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Project-based Learning to Promote Learner Autonomy in Training Hospitality Education at a Technical and Vocational Education and Training College

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Abstract. Project-based learning (PjBL) is a teaching and learning approach that involves students actively working on real-world projects, to develop knowledge and skills. This method has been shown to be effective in promoting learner autonomy (LA) and skills development in language learning studies. There is, however, a dearth of research on the use of PjBL in hospitality education, especially in a technical and vocational education and training (TVET) environment. Using a case study research strategy, this study aimed to investigate whether PjBL could be used to promote autonomy and develop employable skills in students in hospitality education. A convergent mixed methods approach was used to develop a framework for PjBL in promoting LA in a TVET environment. The study included a closed-structured questionnaire with responses from 144 ($n=144$) students from two hospitality programmes, as well as a semi-structured interview with 18 student participants. The findings indicate that PjBL is an effective teaching and learning approach in hospitality education that can promote LA, lead to a deeper understanding of the subject matter, while facilitating the development of a variety of important skills and competencies. Students can apply their knowledge and skills in meaningful ways through hands-on, real-world activities, which can foster a greater sense of autonomy and responsibility for their own learning. Moreover, this study emphasises the significance of incorporating PjBL into hospitality education programmes, to prepare students for success in a rapidly changing world.

Keywords: hospitality education; further education; learner autonomy; project-based learning

1. Introduction and background of the study

Autonomy is considered both a precondition and a vital learning outcome in the academic success of students (Ding & Yu, 2021) and their ability to independently gain knowledge and skills (Bei et al., 2019). Little et al. (2017) posit that learner autonomy (LA) is not an option for educational institutions, but rather a pedagogical imperative. Current trends show an expanding recognition of the significance of LA in academic achievement (Ginting et al., 2020; Melvina & Julia, 2021) and the role of students in directing their own learning process (Alonazi, 2017; Saeed, 2021; Tomasouw & Marantika, 2020; Yu, 2020). The successful transition of students to the technical and vocational education and training (TVET) environment is not only about academic competence (i.e., the skills, attitudes and behaviours that contribute to a student's academic success), but also about adjusting to a learning environment that requires greater autonomy and individual responsibility. One of the approaches used in promoting LA involves integrating project-based learning (PjBL) into the curriculum.

Scholars believe that PjBL, as an experiential learning teaching and learning pedagogy, is a crucial instructional approach that enables students to develop content knowledge and academic skills (Danko, 2019; Indrawan et al., 2020; Pradanti & Muqtada, 2023), develop and improve skills for future success (ESEI, 2021; Stehling & Munzert, 2018), develop LA (Boggu & Sundarsingh, 2019; Yuliani & Lengkanawati, 2017; Zaidi et al., 2020), and build the necessary personal agency to meet the challenges of life and the wider world (ESEI, 2021; High-Quality Project Based Learning, 2018; Stehling & Munzert, 2018). However, although implementing PjBL in curricula may prove to be advantageous, educators may experience challenges in its implementation and application (Aldabbus, 2018; Juliet, 2020; Vasiliene-Vasiliauskiene et al., 2020), especially in a TVET context (H. Liu, 2019; Mustapha et al., 2020).

Research shows that the use of PjBL in a TVET context does not always have the desired teaching and learning effects. This may be because vocational educators are not well versed in PjBL, are unable to adequately supervise students during this process, and encounter difficulties when executing PjBL in practice (H. Liu, 2019). Van de Pol et al. (2019) argue that, in practice, it is not always clear how to support students, or how the educator can ensure that students are ready and capable to assume responsibility for their studies. Furthermore, research shows that traditional, educator-centred styles remain dominant in the practice of PjBL in TVET, and that educators are overly involved in the implementation of projects, depriving students of control and ownership (H. Liu, 2019). Moreover, students lack the autonomy necessary to plan for, prepare, engage in and/or manage their own learning (Borg & Alshumaimeri, 2019; H. Liu, 2019). When students are involved in a project, they are not always sufficiently active, leading to a lack of interest, motivation and creativity on their part, to achieve good learning outcomes (H. Liu, 2019). Studies also show that students are not aware of the concept of autonomy, that educators and students do not favour autonomous learning (Boggu & Sundarsingh, 2019), and that some students need guidance and support from their educators to become autonomous (Reswari & Kalimanzila,

2021). Lastly, Jansen et al. (2020) concede that many students struggle to successfully regulate their learning process.

