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Exploring the effectiveness of problem- based learning (PBL) to improve the application of theory amongst tourism students.

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Abstract

Tourism and hospitality students struggle to apply their theoretical knowledge acquired in the actual workplace (Pan and Jamnia, 2014, p.36; Pez`ua and Bayardo, 2012, p.33). According to Clegg (2005, p. 415) tourism and hospitality employers deem that struggle with applying solutions to problems experienced in the industry. Problem Based Learning (PBL) is a learning pedagogy employed within the classroom to assist students to apply theory attained. In line with PBL pedagogy, students were presented with a case study depicting poor customer service in the tourism and hospitality. Based on the theory learnt, students were requested in groups to role play what they would have done to achieve good customer service if placed in that scenario. A cross sectional survey was employed to analyse the success of the PBL pedagogy. The findings of the study depicted that the PBL successfully promoted that integration of theory in the practical setting. Furthermore, the learning pedagogy showed to enhance students' problem-solving skills.

1. Introduction

This section depicts the purpose for this research study and presents background information pertaining to the study.

1.1. Purpose of the research

One of the core purposes of education is to prepare future employees for the workplace (Wrenn and Wrenn, 2009, p.258). However, several researchers' findings depict that students struggle to apply their theoretical knowledge acquired in the actual workplace (Pan and Jamnia, 2014, p.36; Pez`ua and Bayardo, 2012, p.33; Jugmohan, 2009, p.85). This in turn hinders students' ability to perform optimally within an organisation (Wang, 2013, p.27). Therefore, higher education providers need to provide students with adequate opportunities to practice the application of knowledge acquired while undertaking their studies.

The purpose of this research is to examine the effectiveness of Problem Based Learning (PBL) as a learning pedagogy employed within the classroom to assist students to apply theory attained. According to Huang (2005, p.38) PBL entails creating meaningful and real learning experiences for students which enables an easy transition of theory into practice. These experiences can be achieved through problem scenarios or case study- based techniques (Korthagen, 2001, p. 6). Theory relating to customer service was delivered to students. This was reinforced and practically applied using the PBL learning strategy. Being a people and service driven sector, providing excellent customer service is the cornerstone to a successful tourism and hospitality industry (Pan and Jamnia, 2014, p.85).

In line with PBL pedagogy, students were then presented with a case study depicting poor customer service in the tourism and hospitality. Based on the knowledge acquired, in groups students will be requested to act out (role play) what they would have done to achieve good customer service if placed in that scenario. The rational for this activity is for students to acquire skills that will support their application of theory in the work place environment.

1.2. Background to the problem

The tourism and hospitality industry in South Africa experienced significant and continuous growth since the 1994 democratic elections (Zwane *et al.* 2014, p.2). The industry plays a pivotal role in the country as it is one of the leading sectors in terms of job creation and contribution towards the Gross Domestic Product (GDP) (National Department of Tourism (NDT) 2012:1). Currently in South Africa, one in 22 people are employed by the tourism industry (STATS SA, 2016). Due to the rapid growth and vast interest, tourism and hospitality education has become a very popular field of study (Airey and Tribe, 2006, p.89). However, as a result of tourism and hospitality's swift growth and its relatively new inception as a credible study area, there are various problems contending tourism and hospitality qualifications.

According to Zwane *et al.* (2013, p.4) employers regard tourism and hospitality graduates as being not employment ready upon graduation. The main concern is that tourism and hospitality students are unable to transfer what they have learnt in the classroom in the actual work place (Pan and Jamnia, 2014, p.53). Literature argues that this is due to curricula entailing too much theory and limited practical components (Pan and Jamnia, 2014, p.36; Breytenbach 2010, p.61; Dowling 2010, p.35). Furthermore, researchers argue that tourism academics are too focused on developing conceptual and theory based tourism knowledge rather than preparing students for employment (Theobald 2013:72; Fidgeon, 2010, p.719). In a vocationally based programme like tourism, the implementation of practical and active learning components in a curriculum will enhance graduates' competency and experience that better meet the requirements of the tourism workplace (Wrenn and Wrenn, 2009, p.258).

2. Formulation of the problem

The rational for the study, research questions and research objectives are presented in this section.

2.1. Justification of the problem

Globally, research has indicated that tourism and hospitality students find it difficult to make the transition from theory to practice when employed in the industry. Research by Wang (2013, p.27) depicts that tourism and hospitality students lacked the practical experience and soft skills to supplement their theoretical understanding. Clegg (2005, p. 415) states that employers observed that tourism and hospitality students displayed excellent conceptual understandings during recruitment. However, the author adds that when students are required to handle customers or assist with finding solutions to problems, students tend to struggle. Accordingly, Jugmohan (2009, p.85), asserts that tourism and hospitality employers are disappointed with students' ability to transfer knowledge gained during their studies to the workplace. The implication of this gap, which is the inability to apply theory to practice, results in tourism and hospitality students lacking fundamental employability skills (Pan and Jamnia, 2014, p.36). Furthermore, Wang (2013, p.63) maintains that this gap hinders students' ability to perform their job as capable and competent tourism and hospitality practitioners.

