

International Journal of Early Childhood
Just Like Me: Protagonist-Reader Identification through Personalized Stories Fosters Word-learning
--Manuscript Draft--

Manuscript Number:	IJEC-D-22-00009
Full Title:	Just Like Me: Protagonist-Reader Identification through Personalized Stories Fosters Word-learning
Article Type:	Original research
Keywords:	personalization, reading, story-telling, word learning
Corresponding Author:	Alberto Falcón, Ph.D. Universidad Autónoma del Estado de Morelos CUERNAVACA, MORELOS MEXICO
Corresponding Author Secondary Information:	
Corresponding Author's Institution:	Universidad Autónoma del Estado de Morelos
Corresponding Author's Secondary Institution:	
First Author:	Ulianov Montano
First Author Secondary Information:	
Order of Authors:	Ulianov Montano ALBERTO FALCÓN Fernanda Alcaraz
Order of Authors Secondary Information:	
Funding Information:	
Abstract:	Studies have shown that personalized stories can further enhance the beneficial effects of story reading. This study introduces a method of personalizing stories and aims to evaluate its effect on identification and word learning. The method was tested with 6 year-old children. The experiment consisted in reading a similarity-based customization of a story that contained novel words, and measuring how many of the novel words the children remembered. Results showed a word learning facilitation effect by the personalized versions of the story. The distinctive characteristic of this method of personalization is not only that it exhibits a beneficial word learning facilitation effect, but also that it points to an identification-response as the mechanism mediating the learning effect. The study presented here may contribute to understand how personalization enhances storytelling as a method of delivering information and, also, may serve to practitioners interested in developing more effective interventions through story reading.

Title: Just Like Me: Protagonist-Reader Identification through Personalized Stories Fosters Word-learning

Ulianov Montano, Alberto Falcón*, Fernanda Alcaraz

*Laboratorio de Comunicación Humana y Cognición, Facultad de Comunicación Humana,
Universidad Autónoma del Estado de Morelos, México*

*Corresponding author:

Alberto Falcón

Facultad de Comunicación Humana. Privada del Tanque No. 200, Col. Lomas del Mirador,
C.P. 62350 Cuernavaca, Morelos, México
e-mail: falcon@uaem.mx

Ulianov Montano received his PhD. from the University of Groningen, The Netherlands. He is a Research Assistant at the Laboratory of Human Communication and Cognition. He is interested in language, symbols and the philosophy of science

Alberto Falcón is a Research Professor in the Faculty of Human Communication at the Universidad Autónoma del Estado de Morelos, México. He received his PhD. from the UNAM, México. He is the head of the Laboratory of Human Communication and Cognition. He is interested in language acquisition, development and how it is processed and used in both written and oral modalities.

Fernanda Alcaraz received her Masters Degree in Inclusive Education and Attention to Diversity from the Universidad Autónoma del Estado de Morelos, México. She is interested in education and diversity.

Declarations

Funding

Not applicable

Conflicts of interest/Competing interests

The Author(s) declare(s) that there is no conflict of interest

Availability of data and material

The data that support the findings of this study are openly available

Code availability

Not applicable

Authors' contributions

Alberto Falcón
Conceptualization
Formal analysis
Methodology
Resources
Supervision
Writing – review & editing

Ulianov Montano
Conceptualization
Writing – original draft
Writing – review & editing

Fernanda Alcaraz
Data curation
Investigation
Methodology
Project administration
Writing – review & editing

Ethics approval

Written informed consent from parents or other main care givers such as grandparents was obtained.

Just Like Me: Protagonist-Reader Identification through Personalized Stories Fosters Word-learning

Abstract

Studies have shown that personalized stories can further enhance the beneficial effects of story reading. This study introduces a method of personalizing stories and aims to evaluate its effect on identification and word learning. The method was tested with 6 year-old children. The experiment consisted in reading a similarity-based customization of a story that contained novel words, and measuring how many of the novel words the children remembered. Results showed a word learning facilitation effect by the personalized versions of the story. The distinctive characteristic of this method of personalization is not only that it exhibits a beneficial word learning facilitation effect, but also that it points to an identification-response as the mechanism mediating the learning effect. The study presented here may contribute to understand how personalization enhances storytelling as a method of delivering information and, also, may serve to practitioners interested in developing more effective interventions through story reading.

Keywords: storytelling, personalization, story reading, identification, word learning

Introduction

Studies have shown that story reading is beneficial to children's development in areas such as language acquisition and language learning (Montag, Jones, & Smith, 2015), attachment (Newcombe & Reese, 2004), and socializing (Dickinson, Griffith, Golinkoff, & Hirsh-Pasek, 2012; Kucirkova, Messer, & Whitelock, 2010). It has also been documented that the beneficial impact of story reading can be further enhanced by means of personalizing the story or the media containing the story.

Book personalization

Personalizing a book (or a story) consists in customizing it in such a way that the book comes to be perceived as possessing a special relation, meaning, or value to the reader as a person. In this sense, personalizing a book comprises superficial customizations such as choosing the colours and designs on the cover, but also customizations that are highly relevant to the person's experiences, values or culture. Findings have shown that a personalized book enhances the effect of book reading in engaging the child in social interaction (Kucirkova, Messer, & Whitelock, 2013) in lexicon development (Kucirkova et al., 2010), and in fostering the child's interest in books (Dickinson et al., 2012). These findings provide us with valuable insights about the potential of personalized stories for optimizing the impact of information delivered through story reading. However, it is not clear what are the factors responsible for eliciting the beneficial effects of personalized stories. Most studies on personalization focus mainly on confirming the existence of beneficial effects. However, in general, the issue of how and why storytelling has an impact on audiences is still a developing topic. Green (2008) draws attention to this fact:

Stories generally include a plot, characters, description, and perhaps other literary elements. They can evoke strong emotions or vivid images; individuals may identify with a main character. Are all of these ingredients necessary to create a persuasive story? If not, which ones are essential and which can be omitted? Research has not yet come up with a formula for creating a transporting and influential narrative. (Green, 2008)

The present study proposes and evaluates a method for personalizing stories to achieve word-learning facilitation, by means of customizing specific items of information. The method consists in manipulating minimal items of text in a baseline story, with the aim of inducing identification. The distinctive feature of this method is

that it personalizes the text of the story in a very specific and controlled way. This contrasts with other personalization methods studied in the literature, which usually personalize different variables at the same time, thus making difficult to identify what factors may be liable for the beneficial effects of the personalization. Due to its specificity, this method represents a first attempt at addressing the issue of how and why personalized storytelling results in beneficial effects: personalization may enhance beneficial effects due to the fact that it induces an identification response. The identification response is the factor liable for the enhancements of the effects.

