



The benefits of guide training for sustainable cetacean-based tourism in developing countries, case study – Ponta do Ouro Partial Marine Reserve, Mozambique

Diana Rocha^{1,2} · Sarah A. Marley³ · Benjamin Drakeford⁴ · Jonathan Potts¹ · Angie Gullan²

Received: 11 November 2020 / Revised: 27 May 2022 / Accepted: 9 June 2022
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Abstract

Tour guides represent the forefront of responsible Cetacean-Based Tourism (CBT), client satisfaction and product development. How an operation and specifically the guide facilitates the activity can shape tourists' attitudes and change their behaviour towards the environment, turning consumers into stewards of the environment. This study examined the validity and success of a guide training workshop for CBT operators in the Ponta do Ouro Partial Marine Reserve (PPMR), Mozambique. A questionnaire survey was implemented pre- and post-training to measure the operators' knowledge of aspects related to CBT and attitudes towards sustainable tourism and local regulations. Results suggest that the training workshop improved guide knowledge, which in some cases showed significant variations according to demographic variables namely, gender, education, and years of experience in the current job position. Mandatory guide training is recommended and should include not only product knowledge but also content on visitors' expectations, interpretive guiding, and experience brokering. Pre-sessional training, refresher sessions, and English lessons are also advised. If these recommendations are put in place, then there is the potential for sustainable CBT to flourish in Mozambique, bringing much needed environmental and economic sustainability to this developing country.

Keywords Cetacean-based tourism · Guide training · Ecotourism · Mozambique · Sustainable tourism · Interpretation

Introduction

Tourism undertaken to view or interact with wild cetaceans in their natural environment has become increasingly popular (Ballantyne et al. 2011). Commonly known as “whale watching” (regardless of targeting whales, dolphins, or porpoises), it is a rapidly growing industry around the world,

generating an estimated 2.1 billion USD in 2009 (O'Connor et al. 2009; Cisneros-Montemayor et al. 2010).

In addition to generating income and employment in coastal communities, responsible Cetacean-Based Tourism (CBT) that includes an educational element has the potential to foster an appreciation for wildlife in its natural habitat and raise awareness of whale and dolphin conservation needs among participating tourists (Jacobs and Harms 2014). CBT vessels can also serve as valuable platforms of opportunity for the collection of data on cetacean distribution, habitat use, and long-term photo-identification studies (Constantine 2001; Mann et al. 2000; Martinez et al. 2010).

Nonetheless, there are negative impacts of CBT to the wildlife target populations. These can include short-term ecological impacts such as altered breathing patterns (Christiansen et al. 2015; Marega-Imamura et al. 2018), changes in vocalisations (Heiler et al. 2016; Pirota et al. 2015), or changes in activity budgets (Christiansen et al. 2015; Marega-Imamura et al. 2018; Senigaglia et al. 2016). Negative impacts can also result in long-term ecological impacts for example, permanent displacement (Bejder et al. 2006;

✉ Diana Rocha
Diana.Rocha@myport.ac.uk

¹ School of the Environment, Geography and Geosciences, University of Portsmouth, Burnaby Building, Burnaby Road, Portsmouth PO1 3QL, UK
² Dolphin Encountours Research Center, Village Square, Ponta do Ouro, Mozambique
³ Scotland's Rural College (SRUC), Craibstone Estate, Aberdeen AB21 9YA, Scotland
⁴ Economics and Finance Subject Group, University of Portsmouth, Portland Building, Portsmouth PO1 3AH, UK

Constantine 2001; Lusseau and Higham 2004), reduced reproductive success (Bejder et al. 2006), and population decline (Bejder et al. 2006; Constantine et al. 2004).

The sustainability of this activity depends on a balance between economic and social/educational gain versus the negative impacts to wildlife. To ensure that these activities comprise a strong educational and environmental awareness component, it is essential that tours have staff who are trained in these elements.