In another line of inquiry, Wrenn and Wrenn (2009, p.258) claims that primarily theory-based teaching would result in boredom and complete disinterest on the part of the student. This is especially evident amongst the current generation of students who learn best via active participation (Chung and Yeh, 2016, p. 285). In line with literature, the conclusion that can be made is that students within private higher education institutions, also encounter difficulty in making connections between theory and practice. Students have shown to understand theory when questioned, but struggle to apply what they have learnt during simulation.

In search for a probable rationale for student's inability to apply theory acquired, Wrenn and Wrenn (2009, p. 260) argues that educators themselves may have failed to effectively incorporate a balance of conceptual material and practical experience in their teaching; this could have a rippling effect on the student. Pan and Jamnia (2014, p.36) claims that achieving an appropriate balance of theory and practice in curricula can be a difficult task for educator, hence approaches such as PBL must be incorporated in the educators teaching strategy to create an improved alignment between knowledge acquisition and practical application. Accordingly, this research employs PBL techniques to assist with application of theory to practice.

2.3. Research questions

Research questions are essential as they guide and centres the research process (Sekran 2003, p.56). The research questions for this study are presented below:

- In what way can PBL be used to encourage integration between theory and practice in a tourism and hospitality qualification?
- How can PBL be applied to encourage students to use theory towards problem solving?

2.4. Research objectives

To investigate the research questions, research objectives are generated (Plooy – Cilliers *et al.*, 2014, p. 60). According to Wrenn and Wrenn (2009, p. 258) the tourism and hospitality industry requires students not only to understand theoretically underpinnings, but also learn how to apply the theoretical frameworks. Literature highlights PBL as a tool that bridges the gap between theory and practice (Torre, 2016, p.38). Hence research objective one entails: analysing the effectiveness of PBL as a learning pedagogy to improve the application of theory in the classroom. Furthermore, literature has highlights various benefits of PBL, this includes to improve students' problem-solving skills. Jackson (2013, p.3) argues that solving problems in various situations is a key competence required of tourism and hospitality employees. Accordingly, the second research objective for this study involves: examining the use of PBL to enhance tourism and hospitality students' problem-solving skills.

3. Literature review

This section illustrates previous literature relating to the study area. This section commences with key definitions to the most pertinent concepts discussed in the study, literature pertaining to PBL will be examined and the need for PBL in tourism and hospitality studies is discussed.

3.1. Key definitions

The following definition will be adopted for this study:

3.1.1. Performance-based Learning

Performance-based Learning entails creating real and inquiry based learning experiences by allowing students to engage with the learning process, this enables an easy transition of knowledge acquired into practice (Huang, 2005, p.37).

3.1.2. Problem-solving skills

Having the ability to work through a problem in a systematic manner by merging various skills and competencies to find workable solutions (Jackson, 2013, p.5).

3.2. PBL as a learning strategy – A Literature Review

PBL was originally introduced in the 1960's in response to criticisms that traditional teaching methods failed to prepare students to apply knowledge (Hung *et al.* 2008, p. 486). PBL is founded on the premise that traditional memory based teaching and learning inadequately prepare students to solve problems in the real world (Chung and Yeh (2016, p. 285). Therefore, students of traditional teaching methods find difficulty in practically applying theory learnt and are therefore are unable to adapt to the work place environment easily, hence they do not meet industry demands (Hmelo-Silver 2004, p.237).

The value of PBL is that it creates meaningful and real learning experiences that can be adapted to real world problems (Huang, 2005, p.38). These experiences can be achieved through problem scenarios or case study- based techniques (Korthagen, 2001, p.6). The PBL is aligned with the constructivist approach to learning as the educator is the facilitator rather than the instigator of the learning process (Hung *et al.* 2008, p. 488). The educator offers some guiding instruction; however, the student is the active role player and is responsible for own learning (Chung and Yeh, 2016, p.283). During PBL students constructs their own knowledge and skills which is more meaningful and relevant then theory acquired from a textbook (Applefield *et al.* 2001, p.35). According to Wilson (1996, p.138) there are certain principles to be followed to effectively implement PBL. The author asserts that the objectives of the PBL activity needs to be clear to students, the learning task designed needs to be authentic and cognitively demanding. Vygotsky's zone of proximal development (ZPD) can be employed to achieve the objectives of PBL (Jackson, 2013, p.3).

Additionally, Ertmer *et al.* (2015, p.7) maintains that through scaffolding the student takes ownership of their learning, the role of the educator is to challenge the students thinking. Developing a learning community whereby ideas and knowledge is shared is important during PBL, therefore collaborative learning is a focal part of this activity (Wilson, 1996, p.138). Finally, the educator needs to provide opportunities for self-reflection on the content learned and on the learning process (Ertmer et al., 2015, p.7).

