was the method used to collect data for this paper. Wilkinson (2004: 177) defines focus group as "a way of collecting qualitative data, which-essentially-involves engaging a small number of people in an informal group discussion (or discussions), 'focused' around a particular topic or set of issues". Focus groups are a great way of finding out a group's shared understandings, perceptions, feelings, and common knowledge about a topic and exploring the degree of consensus (Gibbs, 1997).

One of the major challenges in the facilitation of focus groups is to encourage participants to become involved in an interactive, open discussion and avoid a session consisting of didactic questions and answers with only the more confident and vocal in the group (Peterson & Barron, 2007; Peterson and Irving, 2008; Wei, 2016). Teachers and group scholars, alike, therefore, search for and employ structured techniques to encourage students' participation in-group discussion (Wei, 2016). Peterson and Barron (2007) commend adding sticky notes/post-its to the qualitative researcher's toolbox, as a way for focus groups to generate information, check for understanding, and grouping and sorting ideas. It is a more effective way of soliciting honest opinions, to solve problems working together to generating and formulate all the relevant information, and it is actively engaging for the shy and reluctant of participants (Straker, 1997; O'Hara, 1999; Peterson & Barron, 2007). They help in identifying misconceptions, improving understanding of different perceptions, gaining an understanding of how participants view and structure the information, and generating a shared outcome that everybody owns (Peterson & Barron, 2007). Using sticky notes/post-its allows information to be organized and reorganized as many times as necessary, until an understanding of the problem is reached and an operative solution produced (Straker, 1997 & O'Hara, 1999). Students are encouraged to prioritize thoughts and to think through their responses critically (Wei, 2016).

Findings

Data analysis was thematic, following Gibbs reflective cycle (1998) as follows:

Description

This first step gives a description of the students' experience on the collaborated marketing plan assignment/project. The project had to be submitted in three sequential drafts, which gave students enough time to correct their work before the final draft was due. The project took a little over three months to complete from start to finish. It was a long project for students.

Students chose, as they wished, who would be on their teams, before the project started. The marketing plan was not just an assignment but it was a form of industry training that prepared students for the real world. Time management was key as the students still had to attend other lectures for the rest of their modules. Students were given many lectures on marketing planning before they were even given the assignment. The submissions first had to be checked and approved by the institutions' writing centre before being submitted to the lecturer. This helped improve students' academic writing and research skills, this was evident in the final work produced and presented.

Students had to choose an existing ecotourism related organisation as their case study and develop a marketing plan for them. This meant conducting research about the organisation



including visiting the chosen organisation and conducting interviews about their marketing activities. There was sensitive/confidential information they had to get from their organisations to do justice to the plan being developed. Students had to see themselves as the developers and consultants during this process.

Students had a fair amount of consultation time and support from the lecturer whilst the project was ongoing. Since it was their first time developing a marketing plan, a rubric and instructions given by the lecturer which they had to follow step by step was very helpful. They had notes from the lectures on marketing planning. They had a guest lecturer from the industry that came to help with their project as well. They also had tutors to assist with them with their project.

Feelings

Students were asked how they felt and what they thought prior to engaging in the collaborated project; how they felt and what they thought during the project; how they reacted during their experience; as well as how they felt and what they thought after they had submitted their project. The following figure 2 serves to describe their feelings.



Figure 2. Students' feelings

This experienced saw the morphing of students from being learners to being businessmen/women, in their thinking about marketing. Though they had many stressful challenges and mixed feelings arising from lack of collaboration from some of their team mates, and confusion as to how to practically apply the theory, they still had lots of fun and excitement while doing the project. They expressed that teamwork made a huge difference, whether it was lack of it or good collaboration. Some experienced stressful moments and felt abused due to pressure exerted on them by group members who made them leaders and thus relied on them for everything, as well as personality clashes within teams.

