Research-based learning (RBL): Added-value in tourism education

Freddy Espinoza-Figueroa [a,c,d,*], Dominique Vanneste [b,c,d],
Byron Alvarado-Vanegas [c,d], Karina Farfán-Pacheco [a,c,d],
Santiago Rodriguez-Giron [c,d,e]

[a] *Faculty of Hospitality Sciences, University of Cuenca, Cuenca, Ecuador*
[b] *Division of Geography, Department of Earth and Environmental Sciences, KU Leuven – University of Leuven, Leuven, Belgium*
[c] *PREIT-tour, Ecuador*
[d] *PREIT-tour, Belgium*
[e] *Destinfinit the Travel Social Network, Ecuador*

A R T I C L E I N F O

A B S T R A C T

The purpose of this research was to explore perceptions of the research-based learning (RBL) approach as an added value in tourism education. This research used a qualitative approach with an exploratory scope through three focus groups of eight tourism students who are part of the project: "Fostering a platform for research-based education to support sustainable development through Tourism in the Cajas Massif Biosphere Area (CMBA)", in Southern Ecuador. The study shows that a research-based learning approach can be more successful than traditional approaches to link theory and practice, using real study cases and problems in the territory.

1. Introduction

As in many universities that only recently moved into a mature integration of research in education, University of Cuenca has made great efforts in the last decade to evolve into a research institution regarding educational policies implemented by the Ecuadorian government. In the case of the Faculty of Hospitality Sciences, its School of Tourism is still trying to consolidate structures for innovation and knowledge transfer to local communities, and from the communities to its student population, based on problems arising from the territory. However, tourism has a deeper task to accomplish, as it is a discipline directly related to local economies and development (Bianchi, 2018).

Currently, there is no in-depth knowledge on how to provide solutions to the territory with tourism as a lever. This, in turn, is linked to the lack of reflection by host communities on the type of tourism to be developed, to the little questioning of tourism as an effective means for local development, to the lack of local participation, and to limited communication between academia and communities. The current educational processes in tourism are still focused on operational training, rather than on training critical professionals who can reflect and proactively tackle the complexity of real problems in the territory.

Therefore, the project: *"Fostering a platform for research-based education to* support *sustainable development through Tourism (PREIT-Tour) in the Cajas Massif Biosphere Area (CMBA)"* is carried out in southern Ecuador by the University of Cuenca in cooperation with the University of Leuven (KU Leuven, Belgium) and the support of the VLIR-UOS Program (Flemish Government, Belgium). PREIT-Tour

aims at exploring whether an RBL approach i) enhances the knowledge of tourism students, ii) improves the capacity to provide a meaningful support to tourism projects of local communities, and iii) improves the critical and more engaging attitude of students and awareness of collaboration opportunities with the communities.

This article aims at reporting an evaluation of PREIT-Tour's research-based learning (RBL) project, while monitoring if and how a different methodological and learning approach is welcomed by the students. We are aware that many research projects designed in the classroom by students, together with the teacher, and applied in local communities, often lack careful set-up, a well-developed methodology, and focus too much on short-term applicable results, neglecting the value of the process, careful selection of respondents and/or a critical discussion. Thus, the PREIT-Tour project is a pilot with the potential for further and permanent implementation in the curriculum of the School of Tourism, which intends to break with this old ineffective tradition and introduce a new educational approach (RBL) at the service of the students and the local communities in the field.

The article first presents a quick explanation of the relationship between research and teaching. Then, it introduces the design of RBL course for tourism students. Next, the article describes the methodology for this particular evaluation and monitoring study. Finally, the results are discussed and some conclusions on the application of RBL approach are formulated in a broader context beyond our particular case.

2. Research-based learning

Boyer (1990), mentions that education can express the student's interest in learning when there is a context of open and permanent inquiry. He also advocated abandoning the traditional model of teaching versus learning and adopting a comprehensive view so that students relate to the real world. Research and teaching are related, they are two forms of learning and both should be essential characteristics of education (Brew & Boud, 1995; Brew & Saunders, 2020; Huber, 2014; Lazonder & Harmsen, 2016).

Given the importance of quality in higher education, linking it to research and innovation has opened the door to changing the unidirectional teaching paradigm and focusing education on the solution of real problems (Levy & Petrulis, 2012; Robertson & Blackler, 2006; Robertson & Bond, 2010; Turner, Wuetherick, & Healey, 2008; Wessels, Rueß, Gess, Deicke, & Ziegler, 2020; Zamorski, 2010). Thus, multiple approaches for such integration have emerged. Conceptual fusions such as research-based, inquiry-oriented, problem-based or project-based learning may seem synonymous, but the categories may be different. The importance of RBL resides in the process and involves the active participation of students to gain reflective knowledge and critical thinking to build their vision, instead of repeating tested knowledge (Decker-Lange, 2018; Huber, 2014; Nurdin, Hussen, Pangastuti, & Lestari, 2019).