Importance of interpretation and guides

Tour guides represent the forefront of responsible whale-watching tourism, client satisfaction, and product development (Curtin 2010). An ecotourism guide is someone who is employed on a paid or voluntary basis to guide tourists during activities that take place in the natural environment adopting ecotourism and interpretation principles (Walker and Weiler 2017). Guides communicate and interpret the importance of the environment, support minimal impact practices, and promote sustainability of the natural and cultural environment (Black and Weiler 2013; Skanavis and Giannoulis 2010). How an operation, and specifically the guide, facilitates the activity can shape tourists' attitudes and change their behaviour towards the environment, turning consumers into stewards of the environment (Samia et al. 2017). When offering tourists an activity that includes a guide and interpretation, the risks of destructive behaviour often associated with ignorance and carelessness are significantly reduced (Glaser et al. 2015; Marschall et al. 2017). Providing interpretation is also important to justify management regulations, such as, distance or time limitations to the activities, which can then increase client satisfaction and compliance to these regulations (Cheng et al. 2018; Jacobs and Harms 2014; Lück 2015; Samia et al. 2017). Given the diversity of skills required and potential benefits, tour guide training programmes have recently emerged around the world on a voluntary or mandatory basis (Cheng et al. 2018; Jacobs and Harms 2014; Lück 2016; Pratt and Suntiikul 2016; Samia et al. 2017; Weiler and Ham 2002b; Weiler and Walker 2014).

Guide training programmes in developing countries

Guide training programmes are diverse in their curriculum and modus operandum, but all aim to integrate ecotourism principles into their roles and promote long-term positive outcomes on the tourists, the community where the industry is based, the target species, and overall sustainability of CBT. Developing training specifically for local guides assists these (often small) communities to achieve know-how and professional growth that can lead to economic sustainability and independence (Weiler and Ham 2002b).

When designing training programmes for developing countries, some limitations must be taken into account: the educational background of these guides may be limited to primary education only; it is unlikely that they have previously been exposed to any training promoting pro-environmental or conservationist behaviours; and their socio-cultural and socio-environmental ideologies might differ from the broadly accepted Western-oriented perspective (Walker and Hawkins 2013; Walker and Weiler 2017). This does not mean that guides in developing countries are unskilled; many may have years of practical field experience. However, this experience will be predominantly focused on hard skills such as first aid, equipment maintenance, boat and vehicle operation, group safety, and public engagement skills such as eye contact, voice projection, language, and diction (Weiler and Walker 2014). Therefore, training programmes must be developed on a case-specific basis, always taking into account local knowledge from experience and the needs of key players (visitors, operators, host communities, and protected area managers). It is suggested that a pre-training assessment of the trainee's competences should be conducted, followed by a competency-based adjustment of the programme (Weiler and Ham 2002b).

Nonetheless, every programme should cover three key subjects: (1) expansion of product knowledge (e.g. cetaceans, history, geography, culture and site knowledge), (2) language training (to communicate in a way that all participants can comprehend and avoid language localisation), (3) interpretive-guiding skills (Weiler and Ham 2002b).

Workshop with CBT operators in the Ponta do Ouro Partial Marine Reserve (PPMR)

Mozambique is a developing country with a growing CBT industry. One of the most popular places to swim-with-dolphins in Mozambique is Ponta do Ouro (DNAC 2011). The Ponta do Ouro Partial Marine Reserve (PPMR; Fig. 1), Mozambique's southernmost MPA, was declared on 14 July 2009. The reserve stretches for 86 km along the coast from the border with South Africa to its northern-most point past Inhaca Island. The reserve protects 678 km² of marine realm, of which 6% is a no-take zone (Daly et al. 2015). The reserve has a management plan that includes whale-watching regulations such as pre-requisites to become an authorized whale-watching company (DNAC 2011). These pre-requisites focus mostly on best practice procedures for operators whilst at sea, such as boat and wildlife approach, and a swim-with code of conduct. However, no form of guide training or interpretation standards for the operation are requested, despite the benefits such training can provide to operators, tourists, and cetaceans.

A previous survey of tourists visiting the PPMR indicated that respondents place high importance on education

Fig. 1 Map identifying Mozambique, Ponta do Ouro and the PPMR boundaries



and interpretation as components of whale-watching (Rocha et al. 2020). However, both tourists and operators indicated that education and interpretation programmes are lacking in this area, and that incorporating them into guide-training courses would be beneficial. Such formal training would be advantageous to both operators and tourists, but training programmes need to be carefully constructed and evaluated for success.

The primary aim of this study is to assess the validity and success of a guide training workshop for CBT operators in the PPMR. The workshop was developed and delivered by the lead author, with success being evaluated by (1) comparison of pre- and post-training scores on a knowledge test, and (2) analysis of operator attitudes towards such training. Outcomes will inform recommendations for the delivery of effective interpretive guide training for CBT operators in the PPMR and are also translatable to CBT initiatives in other developing countries.