There was a lot of anger the students felt mainly against a few that were not playing their role in completing the project. Many were appreciative of the project based learning as it empowered them about challenges in the marketing industry, they were proud to discover and learn various skills (writing, computer, leadership, communication, conflict resolution, project management, time management, etc.), that people are different and the way one communicates with them is key to either succeed or fail. There were frustrations and conflicts associated with setting up meetings with the organisations, and lots of disagreements among group members trying to find common ground.



There was excitement and confidence understanding that hard work always pays off. Students complained a lot about the university services, especially the operating times for the library, the writing centre and for the student transportation to their residences, these closed or stopped operating too early, this made it difficult for students as the best time to meet and carry out their work was after hours when they had finished with their lectures. This led to students using other means to still communicate, for example the created WhatsApp groups to stay in contact.

Evaluation

The students had different experiences with the project and collaborated based learning and assessment. Table 1 (Experience Pros and Cons) illuminates the advantages and disadvantages of the of the students' learning experience. There were some bad experiences such as individuals not pulling their weight in contributing towards the project success; the logistics challenges associated with obtaining company information; and the university systems that the students felt let them down, such as the library which closed too early, as well as buses to the students' residences which also were not available in the later hours of the evenings. Students also praised a lot of good experience the project brought. These experiences included good team collaboration; growth in students' confidence; preparation for workplace; and being able to work under pressure.

Good Experience	Bad Experience
Students learnt that hard work pays, it doesn't matter how intelligent one may be.	There are not a lot of ecotourism companies to choose from.
After the assignment, the students knew they are capable of being leaders.	Some group members didn't contribute towards the project.
Difficulty grows you.	Challenging to get information from organisations.
The project turned students to hard working individuals.	Students paid their own way and travelled far to visit the organisations, sometimes coming back empty handed.
Some felt they improved from being lazy to getting really good energetic about their work.	Begging companies for an appointment.
The number of assignment drafts to submit and the number of group members helped.	Some organisations were not willing to share their information due to confidentiality.
An opportunity to see others' work ethic, in future it will be easy to know who to choose to be in the group.	The library closed too early, buses left too early to selected residences, and some group members not willing to pull their weight.
There are people who are negative and those who are positive.	Time management: assignments were always done or submitted late.
Understanding of the chosen organisations.	Lack of team work (in some groups).
Understanding how to develop a marketing plan.	Group division and misunderstanding.
Students were happy to have finished and submitted the project.	No team effort or participation.
It was good to have consultations with lecturer, to have support of the tutor, and to engage with the guest lecturer.	Bad experience from the organisations.
Some groups had the attitudes of champions.	Confusion and lack of enthusiasm.
Students felt the experience was complete because they covered everything in the rubric.	Working with people with bad perceptions.
Understanding marketing in a deeper level.	
This experience forced students to be leaders.	
The positive mind-set of wanting to know deep about everything.	
Trained to be able to work under pressure.	
Showed us what is expected of us in the field.	
Learnt to submit on time.	
Prepared us for the real world.	
Team work helped as students assisted each other.	
Learnt to communicate well with others.	
Project helped turn marketing theory to practice.	



The assignment was a good idea.	
Good to have three different deadlines.	
Time management skills learnt.	
Fun when we work together.	
Project was flexible and practical.	
Team effort.	
Students learnt to be patient.	
Working with different personalities prepared students for the industry.	
Developed listening skills.	
Gained new skills.	
Learning to be calm and putting yourself out there.	
A better understanding of marketing planning.	
Students learnt communication skills and were able to be in the shoes of a marketer, a real one.	

Table 1. Experience Pros and Cons

Analysis

What went well and why

Students felt that dividing the work was helpful. There was more cooperation among group members. They expressed that it was easy to grasp concepts in groups. Understanding different views, being free to speak, and perseverance are essential to collaborate. Having someone take charge in leading groups who has leadership and organising skills was critical for groups to succeed. These leaders had to learn ways to encourage and push people to work together. Students had to motivate themselves as well, they didn't want to fail and they were hopeful. Commitment led to confidence. Because some students were absent when group members were chosen, they ended up with people who were not committed, this led to them realising that they could be leaders and became one for their groups.