3.3. The need for PBL in tourism and hospitality studies

According to Jugmohan (2009, p.95) it is imperative that tourism and hospitality students develop problem solving skills, this is since tourism and hospitality students often face various challenges especially related to customers or guests, whom they are in direct contact with. Wrenn and Wrenn (2009 p.258) elaborates that tourism employers require a workforce that is fully equipped to handle pressure, make quick and effective decisions, assess problems and find solutions. In agreement, Ndou (2013) asserts that tourism and hospitality professionals require problem solving skills for their daily operation in a tourism and hospitality business. These competencies are attained through integrating PBL within the teaching strategy (Applefield et al. 2001, p.43). Wrenn and Wrenn (2009, p.258) states that one of the aims of higher education is to equip students with theoretical understanding and the ability to apply the theoretical frameworks in the real world. Educational curricula should entail a perfect combination of theoretical and practical methods to deliver holistic learning. However, Hmelo-Silver (2004, p.235) reports that it is exceptionally difficult to achieve a balance of theory and practice in the classroom.

PBL promotes the development of higher order skills such as; problem solving skills, self-directed learning, the construction of knowledge and understanding, and enables students to identify gaps between theory and practice (Chung and Yeh, 2016, p. 288; Hmelo-Silver 2004, p.235). In addition, PBL enhances students' communication, interpersonal self-motivation and independence skills. As mentioned above these are critical qualities is required of prospective tourism and hospitality employees. Through acquiring these competencies, students will find it easier to adapt to the industry and will be more attractive to employers (Chung and Yeh, 2016, p.285) Hence, PBL is an effective competence development pedagogy (Chung and Yeh, 2016, p. 283).

4. Research methodology

This section describes the methodology adapted in this study. The research methods, survey design and information pertaining to data analysis are addressed.

4.1. Research Paradigm

According to Bhattacherjee (2012, p.26) research paradigms are a set of beliefs, assumptions and perceptions that frames the structure of the inquiry. This research has adopted a post-positivistic paradigm. This is since the research aims to find investigate methods to improve the application of theory amongst tourism and hospitality students, rather than make predictions. Taylor and Medina (2013, p. 3) asserts that post positivism research seeks to understand problems more in depth by constructing generalised

knowledge from which solutions can be achieved (Taylor and Medina, 2013, p. 3). This paradigm has been incorporated in studies of a similar nature (Clegg, 2005, p.415; Wrenn and Wrenn, 2009, p.259).

4.2. Quantitative research approach

Due to time constraints and the nature of the research, the study adopts a quantitative research method approach. Quantitative research entails explaining phenomena through numbers, it involves developing statistical relationships (Sekran 2003, p.56). For this study, quantitative research methods will provide clear, precise and objective numerical data, thus increasing the reliability of the study. Furthermore, Thomas (2010, p.4) argues that data analysis for quantitative methods is relatively less time consuming. Creswell (2009, p.94) maintains that through appropriate instrument design quantitative methods can control variables which will minimise the misinterpretation of questions.

Alternatively, quantitative research does encompass certain shortcomings. According to Salkind (2012:253) quantitative research may limit or not fully reflect the respondents' views. Additionally, quantitative instruments may return incomplete or inaccurate. These consequences, together with reduction of data to numbers, may result in the loss of crucial information (Creswell and Plano Clark 2010 p.3). The quantitative approach makes it difficult to explain variations in behaviour and may mask underlying problems (Thomas, 2010, p.4).

4.3. Research Design

For this descriptive study, a cross sectional survey design was utilised. According to Bryman and Bell (2011, p.431) cross sectional surveys are used to collect quantitative data that is connected to multiple variables to determine patterns of association at a single point in time. In agreement Bhattacherjee (2012, p 39) states that within cross sectional surveys the independent and dependent variables are evaluated at the same time. The author argues that this increases external validity. During cross sectional survey design the researcher has only one opportunity to collect data from their respondents (Plooy – Cilliers *et al.*, 2014, p. 149). The cross-sectional survey design is a cost effective and time saving technique (Sekran 2003, p.136). This technique was also adopted by educational studies of a similar nature (Breytenbach 2010, p.60).

4.4. Data collection methods

To collect data for this study, self-administered questionnaires will be employed. According to Bhattacherjee (2012, p 74) self-administered questionnaires consist of a set standardised questions in which the respondents answer independently. The items for the questionnaire will comprise of a Likert scale, open and close- ended questions. According to Sekran (2003, p.198) Likert scales are designed to measure respondents' opinion or attitude relating to set statements. The respondent rates the set statement based on a 5-point category of strongly disagree to strongly agree. Cohen *et al.* (2007, p.346) maintains that Likert scales are a very powerful and useful tool that allows researchers the freedom to combine measurement with opinion, quantity and quality. One of the downfalls of this tool as highlighted by Bhattacherjee (2012, p 78) is that it does not give respondents the opportunity to provide additional comments; hence important meanings may be lost.