Material and methods

Study group

Ponta do Ouro is a small village, located inside the PPMR, known for its year-round marine activities including whale watching and dolphin swimming. Marine operations are mostly owned and managed by foreigners (majority South African) (Lucrezi et al. 2017; Lucrezi and Saayman 2017), and are family businesses owned by couples that will also perform as skippers, dive master/instructors, guides for snorkelling trips or dolphins swims, and receptionists. This multitasking will take place according to the day's needs.

Other hired skippers, dive masters/instructors, and swim facilitators/guides are mostly short-term hires and foreigners that come predominantly from South Africa

(Lucrezi et al. 2017; Lucrezi and Saayman 2017). Mozambique does not have skilled staff for the positions, therefore outside hires are required. However, the costs involved hiring a foreigner full-time are substantial and unsustainable for the finances of a small seasonal business.

The remaining job positions are topman, drivers, and receptionists which are sourced from the local community and have long-term contracts. Topman are required by law to be present on every boat and have basic boat skills. Their responsibilities onboard the vessel differ between operators. Nonetheless, they usually assist clients by getting them onboard, providing with lifejackets and other weatherproof jackets, and handle the respective gear to each participant. Drivers simply transport the participants from the operators centre to the beach where the vessel awaits. Receptionists are responsible for taking the bookings and payments. They are the frontline of the office and handle most of the tourist's enquiries pre and post booking and activity.

As previously mentioned, contracting foreigners on a full-time basis comes with expensive legal paperwork. In order to avoid such expenses, the companies have adopted a short-term contract (one to six months) which only requires a thirty day visa that can be renewed a maximum of five times. Consequently, companies have a high staff turnover that can pose difficulties to implementing staff training and ensuring awareness of local regulations. Moreover, it becomes difficult to keep up with current staff and ensure all are informed of local regulations, such as the CBT code of conduct and guidelines.

Some companies have begun investing in local staff training promoting the local community's development. These in-house trained staff will receive lower salaries than

the foreign skilled labour while reducing the company's expenses, as they do not require immigration and foreign labour paperwork.

The study group in question comprises both foreigners and local staff from various educational and professional backgrounds as well as years of experience. Due to this high concentration of foreigners (both workers and tourists), English has become the main language for business. The companies that participated were contacted previously to ensure all participants could undertake the workshop in English. There are a total of four tour companies in the area that partake in CBT activities, namely, DERC and Somente Aqua Dolphin Centre in the Ponta do Ouro Bay, Halo Gaia in the Malongane Bay, and White Pearl in Mamoli Bay. All four companies were invited and participated in the workshop.

Questionnaire design

All methods applied in this research were approved by the ethics committee from the Science Faculty of the University of Portsmouth (SFEC 2019–025). A questionnaire survey (Appendix 1) and training workshop (Appendix 2) were designed based on the researcher's contextual experience of CBT activities and a literature review on sustainable tourism, ecotourism, and guide training modules. The pre- and post-training questionnaires were identical and included questions regarding skills and knowledge included in the training program. All questions were worded to be consistent with the training content and presented in the same order as the workshop (Table 1). Questions were mostly close-ended: Truth/False/Not Sure, 3-type Likert scale, multiple-choice, and anatomy

Table 1 Sections of the questionnaire survey and description of the subject and question types applied

Section	#	Description
Marine Conservation	1	Marine Conservation—2 multiple choice, 1 open-ended question
Marine Conservation & PPMR related	2	Marine Protected Areas—9 multiple choice, 1 map to label
Marine Conservation (Attitudes towards sustainable tourism)	3	Ecotourism—Table with 16 sentences (Agree/Disagree/Not sure)
Marine Conservation (Attitudes towards sustainable tourism)	4	Cetacean Based Tourism—Table with 15 sentences (True/False)
PPMR related (Attitudes towards local regulations)	5	Cetacean Based Tourism in the PPMR—Table with 12 sentences (True/False)
PPMR related (Attitudes towards local regulations)	6	Health and Safety protocols during CBT activities—Table with 12 sentences (Agree/Disagree/Not sure)
PPMR related	7	Cultural and historical knowledge of the PPMR and Mozambique—Table with 8 sentences (True/False)
Wildlife knowledge & PPMR related	8	Animal Biology—1 multiple choice, 2 tables (True/False/Not sure), 6 diagrams, 1 table with 14 sentences related to CBT in the PPMR (True/False/Not sure)
Wildlife knowledge	9	Marine Turtles—2 multiple choice, 1 diagram, 1 table with 17 sentences (True/False/Not sure)
Wildlife knowledge	10	Participant background and demographic information—5 multiple choice, 5 open-ended

diagrams and a map to be labelled. No open-ended questions were used and all questions were worded as simply as possible due to the diversity of the sample group. Some participants were known to have very basic educational backgrounds and somewhat limited English knowledge.