Applying RBL tackles several aspects, for example, research design, data collection, practical research, and interpretation of results (Brew & Saunders, 2020; Huber, 2014; Ruess, Gess, & Deicke, 2016). RBL can also focus on real problems, which places students in a situation where they not only apply scientific methods but also increase their commitment and participation in the process (Lazonder & Harmsen, 2016; McKinney, 2014). The teacher takes the role of coordination and facilitation. This aspect makes the difference with problem-based learning (Lazonder & Harmsen, 2016; Savery, 2006), where the teacher becomes a teaching guide, but does not provide information about the problem (case study): it is the responsibility of the students to construct and clarify their thinking about the problem (Savery, 2006). Conversely, with RBL students know about the problem, because the teacher provides the information as a starting point and expects the students' thinking and skills to grow through the enquiry process (Savery, 2006). Nevertheless, both approaches seek to engage students in learning methodologies to acquire knowledge and skills based on real or simulated problems (Decker-Lange, 2018; Lazonder & Harmsen, 2016).

2.1. Research-based learning and pedagogical strategies and tools

RBL can use several strategies to innovate learning practices, such as role-playing, simulations, gamification, social media, educational platforms and teamwork (Bakhanova, Garcia, Raffe, & Voinov, 2020; Brew & Saunders, 2020; Schmitt, Hurwitz, Sheridan Duel, & Nichols Linebarger, 2018). These strategies can also facilitate blended learning, combining face-to-face and virtual, for a dynamic learning process (Wendy, Jiang, & Tang, 2020). The process of RBL implies that the student learns by doing in an interactive and applicative way (Ruess et al., 2016). Nevertheless, the process can be overwhelming for students, depending on their context and their level of engagement (Turner et al., 2008). However, Lötter and Jacobs (2020) mention that nowadays the use of technology in education and research processes cannot be underestimated.

Current generations of students have grown up with information technologies, and this impacts on learning strategies. They perceive technology as a fundamental element for their academic success. Furthermore, students mention that technology such as smartphones, social media and educational platforms represent socio-pedagogical tools for solving research-based problems (Ma & Au, 2014). A novel strategy that requires the use of technology is gamification, understood as the use of games in environments such as education through different digital interfaces that can stimulate student engagement, enjoyment and participation. However, when the use of novel strategies is not directly related to the learning process, they act as fragmented tools and become an additional burden (Aguiar-Castillo, Henández-López, De Saá-Perez, & Pérez-Jiménez, 2020; Bakhanova et al., 2020; Schmitt et al., 2018). Thus, the application of innovative strategies will depend on the context and field of study.

Shi, Zhang, and Cai (2020), proposed a shift in a tourism course, from traditional teaching components to student-oriented active learning (Atlas, Landmark, QuickTrip, MyTrip and GlobalTrip). The proposal is based on the empowerment of students to obtain the course materials and to use the learning tools and on the application of the acquired knowledge to real-world projects. The MyTrip and GlobalTrip components together are noteworthy, because they helped to foster students' interpersonal problem-solving skills. Students embedded in this active learning process designed an optional activity on reading academic articles. However, students without a

research background found this activity distasteful. The authors highlight the need to find stimulating techniques to increase students' participation.

2.2. Research-based learning in tourism education

The evolution of the tourism sector requires innovative strategies in education and research to develop competitive and sustainable models (UNTWO, 2015). However, tourism curricula are often under pressure to conform to international accreditation standards and, consequently, lose focus on elements aimed at effectively supporting local development (Vaduva, Echevarria-Cruz, & Takacs, 2020). Prince (2020), states that although tourism pedagogy has become more relevant, curricula continue to reproduce uncritical views on sustainability. Furthermore, she argues that collecting data without reflection on the current crisis could be a banal task to legitimize generalizations about sustainability.

It is worth mentioning that tourism education and research should seek to improve collaboration between stakeholders (Roxas, Rivera, & Gutierrez, 2020; UNWTO, 2015), such as national and local governments, community, companies, academia, international bodies, which in some cases have fragmented or non-existent relationships (Roxas et al., 2020). Likewise, the heterogeneity of tourism poses new challenges for the new tourism professionals, due to the divergence of opinions, visions, strategic orientation and the role it plays around sustainable development (Lindberg, Fitchett, & Martin, 2019).

Kirillova and Au (2020) , propose a study to understand how tourism and hospitality students find their way to research, mentioning that such skills are currently very significant in this department. However, the authors find that the form and content of teaching research methodology has a negative influence and suggest that research should not only be taught as a subject, but rather a transversal activity or skill throughout the university department.