Open-ended question provides authentic, rich and honest data that is entails depth (Bryman and Bell, 2011, p.450). However open-ended questions can create data handling problems as data needs to be coded into numbers and themes, which may violate the reliability and validity of the responses (Thomas, 2010, p.12). Close-ended questions are also employed in this study. According to Cohen *et al.* (2007, p.353) close-ended questions is when the respondent selects predetermined responses to a question. Data analysis is also simpler, and comparisons can be conducted easily using various frequencies (Sekran, 2003, p.192). However, Cohen *et al.* (2007, p.353) cautions that when using close-ended questions the different categories must be carefully chosen as these could distort responses, create confusion or not really reflect what the respondents wish to say.

4.5. Data analysis

According to Cohen *et al.* (2007, p.213) quantitative data analysis entails categorising data, counting them and constructing statistical models. The researcher will categorise data according to specific codes, these codes will be listed into the researchers' code book. The quantitative data acquired will be analysed through the Predicted Analytical Software (PASW) Statistics Version 18.0 or SPSS as it is known. The raw data has been inputted into SPSS, which the generate numerical analysis, comparisons and relationships between variables. The data generated are presented through bar charts and tables.

5. Description of the population and sampling

The section outlines the sample and sampling methods that were employed in this study.

5.1. Sampling method

Salkind (2012:260) defines sampling as studying a representation of the population, from which generalisations can be made and applied to the entire population. According to MacGregor (2008) in South Africa accurate data pertaining to the number of students undertaking tourism and hospitality qualifications is limited, as the South African education system comprises of various registered and non-registered education institutions. Due to this, the study will utilise a non-probability sampling method.

As an element of non-probability sampling, the study will adopt convenience sampling. Bhattacherjee (2012, p 69) infers that convenience sampling is utilised when parts of the population are easily accessible and readily available to be incorporated in the research process. In addition, Plooy – Cilliers et al. (2014, p. 142) states that potential respondents for convenience sampling can be derived from immediate environment of the researcher. Since the researcher is employed as an educator within a private higher education institution in South Africa that offers a Higher Certificate in Tourism and Hospitality, a sample from this population will be selected.

5.2. Population and sample size

The population of the potential participants of this study is 20, since the size of population is limited, all 20 students will be requested to participate in the study. This method was adopted by studies of a similar nature (Zwane *et al.* 2014, p.5).

6. Feasibility of the study and anticipated contribution

Du Plooy – Cilliers *et al.* (2014, p. 142) asserts that research studies need to be feasible in terms of time, sample size, methodology, ease of collecting the data, cost implications. This study is deemed feasible as the researcher is an experienced scholar and academic that is well versed in research processes. The researcher is employed in the institution whereby the research will be conducted, hence cost implications would be minimal and data collection would be fairly easy. The methodologies and techniques adopted were also utilised by other studies of a similar nature, thus increasing reliability and validity.

The results of this study will used to inform the educators teaching strategy. Furthermore, this study hopes to produce more employable and skilled tourism and hospitality graduates leaving the institution. The research would be most beneficial to curriculum designers, tourism and hospitality academics employed at the institution.

7. Ethical considerations, validity and reliability

To ensure that ethical considerations are met, an informed consent letter was presented to respondents prior to participation. The consent letter gives the individual a choice whether to participate in a study, details the purpose of this study and allows the individual to withdraw from the study at any time (Ranjith, 2014 p.51). The respondents and the participating institution will be given anonymity as their names will not be mentioned in the study. The researcher strived to design simple, clear and unbiased questionnaire that would not hinder the respondent's interpretation.

According to Plooy – Cilliers *et al.* (2014, p. 254) reliability examines the credibility of the research, to ensure reliability consistency in terms of instruments utilised and data obtained must be achieved. To ensure reliability of the instruments and data the researcher strived to ensure that the data collection process is clearly documented, and is continuously revisited to ensure trustworthiness. In addition, the methodologies and techniques utilised in this study were also employed by other studies of a similar nature, hence the processes have shown to work and retesting is not necessary. Alternatively, validity is about determining whether the research measured what it intended to measure (Bhattacherjee, 2012, p 72). Peer examination will be incorporated to assess the studies instrument, data and findings; this is conducted to increase the face and content validity of the study.

8. Limitation of the study

Salkind (2012:260) describes limitations as constraints pertaining to the study that are outside the researchers' control. In terms of limitations, this study took an exploratory approach since there is inadequate literature pertaining to employing PBL within tourism and hospitality education. Accordingly, the scope of the study and generalisation of results would be limited. According to Dale and McCarthy (2006, p.51) tourism and hospitality students require several skills that can be practically used and applied in the business environment. However due to time constraints, only the improvement of applying problem solving skill through PBL could be addressed. Additionally, time constraints only allowed for the use of quantitative research methods. Hence, important themes could escape the research process.

