

Determining the effectiveness of an educational learning resource on the awareness of the Cross River Gorilla

Ffion Davies
School of Biological Sciences, University of Newcastle, U.K.



QR code
to survey

ABSTRACT

According to the IUCN Red List of Threatened Species there are fewer than 300 species of Cross River gorilla (*Gorilla gorilla diehli*) remaining in southwest Cameroon and Nigeria, highlighting the severity of their endangerment status.

The main objective for this report was to raise awareness of this issue and to educate people on the reasons for this endangerment. The target audience for this report has been rather broad. The decision not to refine said audience was purposeful; it allowed for communication with various generations who may come from differing thought perspectives and educational levels, effectively raising awareness across the cohort as a result.

Younger participants were engaged via a specially-made puzzle game, whilst informative visual media was created with material best suited to an older audience. The two communication mediums combine to create a pop-up exhibition suitable for all, to be displayed at a Cross River Gorilla Project charity event held at Kew Gardens at the end of March.

Prior to this, feedback was gathered from various age groups; the project was taken to both West Jesmond Primary School and to the Great North Museum.

OBJECTIVES

- The main objective for this study was to design and implement a series of educational resources to improve awareness of the endangerment status of the Cross River gorilla (*Gorilla gorilla diehli*).
- Educate people on the reasons for the endangerment of CRG species.
- Improve key messaging and publicity for the Cross River gorilla project.

INTRODUCTION

- Given that many of the problems facing the Cross River gorilla are closely linked to general conservation issues which face other species and their habitats, the topic in discussion is a serious issue.
 - It is hoped that raising awareness of the Cross River gorilla's endangerment may inadvertently inform participants of similar issues facing different species. The knowledge gleaned through previous projects made the Cross River gorilla an obvious choice of topic for this report and provided a foundation upon which to begin researching.
 - The hardships facing the Cross River gorilla are hard to ignore and are deserving of the attention of a wider audience; something this report seeks to achieve in order to contribute to species conservation. This was proven successful by Brooks et al (2015), who demonstrated that raised awareness led to improved conservation of a species.
- Having read work by Ginsburg (2007), stating that play is essential for cognitive development in children, it was decided that an interactive game would be added in order to better engage a young audience and provide an increased understanding of the topic.
 - The interactive aspect of the project was aimed at a younger audience of around 6-12 years. The materials were tested at West Jesmond Primary school, which provided access to a large pool of participants, thus increasing the reliability of results Bastos et al (2014).
- The nature of a topic involving an endangered species means that not all aspects are suitable for a young audience, who are likely to find these details upsetting.
 - An informative poster was therefore created as part of the exhibition to sit alongside the interactive game; this would be targeted at an older audience more capable of grasping the complex issues faced by the Cross River gorilla.
 - The two would complement each other well at the exhibition in Kew Gardens. Targeting an older audience allowed for more in-depth research, comprising of more comprehensive details and backed by data.
 - This age-group is also more likely to have the ability to act on this new-found knowledge, be it direct action or further educating younger generations on the issues.

METHODS

- Game:
- Initial project plan was to create a jigsaw puzzle with multiple pieces- decided against as this was too complex.
 - Sketches were created and shared with the engineering department, where the game's design was finalised.
 - Game materials
 - Plywood was the chosen material, due to its strength and the unlikelyhood that it would expand after being cut.
 - The wood was painted in browns and greens using sponges to create a shrubby effect.
 - Gorilla pieces were cut out using laser cutting equipment and painted red, representing their endangerment status and their presence on the IUCN red list.
- Poster:
- The Cross River Gorilla Project logo and website link were included at the bottom of the poster.
- Questionnaire:
- The questionnaire was tested on people in the Great North Museum, alongside an online questionnaire, created on Survey Monkey.
 - Included both quantitative and qualitative questions, in order to create a broad spectrum of data.
- Ethical conduct:
- Ethical approval was granted with regards to the content of the questionnaires, puzzle and poster.
 - A gatekeep (teacher) was necessary at the school, in order to obtain ethical approval.