The fact that a specific factor may be identified as a mediator in eliciting the beneficial effects of personalization is not trivial, since the literature on personalization is rather vague about the factors liable for eliciting effects. Consider, for example, Flewitt, Messer, and Kucirkova (2015), who tested the impact of customizable books in *iPads* in three different school settings. The experimenters gave teachers and children the freedom to take advantage of the customizing capabilities of iPads in the way teachers and children preferred. Beneficial effects on literacy were observed. Now, in Flewitt et al.'s study, it is difficult to isolate specific factors that may explain the effectiveness of personalized media. The suggestion by Flewitt et al. is that their personalized books result in beneficial learning effects because they are aids that allow children to make connections between new and familiar knowledge.

In other study (Kucirkova, Messer, & Sheehy, 2014), the method of personalization consisted in providing a book with pictures chosen as familiar or significant by the children's parents. Improved word learning was observed in children exposed to personalized books. The authors suggested that personalized books offer a platform to connect new and familiar knowledge, thus resulting in word learning facilitation: when the child reads the book, he eventually recognizes his environment in

it, allowing him to connect the information in the book with his own experience. In yet another study (Kucirkova et al., 2013), personalized books were created by asking parents of toddlers to take seven pictures of any things, places or activities their child enjoyed and to provide a simple storyline to accompany them. More engaged behavior was observed in toddlers exposed to personalized books. The explanation of the beneficial effects that the authors suggested is that the reading experience is more enjoyable to the child when he recognizes himself in the book.

Now, in order to be more specific about the source of the beneficial effect of personalization, the method presented here was devised assuming from the beginning a hypothesis about the mechanism liable for the effect: we hypothesized that inducing an identification response in the reader may result in learning facilitation. To better understand the hypothesis, in the following we explicate what is identification and how it is linked to learning facilitation.

Identification

To characterize identification, it must be distinguished between responses of spectatorship and responses of identification. In being exposed to a story, a reader experiences a response of spectatorship as if he were contemplating the story from a third person perspective, that is, as if the reader were part of the audience watching a play or a film. By contrast, when a reader experiences a response of identification he tends to experience the story from a first person perspective, as if he were one of the characters in the story. Cohen (2001) characterizes identification with media characters as an imaginary process in which the audience imagines themselves as being a character in the story and assuming the character's identity, objectives and perspective. Cohen points out that readers remember more the actions and dialogues of the characters with

whom they identify. Many studies show that facilitation effects in attention and memory accompany identification. For example, De Graaf, Hoeken, Sanders, and Beentjes (2012), propose identification as one of the mechanisms through which narratives can modify reader's attitudes and beliefs. This is due to reader's links to the character, and the vicarious experiences the character affords the reader. Tal-Or and Cohen (2010) point out:

...Identification promotes the focusing of mental resources on the text, increasing the levels of attention to the story's details, progressively engaging the reader in the act of constructing the story. When the story is more interesting readers tend to exhibit more focused attention and enhanced memory.

The literature offers findings that suggest that identification can be achieved through similarities with the reader. For example, Hoeken, Kolthoff, and Sanders (2016) argue that the reader identifies to a greater extent with the character when there are similarities between them. By similarities the authors refer to any shared characteristic such as gender, profession, age, tastes, preferences, contexts, and so on. Tsay and Krakowiak (2011) suggest that the similarities the reader recognizes, arouse a connection and liking towards the character, which increases the interest in the story. These studies suggest that resources such as memory and attention can be heightened in episodes of identification.

Studies on identification allows us to identify specific elements of a story that are suitable to be controlled in attempting to elicit a learning facilitation effect: namely the elements that allow the reader to see similarities, affinities, and common ground between a character of the story and himself. Our strategy is to exploit the fact that some of these similarities, affinities and common ground can be codified in small pieces of information. For example, the protagonist can be similarly named as the reader. We can further give some of the characters in the story the same tastes as the reader. We can

locate the story in the same places or circumstances as the reader's. In this way, we establish similarities between the story and the circumstances of the reader, a fact that is known to elicit identification. Moreover, we can do all this simply by utilizing information that can be codified in one or few words (e.g., names, places, tastes, etc.). This allows us to specify in a very detailed manner the pieces of text that may operate in eliciting identification.

Thus, based on the foregoing findings, in designing the personalization method we hypothesize that a process of identification can be used to recruit attentional and memory resources, thus resulting in better learning performance. In sum, the method customizes small pieces of information in a baseline story, with the goal of establishing a similarity between the reader and story's protagonist. We label this method *similarity-based personalization*.

The present study investigates the effects of *similarity-based personalization* on word learning. Since similarity-based personalization manipulates only small items of text, one of its advantages is that, in a simple fashion, it gives the practitioner and researcher more control over the intervention, and provides specific insights into the possible factors that make the story effective.

Method

The general idea of the personalization method is to customize a baseline story with information pertaining to the reader. This should induce an identification response. In turn, this identification response may result in facilitating learning of novel words presented in the story.

Hence, items of information pertaining to the participants were collected. The information items had emotional or affective relevance to the participants. For instance,

we collected information about the participant's close people and about tastes, since familiar people and tastes are associated with feelings of pleasure or joy. These personally significant items of information substitute the information in a baseline story, thus resulting in a story specifically personalized for the reader.

Participants

Forty-two six-year-old children participated in the experiment. Thirty-one of the participants were female. All children were from monolingual Spanish-speaking families and presented no evidence of language delays or disabilities according to their teacher's report. All children were first grade students from public schools. Participants tended to be from low-income homes.

Children were randomly selected to participate in either the personalized (16 boys and 5 girls) or the control condition (16 boys and 5 girls).

Materials

A questionnaire for personalization based on parent report was created for the study (see Appendix 1). Each questionnaire contained 16 items. The first item asked for up to three different names (short names, nicknames, etc.) people close to the child use to call him. Items 2 and 3 asked for the name of three of the child's close persons and pets. Items 4 to 7 asked for known places. Finally, items 8 to 16 collected information about likings and preferences. The information collected with the questionnaire was incorporated into the personalized books as part of the information pertaining to story's characters and circumstances.