2. Aim of the study

In order for students to develop into autonomous learners, they require ongoing support, guidance and commitment from their educators. In doing so, there is a need for the design and implementation of PjBL to promote LA, and to create a learning environment in which students can acquire the necessary skills to succeed both academically and within the hospitality industry.

This study aims to contribute insight into how PjBL, as a teaching and learning pedagogy, promotes hospitality students' autonomous learning in gaining work-related skills and competencies based on their beliefs around and perceptions of LA in a TVET context. The study addresses a gap in the research, which is currently dominated by literature on students' beliefs and perceptions in promoting LA in the context of the English language and English as a foreign language (EFL) (Barin & Eyerci, 2021; Bhattarai, 2021; Iamudom & Tangkiengsirisin, 2020; Jose et al., 2020; Kim & Yoon, 2021; Pham, 2021; Reswari & Kalimanzila, 2021; Yaprak, 2021; Yu, 2020; Yuliani & Lengkanawati, 2017; Zourez, 2019), or has been conducted at either the primary and secondary schooling level (Wirapatni et al., 2021; Yuliani & Lengkanawati, 2017; Zaidi et al., 2020) or the university level (Padmadewi et al., 2020; Tran, 2020; Yasmin et al., 2020). There is a dearth of research into how PjBL can promote LA, especially within TVET hospitality education, to enable students to acquire employable skills and competencies.

Furthermore, this is to provide a framework for PjBL in promoting LA in the TVET milieu. The outcomes of this study can contribute to educators designing, implementing and facilitating better learning experiences for students, using PjBL to promote autonomous learning and help students achieve academic success. To that end, the study addresses the following research question: How can PjBL promote LA in hospitality students studying hospitality education at a TVET college?

3. Review of the literature

3.1. Conceptualising learner autonomy

Autonomy is not a universal concept that is understood similarly around the world. As Teng (2019) notes, theoretical discussions around LA are far from coherent, consistent or systematic. Many scholars use LA synonymously with autonomous learning (Kyu, 2018; Thanh, 2019; Yu, 2020; Zaidi et al., 2020), learner independence (Kim & Yoon, 2021; Zaidi et al., 2020), independent learning, self-directed learning or self-direction (Al-Khawlani, 2018; Gulyamova & Kadirova, 2021; Hawkins, 2018), learner-centredness (Kyu, 2018; Yu, 2020), learner self-regulation (Hawkins, 2018; Oxana et al., 2020) and self-managed learning (Marsevani, 2021). It is a difficult and complex concept to define precisely (Gulyamova & Kadirova, 2021; Kim & Yoon, 2021; Sereti & Giossos, 2018; Teng, 2019), because of its broad and abstract nature (Oxana et al., 2020).

Holec (1981, as cited in Tran, 2020, p. 134) views autonomy as “the ability to take charge of one’s own learning”, in an “individual capacity”. Benson (as cited in Tomasouw & Marantika, 2020, p. 505) describes autonomy “as the capacity to take control of one’s learning”. Although the terms *ability* and *capacity* are used in these definitions, they are often widely used interchangeably. Saglam (2018) defines autonomy as “the ability of the learner to take responsibility for his/her own learning and monitor own learning process”. Scharle and Szabó (2000, as cited in Iamudom & Tangkiengsirisin 2020, p. 201) define autonomy as “the freedom and ability to manage one’s own affairs, which entails the right to make decisions as well”. Note the use of “take charge of”, “take control of”, “take responsibility for” and “manage” (Blidi, 2017, pp. xxiv; 82) in these four definitions.

In addition to emphasising ability/capacity and taking charge/control/responsibility, scholars mention two affective factors that affect students’ autonomy, namely motivation and willingness (Bhattarai, 2021; Ceylan, 2021; Iamudom & Tangkiengsirisin, 2020; Little et al., 2017; Orakcı, 2021; Yu, 2020). Nguyen (2014, as cited in Alrabai, 2017, p. 212) defines LA as a “learner’s willingness and ability to take responsibility to plan, implement, monitor and evaluate his/her learning in tasks that are constructed in negotiation with and support from the teacher”. The emphasis is on students being positive and active in their learning.