Bowan and Dallam (2020), present an experimental education approach to sustainable tourism, based on fair trade learning principles and experiential learning philosophies. The model used an international curriculum focused on the environmental, economic and cultural impacts of global tourism. It highlights field experiences where students have contact with multiple tourism stakeholders to broaden their critical perspective in order to understand multidimensional issues of tourism growth and the health of the planet. The model is significant in relation to the importance of building channels to foster international tourism education through cooperation between different universities, including cross-border initiatives.

Likewise, Gayle, Scantlebury, and Wolfe (2009) carried out a proposal of repetitive cycles through participatory action-research associated with pedagogical innovation. They identified three successful practices: reflexivity (customer service and critical thinking), team learning (problem-solving), and communities of practice (real experiences). These practices respond to both internal and external tourism education and to the environments of the tourism industry. In turn, all three elements together aim to continuously link theory with practice, the promotion of real-world teaching-learning experiences and the development of professionally based learning skills.

Education in tourism cannot only focus on operational skills. In this aspect teachers play an important role, requiring them to have the vocation and skills to connect the territory with their students (Vaduva et al., 2020). Prince (2020) argues that some academics must leave behind that selfish position based on closing research knowledge to others, including their students, to meet individual goals. Furthermore, we cannot disregard the possibility that academia may be disconnected from students, the labour field, the community and even from itself. Hence, it is substantial to foster relationships based on common goals, and sustained by critical learners with skills to facilitate problem-solving in study locations (Maumbe, 2014; Vaduva et al., 2020).

In the case of Ecuador, there are few examples linking tourism education to RBL. One of them is presented by Peñaherrera, Chiluiza, and Ortíz (2014), who developed a proposal that suggests certain pedagogical practices in the design of postgraduate programmes: i) Designing learning activities on current research topics, ii) Teaching research methods, techniques and skills, iii) Building small-scale research activities, iv) Involving students in research projects in areas related to their interests, and v) Motivating students to feel part of the research culture by involving them in research centres or groups. These pedagogical practices are intended to change the passivity of students and the uncritical teaching of teachers.
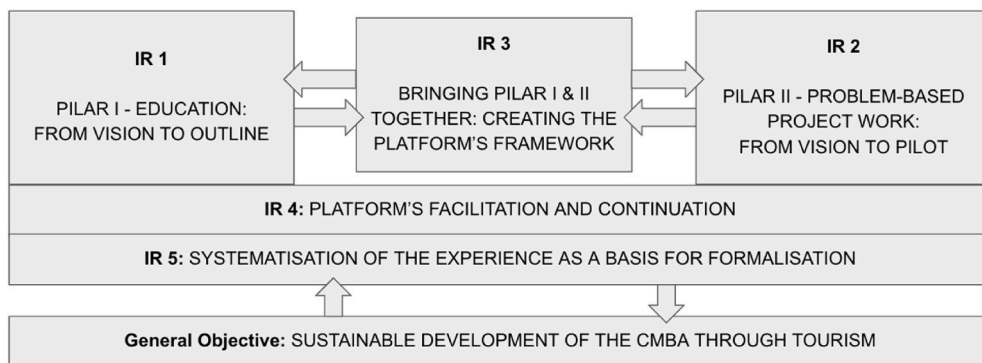

Fig. 1. Immediate Results (IR) in Fostering a platform for research-based education.
Source: PREIT-tour, 2020

3. International cooperation project for research-based learning in the Cajas Massif Biosphere Area

The project: "Fostering a platform for research-based education to support sustainable development through Tourism (PREIT-Tour) in the Cajas Massif Biosphere Area (CMBA)", is being carried out in the Tourism School of the Faculty of Hospitality Sciences of the University of Cuenca. The initiative aims at the creation of a research-based educational platform, which intends to enhance sustainable development and contribute to innovation through tourism in the CMBA. To this end, a bottom-up and collaborative approach is formulated with strategic partners (communities, public and private actors), while involving students and professors. The project describes 5 expected intermediate. Pillar I seeks to develop a vision of problem-based research tasks at the undergraduate and postgraduate level to support development through tourism. Pillar II focuses on research-based learning conducted by students in collaboration with local partners. Pillar III consists of the integration of Pillars I and II, in order to formalise the framework of the platform. Pillar IV proposes the mechanisms to continue with the networking through the necessary management support to connect the key activities of the project. Finally, Pillar V suggests the systematization of the experience gained in the project. The project's expected intermediate results are illustrated in Fig. 1:

The implementation of the RBL approach in University of Cuenca's School of Tourism began before the 2020–2021 academic semester. The first step was to identify the potential pilot study cases at the CMBA. The selection criteria for the pilots were: a) cases with experience in trying to develop tourism products, b) cases with interest in relating tourism to sustainability, and c) openness to working together with the academy and various tourism actors. As a result, nine pilots in the territory were selected.