Delimitations are because of the researcher's choices that would have an impact of the research (Plooy – Cilliers *et al.*, 2014, p. 254). Since there is inaccurate data pertaining to the number of students undertaking tourism and hospitality qualifications in South Africa (MacGregor, 2008), the researcher chose to utilise convenience sampling. The researcher

is an educator to tourism and hospitality student within a higher education institution in the country. Apart from this, the researcher strives to implement for new methodologies and approaches to increase student development. Hence, these particular students became the sample population of this study.

9. Results and analysis of research

This section presents the results for this study and an interpretation and discussion of findings in line with the study's objectives to draw conclusions. A total of twenty self-administered questionnaires were distributed to selected sample. The study had obtained response rate of 100%, hence the study is deemed viable. The findings were presented by question to ensure clear alignment to the studies objectives.

9.1. The application of theory through PBL

PBL as a learning pedagogy creates meaningful and real learning experiences for students that can be adapted to real world problems (Huang, 2005, p.38). The participants were asked if the activity assist them to apply theory on customer service to the depicted case study. In line with literature, 100% of respondents indicated that the PBL activity assisted them to successfully integrate theory acquired to the simulated activity. Chang (2013, p.281) states that PBL minimises the gap between reality and classroom theoretical underpinnings. As a result, students found the transition between classroom to real world easier.

9.1.2. The function of theory in PBL

As a follow up question, participants were asked to describe how they used the theory taught in class during the activity, to ascertain how theory assisted with application. Figure 1 depicts these results.
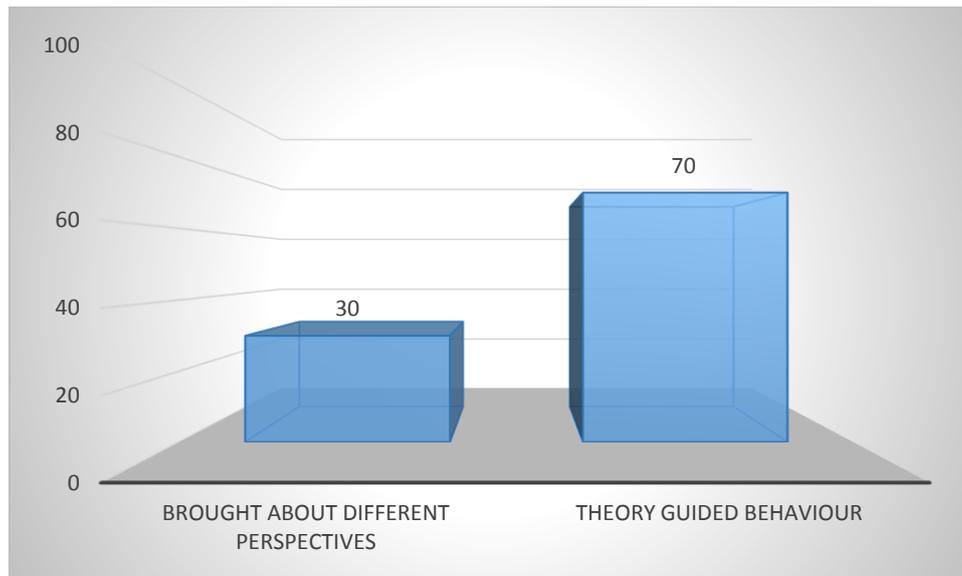
Figure 1: The use of theory

30% of respondents revealed that drawing from the theory acquired, students were able to bring about different perspectives to offer solutions to problems. Accordingly, Wood (2005, p.328) asserts that PBL drives students to make connections between theory and real world, thus triggering solutions to problems. Essentially, when placed in a practical scenario, the activity enabled students utilise theory as a framework to identify, assess and understand potential problems. Additionally, this activity assisted students to draw on the perspectives of their peers to develop their own theoretical assertions. The results of this study supported these inferences, as 100% of the respondents indicated that the activity enabled them to easily develop solutions to problems highlighted. Thus, making the study aligned with the objectives PBL (Ertmer *et al.* 2015, p.7).

Moreover, Figure 1 illustrates that 70% of student utilised theory to guide their behaviour in the practical setting. In line with the results, a respondent revealed that "*Because we learnt about customer expectations in class, I knew how to act and behaviour when faced with the problem.*" In agreement, another respondent added "*During class the lecturer taught us how to professionally engage with customers, therefore I was able to deal with the problems in the case study.*" As a result, it can be concluded that the process of scaffolding empowered students to be confident enough to deal with problems faced.