Questionnaire survey delivery

All four dolphin-swim operators agreed to participate. The workshop took place in April 2019, during three consecutive days for three operators; the remaining operator participated later in August 2019 due to managerial changes, with the workshop again lasting three days. Each day-session lasted three hours. The participants began the training with a brief explanation of the program, followed by the signing of consent forms. Following Kirkpatrick (1983), the questionnaires were presented to the participants to complete on a voluntary basis at the beginning and immediately following the workshop. Participants were identified through a numbering system, protecting their anonymity and reducing social desirability bias, while ensuring a matched-pairs analysis.

Data analysis

Descriptive statistics, by Microsoft Excel, were used to summarise the demographic characteristics of the sample. All statistical analysis was performed using IBM SPSS Statistics 26. A paired sample t-test was used to determine if there was a significant difference between pre- and post-training questionnaires. Two-way ANOVA tests were employed to compare results between demographics (nationality, gender, age, education, years of experience, job position) and sections of the survey with the survey type (pre- or post-training). For all statistical tests, a significance cut off value of 0.05 was used.

Results

A total of 17 participants completed both pre- and post-training questionnaires (Table 2). The majority were between the age groups of 25–35 (35%) and 35–45 years (29%) of age; with 65% of the participants being males; and, 53% originally from South Africa. When analysing their job position, 47% of the participants work as guides but not all exclusively, these are mostly combined with other positions in the company such as owner, manager, and/or receptionist. Also, note that 41% had started in their current job less than a year ago and 18% have between one and five years experience.

Table 2 Demographics of the study population (n=17)

Age	Count	%	Education	Count	%
18–25	2	12	Primary	4	24
25–35	6	35	High school	9	53
35–45	5	29	Tech course	3	18
45–60	2	12	Graduate	1	6
> 60	1	6			
NR	1	6			
			Gender	Count	%
			Female	6	35
			Male	11	65
			Country	Count	%
			Mozambique	6	35
			South Africa	9	53
			Other	2	12
			Job	Count	%
			Receptionist	1	6
			Topman	3	18
			Guide	8	47
			Manager	2	12
			Skipper	2	12
			Other	1	6
			grow up	Count	%
			Inland	9	53
			By the sea	6	35
			NR	2	12
			Experience	Count	%
			< 1y	7	41
			1-10y	6	35
			> 10y	3	18
			NR	1	6

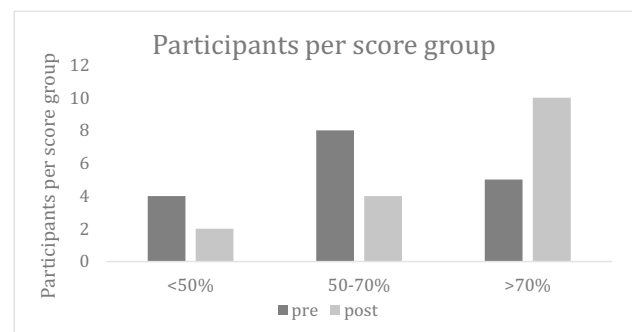


Fig. 2 Overall scores according to score groups

Overall Pre vs Post test scores

A paired T-test showed a significant difference ($t = -5.53$, $df = 16$, $p < 0.001$) between the pre- and post-training test scores. After training, the mean score increased from 60 to 70% (Fig. 2).

Test scores according to demographics

A two-way ANOVA test showed a significant interaction between gender ($F = 283.2$, $df = 1$, $p = 0.04$) and between survey type ($F = 209.4$, $df = 1$, $p = 0.04$) with regards to the total score of the survey (Fig. 3). Females scored more highly than males overall, and the scores of both sexes improved after training.