3.2. Project-based learning as a teaching and learning pedagogy

PjBL involves an inquiry-based instructional method (Albar & Southcott, 2021; Guo et al., 2020) that involves students in the construction of knowledge by having them accomplish meaningful projects and develop real-world products (Guo et al., 2020; Pradanti & Muqtada, 2023), presentations, or performances over a given period (Albar & Southcott, 2021). These projects usually involve elements of researching a complex problem, question or challenge, as an extension of what has already been learned in class, before presenting it as a project (Güven & Valais, 2014). A collaborative learning environment is created in which students work in teams or pairs, supervised by an educator, a facilitator or a mentor (Albar & Southcott, 2021; Budhai & Skipwith, 2022; Roland, 2017). Krajcik and Shin (2014) report that the PjBL environment comprises six key elements: (i) a driving question, (ii) a focus on learning goals, (iii) participation in educational activities, (iv) engaging through collaboration, (v) scaffolding with the use of learning technologies, and (vi) creating a tangible product.

In engaging with the project, students may encounter problems that need to be addressed, requiring them to construct and present an end product in response to a driving question (Albar & Southcott, 2021; Pradanti & Muqtada, 2023). The educator interacts with the students to guide them to frame meaningful questions, facilitate student dialogue in knowledge development and organise tasks, and he or she provides ongoing feedback to students on what they have learned from their experiences (Budhai & Skipwith, 2022; Güven & Valais, 2014). Educators and students thus develop an “inclusive relationship learning partnership” (Güven & Valais, 2014, p. 184).

Moreover, in PjBL the role of the students is to investigate significant questions that require them to gather information and think critically (H. Liu, 2019). This allows them to learn by stimulating their interest and motivation, and capacitates them to apply new knowledge learned in a problem-solving context (Budhai & Skipwith, 2022). Fini et al. (2018) assert that PjBL allows different groups of students to work together to solve practical problems, before presenting and defending their approaches and solutions. This entails promoting their intellectual and social development, requiring them to actively participate in the process of acquiring knowledge, while improving their communication and interpersonal skills, and enhancing their leadership skills and creativity (Fini et al., 2018).

In PjBL, the “voice and choice” of students are fostered through carefully managed and planned instructional benchmarks (Güven & Valais, 2014, p. 184), with regular formative assessments of these benchmarks serving to guide them, even as their progress with the project encourages them to dig deeper into the concepts learned.

3.3. Project-based learning in promoting learner autonomy in hospitality education

Zaidi et al. (2020) conclude that the use of PjBL enhances LA and has been proven to be effective in improving cognitive ability, improving students’ use of critical thinking skills, enhancing students’ ability to obtain, retain and retrieve the knowledge to increase the achievement of students. This is furthermore supported by studies by Tran and Tran (2020), Ayu Sukerti and Yuliantini (2018), Van Loi (2017), and Yuliani and Lengkanawati (2017), which emphasise the promotion of LA through PjBL. By promoting LA, students are more likely to actively engage, explore their interests and develop the necessary knowledge and skills to excel in their chosen hospitality profession, thus promoting lifelong learning (X. Liu et al., 2020), critical thinking and adaptability, which are all essential attributes in the dynamic ever-evolving field of hospitality.

4. Theoretical framework

Kolb’s experiential learning theory (ELT) is an important and influential approach to education that focuses on how students learn best by experiencing the material they are studying. ELT is derived from the work of 20th-century foundational scholars such as John Dewey, William James, Kurt Lewin, Lev Vygotsky, Jean Piaget, Paulo Freire, Carl Jung, Carl Rogers and Mary Follett, who placed experience at the centre of the learning process, thereby envisaging a learner-centred educational system (Kolb & Kolb, 2017; Passarelli & Kolb, 2020). Dewey (as cited in Vasiliene-Vasiliauskiene et al., 2020) postulates that the nature of the experience is continuous, and the experiential learning process is fundamentally important in the shaping of students’ learning. Dewey (as cited in Passarelli & Kolb, 2020) considers experience, inquiry and reflection to be key components of experiential learning. In addition, practical and varied experiences are deemed to improve students’ preparedness for life holistically, with varied activities being more beneficial than traditional curricula (Dewey, 1986 as cited in Bradbury, Schwarz & Lenton, 2021).