RESULTS

- Game testing and validation:
- The game was tested in West Jesmond primary school, here both children and teachers were able to use the game, providing feedback through informal focus groups and questionnaires.
 - Questionnaires were open ended as to avoid bias, therefore creating more valid results, according to Bowling (2005).
 - Initial feedback
 - Children provided positive feedback with regards to the puzzle- many stating that they enjoyed learning through movement, instead of at a desk.
 - Teachers gave positive feedback, stating that they liked that the facts could be removed from the piece, meaning that it could be used multiple times.
 - Constructive feedback was also given by the teachers
 - Facts may be better if they were laminated
 - Pieces of plywood were glued together.
- Twenty respondents were included in the study, 60% of which were female and 40% were male (Figure 2a).
- The categorical distribution of respondent ages as shown in Figure 1b portrays demonstrate that the majority of participants were of the age range 8-12 years (45%)
 - The next most populous group was 25-50 years (35%)
 - Fewer respondents were over 50 years and under 7 years (10 and 10%, respectively; Figure 2b).
 - The age categories 13-16 years and 17-25 years were removed here due to the lack of responses from these groups.
- Participants aged <7 identified the fewest number of ape groups (1 group) with the number of apes known positively correlated with age, as expected (Figure 3a).
- A similar positive trend was observed for number of different gorilla species known and age (Figure 3b).
- Figure 2c portrays how the younger participants, ages 7 years and under and 8-12 years answered incorrectly. Half of the respondents under 7 years answered that the Cross River gorilla (*Gorilla gorilla diehli*) was found in Madagascar, and the remaining half indicated that it was found in Egypt.
- None of the 8-12-year-old participants answered correctly, as they stated that the species was found in Kenya, Madagascar and Egypt, which is suggestive of guessing.

FIGURE 2.