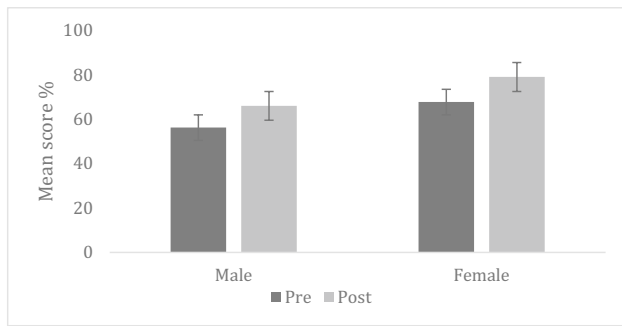


Fig. 3 Overall scores according to gender

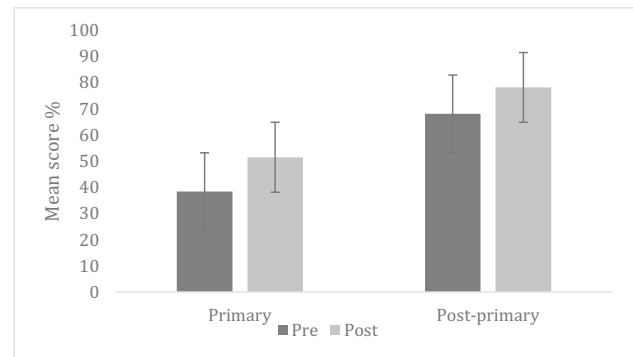


Fig. 5 Overall score according to education groups

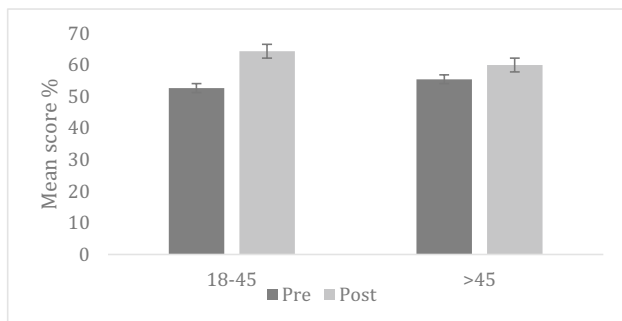


Fig. 4 Overall score according to the participants age groups

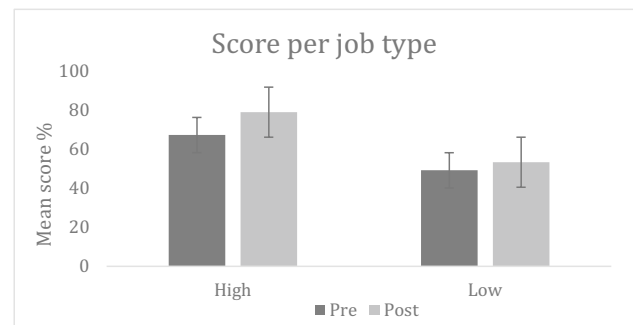


Fig. 6 Overall score according to the job type

Due to the small sample, age groups were broadly merged into “18–45 years” and “> 45 years”. A two-way ANOVA test showed no statistically significant difference between age groups ($F=1.5$, $df=3$, $p=0.37$); however, it was significant between survey types ($F=598$, $df=1$, $p<0.001$) with regards to the total score of the survey. There was an increase of 11.7% between pre and post surveys for the “18–45” group; and of 4.5% for the “> 45” group (Fig. 4).

Due to the small sample, educational groups were broadly merged into “primary” and “post-primary”, where the latter includes high school, technical courses, and graduates. A two-way ANOVA test showed no significant interaction ($F=0.159$, $df=1$, $p=0.6926$) between education groups and survey types. However, the difference between survey types was significant ($F=6.881$, $df=1$, $p=0.0136$), as well as the difference between educational groups ($F=31.419$, $df=1$, $p,0.001$). The lowest scores were attributed to individuals with only primary education (pre-training: 38%, post-training: 51%) and the highest to those with a higher education (pre-training: 51%, post-training:78%) (Fig. 5).

When comparing scores amongst job positions, these were merged into broader groups according to the intensity of their communication with the tourists. Guides and Skippers were merged into a “High” tourist communication group whilst Receptionist, Topman, Managers and Other



Fig. 7 Overall score according to years of experience in their current job

were merged into a “Low” group. The results suggest that “High” communications groups had slightly higher scores on both surveys, but a two-way ANOVA showed no significant difference according to between job types or survey types ($F=19.8$, $df=1$, $p=0.14$ and $F=3.98$, $df=1$, $p=0.29$) (Fig. 6).

A two-way ANOVA test showed significant interaction between years of experience in the current job ($F=23.3$,

$df=2, p=0.04$) but, not for survey type ($F=10.9, df=1, p=0.08$). Individuals with over ten years of experience had the highest scores (pre-training: 79%, post-training: 83%) followed by those with less than a year of experience (pre-training: 63%, post-training: 76%) and finally, those with one to ten years (pre-training: 54%, post-training: 63%) (Fig. 7).