Currently, ELT (Passarelli & Kolb, 2020) is known as a dynamic, holistic model that defines learning as the major process of human adaptation, involving the person in his or her entirety (Bell & Bell, 2020; Kolb & Kolb, 2017; Passarelli & Kolb, 2020). Kolb's ELT proposes that individuals learn through a four-stage process that includes concrete experiences, reflective observation, abstract conceptualisation, and active experimentation (Kolb & Kolb, 2018; Passarelli & Kolb, 2020). According to Kolb (cited in Kolb & Kolb, 2017, 2018; see also Passarelli & Kolb, 2020), these stages form a continuous cycle in which individuals engage in experiences, reflect on those experiences, form new concepts and theories, and test those concepts and theories in new experiences.

Kolb's theory has been widely applied in various fields, including education, information science, business and psychology (Passarelli & Kolb, 2020). In education, Kolb's theory has been used to design instructional strategies to promote active and reflective learning (Askren & James, 2021; Patil et al., 2020). Empirical studies have provided support for Kolb's theory. The findings reported by Calderón Carvajal et al. (2021) support the hypothesis of four learning modes. As Pamungkas et al. (2019) found, implementing Kolb's ELT could enhance students' conceptual understanding, and allow them to directly develop their knowledge and abilities.

Some are, admittedly, critical of Kolb's theory, based on systematic reviews (Calderón Carvajal et al., 2021; Johnson et al., 2020; Kumar & Bhandarker, 2020; Matsuo & Nagata, 2020; Morris, 2020; Ndlovu & Nyane, 2018). Many believe ELT lacks sound theoretical and empirical foundations (Bell & Bell, 2020; Burch et al., 2019; Morris, 2020), and they question the premise on which it is based, the design and acceptance of its constructs, and its generalisability and effectiveness (Kumar & Bhandarker, 2020). Calderón Carvajal et al. (2021, p. 605) found that Kolb's model reflects the presence of the four learning modes, but not the "orthogonal bipolar structure". These results therefore confirm the existence of learning modes, but not of learning styles, which are deemed non-viable due to their failure to comply with the orthogonal bipolar structure.

Despite these criticisms, Kolb's ELT has been influential in the field of education and continues to be widely used in various disciplines (Kolb & Kolb, 2018; Morris, 2020), especially hospitality education (Askren & James, 2021; Dillette & Sipe, 2018; Zisan, Albattat, & Bvvasar, 2021). It provides a valuable framework for understanding strategies that promote active and reflective learning.

5. Research methodological approach

5.1. Research approach and the data collection instrument

This study employed the convergent mixed-methods research approach to gain a thorough understanding of the topic under study. Creswell and Guetterman (2021) define convergent mixed methods as a research approach in which quantitative and qualitative (QUAN + QUAL) data are collected concurrently, weighed equally, analysed independently, and then interpreted jointly. The

researchers triangulated the methods for corroboration and validation by directly comparing the QUAN results with the QUAL findings.

Two scales were used to collect QUAN data on students' perceptions of LA and experiential learning. The researchers used Bei et al. (2019) five-point Likert-type scale, developed to measure LA from the dimensions of personal and educational autonomy. The second scale, a seven-point Likert-type experiential learning scale, developed by Clem et al. (2014), was used to collect data from respondents' PjBL experiences and assess their perceptions of experience-based instruction. Furthermore, the QUAL data was collected through semi-structured interviews whereby only two of the 20 questions posed to answer the research question, are addressed in this article. They are: (i) What skills do you have that allow you to be an autonomous student?, and (ii) Is the self-reflection report important or not important in your development as a student? Please explain your answer.

5.2. Data collection and the analysis process

Before conducting research, ethical clearance was obtained by the University of South Africa's College of Education Ethics Review Committee and the TVET college where the study was conducted. Students enrolled in the selected TVET college during the 2021 and 2022 academic years, who completed a project in either Catering Theory and Practical N6 (on the National Accredited Technical Education Diploma [NATED] level) or Hospitality Services level 3 (on the National Certificate Vocational [NC(V)] level), were invited to volunteer for the study. Those who completed the paper-based survey were asked to also participate in the semi-structured interviews.

In total, $n=144$ responses were received from a population of $N=181$, selected using simple random sampling. A 99.0% confidence level with an $E=4.87\%$ was achieved. Noori (2021) and Cohen et al. (2018) postulate that, in educational research, confidence levels of 95 to 99 per cent are commonly used. Cronbach's alpha was used to test the reliability of both the LA and experiential learning scales. In the end, 18 students participated in the semi-structured interviews.