Two baseline non-personalized stories were created in ePub format. The books tell an original story created for the present study. In the story, the protagonist finds 4

little monsters, labeled with 4 nonwords. The monsters are lost and away from their home. The protagonist becomes best friends with the monsters. In the end, the protagonist must solve a conflict: she must chose between either telling the monsters that she has found their way home and sadly say goodbye to the them, or keeping the truth from them so the monsters stay with her. This non-personalized book was created in two versions: with a female and with a male protagonist, which were assigned to match the participant's gender (see Appendix 2).

Twenty-one *personalized books*. These books tell the same story as the non-personalized ones. However, information pertaining to each child, obtained from the parent reports, was incorporated, including participant's own gender (see Appendix 3).

A *word-learning test* was created. This included three separate images: on the first page, all four monsters from the story appeared together. On the second image only two of the four monsters were shown and on the final image the remaining two monsters were presented (see Appendix 4).

An adaptation of the *Empathy and Identification Scale* (Igartua, 2010) was used to evaluate children's identification and empathy with the characters of the story. The original scale was devised for adults, to evaluate their empathy and identification with characters appearing in stories (mainly movies). To make the scale apt for children, an auxiliary context was provided and the items' descriptions were easy enough for children to understand. For example, instead of asking: *I have felt emotionally implicated with the main characters*, the item was changed to *How did you feel when Rosella (the main character in the non-personalized book) knew she had to give the monsters back?* (see Appendix 5).

All books and instruments were presented on an *iPad*.

Procedure

The study was conducted in a quiet area within the school, free of distractors. The story was read individually to each child by a female experimenter, who was trained to read the books in a consistent fashion across all participants and conditions. The experimenter was also blind to the main hypothesis.

Storytelling

Children were presented with either a personalized or a non-personalized story. The non-personalized story was read to 21 of the 41 children in one of the two versions (i.e. girl or boy as protagonist). The version with female protagonist was read to the girls, and the male protagonist version to the boys. The remaining 21 children listened to their own personalized book, also with congruence between the protagonist's gender and their own. This gender matching (i.e., between the participant and the protagonist) allowed for excluding gender as the factor responsible for any possible difference.

Word-learning assessment

After finishing reading the story, the experimenter asked the child if she or he could help her remember the names (i.e., nonwords) of the monsters from the story (using the word-learning instrument). In the first of three images of the instrument, all four monsters were displayed and the experimenter named three of them, one by one, whilst asking the child to point to the corresponding monster (i.e., 'Show me _____'). For the last monster, the child was asked to name it himself. In the second and third images, the four monsters were presented again, now in pairs, whilst the experimenter name one of the two monsters presented at a time and asked the child to point to the corresponding one. The experimenter asked the child to name himself the other monster (the one not pointed to).

Each of the responses, either pointing (5) or naming (3) was coded as correct or incorrect. The entire reading and word learning test session took approximately 15 minutes long (see Appendix 4).

Empathy and Identification assessment

The adaptation of the *Empathy and Identification Scale* was administered after the word-learning test. This tests combines questions regarding how similar to the characters the child finds herself and how similar the character's reactions resemble child's own feelings and emotions (see Appendix 5). The experimenter read the questions from the instrument while showing the images that were in the adapted scale. The administration of this instrument took approximately 5 to 10 minutes.

Results

To test for possible bias in the groups, age and scholar achievement was compared by condition with an *independent measures t-test*. No difference in age or scholar achievement was observed across conditions. Responses were coded as correct or incorrect out of a total of 8 trials.

Word Learning Facilitation

Performance (pointing and naming response) was coded as correct (1) or incorrect (0) out of a maximum of 8 correct responses. Average performance was obtained according to condition (see Table 1). These results were then compared with an independent *t-test*. Significantly better performance was observed in the personalized condition ($M = 7.06$, $SD = 0.73$) compared to the non-personalized condition ($M = 5.26$, $SD = 1.79$), corrected $t(26.5) = 4.26$, $p < .001$, $D = 1.31$). Thus, children learned better the names of

the monsters when they heard the personalized story (see Fig 1). However, data in both conditions were not normally distributed. Therefore, a non-parametric Mann-Whitney U test for independent samples was conducted. The non-parametric test also revealed a significant better learning in personalized condition compared to the non-personalized ($p < .001$).

//INSERT TABLE 1 ABOUT HERE//

Identification Assessment

Results from the identification questionnaire were normalized to the interval [0, 1] (where 0 is no identification, 1 is total identification). Single tailed independent t-test analysis of identification assessments in the personalized ($M = 0.91$, $SD = 0.10$) and control ($M = 0.64$, $SD = 0.25$) conditions. Statistical analyses of a corrected $t(26.99) = 4.48$, $p < .001$, $D = 1.41$ showed a significant difference. Since data was not normally distributed, a non-parametric Mann-Whitney U test was also conducted, which showed that identification in the personalized condition was significantly higher compared to the non-personalized condition ($p < .001$). Thus, children were more identified with the main character in the personalized story compared with the non-personalized book (see Fig 2).

//INSERT FIG 1 ABOUT HERE//

Empathy Assessment

As well as with the identification assessment, *empathy* results (Fig 3) were coded as 0 or 1 and averaged across all participants per condition (where 0 is no empathy and, 1 is

total empathy). Single tailed t-test analysis of normalized average for empathy in the personalized ($M = 0.77$, $SD = 0.18$) and control ($M = 0.72$, $SD = 0.17$) conditions showed no significant difference ($p > .05$, $D = 0.28$).

Correlations: Word learning-Identification-Empathy

Bivariate non-parametric correlations among Word Learning, Identification and Empathy were conducted. Results of the Spearman correlation indicated a significant association between Word learning and Identification ($r_s = .511$, $p < .001$). This means that children tend to rank higher in the Word learning task when they have higher scores in the Identification assessment. Also, a correlation between Empathy and Identification was observed ($r_s = .56$, $p < .001$). However, no significant correlations were observed between Word learning and Empathy ($r_s = .079$, $p = .309$).