Regarding the in-class work with students, the course of Tourism Projects, taught to 8th-semester students, was the one selected to work with the RBL approach. This course is taught 3 h per week (48 h in the semester). However, a mutual agreement was reached with the students to have two additional hours per week, when required. The design of the research projects focused on essential components, such as reflexivity, dialogue, skills enhancement, and research processes.

Besides, field trips were carried out and interviews with local actors took place in order to understand the nature of the problems in each pilot case. Subsequently, students used the information from the fieldwork to improve their final reports and the research design. Then, the work in virtual environments provided more discussion topics, based on the students' curiosity to understand various problems in each pilot after a real experience. This led to modifications in the students' final reports based on the conjugation of theory and practice.

Before the outbreak of COVID-19, a field research component was planned. However, this field visits were not feasible due to mobility and confinement restrictions. The forced adaptation to virtual classes represented a great challenge for universities all over the world. The PREIT-Tour project faced it according to available human, technological and financial resources (Espinoza, Vanneste, &
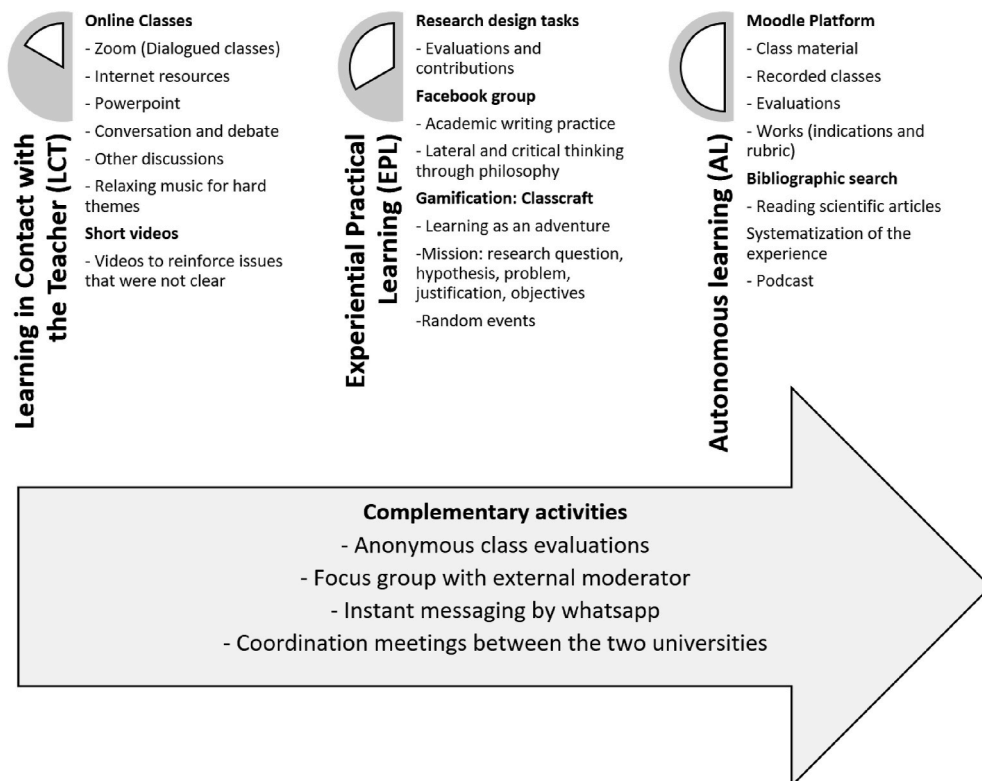

Fig. 2. Learning axes for the application of RBL in tourism education.
Source: Adapted from *Estrategias de aprendizaje basado en investigación en época de COVID-19*, by Espinoza, Vanneste & Rodriguez-Giron, 2020.

Rodríguez-Girón, 2020). Therefore, the Ecuadorian-Belgian team adapted strategies in cooperation with students and authorities to ensure progress. One of these strategies consisted of linking the research design with the graduation thesis, based on the principle of tourism as a means for sustainable development and the discussion of innovative ideas for problem-solving.

As shown in Fig. 2, the RBL course was adapted to three learning axes according to Ecuadorian and University of Cuenca's regulations: 1) Learning in Contact with the Teacher (LCT), 2) Experiential Practical Learning (EPL), and 3) Autonomous Learning (AL) (Consejo de Educación Superior, 2019). Due to the pandemic, classes took place through online virtual environments. Also, a transversal axis of complementary activities was added.