Once the paper-based surveys were completed, the researcher captured the data in Google Forms and then the data was uploaded into IBM SPSS (version 6) for analysis. The QUAN data were run on all the survey items to understand the pattern of responses within the sample and to describe the sample in terms of the constructs under investigation. In order to answer the research question, both simple linear and multiple regression analyses were performed to determine whether a statistically significant relationship exist (Pallant, 2020). The QUAL data obtained through semi-structured interviews were recorded and then transcribed in Microsoft Word® and uploaded to Atlas.ti™ 22.2 to store and organise the data, compare codes and produce visual representations, that is, a word cloud of the QUAL data of the most commonly used words among responses.

5.3. Reliability of the questionnaire

To determine whether the QUAN instrument was successful in gathering accurate data on students' perceived LA and PjBL, the Cronbach α was used to evaluate internal consistency and reliability (see Table 1).

Table 1: Table of Cronbach Alpha co-efficient reliability estimates for the personal autonomy scale ($n=144$)

Scales	Items	Items left out	Cronbach α co-efficient	Reliability interpretation	Skewness
Personal autonomy	1, 2, 3, 4, 5, 6, 7	None	0.600	Moderate	-0.507
Educational autonomy	8, 9, 10, 11, 12, 13, 14, 15, 16	None	0.507	Moderate	-0.215
Experiential learning	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28	None	0.802	High	-0.897
Sub-scales of experiential learning scale					
Sub-scales	Items	Items left out	Cronbach α co-efficient	Reliability interpretation	Skewness
Authenticity	1, 2, 4, 5	3	0.626	Moderate	-1.210
Active learning	6, 7, 8, 10, 11, 12	9	0.578	Moderate	-0.622
Relevance	13, 14, 15, 16, 17, 18, 19, 20, 21	None	0.721	High	-0.804
Utility	22, 23, 24, 25, 26, 27, 28	None	0.606	Moderate	-0.897

As the study sought to investigate what is involved in project-based teaching and learning which seeks to promote LA in hospitality students at a TVET college, the researcher sought to obtain reliability on the global scales of personal autonomy, educational autonomy and experiential learning, for both the descriptive statistics and the simple linear regression analysis. As seen in Table 1, all three scales attained adequate reliability: The personal autonomy scale had a Cronbach α of 0.600 (moderate reliability), the educational autonomy scale 0.507 (moderate reliability), and the experiential learning scale 0.802 (high reliability).

Next, the sub-scales of the experiential learning scale were examined for reliability, to complete a multiple regression analysis. For the two sub-scales – authenticity and active learning – to be deemed reliable, one item of each subscale was omitted, having achieved a negative corrected item correlation. Item 3 of the authenticity subscale “The environment I learn in does not enhance the learning experience” had an item correlation of -0.260, while item 9 of the active learning subscale “I find this experience boring” had an item correlation of -0.073. Both items received a negative correlation, as they were negatively stated in the questionnaire which contained both positive (regular) and negative (reversed) statements. Scholars who have researched similar questionnaires with

both types of structured questions and/or statements combined in a single test, argue that the reliability of such questionnaires may be significantly negatively affected (Chyung et al., 2018; Suárez-Alvarez et al., 2018; Zeng et al., 2020).

After removing the aforementioned two items, the Cronbach α for authenticity was 0.626 (moderate reliability), and for active learning 0.578 (moderate reliability), relevance 0.721 (high reliability), and utility 0.606 (moderate reliability). A Cronbach α of 0.5 and above is acceptable, according to Hinton et al. (2014). As a result, it was deemed that the three scales and four sub-scales, with Cronbach's α values ranging from 0.507 to 0.802, were adequate and could be used in the study (Hinton et al., 2014; Suntharalingam et al., 2021).

6. Results and findings of the study

6.1. The results on the contribution of project-based learning in promoting learner autonomy using simple and multiple regression analysis

To find out if the data was multicollinear, correlation analysis was utilised. The first regression analysis performed was simple linear regression analysis to estimate the relationship between two variables. Two simple linear regressions were run to predict personal and educational autonomy from experiential learning. Table 2 shows the results of these regressions.