//INSERT FIG 2 ABOUT HERE//

Discussion

Just as in previous studies (Kucirkova et al., 2010; Montag, Jones, & Smith, 2015), our evidence shows that exposure to personalized stories results in a significantly better word-learning rate. However, it must be pointed out that an additional contribution of the present study is that it allows us to identify specific pieces of information as the active factor in (or, at least, one of the factors involved in) eliciting the effect. The working hypothesis of the similarity-based personalization method is that the response of identification may be the factor that explains the facilitation effect. Recall that the general idea is that this method of personalization may induce *identification*, which

would ultimately result in attention and memory enhancement. Results from the learning test confirmed the learning facilitation effect and results from the identification questionnaire confirmed the presence of a response of identification by means of the personalized stories. Moreover correlations were observed between identification and learning, which further confirms the hypothesis that identification is the mediating mechanism responsible for the beneficial effect of personalization.

//INSERT FIG 3 ABOUT HERE//

Now, the variable that has been manipulated in our personalization method consists of small items of information pertaining to the reader. The manipulation consisted in attributing this information to the story's characters and circumstances. We expected that the reader would recognize those items of information and, as a result, he would see the story's characters as similar to himself. Thus, our expectation about identification was confirmed not only because scores were higher in the personalized condition, but also because the identification effect was correlated to the word-learning rate.

As an additional indicator of identification, we administered an empathy-measuring instrument. However, no significant difference in empathy response between the control and experimental groups was found. Now, two considerations are relevant to this: 1) we do not need to assume that there is an emotional or experiential engagement. The listener may simply identify himself with the protagonist in the sense that he recognizes that the information in the story and his personal information are similar. For instance, imitation and similarity are taken as identification markers by Huesmann et al., (1984), Sheehan (1983), Wiegman et al., (1992) or Basil (1996); and 2) although our questionnaire may be reliable for indicating different levels of empathy, emotional situations suitable for empathy assessment across the story may not have been enough

in number and salience to elicit a measureable effect. Reducing thus the potential sensitivity of the instrument.

Advantages of similarity-based personalization

Similarity-based personalization has potential for applications. Recall that one of the advantages of the personalization method studied here is that it can be implemented in a very controlled manner, by merely modifying designated locations in the text. By the same token, the approach also depends solely on specific items of information. Unlike many studies, we have avoided the complexities of interaction in the act of reading, and of the child's engagement with the book. Of course, the effect of learning facilitation depends on many factors; the advantage of our approach is that we have identified and isolated one of such factors, namely the information that induces identification, that is, the customized information that makes the children and the story's characters similar.

Children showed an equalized performance regardless of their initial differences. The personalized story not only facilitated learning, but also leveled the playing field for children. This feature is of particular interest for applications in, for instance, education. The control group showed a higher variability in learning performance. This means that exposure to the personalized book resulted in children performing equally well, regardless of its initial characteristics and abilities.

In sum, one of the contributions of this study is that improves our knowledge about what characteristics of the text operate in bringing about an effect of learning facilitation. Another contribution is that the personalized story seems to level the field for children. Thus, in addition to its role as cognitive facilitator, similarity-based personalization may serve as a promoter of opportunities for children. These advantages mean that potential users of our personalization method are offered concrete

opportunities for further exploring and adjusting personalization, to better cater to their specific needs. For example, information such as familiar people and tastes were integrated in our personalization, but if the availability of such information is an issue, the practitioner can look for alternative information that fits his necessities and that plays the role of inducing identification. Or, for example, the information can be adapted to specific groups of children: children of different ages, in different grades, different schools or different cultures.

Finally, the simplicity of the method makes it attractive to be applied in a wide range of fields. The testing of our personalization method is thus of interest to practitioners: the method allows them to design more focused and efficient interventions, since they know what to modify to obtain a specific result. Similarly, our study is of interest to researchers, since it gives them a platform to identify further causal factors and to develop more specific hypothesis to investigate.

Supplementary materials

Supplementary materials of this article can be found online.

Appendix 1. *Questionnaire for personalization based on parent report.*

Appendix 2. *Non-personalized story (female).*

Appendix 3. *Personalized story (example).*

Appendix 4. *Word-learning test.*

Appendix 5. *Empathy and Identification Scale.*

Acknowledgements:

Thanks to Alejandra Brito for her assistance in data collection. Special thanks to parents, authorities and children of the elementary schools (*Escuelas Primarias Tepoztecatl, 15 de septiembre de 1810* and *Tierra y Liberatad*) of Morelos for their willingness to participate.

References

- Basil, M. D. (1996). Identification as a mediator of celebrity effects. *Journal of Broadcasting & Electronic Media*, 40(4), 478–495.
- Cohen, J. (2001). Defining identification: A theoretical look at the identification of audiences with media characters. *Mass Communication & Society*, 4(3), 245–264.
- Dickinson, D. K., Griffith, J. A., Golinkoff, R. M., & Hirsh-Pasek, K. (2012). How Reading Books Fosters Language Development around the World. *Child Development Research*, 2012, 1–15. <https://doi.org/10.1155/2012/602807>
- Eisenstock, B. (1984). Sex-role differences in children's identification with counterstereotypical televised portrayals. *Sex Roles*, 10(5–6), 417–430.
- Flewitt, R., Messer, D., & Kucirkova, N. (2015). New directions for early literacy in a digital age: The iPad. *Journal of Early Childhood Literacy*, 15(3), 289–310. <https://doi.org/10.1177/1468798414533560>
- Green, M. C. (2008). Research Challenges: Research challenges in narrative persuasion. *Information Design Journal*, 16(1), 47–52.
- Huesmann, L. R., Lagerspetz, K., & Eron, L. D. (1984). Intervening variables in the TV violence-aggression relation: Evidence from two countries. *Developmental Psychology*, 20(5), 746.
- Kucirkova, N., Messer, D., & Whitelock, D. (2013). Parents reading with their toddlers: The role of personalization in book engagement. *Journal of Early Childhood Literacy*, 13(4), 445–470. <https://doi.org/10.1177/1468798412438068>
- Kucirkova, Natalia, Messer, D., & Sheehy, K. (2014). Reading personalized books with preschool children enhances their word acquisition. *First Language*, 34(3), 227–243.
- Kucirkova, Natalia, Messer, D., & Whitelock, D. (2010). Sharing personalized books: A practical solution to the challenges posed by home book reading interventions. *Literacy Information & Computer Education Journal*, 1(3), 263–272.
- Liebes, T., & Katz, E. (1990). *The export of meaning: Cross-cultural readings of Dallas*.
- Maccoby, E. E., & Wilson, W. C. (1957). Identification and observational learning from films. *The Journal of Abnormal and Social Psychology*, 55(1), 76.