In Fig. 2, the first axis (LCT) refers to dialogued virtual classes using the *Zoom* platform. The teaching tools were: online search tools for scientific literature, *Microsoft PowerPoint 2017* to graphically explain sequences and processes, and dialogue and debate on research methodologies under the principle of tourism as a means for sustainable development. Non-academic conversations were held during the first 10 min of the class to build a sensation of proximity between the teacher and the students. At the suggestion of the students, soft and relaxing music was used on topics that were eventually difficult for them (eg. research methodology and statistics). Additionally, the teacher made short videos (maximum 1 min) with quotidian examples related to class topics that were not clear.

For the second axis (EPL), three strategies were designed. First, the completion of tasks for a research design with its standard components (Leavy, 2017). Second, a *Facebook* group was created where students wrote about readings and videos tackling everyday issues (c, 2018) like love, life, power, tourism and sustainability. This was a way for students to practice academic writing and communicate in a simple way. As a counterpart, the teaching staff commented and challenged certain assumptions to encourage debate in the group. And third, gamification was used with the *Classcraft* platform, which allows learning as a multi-player adventure. The students created avatars (eg. magicians, warriors and healers) with different skills and worked in teams to get rewards for fictional missions involving the development of research components (research question, hypothesis, objectives, etc.). Additionally, there were random events where students explained some components of the research process.

For the third axis (AL), the *Moodle* platform was used to provide students with lessons' material, recorded sessions, general instructions, rubrics and evaluations. There was also a literature search activity with the aims of strengthening reading practice (Spanish and English) and of broadening perspectives on tourism as a means for development. Finally, the students systematized their experience by producing podcast episodes available at www.PREIT-Tour.org.

Finally, the transversal axis of complementary activities (CA) aimed at providing feedback to the project team and the teacher. Resources such as anonymous surveys, instant messaging via *WhatsApp*, regular biweekly monitoring meetings between the Ecuadorian-Belgian team and, some sessions with members of the international team were carried out.

4. Methodology

To evaluate and describe the role of RBL in increasing the knowledge, reflexivity and skills of tourism students, a qualitative approach of exploratory scope through focus groups was adopted. This methodology allows to explore social or human phenomena and to interpret the meanings revealed by the process (Guber, 2014). For the selection of informants, a non-probabilistic sample of the intentional type was used (Leavy, 2017), given that sampling in qualitative research is not necessarily guided by random selections, nor is its validity linked with the size of the sample. Hennink (2014), however, recommend focus groups of 6–8 participants, but this can be extended to 10.

Focus group discussions were the selected methodology because it allows the collection of qualitative data regarding perceptions

Table 1
Characteristics of focus group participants.

	Group 1	Group 2	Group 3	Total
Gender				
Male	0	3	2	5
Female	8	5	6	19
Age				
21-22	5	4	3	12
23-25	3	3	3	9
26-27	0	1	2	3
Semester				
8th	8	8	8	24
Research experience				
Yes	0	0	0	
No	8	8	8	24
Previous Higher Education studies				
Yes	1	1	1	3
No	7	7	7	21
Repeated the semester				
Yes	0	1	1	2
No	8	7	7	22
Did the fieldwork				
Yes	2	3	8	13
No	6	5	0	11

and opinions of intentionally selected students about a specific topic. The focus groups were conducted periodically to evaluate the application of RBL in a social science such as tourism (Lazonder & Harmsen, 2016). Nevertheless, this evaluation study is not only useful for immediate remediation measures for the course. Results of this evaluation are also useful for the systematization of the RBL experience, as a basis for the formalization of the PREIT-Tour project discussed in this article (Fig. 1).

Thus, 3 focus groups were conducted on May 6, May 28 and August 11, 2020. Taking into account the global pandemic caused by the COVID-19 virus, the sessions took place via the *Zoom* online platform and were conducted in Spanish. Each session lasted 90 min, with 8 eighth-semester students per group. 24 students, of a total of 45 who are part of the course, participated in the study. Every participant signed an agreement to take part in the study voluntarily. It was also agreed not to reveal the students' identity during the transcription of the information and to carry out the session without the course teacher to avoid influencing the students' answers. The moderator of the focus groups was the research assistant of the project, who is not a teacher at the University of Cuenca and has no regular contact with the students. Therefore, the participants were able to express their experiences freely. The participants' characteristics are described in Table 1:

Before the sessions, a list of topics and open questions was prepared. Nevertheless, the moderator posed different questions when necessary (Guber, 2014). Then, the list of topics was validated by PREIT-Tour's international team to verify the integrity of the questions. Additionally, the design was adapted to the requirements of the research, as well as to criteria of impartiality, rigour, ethics, and being friendly, critical and formal (Hennink, 2014), following the hourglass design for focus groups developed by Hennink (2014).