Sections of questionnaire

The survey was divided into three broad-themed sections: 1 – Marine Conservation, 2 – PPMR related, 3 – Wildlife knowledge (Table 1). A two-way ANOVA test showed significant interaction between survey types ($F=21.7, df=1, p=0.04$) as well as between the scores of each section ($F=33.95, df=2, p=0.03$) with regards to the total score of each section. Participants increased their knowledge across all sections after the training, presenting higher scores in their post surveys (Fig. 8). Results also indicate that the section containing questions related to marine conservation scored higher on both pre (70%) and post (80%) surveys.

Perceptions of Cetacean-Based Tourism

Within the three broad-themed sections there are a total of 10 sections (Table 2). To assess the participants’ knowledge and attitudes towards CBT, sections 4, 5 and 8 were analysed: section 4 relates to attitudes and knowledge of CBT; section 5 refers to CBT regulations within the PPMR; and section 8 assesses knowledge on cetacean’s ecology and usage of the PPMR. A two-way ANOVA test showed no significant interaction between sections but showed significant interaction between survey types ($F=27.7, df=1, p=0.03$) with regards to the total score per section. Results indicate an increased score on the post surveys with section four increasing 8%, section five 8%, and section eight 4%

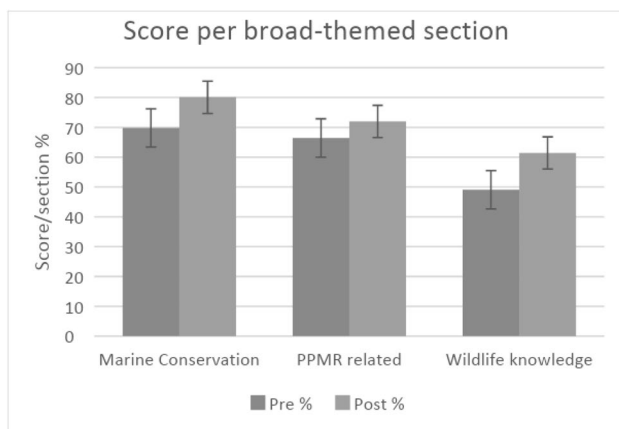


Fig. 8 Percentages of the overall score per broad-themed section

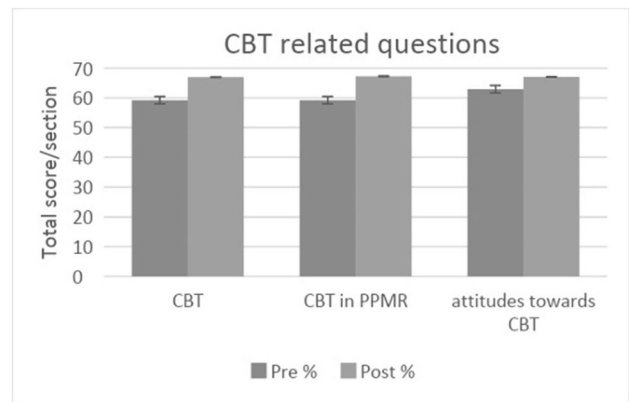


Fig. 9 Score for “CBT activities” related question

(Fig. 9). This indicates that perceptions of CBT improved after the training.

Perceptions of ecotourism

The total scores for this table are presented in Fig. 10. A two-way ANOVA test showed no significant interaction between gender, occupation, or education according to survey type. A one-way ANOVA test showed no significant difference in the participants’ scores for each survey type ($F=2.59, df=1, p=0.12$). Participants appeared to have a good understanding of the meaning of ecotourism with $n=13$ (76%) scoring over 80% on the pre survey and $n=15$ (88%) on the post survey.