- Montag, J. L., Jones, M. N., & Smith, L. B. (2015). The Words Children Hear Picture Books and the Statistics for Language Learning. *Psychological Science*, 26(9), 1489–1496. <https://doi.org/10.1177/0956797615594361>
- Newcombe, R., & Reese, E. (2004). Evaluations and orientations in mother–child narratives as a function of attachment security: A longitudinal investigation. *International Journal of Behavioral Development*, 28(3), 230–245. <https://doi.org/10.1080/01650250344000460>
- Sheehan, P. W. (1983). Age trends and the correlates of children's television viewing. *Australian Journal of Psychology*, 35(3), 417–431.
- Wiegman, O., Kuttschreuter, M., & Baarda, B. (1992). A longitudinal study of the effects of television viewing on aggressive and prosocial behaviours. *British Journal of Social Psychology*, 31(2), 147–164

Tables and Figures

Table 1 Descriptive data. Summary of measures by condition

	Type of story (condition)	
	Personalized (M) (SD)	Non personalized (M) (SD)
Age	6y 4m (3m)	6y 7m (3m)
School performance	8.71 (.18)	8.76 (.62)
Word learning	7.06 (.73)	5.26 (1.79)
Identification (proportion)	.91 (.10)	.64 (.25)
Empathy	.77 (.18)	.72 (.17)

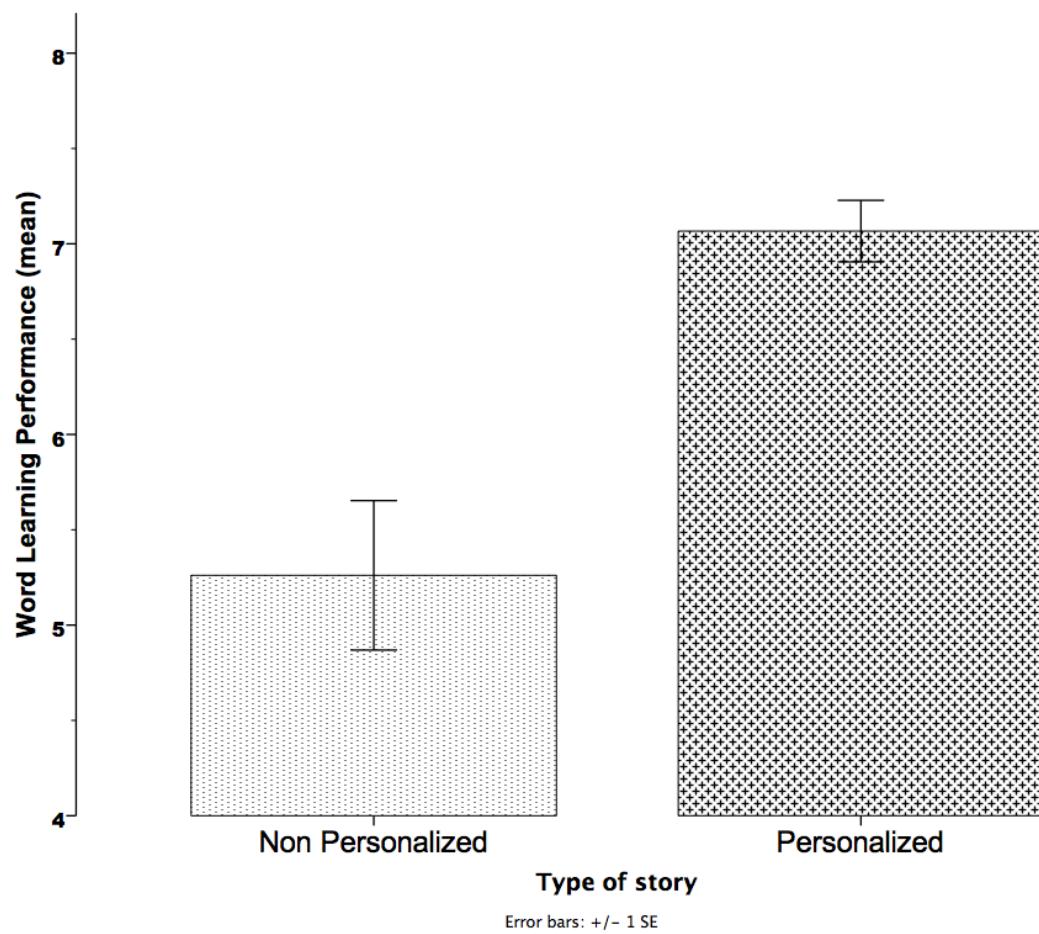


Figure 1

Mean (+/- 1 standard error) of word learning performance (where 0 is the minimum and 8 is the maximum learning). T-test showed a significant difference between conditions ($p < .05$)