At the end of each focus group, students were asked their perception of the session. All sessions were videotaped – with students' consent – and notes were taken on specific topics that arose during the discussions. Afterwards, the discussions were transcribed and translated (into English) in their entirety for an in-depth analysis, for which an inductive approach was applied to draw general conclusions based on particular observations (Leavy, 2017). The analysis of the data was carried out by three members of the team. Through the first analytical round of the transcripts, the main themes were identified. Then, during a second analytical round, the themes were compared to integrate them, when possible, into broader discussion lines. This process resulted in 4 main lines responding to the objectives of our study. No software was used to automate the data analysis, but a comparable procedure was used by coding and flagging parts of the transcripts until obtaining 4 axes (themes) of analysis, discussed in the next section.

5. Results: tourism students' vision on research-based learning

The discussions of the focus groups were systematized into 4 axes.

5.1. Perception of the course subject (tourism projects) and the research-based learning methodology

A central axis drawn from the data analysis refers to the course using a RBL approach. For most students, learning with this methodology is a new experience. In this context, the interest of the teacher in teaching basic elements of research was emphasized.

> "This class has broken with all traditionalist learning schemes because most learning is based on just listening to the teacher and getting good grades".

Students positively valued having started the course by learning research fundamentals. Although the students had no previous research experience, they highlighted the learning achieved with this course.

> "I think having started from scratch with the subject has been one of the reasons the classes are working. Due to the new approach to the subject, the teacher started teaching from the basics, so that we do not get lost in some complicated stage of the project that may come in the future".

Another finding is that students emphasized the viability of RBL to improve learning, fostered by elements anchored to technological tools, which were incorporated to make the classes dynamic. The use of diverse platforms was valued positively by most students as a way to expand their knowledge through various learning environments.

> "I think this knowledge has been very useful because it also helps us to apply it to other subjects and be better researchers."

> "[…] the teacher has taught us new ways to obtain and process information and it is something that serves our learning."

On the contrary, other students pointed out certain limitations, which focused on two aspects. The first was related to the demand for developing research skills that they had not acquired in previous years. For most students, it was difficult to keep up with the pace set by the teacher.

> "[…] the contents have been very extensive and I have been a little saturated".

The second limiting aspect was related to the technological tools. Some students had limited resources at home to access learning technologies. While for other students, learning was delayed due to the difficulty of handling several platforms simultaneously.

5.2. Emotions related to research-based learning

This axis arises from the emotions felt by the students concerning the development of the course. Since the course took place in the context of a pandemic, there was uncertainty about the actions to be taken. Initially, students were positive about the course, with high expectations to link classes with fieldwork. However, at the beginning of the lockdown students were frustrated and overwhelmed by not being able to do the fieldwork and the obligation to attend classes online. A scenario they were not prepared for. Some students said

they were under a lot of pressure because of the virtual classes. They claimed they had to attend several subjects at the same time. Moreover, the students were demotivated because the fieldwork did not take place as planned, which illustrates its importance.

Nevertheless, at the end of the course, most of the students were satisfied with the results, they claimed to gain new research skills applicable to future projects. All of the students stated that the COVID-19 context provoked them negative feelings, however, with the support of the teacher the students mentioned that they were able to overcome this situation. The importance of fieldwork, not only in terms of knowledge but also in terms of motivation, was observed in the difference between the dynamics developed by the majority of students, who were not able to conduct any fieldwork, and those who were able to conduct at least some interview(s) with a stake-holder(s).

Among those students who could do fieldwork, some pointed out that certain stakeholders were not interested in tourism development, or do not have the required training to manage tourism. Also, students mentioned that certain actors were not willing to provide all the information related to their daily activities. They concluded that if the actors do not act with transparency and objectivity, it will be very difficult for them to achieve development through tourism. However, it was found that, in most cases, the support of the university was positive for the fieldwork, despite some conflicts in the way of thinking on problem-solving. This gave the students self-confidence and even a certain sense of authority. On the other hand, some female students -the majority of the sample and the student population in tourism-felt negatively affected by the macho attitude of some interviewees.

Finally, students felt that this way of learning gave them "the opportunity to make mistakes" and provided them with "no fear for thinking that they [teaching staff] will punish us for not thinking the same".

5.3. Relationship between previous theoretical research and field work

This axis arises from opinions mentioning that the practical element did not meet the initial expectations, given that the course had mostly theoretical content and only a few field visits by a reduced number of students due to the COVID-19 pandemic. These negative perceptions are not only due to the compulsory isolation, but also due to the high standards set for the students. For example, some students stressed the difficulty of obtaining sound information about case studies. This shows, nonetheless, that students started to become more critical and aware of the diverse quality of information and sources. This is also in line with another result, which showed that the data collected during the theoretical research did not correspond to the information found in the fieldwork. The students who visited the territories highlighted the importance of fieldwork because this allowed them to contrast the information from diverse sources. The participants stated that some actors lied about the reality of their territories, which hinders planning processes, territorial management, and can lead to serious problems for local development. Initially, students were worried about this lack of consensus, but gradually they realized the importance of stakeholders' differences and power relations.