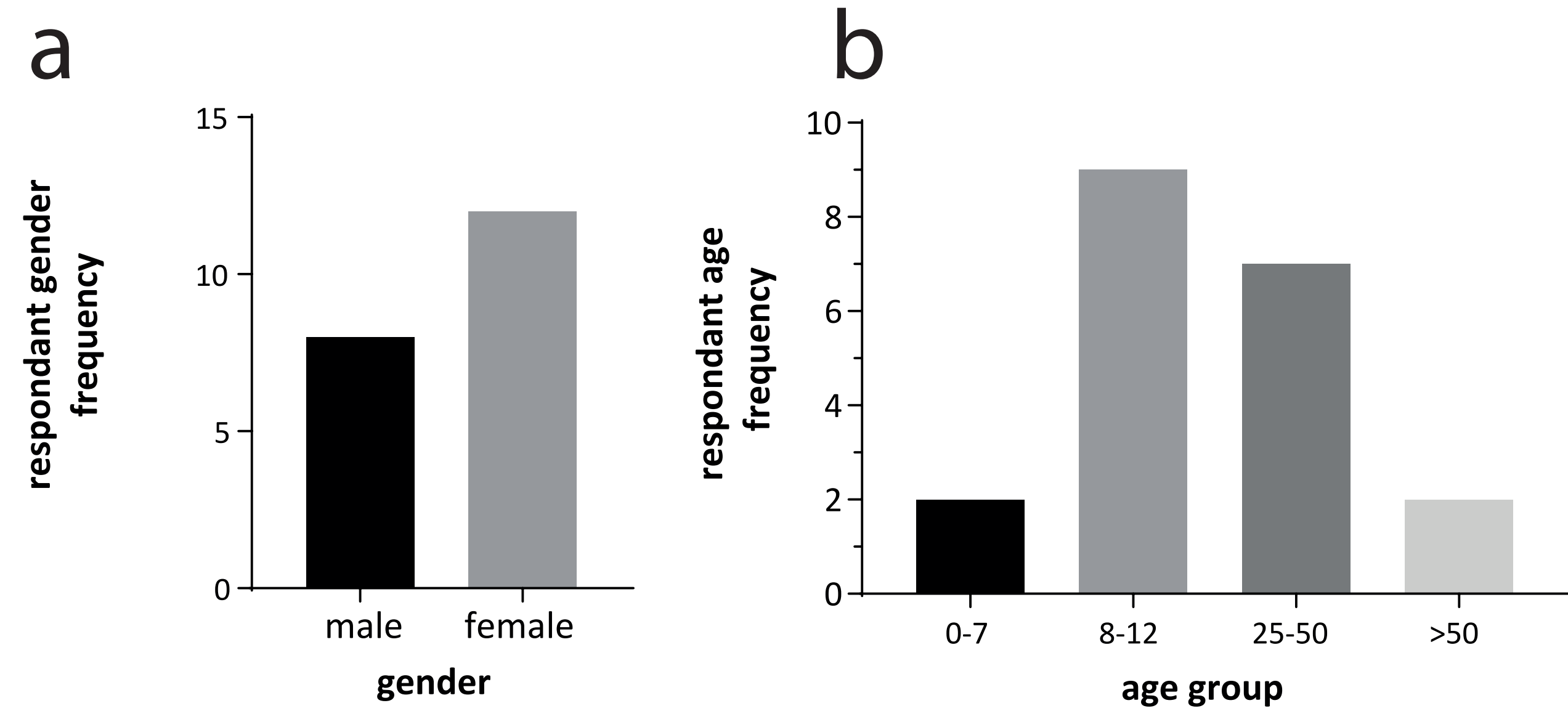


Figure 2. a) Gender characteristics of respondents at the Great North museum. b) The frequency of ages of respondents.

- The older age groups, 25-50 years and 50 years and over demonstrated a better level of knowledge, as 43% of 25-50-year olds answered correctly
- 50% of participants above 50 years also indicated the correct geographical restriction of Cross River gorilla species.

FIGURE 3.