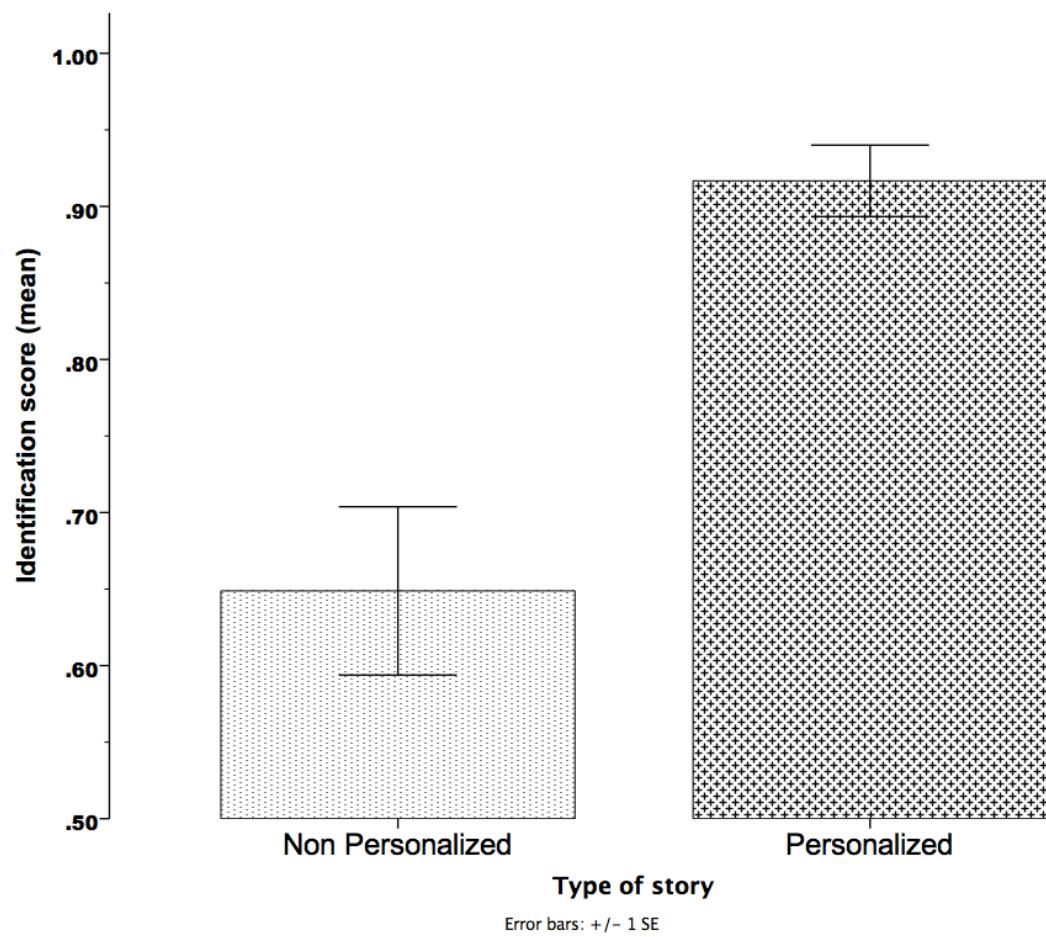


Figure 2

Mean (± 1 standard error) of identification score (where 0 is no identification and 1 is total identification). T-test showed a significant difference between conditions ($p < .05$)

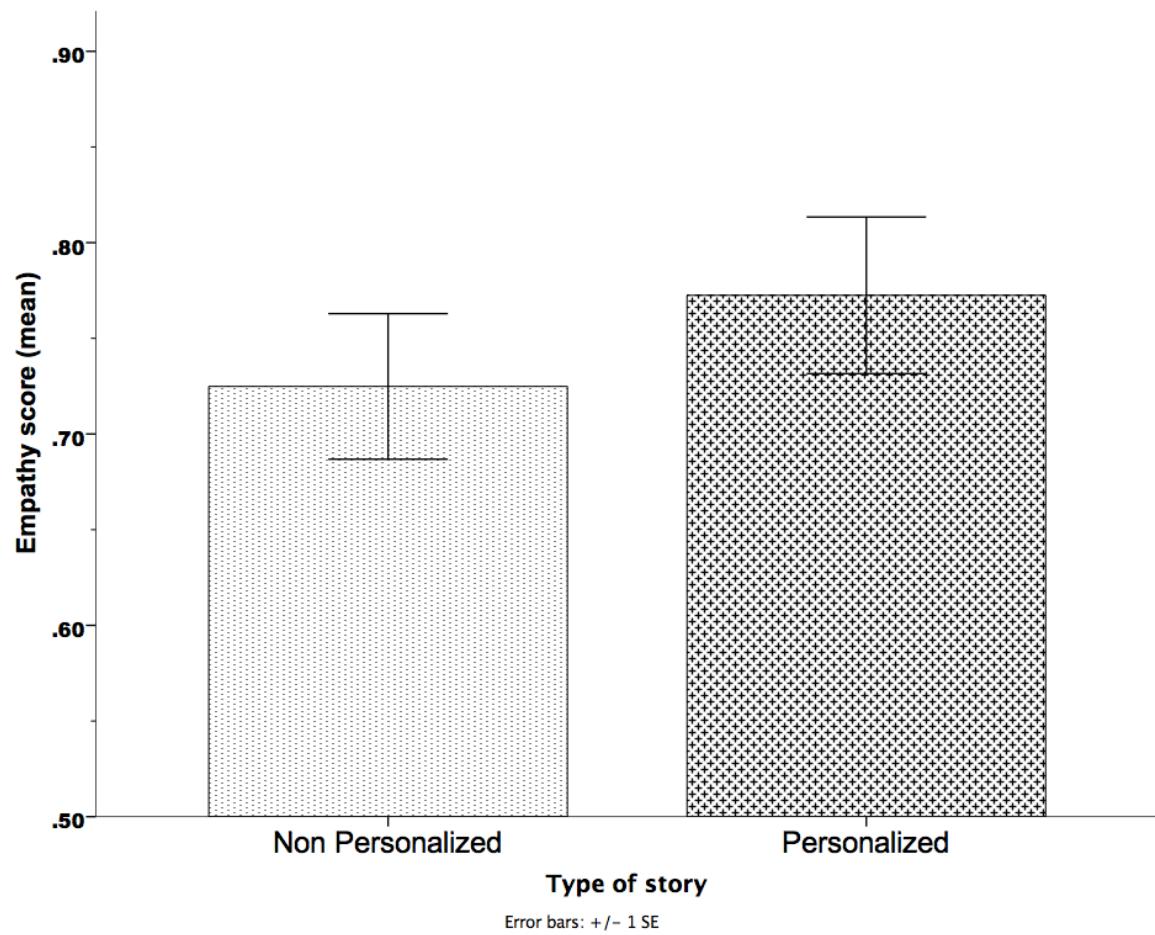


Figure 3

Mean (+/- 1 standard error) of empathy score (where 0 is no empathy and 1 is total empathy). No significant difference was observed ($p > .05$)