"[…] the fact of visiting a territory helps us to know the environment and there are many ways to investigate […] we realised that such information was not true and we had to verify it ourselves. We realised that they do not have a good organisation"

"[…] while we were doing the interview we noticed that the community leader was hiding a lot of information, contradicting himself, lying to us. A clear example was when he told us to abide by biosecurity rules, but we saw that people were entering without taking their temperature, without wearing a mask and without any biosecurity measures."

Most students in the focus groups claimed to have made significant progress in their projects. Mainly because they conducted literature review and documentary research before contacting the local actors. Therefore, this article stresses the importance of emphasizing the research questions and the quality of the information sources before conducting field visits. The preliminary desk research allowed students to contrast secondary data with the information provided by the interviewees during the fieldwork. Thus, contrasting data is a relevant aspect for tackling the research questions. This is because each actor interviewed has an opinion about the reality of the territory, and all this diversity of perspectives sparks the critical thinking of the students-researchers.

"I used to read, but not so much and I didn't like to do research. However, now I have learned to seek more reliable sources of information. After we have presented the final task, we felt good because we learned".

5.4. Attitudes of students

The analysis found that students were engaged beyond their case study. Most of them stated that regardless of the circumstances, RBL will be useful to them in different fields of action. After the visit to the territories, the students stressed the importance of nurturing linkages with the community to suggest improvement strategies. This shows that a RBL approach not only fosters academic skills, but also a sense of responsibility and improves attitudes.

"They thought that [tourism] could develop just by our arrival and it is not like that because they need training, among others. I think they should work hard to develop the association."

"[…] we could observe that almost nobody uses masks and that is a negative thing"

A relevant finding in the attitude of the students is that they are ambitious or impatient regarding implementation actions. Therefore, this article emphasizes the need to educate student-researchers about their role as intermediaries of knowledge for local development, and not necessarily as implementers of actions on behalf of communities. In this context, students must be aware that the local community is the one that must take an active attitude towards its development. For the students, it was very difficult to talk about local development and it was frustrating if the management of a territory is not carried out correctly. Out of frustration, some

students suggested "to start doing things themselves", not aware of the need for local participation, sense of residents' ownership and bottom-up community-based involvement. On the other hand, students learned to detect unreasonable expectations among local stakeholders as well.

> "Nor can changes be imposed on them overnight. I think that in all projects we have a great difficulty, but if we focus correctly I am sure that we will be able to finish the projects and the theses in a satisfactory way."

> "They already wanted to have more tourists and see results. Obviously the results are not going to come easily in the short term, but in 3 years they should already have improvements with respect to the first year."

6. Discussion and conclusion

We can summarise the students' evaluation of the project course with the RBL approach as satisfactory. So, the students improved their knowledge of tourism. This was evident in their final reports where they were able to use research to study tourism with greater depth and understanding of its complexity. However, the lack of prior knowledge of research highlighted the weakness of the link between research and tourism. This study then showed that the lack of prior research knowledge was related to the perception that the subject was demanding and, to some extent, monotonous. This led to a certain level of frustration among some students. Probably, tourism education is mostly linked to operational elements and less to meeting local development needs. This could be leading to a growing disconnection between academia and the territory. Thus, Kirillova and Au (2020) argue that research should be a cross-cutting activity throughout the university department.

Besides, there was evidence of an improvement in the ability to provide meaningful support to community-based tourism projects. Interviews and subsequent discussions between students and local stakeholders helped to understand that tourism development processes are not exclusively linked to the construction of infrastructure and tourism promotion. Some communities have even decided to work on issues of associativity and cooperation with the support of the PREIT-tour team. However, the pandemic outbreak limited some of the students' field trips, which caused them some frustration. Despite this, at least one visit was made with each group of students. Furthermore, the rise of various technological resources in the classroom also facilitated contact between local actors and students. This approach allowed them to get to know the problems of each community, which proved to be positive for the realisation of their final reports and closer collaboration in the future.

The students' commitment and responsibility towards the pilots were remarkable. They felt part of an important process involving international cooperation between universities, and felt the commitment of the academic agents, confirming the results presented by Bowan and Dallam (2020). The students' engagement has even led to approximately half of the students deciding to continue with their pilots as a thesis theme, which is taking the research process to a higher level of depth.

Previously, students had a misconception about research. They believed that most of the time they had to do fieldwork, with a very ambitious and impatient attitude towards achieving visible results. Nevertheless, our study shows an alignment with the study by Gayle et al. (2009), on reflexivity to foster critical thinking through real experiences. The difference with our study is that the approach is not based purely on the teaching of operationally-based career competencies (Vaduva et al., 2020). Rather, the PREIT-Tour initiative focuses on the connection between academia and the different actors in the territory, in order to work with real problems arising from each locality (Maumbe, 2014; Shi et al., 2020; Vaduva et al., 2020).