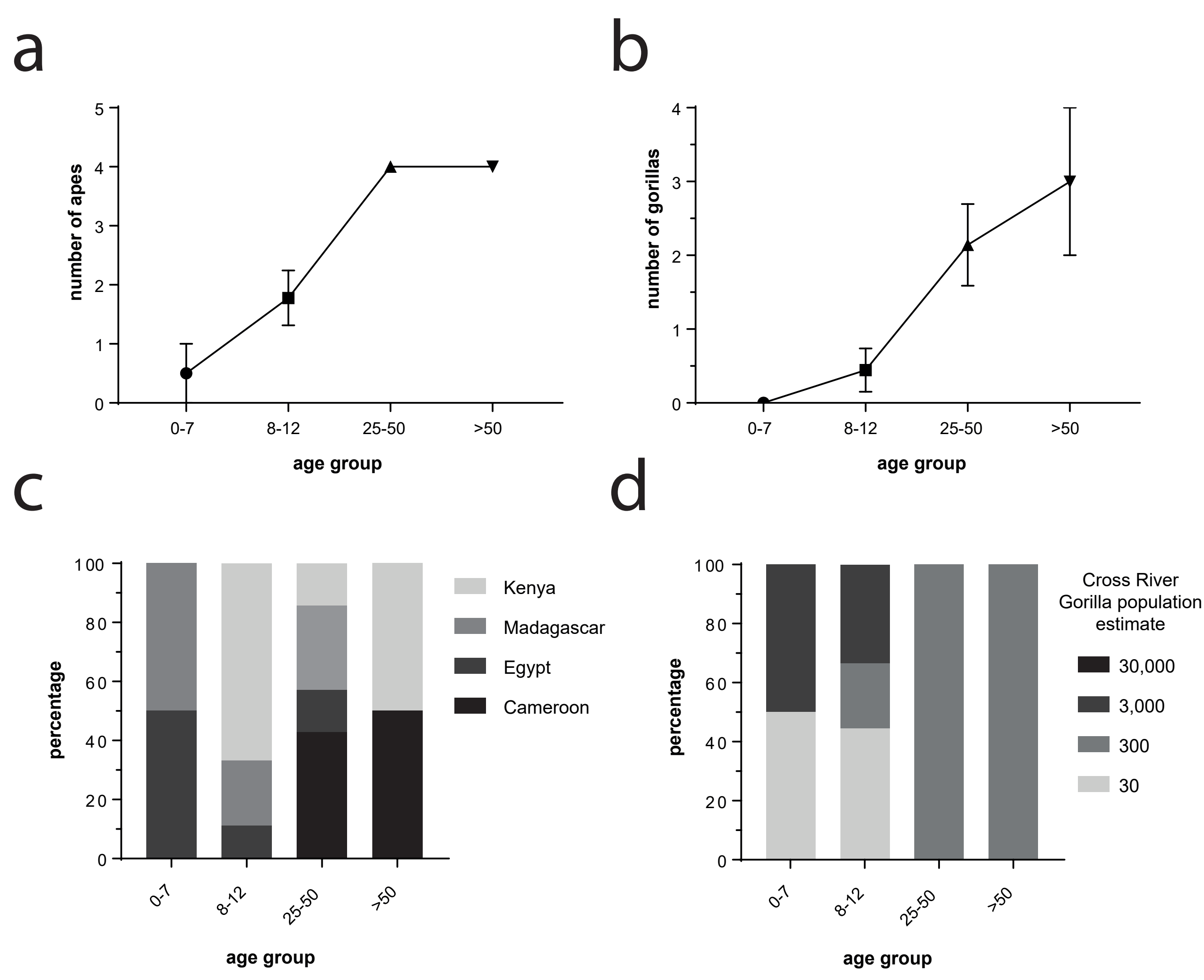


Figure 3. a) the number of ape groups known by the different age categories who took part in the questionnaire at the Great North museum. b) the number of gorilla species. c) The percentages of each country indicated in the different age brackets. d) Approximate current population size of the Cross River gorilla, as estimated by the different age groups of the respondents.

- The qualitative answers followed a slight trend, as seen in Figure 4, the most frequently distributed words included 'charity', 'money' and 'donate'. This emphasises that respondents prefer organisations to carry out the work of conservation, as words such as 'recycle' and 'education' are less frequent.

FIGURE 4.



- Figure 4. Word cloud illustrating open-ended p questions. Relative word size indicates word frequency.

FIGURE 5.