Table 2: Simple linear regression results showing the contribution of experiential learning, to promoting personal and educational autonomy

	Adjusted R ²	ANOVA		Coefficients		
		F	Sig	B	t	Sig
Personal autonomy	0.076	12.710	<0,001	0.071	3.565	<0,001
Educational autonomy	0.101	17.147	<0,001	0.091	4.141	<0,001

Experiential learning statistically significantly predicted personal autonomy and explained 7.6% of its variance ($F=12.170$, $p < 0.01$, adj. $R^2 = 0.076$). There was a significant positive relationship between these two variables, with a one unit increase in experiential learning associated with a 0.071 unit increase in the total personal autonomy score. Similarly, experiential learning statistically significantly predicted educational autonomy and explained 10.1% of its variance ($F=17.147$, $p < 0.05$, adj. $R^2 = 0.0101$). There was also a significant positive relationship between these variables, with a one unit increase in experiential learning associated with a 0.091 unit increase in the educational autonomy score.

In addition, multiple regressions were run to determine the contribution of experiential learning sub-scales to promoting personal and educational autonomy. The results are shown in Table 3.

Table 3: Multiple regression results showing the contribution of experiential learning sub-scales to promoting personal and educational autonomy

	Adjusted R ²	ANOVA		Coefficients		
		F	Sig	B	t	Sig
Personal autonomy						
Experiential learning combined model	0.091	4.600	0.002			
<i>Authenticity</i>				-0.040	-0.475	0.636
<i>Active learning</i>				0.231	2.573	0.011
<i>Relevance</i>				0.019	0.297	0.767
<i>Utility</i>				0.110	1.560	0.121
Educational autonomy						
Experiential learning combined model	0.105	5.193	0.001			
<i>Authenticity</i>				0.124	1.317	0.190
<i>Active learning</i>				-0.040	-0.408	0.684
<i>Relevance</i>				0.240	3.334	0.001
<i>Utility</i>				-0.046	-0.585	0.559

Active learning made a statistically significant unique contribution to the prediction of personal autonomy after all other sub-scales were controlled for ($t=2.573$, $p<0.05$), with a one unit increase in active learning associated with a 0.231 unit increase in personal autonomy. As for educational autonomy, it was found that relevance scores made a statistically significant unique contribution to its prediction when other sub-scales were controlled for ($t=3.334$, $p<0.05$). A one unit increase in the relevance subscale score was associated with a 0.240 unit increase in educational autonomy.

6.2. The findings of the qualitative data

Two questions were used from the QUAL data findings to support the development of the framework for this study. Participants were asked what skills they possess, to allow them to be autonomous. Figure 1 illustrates the participants' word frequency, using Atlas.ti 22, in describing their autonomous skills.



Figure 1: Participants' opinions on the skills that allow them to be autonomous

The most widely used term participants used to express their skills was *motivation*, followed by *teamwork*. Words that received the same count were *creative/creativity*, *leadership*, *responsibility*, *planning*, *organising* and *goals*. Other common words were *communication*, *confidence*, *decision making*, *independence*, *positivity*, *problem-solving*, *social interaction*, *critical thinking* and *time management*. This indicates that participants viewed themselves as applying the aforementioned skills in their studies, and while completing the project. All the skills shown in Figure 1 are necessary for promoting LA.

Next, participants were asked whether or not self-reflection is important in their development as students. The majority stated that self-reflection is an important part of PjBL, as it helps them reflect on how they performed during the project. Participant 9 stated:

Yes, it is important, because you have to give feedback on the reason for the rating, things you find challenging, and what you experienced, what could you have done to sell more products. I gave myself a rating of how I performed at the service. So it is important for me to reflect on what I have done there. I learned something from this. I learned about the challenges I got from the services and the feedback of the customers regarding the service.

Participants indicated that, by reflecting, they could identify areas for growth, or where they need to acquire new skills.

6.3. Proposed framework based on the findings of the study

The aim of this study was to investigate what is involved in project-based teaching and learning, to promote LA in hospitality students at a TVET college and develop a framework for promoting such autonomy. A proposed framework, based on the synthesis of the QUAN results and the QUAL findings, was developed by the authors for PjBL in promoting LA in a TVET environment (see Figure 2).