The role of the teacher was key in arguing that the researcher is a facilitator, not a decision-maker in the territory. Also, the teacher should constantly mention that fieldwork without a clearly defined research question and objectives can be sterile. Moreover, communities may not show interest in the process and this can be frustrating for the students.

Of course, the abrupt changes from face-to-face to virtual mode due to the COVID-19 crisis meant a limitation for the students' learning, so it was imperative to adapt the structure of the project to this new reality. In fact, the high time load and the mobility restrictions caused by the health emergency have contributed to the frustration of the students. Nevertheless, the uncertainty posed by COVID-19 demonstrates that educational processes can be resilient and adaptable to the current context. However, we must be aware that most countries do not have a national digital education strategy to develop a distance education model that takes advantage of current technology (IDB & CIMA, 2020). Therefore, self-efficacy, motivation and appropriate learning strategies are also essential to achieve better learning outcomes (Wang, Peng, Huang, Hou, & Wang, 2008). Also, the shift to virtual education was advantageous in accelerating the use of gamification techniques in education (Bakhanova et al., 2020).

From an emotional point of view, the results pointed to the satisfaction of achieving the ability to contrast knowledge acquired through theory with experience in the fieldwork. Also, the students became aware of their increased knowledge concerning improving the well-being of local communities.

Another important finding was the students' recognition of the value of the RBL philosophy and how they could apply the skills acquired. Participating students expressed how the (RBL) approach contributed to their search, analysis, sharing and retention of information "when the teacher motivates you to research a certain topic and you are interested in it, you will continue to pursue it for the satisfaction of getting good results". Of course, a minority of participants showed no interest.

In another aspect, students showed a positive relationship between the reading process and increased learning, although they explained that the time spent reading academic literature was high. Since the subject of the class also involved fieldwork, it can be concluded that the students showed (academically) desirable behaviour, as they paid close attention to the content of the class, expecting an application in the field. It can be observed that they still aim for practical work in the first place, but their perception of the literature as an unavoidable obstacle to overcome has been transformed into the recognition that theory and empirical research are inseparable.

The results of the RBL approach showed that reading had a beneficial effect on students, as it enabled them to better integrate theoretical content and apply it in practice, which in turn was related to increased learning. This means that theoretical research helped to better design work for learning in the field. So, the students claimed that reading academic literature was perceived as highly relevant, in order to contrast information from other sources, and to realise that different sources did not agree with each other. These contradictions motivated the development of critical thinking in students to discern between relevant information and data that did not contribute to their case studies. Students became aware of the unreliability of some sources of information in the context of learning (Mason, Pluchino, & Ariasi, 2014). This attitude was maintained during the fieldwork because they questioned the information collected to the point of concluding that they needed approaches with actors outside or contrary to the tourism development processes in the different case studies. Thus, students recommended improving the RBL approach in terms of active participation, greater dynamism, continuity of the approach, its application from the first semester and fostering technological tools.

In many universities, the importance of research skills on student learning is largely ignored and must be urgently addressed for more effective teaching. This represents a major challenge for academia, which implies the need for a more integrated planning and support system to teach through research linked to the territory, emphasizing on a comprehensive training that allows students' evolution as their School develops (Healey, 2007), but also -certainly in a tourism curriculum-following the needs of the territory. It is necessary to reformulate the educational methods that have been applied in recent years, in order to promote critical thinking and the capacity for innovation in students through "academic communities of practice" (Nistor, Daxecker, Stanciu, & Diekamp, 2015).

Hence, a curriculum with an RBL approach would be a strong competitor to traditional teaching methodologies. Academic staff then need to be motivated to establish links with local stakeholders to build bridges between research and practice, so that they can increase the level of student learning. Moreover, this institutional task of creating cooperative links with local stakeholders to support problem-solving through research is a critical and demanding preliminary task that should not be overlooked by academics. It is a prerequisite to ensure that an RBL approach finds the conditions to benefit all stakeholders: students, academia, and the territory. Finally, international collaboration with partners who apply RBL for many years is of great added value.

Author statement

Freddy Espinoza-Figueroa: Investigation, Writing - Original Draft, Writing - Review & Editing, Formal analysis, Project administration **Dominique Vanneste:** Conceptualization, Validation, Formal analysis, Investigation, Supervision, Funding acquisition **Byron Alvarado-Vanegas:** Investigation, Formal analysis, Methodology, Writing - Original Draft **Karina Farfán-Pacheco:** Resources, Methodology, Funding acquisition, Visualization, Writing - Review & Editing **Santiago Rodriguez-Giron:** Writing - Review & Editing, Supervision, Funding acquisition, Validation, Conceptualization.

Declaration of competing interest

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