Figure 1

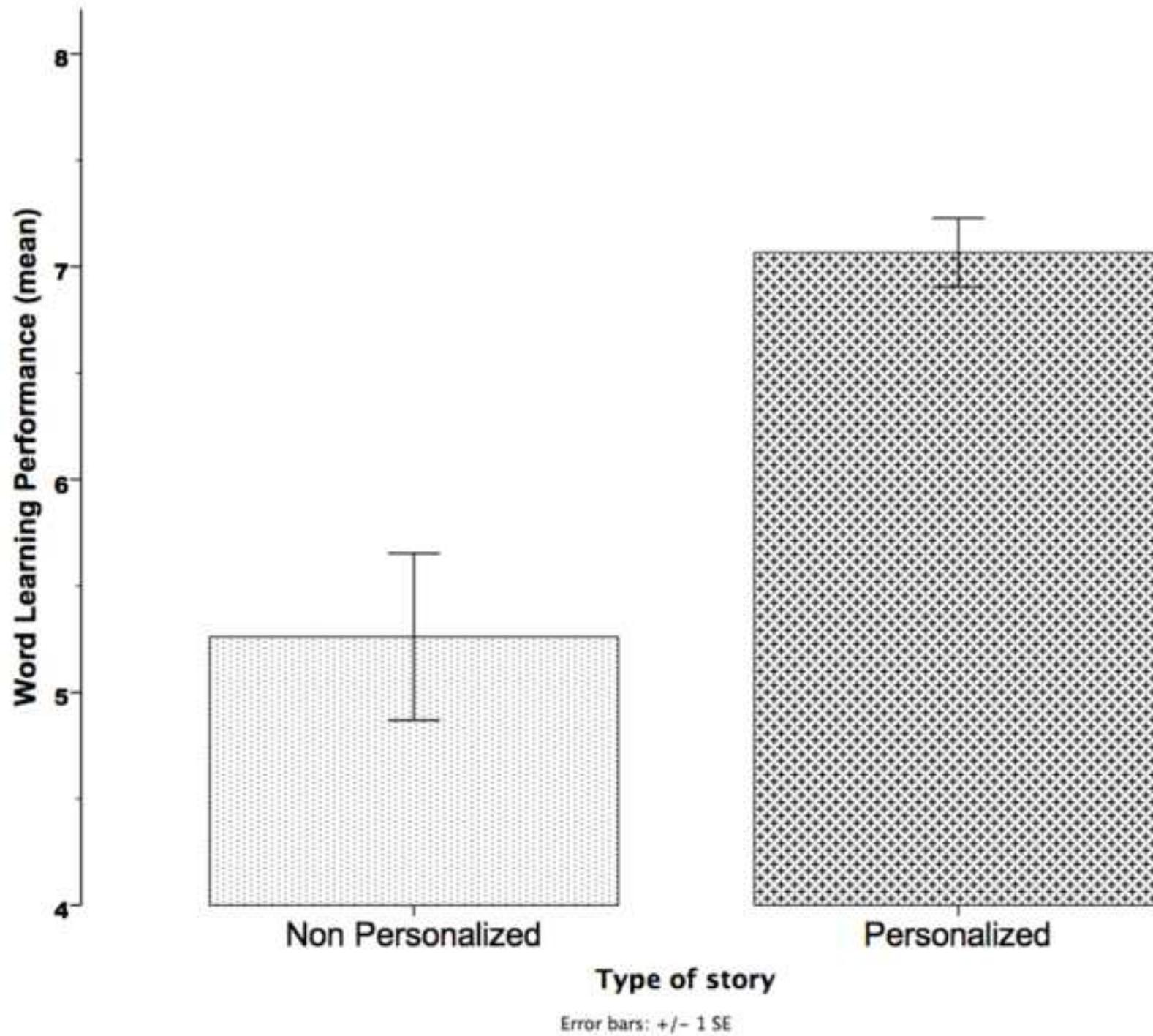
[Click here to access/download;Figure;Fig1.tif](#)