9.2. The attainment of solutions

Respondents were asked to indicate how the activity enabled them to develop solutions to the problems highlighted in the case study. Figure 2 illustrates how solutions were developed by the respondents.
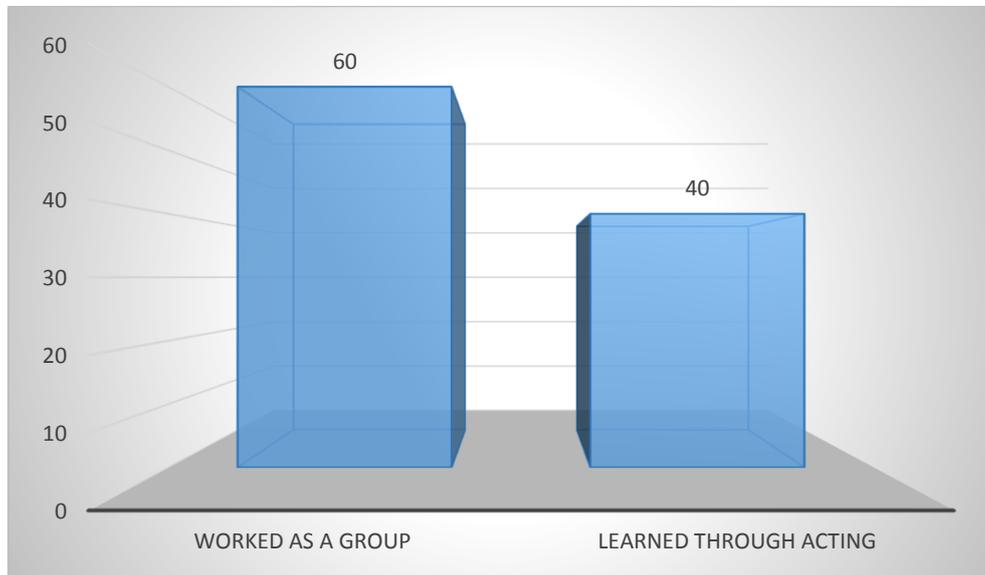

Figure 2: Development of solutions

60% of the respondents deemed group work made it easier to develop solutions. According to Jalani and Sern (2015, p.873) group work can be employed as a tool to facilitate PBL. When utilising group work in PBL, collectively students identify what they already know, what they need to know and how to access the information to develop solutions to the problem (Chung and Yeh, 2016, p.285). The results depicted that working in groups enable students to draw on different people's respective strengths. This exposed students to different ideas and thoughts which opened their minds to more and different ways of thinking. In addition, 40% of respondents inferred that the PBL activity i.e. role playing, aided the development of solutions to problems highlighted. According to Huang (2005, p.38) PBL stems from constructivism which emphasises the development of new knowledge which is built on previous knowledge. Furthermore, for PBL to be successful student motivation and knowledge acquisition is essential (Hmelo-Silver 2004, p.237). Accordingly, role plays are ideal for PBL as it inspires students to be creative, which results in the development of new knowledge (Chan, 2011, p.24). Thus, the results depicted confirms objective one, that PBL is an effective learning pedagogy to improve application of theory in the classroom.

9.3. The success of PBL pedagogy

Figure 3 below shows that 90% of respondents deem that upon completing the activity, they are more confident to handle customers in the industry. Participants were also asked if they now feel more confident in applying knowledge acquired to find solutions to problems experienced by customers. Figure 4 shows that 84% of respondents are more comfortable in transferring knowledge acquired to develop solutions. Drawing from these results the study can infer that the implementation of PBL as a learning pedagogy to improve the application of theory in the classroom was successful.
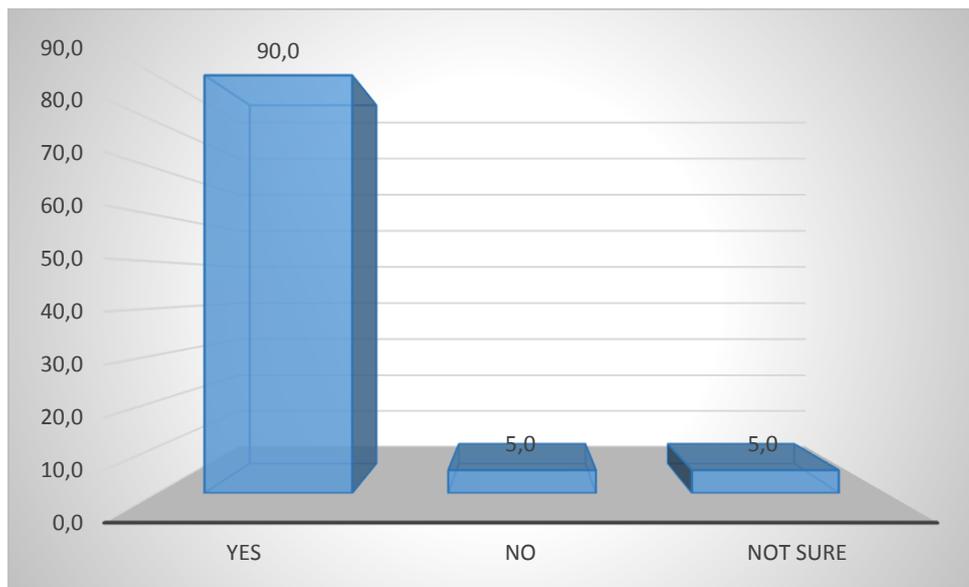