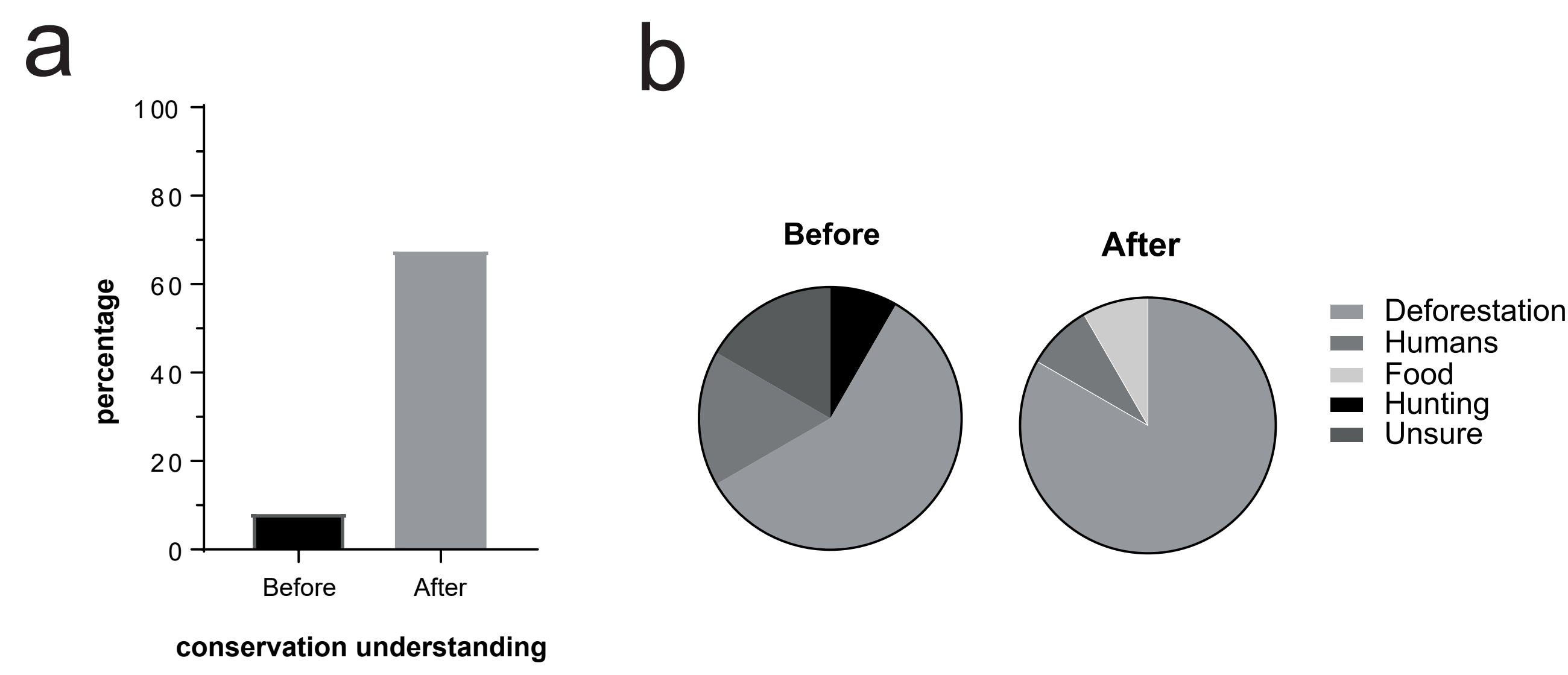


Figure 5. a) the percentage of participants who had a knowledge of understanding before and after the use of game materials. b) The answers given when asked what main factor contributed to the endangerment of the species. Both figures from a total of 12 participants.

- The results obtained from this demonstrates how the children gained a knowledge and understanding of the conservation issue.
 - For example, question 4 of the questionnaire asked, 'Have you heard of the gorilla species- the Cross River gorilla?'
 - Before the participants used the game, 92% had not heard of the species, and after using the game, only 33% stated that they had not heard of the species.
 - This demonstrates that this mode of learning has helped increase awareness of the species' existence, which was part of my aim, as shown in Figure 5a.
 - An increased level of understanding is also demonstrated in Figure 5b, which indicates how no participants were left 'unsure' after the use of the materials.

DISCUSSION

- The initial data indicated that the complexity of the jigsaw together with the size of the jigsaw pieces would limit information displayed, meant that this was not an option.
 - As such, the game was altered into one that removed pieces from the board, revealing facts about the species underneath. This was a significant improvement from the initial puzzle as it allowed for a more educational approach.
- It was also part of the initial plan that the puzzle be displayed alongside the poster at the Great North Museum for a period of time.
 - The addition of questionnaires, however, meant that it would be more beneficial to take the project to the museum only for a short time, conducting concurrent research (in the form of questionnaires) and allowing for the answering of any questions that the public had with regards to the project.
 - This provided an excellent understanding of the existing knowledge the general target audience held on the subject.
 - It was decided that the most beneficial way to gain feedback on the project would be to take it to West Jesmond primary school, as here there are a larger number of engaged children of the required age with the time and freedom to participate in a learning environment and provide feedback.
 - Furthermore, the feedback received school teachers would also be valuable and improve development, before taking the project to Kew Gardens for the Cross River Gorilla Project charity event.

CONCLUSIONS

- The interactive game proved to be a success when wanting to educate children on the topic of conservation and the endangerment of the species, which in turn helps raise awareness of the issue, which was the main goal of the project.
 - Based on this data it is important to increase the awareness of conservation and CRG species through the use of high-quality, interactive learning materials in the early education setting.
 - Using these materials, it may be possible to improve the conservation outlook in target species by educating the next generation
- Collectively, the poster and game materials aided the awareness of the endangerment status of the species, as the results demonstrate an increased level of knowledge and understanding after the use of the materials.

REFERENCES

- Bowling (2005). Mode of questionnaire administration can have serious effects on data quality. - Journal of Public Health, 27, pp.281-291.
- Brooks et al (2015). The Importance and Benefits of Species. Current Biology, 25, pp.431-438.
- Ginsburg (2007) The Importance of Play in Promoting Healthy Child Development and Maintaining Strong Parent-Child Bonds. PEDIATRICS, 119, pp.182-191.

ACKNOWLEDGMENTS

West Jesmond Primary school staff and students for the feedback of questionnaires.

Great North Museum for permission to hand out questionnaires and comments.

Cross River Gorilla Project board members for support and provision of focus group.