Discussion

This study aimed to assess the validity and success of a guide training workshop for CBT operators in the PPMR. This aim was achieved by examining the attitudes of CBT operators towards CBT guidelines, their product knowledge

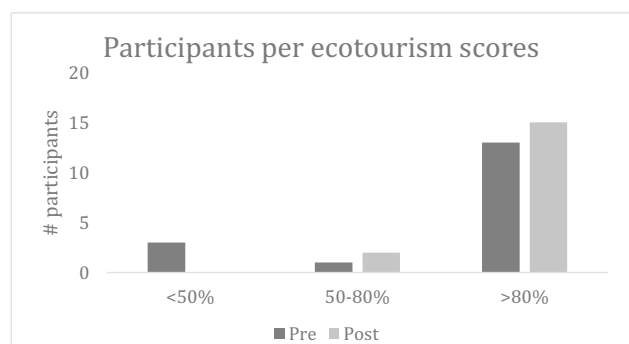


Fig. 10 Number of participants according to their score group for pre and post surveys

(cetacean biology and local history, culture and geography), human and animal safety, and other aspects of CBT in the PPMR during a short guide training program, in order to provide recommendations for an efficient guide training course in the PPMR. To this end, data were collected from all CBT operators' staff that have direct contact with the tourists, using a pre- and post-training questionnaire survey.

These findings reinforce the importance of guide training as well as identify demographic variables that might influence the participants learning outcomes.

Results indicate that the training workshop improved guide knowledge, which in some cases showed significant variations according to demographic variables. Specifically, findings revealed that at the end of the workshop participants presented a mean increased overall score of 10%, with the three broad-themed sections of the survey also showing increased scores on the post-training survey. Although the eco-tourism sub-section presented increased scores, these were not statistically significant and none of the demographic variables appeared to influence scores on this topic. The CBT sub-sections also presented increases on all three questions; however, the questions related to the participants' attitudes towards swimming guidelines offered the least increase. In general, the demographic variables that were most significant to the overall survey scores were gender, education, and years of experience in the current job position.

From these, we can concur that both qualitative and quantitative results represent a positive change as an outcome of the training. The pre- and post-training results indicate a statistically significant positive change on the participants attitudes towards the importance of a tourism guide, ecotourism standards, and CBT guidelines after receiving training. Similar tests have been conducted with marine wildlife ecotourism guides in developing countries and these also presented positive changes to their perceptions (Walker and Weiler 2017). The results also indicate a better knowledge of the product, this being cultural and historical aspects of the region and biological aspects of the main locally observed/interacted with species, as well as safety aspects of the activity for both humans and animals.

Gender, level of education, and years of experience in the current job proved to have a statistically significant influence on the results. Participants with only primary education produced the lowest knowledge scores, which likely reflects a lower overall awareness of product knowledge relating to environmental or biological factors. This group was in its totality represented by the local community (Mozambican), as opposed to South African or other Western nationalities. Mozambique has a gross illiteracy rate of 46.9%, of 60.7% for females, and only 32.7% of students completing primary education are capable of interpretive reading (SACMEQ—*The Southern and Eastern Africa Consortium for*

Monitoring Educational Quality n.d.). A concerning situation is the high rotation of staff. Results indicate that 41% of participants have less than one year of experience in their current job position and only 18% have over ten years' experience. Those with the most experience seemed to have better knowledge of their work requirements. This, combined with a foreigner job occupancy of 65%, points not only to a lack of local qualified labour but also the need for a formal guide training programme. Studies have shown that developing ecotourism professionally is critical for its future (Weiler and Ham 2002a). The adoption of accreditation programmes such as a national certification programme for ecotourism operators and guides, as well as devising quality standards, are important steps for a sustainable ecotourism industry in a country (Higham et al. 2001).

Assessing the participants attitudes towards CBT guidelines, specifically when to enter the water according to the animal's behaviour, presented the lowest statistically significant increase score. This indicates that although some understanding was gained, there is still uncertainty and lack of confidence to make the decision, something that should come with experience. This emphasises the importance of investing in staff training. However, the current precedent is for companies to have a high number of short-term, foreign staff. If instead companies chose to increase the number of local staff employed, these long-term hires would allow for better returns on any training investments. Despite having lower educational levels, these staff have the potential to become qualified guides and such initiatives would also develop local empowerment.

Limitations

This study provides the first investigation into the validity of training for CBT guides in Mozambique. However, a key limitation was the small sample size, which may restrict the general applicability of specific findings. Whilst it was not possible to gain a wider sample size in the present study due to limited project resources and local guide availability, it would be beneficial for future studies to consider widening the study area to capture a greater sample size (Lopez and Pearson 2017). A suggestion would be to include CBT operators along the coast of Mozambique, allowing for a comparison between operators based within and outwith MPA borders. This would also contribute to the development of national certification programmes and quality standards.