Other students felt that having connections with people in the industry helped in getting company information they needed to complete the project. This means that for some students, obtaining the information necessary for the project was easier as they knew people in the industry who could give them the information they required, avoiding the red tape other had to go through. Consultations with lecturer was vital to students' success. The lecturer was there to help throughout the project, with constructive comments, recommending readings, books, resources and organising a guest lecture. All information to succeed in the project was made available to them. Having three drafts to submit led to students improving and having really good marks. Most students were actively involved and responsible for certain tasks in their groups. Others contribution was calling the companies, calling meetings with groups, though they felt used by other team members at times, they still did it. They had to have a marketer mind-set. The marketer mind-set requires them to always think and be 'quick on their feet' to gain competitive advantage. It is about putting oneself in the customers' shoes and trying to think like a customer in order to deliver and meet the very needs and wants of the customers better than any competitor. For some groups, threatening to report those who were not contributing, to the lecturer if they did not participate, helped to get all group members to work together. Some students found themselves having to entertain others so they could go on with the project. This allowed them to submit sound work and pass.

Being stubborn, not giving up and respect for one another kept them motivated. Group members contributed in terms of meals together, transportation to visit chosen companies and airtime to communicate with each other and with companies. Students collaborated with group members using WhatsApp. Other students always made sure they were contributing by being there, supporting what they said with books and journal articles. Most students were hard working and committed.



The students suggested that it would be better to start the project with presentations as this could have helped them in choosing the right group members and positive people to work with. There were those who gave up everything just to do the project. Positive communication helped students to understand each other in terms of beliefs and attitudes. Having good working Wi-Fi was counted as critical in the students' research.

What went badly and why

It came out that in despair, especially for the first draft submission, students would copy from the internet, which leading to plagiarism which then led to students being heavily penalised and failing the first draft. Lack of cooperation from companies meant that students had their work cut out. Some failed the first draft because the rubric was not adhered to. Not reading and studying the notes given in lectures led to some groups having to redo the assignment. The initial attitude was more about passing the module rather than the learning which had to take place. There were complaints of low commitment from other group members who were not giving the project their all. Some students expressed that working in groups caused a lot of bad emotions and things got too personal at times. Some felt that it took long to understand marketing planning since this concept was new to them, and reckon that if it had been introduced in the previous year, it would have been better. Some members didn't care and thus didn't contribute. Students who didn't get good marks found that it was due to a lack of cooperation from the rest of the group members. Those who were not really interested always came up with excuses not to be at the group meetings. Students felt that there was not a very good academic support system. The library closed too early and the buses left too early. The library should be open 24/7. Due to the bus schedule, some students who do not stay at the university residencies found themselves having to leave the early while other members continued with the work, so that they are not stranded without transportation.

Students felt there were some sacrifices to be made, they didn't see much of their friends and families during the project. Friendships within groups made it hard, students felt that cliques divided the groups. Others were lazy and lacked interest. This resulted in one group not finishing their first draft and therefore not submitting on time. Lack of commitment led to low marks. Choosing group members because you know them was bad, as it turned out that others had no good work ethic. Some group leaders say they were active, participated, multitasked and were harsh to their group members because of too much responsibility.

Conclusion

The final reflections for the students was that through this experience their character changed for the good. They learnt to adapt, for example, those who were impatient became patient, they developed a positive attitude, they gained good writing, computer and research skills. Some confessed to having taken marketing for granted before the project but now view it as something they can do and it will help them in the future. They asserted to having better conflict resolution, communication skills, leadership skills and great resolve. They found they can arrange information correctly. Some discovered they are sensitive, goal driven and hard working. Those who didn't have listening skills, developed them. One student's conclusion of this whose experience was "no one inhibits you to do good besides yourself, every hard work has a reward".