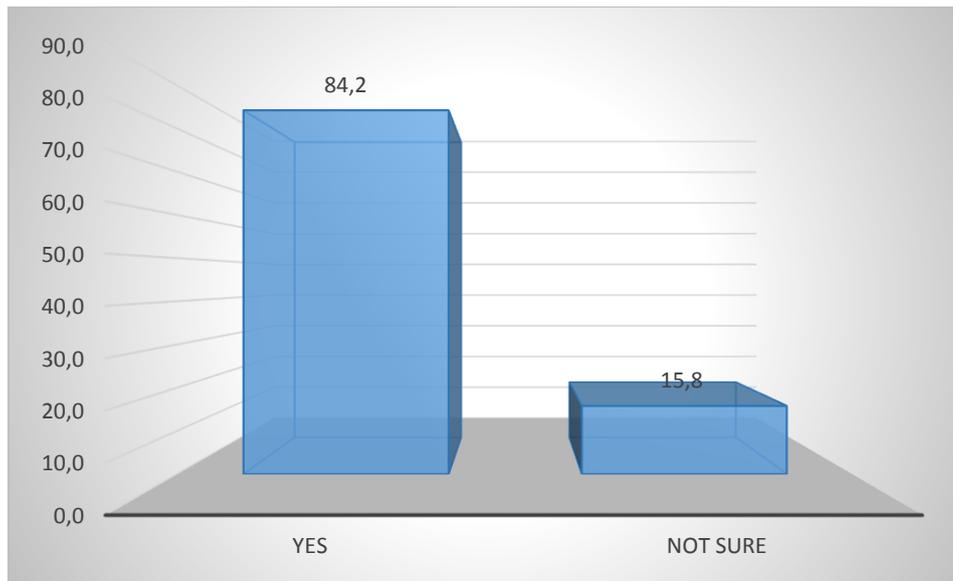**Figure 3: Whether respondents are confident in handing customers**

Figure 4: Whether respondents are confident applying knowledge to develop solutions

As highlighted in the literature review section, it is imperative that tourism and hospitality students are well equipped with the skills that enables them to solve problems and handle customers in a professional manner, as majority of the time only point of contact for the customer (Jugmohan, 2009, p.95). Figure 3 and 4 shows that problem based learning improves student's professional development, thus making students more attractive to employers. This assertion is in line with literature that strongly suggests that PBL promotes student professional skills and attitudes (Chung and Yeh, 2016, p. 288; Hmelo-Silver 2004, p.235).

9.3.1 Utilising PBL to develop problem solving skills
Problem solving skills is an essential requirement for graduates to operate efficiently in the workplace (Jackson, 2013, p.3). Ndou (2013) asserts that this skill is crucially important in the tourism and hospitality industry as employees are in direct contact with customers. Respondents were asked to rate whether the activity required them to exercise characteristics related to problem solving skills. This was done to ascertain the development of student's problem-solving skills.

Table 1: Respondents competence levels to solve problems

No.	Problem solving skill	Strongly Disagree	Disagree	Agree	Agree Moderately	Strongly Agree
1.	Assess the problem	0	0	31%	32%	37%
2.	Think critically	0	0	47%	32%	21%
3.	Make quick decisions	0	10%	32%	32%	26%
4.	Handle pressure	0	10%	42%	37%	11%
5.	Develop effective solutions	0	0	26%	42%	32%

Drawing from Table 1, the majority (37%) of respondents strongly agreed that the PBL activity implemented assisted them to easily assess the problems presented. According to Wan and Badrul (2010, p.) at this initial stage the student seeks to obtain a clearer understanding of the problem, by examining the background, the implications and effected parties of the problem. Wrenn and Wrenn (2009 p.258) adds that this is a critical stage in problem solving, as this stage informs the effectiveness of the solution reached. Critical thinking is necessary to solve problems, as thinking critically brings about creative thinking, open-mindedness and logic, these are needed in developing effective solutions (Pan and Jamnia, 2014, p.36). Accordingly, Hmelo-Silver (2004, p.235) states that critical thinking is a higher order skill that entails analysing, synthesising and evaluating information. The results of the study, shows that 47% of the respondents agreed that the activity enabled them to think critically.

The majority of respondents agreed that they are confident to make quick decisions. Fidgeon (2010, p.719) asserts that effective decision making is an important part of the problem-solving process. When making decisions, students are required to evaluate the problem, consider alternatives, make a choice and follow up with necessary action (Pan and Jamnia, 2014, p.36). The PBL activity compelled students to consider these factors, thus quick decisions were easier to make. On the other

hand, 42% of respondents inferred that they are able to handle pressure when placed in practical situations. Theobald (2013:72) states that tourism and hospitality is a fast paced and intense industry. The author adds that potential employees should be equipped with the necessary skills to deal with pressurised situations. In addition, Table 1 portrayed that the respondents strongly agreed that they were able to develop effective solutions. Based on the results it can be ascertained that the PBL activity enhanced the students' problem-solving skills. The results of this study is aligned with other studies, which also found an improvement of students' problem solving skills through PBL (Kader *et al.* 2016, p.166; Klegeris *et al.* 2013, p.73; Higgs, 2005, p.149).