Ecotourism is committed to return benefits to the local community by promoting not only ecological but also economic sustainability (Samia et al. 2017; Weiler and Ham 2002b). This can be achieved by training local people to become ecotourism guides. The development of local know-how should be a goal to every ecotourism company;

however, most guide training programmes are developed in western countries and then adapted to projects in developing countries (Weiler and Walker 2014). These programs require a certain level of ability (e.g. computer illiteracy, higher education) from the participants that cannot be expected from developing-country participants. Although the workshop was conducted by the lead author, who grew up and lived in the study area, her education was of Western influence and this might have influenced the study design and consequently resulted in limitations to participants of local origin. A more hands-on experience seems to be required to engage these participants, for example the use of 3D models, documentaries in Portuguese, and role playing contextualised with local influences/issues. Another limitation was the language barrier; although the operators were contacted to ensure that all participants could undertake the workshop in English, it was later discovered that some participants could only speak but not read English. The lead author had to verbally translate the survey to Portuguese during the exercise. As she is fluent in both languages, no meaning was lost in translation. However, this was a time-consuming task that might have also induced some stress or distraction on the participants.

Due to time constraints, the workshop had to take place only in the early afternoons, this way participants could go on with their daily work tasks prior to the workshop and still had access to transportation back to their homes at the end of the day. The workshop also had to take place during the high season period, when operators have more activities taking place and less available time. However, it was guaranteed that no staff would be on leave, therefore, obtaining a higher number of participants. This time limitation resulted in only in-class assessment and no field-assessment, which is an important component of guide training (Lovrentjev 2015; Rabotic 2015; Walker and Weiler 2017; Weiler and Walker 2014). Any future studies would therefore be recommended to investigate whether the classroom improvements observed here translate to improved practice in the field.

Conclusions & recommendations for PPMR management on guide training

Previous studies have demonstrated the positive impacts of wildlife tourism on visitors' environmental knowledge and attitudes by raising visitors' awareness of environmental issues, developing their appreciation for wildlife, and promoting environmentally sustainable attitudes (Baltayne et al. 2007; Lee and Moscardo 2005; Zeppel and Muloin 2007). Guides are of key importance as they mediate between the needs of the tourists, operators, host communities and protected area managers (Weiler and Ham 2002b).

It is with this in mind that the following recommendations are proposed for the PPMR:

- Guide training to become mandatory for any CBT guide, swim facilitator, skipper, or receptionist regardless of the extent of their contract or non-paid voluntary stay. These are the main professions that will be involved with the clients either during the pre-activity briefing, onboard the vessel, or at the conclusion of the activity for payment, feedback, and media promotion (e.g. photographs and movies taken during the activity).
- A refresher course should be implemented annually containing updated research related to the product (cetaceans and physical area) and social skills to manage expectations, allow for interpretation and brokering, and inform on new regulations and guidelines both local and international (Black and King 2002). This could be an online module delivered at the PPMR headquarters, due to lack of computers and reliable internet supply in the village.
- Ownership of the guide training programme should remain with the host country, or in this case the PPMR (Weiler and Ham 2002b), allowing the local community to empower itself with local training and more jobs (Curtin 2010).
- Guide training should include content on visitors' expectations, interpretive guiding, and experience brokering (Black and King 2002; Christie and Mason 2003; Weiler and Walker 2014).
- More "hands on" training with cetacean models, role playing, and multimedia to ensure that all types of learning groups are covered (audio, visual, and physical).
- Include field training practice and assessment.
- Training to be done in their mother language or an English course to be completed prior to guide training; the latter is more preferable as most tourists are foreign and English will be the common language between operators and tourists.

In conclusion, we found guide training workshops to be affective at improving the knowledge and attitudes of CBT operators towards marine wildlife and sustainable tourism. Developing countries often have limited supply of resources such as computers and reliable internet. Additionally, there is the challenge of higher adult illiteracy rates and high numbers of guides holding only primary education. Delivering guide training through a presentational workshop proved to be an effective method to circumvent these limitations, and would be broadly applicable to other developing countries. We provide recommendations for how to implement and expand guide training. If these recommendations are put in place, then there is the potential for sustainable CBT to flourish in Mozambique, bringing much needed environmental and economic sustainability to this developing country.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s11852-022-00876-1>.

Acknowledgements The authors thank the PPMR for the use of their headquarters as a field office.

Acknowledgements are extended to the commercial tour operators, DERC, Somente Aqua Dolphin Centre, Halo Gaia, White Pearl Resort, for opening their premises, welcoming onboard their vessels and taking time off of their work to participate in the workshop.

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