Self-motivation and putting more effort from the onset benefited some of the students. They learnt not to allow others' negative attitudes deter them and learned that nothing is impossible if they apply themselves. One student even mentioned "I learnt to be kind to myself". Some even boasted that the organisation of the marketing plan helped them to be better organised and this brought order and organisation into their lives where every move they made was no longer a wasted one.



Some regretted not conducting more research or consulting with their organisations during the project. Some complained and given another chance would have chosen different group members. Others implied that having a mentor during this project was critical to succeed. Students learnt that marketing is not hard, that they have to change their attitudes towards it in order to achieve good marks and lifelong learning. Doing projects in groups helped them get inspiration from the rest of the group members and also helped them study with greater clarity and understanding. Some have decided that marketing is their field of choice and their careers will be in marketing. They acknowledge being able to apply theory they have learnt to real life cases. They stated they are no longer average, they are diligent and will achieve what they want to.

Action Plan

This section justifies the value of actions needed to better prepare the students, considering the whole experience of collaborative project based learning and assessment they went through, many of which have been mentioned in the above sections.

Following the given instructions and assessment rubric came up at the top, students felt that a lot of their struggles came as a result of not listening or paying attention to the rubric. Some had missed lectures and tutorials, they also did not go to lecturers and tutors for consultations, as a result failed to use the resources such as the marketing plan template they already had. Vitally important is choosing group members wisely and improving communication skills among the team members as well as assigning each member to a task contributing to the whole. There should be presentations or debates about marketing plans before having to develop the marketing plan, these will serve as “auditions” for all learners before they decide whom to choose as team members.

Students felt they needed to be more ambitious in their work, be able to work harder and under pressure. They learned that being a good patient team player enthusiastic about the project, paying attention to detail, being prepared and committed, all led to them being able to be successful critical thinkers. Time management, taking project seriously, eager to learn new things are all key to staying on target and reaching all project milestones. Students found that surrounding themselves with teammates who are self-motivated and have a positive mind-set, who are confident, respectful, who do not allow negativity to halt their progress or keep them from achieving their goals, was already a battle half won. Some learned not to underestimate other people but instead build them up and strengthen them instead and celebrate their strengths. In terms of the university systems, the writing centre needs to close at the same time as the library, and the students’ transportation system to support this for students to fully optimise their learning through these great resources.

Conclusion

The project equipped students with many 21st century skills they did not have prior to the project and their final grades were excellent. Reflecting on their learning as they conducted the project was not a fact of just adding information, but using that to obtain knowledge which in turn would help the students apply themselves in the marketing world. Collaboration makes work easy to manage because of all the different views and contributions. This pedagogical style helped students improve their learning as Mummalaneni, 2014; Karpudewan et al, 2016 suggests. Using Sticky notes as advocated by Peterson and Barron (2007) was extremely valuable during the focus groups. Students eventually ‘came out of their shells’ and started participating voluntarily in focus group discussions which was of itself a useful exercise.



Since the project went for just over three months, the students were challenged about participating in long-running collaborations that require effective communications among team members (Borge & White 2016). Though by the end of the project these difficulties had lessened, students often lacked the interpersonal skills necessary to manage group work, which interfered with their engagement in collaborative work (Krajcik et al., 1998). The collaborative nature of CPBL environments can indeed impose extra workload for students as they need to engage in joint activities (Al Rawahi & Al-Mekhlafi 2015).

This project was well aligned with industry as well as with Higher Education (Mchunu & Hlengwa, 2018). Such activities assist the students to easily adjust into the working environment that is demanding and still be able to thrive. The significance of applying CPBL and reflective learning methods in this course extends beyond students' immediate academic success and emotional competency development to include a commitment to a deeper purpose of contributing to their longer term well-being and personal development, as well as adequately preparing students for challenging workplaces (Xiao & Carnes 2017).

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