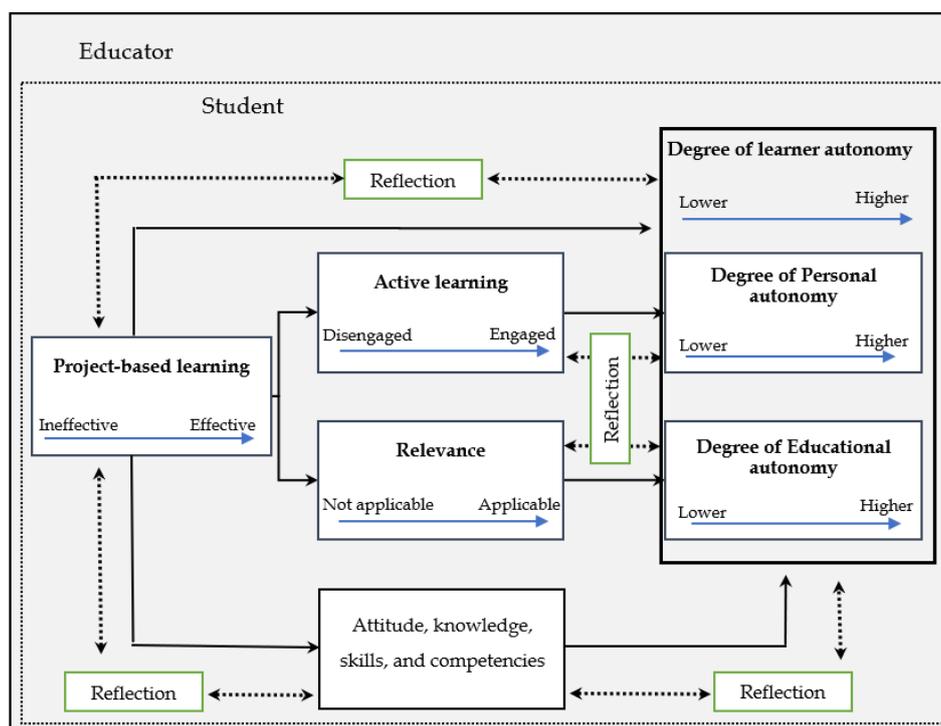


Figure 2: Framework for project-based learning in promoting learner autonomy in technical and vocational education and training contexts

The two main participants in the framework – the educator and the student – form an “inclusive relationship learning partnership” (Güven & Valais, 2014, p. 184). Here, the educator’s role is to facilitate the learning process for students, rather than simply delivering content (Budhai & Skipwith, 2022). The educator should assist students in defining and clarifying project goals, ensure that resources are available to students for PjBL, provide guidance and support as needed, and ensure that students stay on track and make progress towards completing the project (Budhai & Skipwith, 2022; Güven & Valais, 2014). Moreover, the educator serves as a mentor (Roland, 2017), creating an environment in which students can develop the necessary knowledge, skills, attitudes and competencies required for workplace and academic success, as well as LA (Bei et al., 2019; Boggu & Sundarsingh, 2019; Danko, 2019; Indrawan et al., 2020; Pradanti & Muqtada, 2023; Yuliani & Lengkanawati, 2017; Zaidi et al., 2020). Furthermore, the educator should provide students with continuous feedback on the progress of their work, assist them in refining their ideas and improving the quality of their projects (Budhai & Skipwith, 2022), and encourage them to delve deeper into concepts learned (Güven & Valais, 2014). Lastly, the educator must evaluate the competency of the students’ final product.

The students’ role is to own their learning and actively participate in the learning process (Alonazi, 2017; Saeed, 2021; Tomasouw & Marantika, 2020; Yu, 2020) to gain the necessary experience by reflecting on their experiences and linking that to future action (Kolb & Kolb, 2017, 2018; Passarelli & Kolb, 2020). They are also responsible for identifying and researching a topic of interest, developing a plan

to learn more about it, and presenting and defending their findings in a final project (Fini et al., 2018; Güven & Valais, 2014). Students should play an important role in the collaborative aspect of PjBL by brainstorming ideas, sharing resources, reflecting, providing feedback, and supporting one another throughout the project. This will assist them in developing the necessary knowledge, skills, attitudes and competencies, and allow them to become autonomous (Fini et al., 2018).

