Gamification Effectiveness on Education*

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First sentence. Second sentence. Third sentence. Fourth sentence.

1 Introduction

Games have been part of human history for a long time and are loved by many young and old. The design behind why game are so fun have investigated in recent time and how to apply those element that are fun and to apply them to other fields, this is known as gamification. Gamification is used in fields such as enterprise, sales, lifestyle and education. In this paper we will focusing on application of education, we be using data from Duolingu, training model and making inference off, real life application of gamification to an individual productive.

In this paper, we are doing replication of a study … , which has a control and treatment where the treatment is applied gamification, while the control is using an ordinary education system. Yeah there benefits, but there are downside when comes to how the gamification as it might discourage learning. Furthermore, an wide use application of gamification is a language learning app called Duolingo, which has … active users and this app learning is recognized in certain Universities as legitimate English learning.So we examine game design that are use. Ways to apply gamification in daily lives, like this app called Habitica: Gamify your tasks.

2 Data

Some of our data is of penguins (Figure 1), from Horst, Hill, and Gorman (2020).

Talk more about it.

And also planes (**?@fig-planes**). (You can change the height and width, but don't worry about doing that until you have finished every other aspect of the paper - Quarto will try to make it look nice and the defaults usually work well once you have enough text.)
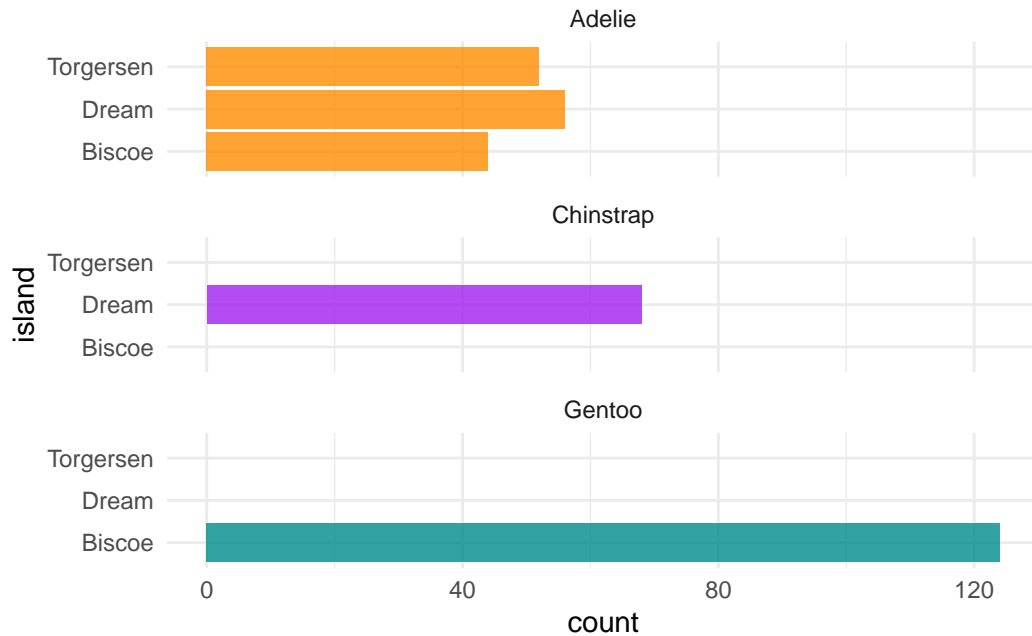
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*Code and data are available at: LINK.

Figure 1: Bills of penguins

Talk way more about it.

3 Model

The goal of our modelling strategy is twofold. Firstly,...

Here we briefly describe the Bayesian analysis model used to investigate... Background details and diagnostics are included in Appendix B.

3.1 Model set-up

Define y_i as the number of seconds that the plane remained aloft. Then β_i is the wing width and γ_i is the wing length, both measured in millimeters.

$$y_i | \mu_i, \sigma \sim \text{Normal}(\mu_i, \sigma) \tag{1}$$
$$\mu_i = \alpha + \beta_i + \gamma_i \tag{2}$$
$$\alpha \sim \text{Normal}(0, 2.5) \tag{3}$$
$$\beta \sim \text{Normal}(0, 2.5) \tag{4}$$
$$\gamma \sim \text{Normal}(0, 2.5) \tag{5}$$
$$\sigma \sim \text{Exponential}(1) \tag{6}$$

We run the model in R (R Core Team 2023) using the `rstanarm` package of Goodrich et al. (2022). We use the default priors from `rstanarm`.

3.1.1 Model justification

We expect a positive relationship between the size of the wings and time spent aloft. In particular...

We can use maths by including latex between dollar signs, for instance θ.

4 Results

Our results are summarized in Table 1.

5 Discussion

5.1 First discussion point

If my paper were 10 pages, then should be be at least 2.5 pages. The discussion is a chance to show off what you know and what you learnt from all this.

5.2 Second discussion point

5.3 Third discussion point

5.4 Weaknesses and next steps

Weaknesses and next steps should also be included.

Table 1: Explanatory models of flight time based on wing width and wing length

	First model
(Intercept)	-0.15
	(0.65)
certainty	0.14
	(0.10)
Num.Obs.	53
R2	0.039
Log.Lik.	-32.999
ELPD	-35.1
ELPD s.e.	2.7
LOOIC	70.2
LOOIC s.e.	5.5
WAIC	70.2
RMSE	0.47

Appendix

A Additional data details

B Model details

B.1 Posterior predictive check

In **?@fig-ppcheckandposteriorvsprior-1** we implement a posterior predictive check. This shows…

In **?@fig-ppcheckandposteriorvsprior-2** we compare the posterior with the prior. This shows…

Examining how the model fits, and is affected by, the data

B.2 Diagnostics

Figure 2a is a trace plot. It shows… This suggests…

Figure 2b is a Rhat plot. It shows… This suggests…
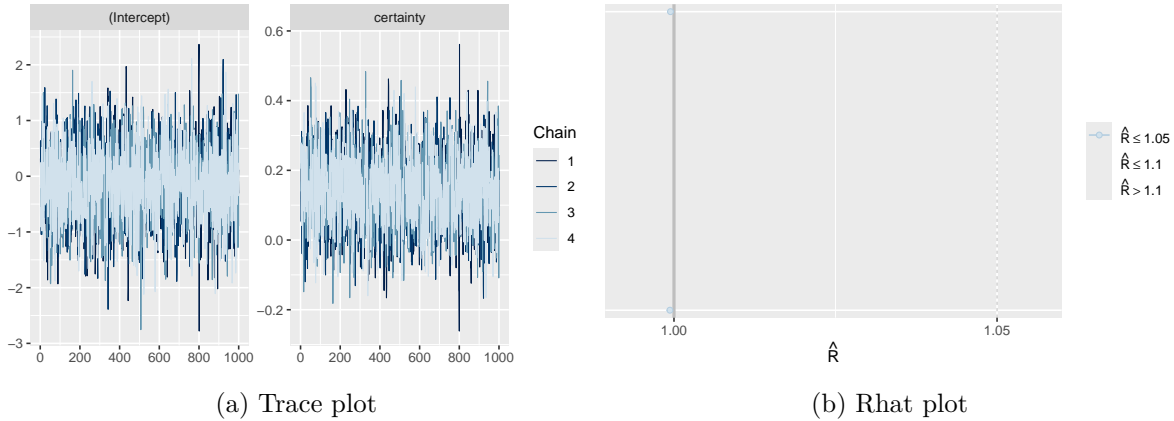
(a) Trace plot   (b) Rhat plot

Figure 2: Checking the convergence of the MCMC algorithm

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