10. Discussion

This study adds to current literature that seeks to promote the benefits of PBL in comparison to traditional learning methodologies. The problem-solving process, which is an integral component PBL, was guided by a framework whereby students learn to explore and analyse problems systematically. The PBL activity employed in the study enabled students to take initiative of their own learning and to be more confident in their own skills and competencies. Furthermore, PBL provided opportunities for students to experience authentic problems, thus making the learning experience more real. Student were able to integrate theory learnt from textbooks and lecturer slides within practical settings. During this process students could think more critically, creatively and work as teams, to develop effective solutions. This contrasts with traditional teaching and learning which requires students to repeat and memorize information (Ertmer *et al.* 2015, p.7). The learning activity engaged students in group work, which exposed students to different ideas and thoughts which opened their minds to more and different ways of thinking. The learning approach is deemed as a successful pedagogy to encourage integration between theory and practice. Furthermore, the study confirmed that students problem solving skills were enhance through the adoption of PBL during teaching and learning.

11. Recommendation

The results of this study cannot be generalised due to the small sample size, hence it is recommended that a larger sample should be considered. Future research should focus on the implementation of PBL in other disciplines and using other methodologies besides role plays. It is recommended that a test-retest approach to be conducted once students have been placed in the industry to assess the effectiveness of the PBL approach.

12. Conclusion

The introduction of PBL brought about many positives that alleviated the students learning experience. Students became autonomous learners that improved students higher order skills cognitive development. The results depicted that students were able to think critically and creatively as well as develop solutions to problems that were posed to them.

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Annexure A - Questionnaire

Dear Respondent

I Shayna Ramouthar, am currently completing my Post Graduate Diploma in Higher Education (PGDHE) through the Independent Institute of Education (IIE). As a part of the programme, I am required to conduct research on learning strategies to promote positive and effective teaching and learning.

The purpose of this study is to analyse the effectiveness of Problem Based Learning (PBL) as a learning strategy to improve the application of theory in practical environments and to examine the use of PBL to enhance tourism and hospitality students' problem solving skills. According to Huang (2005, p.38) PBL is a teaching strategy that challenges students to develop solutions to problems by means of combining several problem-solving related skills and attained knowledge. Case studies are used as a tool in PBL (Korthagen, 2001 p. 6). You were presented with a case study depicting poor customer service in the tourism and hospitality. In groups, you were asked to act out (role play) what you would have done to achieve good customer service if placed in that scenario. This questionnaire is based on the activity undertaken.

Your participation in this study is entirely voluntary and you can withdraw from the study at any time. Your name will not appear on the questionnaires and your answers will be confidential. There is no right or wrong answer to the questions. The questionnaire will take you approximately 5 – 10 minutes to complete.

If you agree to voluntary participate in this study and fully understand this consent letter, kindly proceed to the questionnaire.

Thanking you

Yours Faithfully

_____

Shayna Ramouthar

Kindly follow the instructions provided. For each question select **_one_** option only, unless otherwise stated. Please answer **_all_** questions.

These questions relate to the activity conducted in class, where by you were given a case study depicting poor customer service and in groups you were tasked to act out what you would have done to achieve good customer service if placed in that scenario.

1) Did this activity enable you to easily develop solutions to the problems highlighted in the case study?

Yes ☐

No ☐

Not Sure ☐

2) Please explain your answer to question 1.

_____

_____

_____

_____

_____

3) Did the activity assist you to apply theory on customer service which was taught in class to the depicted case study?

Yes ☐

No ☐

Not Sure ☐

4) Describe how you used the theory taught in class during the activity.

_____

_____

_____

_____

_____

5) If you were the customer in the depicted case study, would you be satisfied with the customer service level that your group offered?

Yes [ ]

No [ ]

Not Sure [ ]

6) Please explain your answer to question 5.

_____

_____

_____

_____

_____

7) After this activity, would you consider yourself to be more confident to handle customers in the industry?

Yes [ ]

No [ ]

Not Sure [ ]

8) Please explain your answer to question 7.

_____

_____

_____

_____

_____

9) Do you consider yourself to be more confident in applying knowledge acquired to find solutions to problems experienced by customers?

Yes [ ]

No [ ]

Not Sure [ ]

10) Use the Likert scale provided below to rate whether the activity required you to exercise the following characteristics related to problem solving skills.

Item	1 Strongly Disagree	2 Disagree	3 Agree	4 Agree Moderately	5 Strongly Agree
a. Assess the problem					
b. Think critically					
c. Make quick decisions					
d. Handle pressure					
e. Develop effective solutions					

_____*The End* _____