A positive and significant relationship was found between PjBL and personal and educational autonomy. As a result, the more effective PjBL is in its design to achieve the desired outcomes, the greater the degree of LA in the form of personal and educational autonomy (Boggu & Sundarsingh, 2019; Yuliani & Lengkanawati, 2017). Thus, educators and PjBL designers must ensure that the project encourages students to participate actively in real-world problems or challenges that are personally meaningful to them (Guo et al., 2020; Pradanti & Muqtada, 2023). A positive and significant relationship was found between active learning and personal autonomy. As the results indicate, students' level of engagement in the project increased their level of personal autonomy. They were therefore more likely to be able to explore their own interests and feel in control of their own learning, when they were mentally and/or physically engaged in the development of an authentic product for the project (Guo et al., 2020; Pradanti & Muqtada, 2023).

Relevance and educational autonomy were found to have a positive and significant relationship. Learning becomes more meaningful and effective when linked to students' own experiences and interests, allowing them to see the relevance of the material they are learning to their own lives and futures (Budhai & Skipwith, 2022; Güven & Valais, 2014). Students are therefore more likely to invest time and effort in learning when they believe the material is important or useful to them. Moreover, PjBL is seen as an effective way of promoting relevance, as it allows students to apply the knowledge and skills they learn, to real-world problems or challenges (Guo et al., 2020). Therefore, incorporating PjBL into the hospitality education curriculum in TVET is viewed as a teaching and learning pedagogy in which students learn by actively engaging in real-world experiences, reflecting on those experiences, and participating in personally meaningful projects that promote their autonomy.

7. Conclusion

The purpose of this study was to investigate what is involved in project-based teaching and learning aimed at promoting LA in hospitality students at a TVET college. The findings were used to develop a framework for PjBL, to promote autonomy in TVET hospitality students. In this study, PjBL was shown to be an effective teaching and learning approach in hospitality education that can promote LA, lead to a deeper understanding of the subject matter, and facilitate the development of a variety of important skills and competencies needed for the world of work. Students can apply their knowledge and skills in meaningful ways by actively participating in hands-on, real-world activities, which can foster in them a greater sense of ownership and responsibility for their own learning. This

approach allows students to take the lead in their own learning, and make decisions about the direction of their projects, thereby promoting independence and developing self-direction. Moreover, this study emphasises the significance of incorporating PjBL into hospitality education programmes to promote LA through active learning and student-centered projects. PjBL is thus recognised as a valuable experiential learning approach, with the potential to promote deeper learning outcomes. The implication for practice is that the findings of the study and the suggested framework could be used by educators in designing, implementing and facilitating a better learning experience for their students through the use of PjBL to support student independence and help them achieve academic success.

8. Recommendations and future research

This study recommends the following improvements or suggestions for educators, to ensure that PjBL is effectively applied to the TVET hospitality education curriculum:

1. The educator should provide guidance, support and inspiration to students throughout PjBL. Many students will be experiencing PjBL for the first time, so educators must strike a balance in assisting them during the process, so as not to take control away from them, but rather to guide, support and mentor them to achieve the project outcomes.
2. The educator should engage with students in selecting the project topic, problem, challenge and/or content, based on the project structure provided by the assessment guidelines. Allowing students to select their own project topic, problem, challenge and/or content ensures that the project is relevant to their needs. It can also be an effective way of engaging students in the learning process, as they are more likely to be invested in the project and motivated to complete it – all of which encourages autonomous learning.
3. Following the agreement by both students and educators on the project topics and outcomes, educators should assist students in developing realistic and measurable goals to achieve through PjBL. Setting goals allows students to focus their efforts, giving them a clear picture of what they are working towards. Furthermore, involving students in the process of setting goals and identifying the next steps during the project, will allow them to take ownership of their learning and development.
4. Educators should provide students with continuous feedback (not only at the end of the project), to help them understand how their work is progressing, and identify areas where they need to focus additional effort. It may also help them understand what is expected of them, and how they can improve.
5. Self-reflection is an important aspect of PjBL. Reflection provides students with an opportunity to analyse information, solve problems and make decisions. Educators should ensure that students possess the required skills to self-reflect, in order for them to learn and develop new concepts or skills and produce a final product for the project.

The focus of this study was on two specific areas of PjBL in promoting LA, namely hospitality education and the TVET environment. Future research could look into other fields/programmes within this environment, as well as hospitality

education at other types of institutions, to determine whether the results and/or findings will yield a similar framework. Furthermore, research could be conducted to determine whether other types of classroom-based, online or virtual experiential learning teaching and learning approaches can be used to promote LA amongst TVET hospitality students.

9. References

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