Figure 2

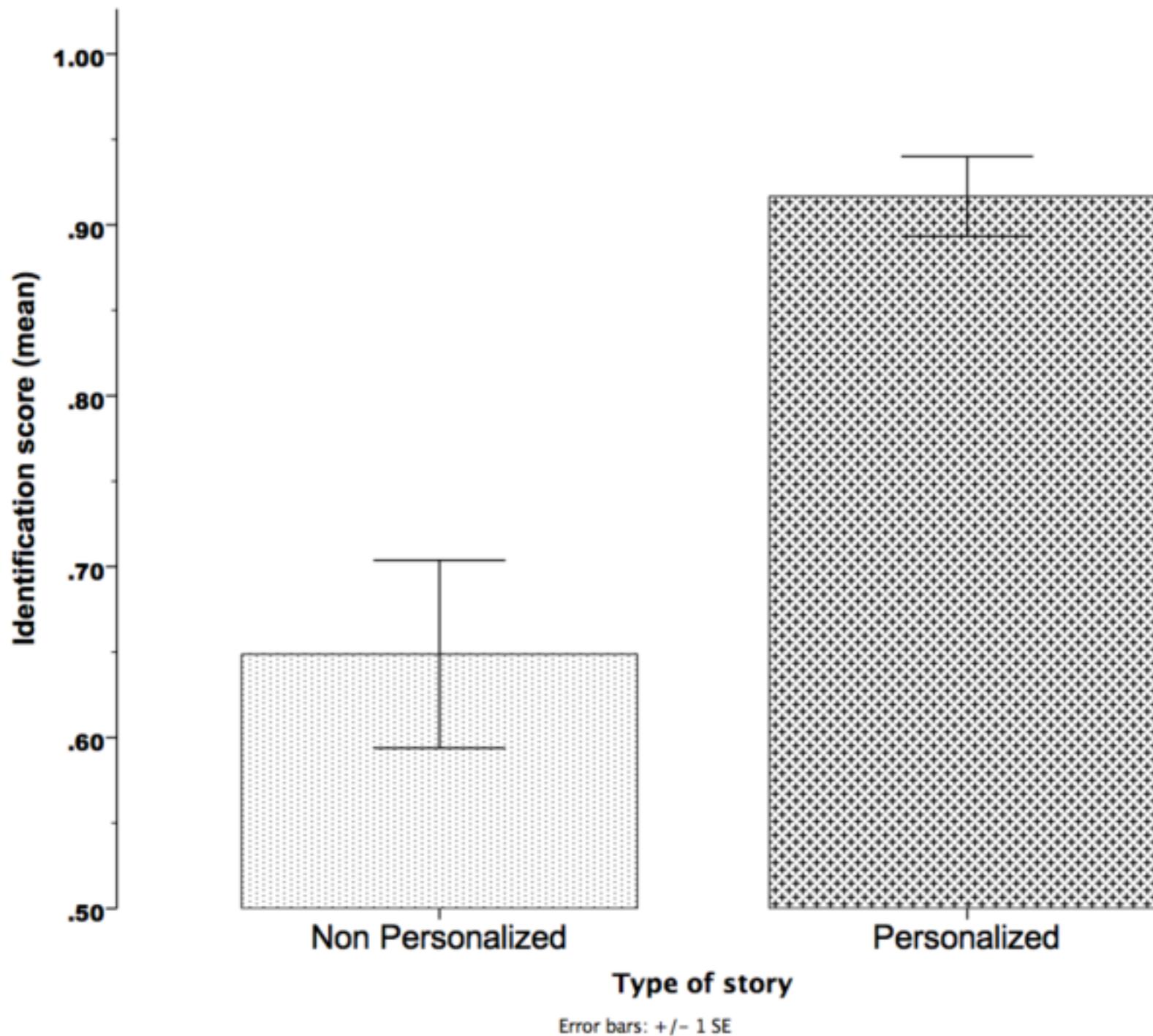
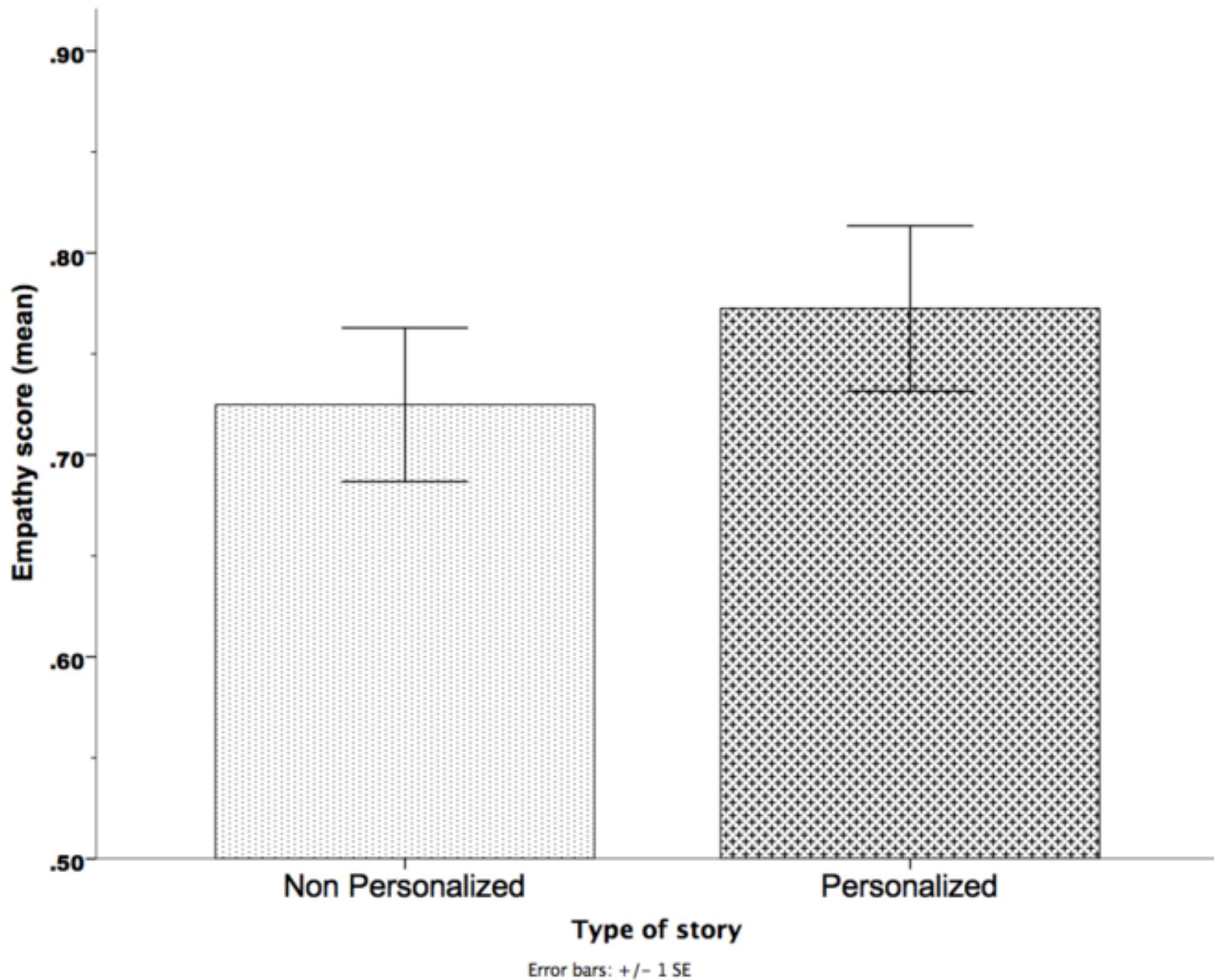
[Click here to access/download;Figure;Fig2.tif](#)

Figure 3

[Click here to access/download;Figure;Fig3.tif](#)



Questionnaire. Translated version (English)

The Autonomous University of the State of Morelos and the Laboratory of Human Communication and Cognition cordially invite you to participate in this research project:

Personalization of stories and Word learning

Reading stories is a valuable opportunity to interact and spend time with our children. It is a moment in which we manage to connect with them in such a way that we get to know them more.

Children greatly enjoy this activity because it allows them for a moment to enter fantastic worlds full of adventure where the most exciting thing is to live new experiences through the characters.

What if your child became that character? We invite you to make this possible by answering this questionnaire that will allow us to personalize a story for your child, hoping on the one hand that the experience will become enriching for you and on the other it will allow us to find data that will give us the necessary information to learn more about how the children learn new words and develop language.

All information will be confidential and for the exclusive use of the Laboratory of Human Communication and Cognition and its researchers.

Name of the child: _____

Age: _____ years _____ months

Questionnaire for the personalization of stories

Please answer the following fields as accurately as possible. Thank you.

1. Write the name by which you regularly call your child and two ways in which you call him affectively.

2. Write the name of the father, mother and two brothers / sisters of your child specifying the relationship they have with him / her. Example: Paco- brother. In case of no brothers / sisters, please write the name of cousins.

3. If you have a pet, write its name and specie. Example: Max- dog

4. Write the name of a major avenue that your child recognizes.

5. Write the name of the neighborhood in which your child lives.

6. Write the name of a park that your child knows about.

7. Write the name of a *Plaza* or Shopping Center that your child knows.

8. Mention what your child's favorite food is.

9. Mention your child's favorite ice cream flavor.

10. Mention what your child's favorite treat is.

11. Write the name of your child's favorite character. Example: from movies or comics, or cartoons or stories.

12. Mention what your child's favorite story is.

13. Mention what your child's favorite game is. Example: ball, hide and seek, bicycle, videos, puzzles, etc.

14. What is your child's favorite toy?

15. Mention what is the name of your child's favorite song.

16. Write one reason why you would habitually scold your child. Example: does not want to eat, does not pick up his toys, does not want to do homework, etc.

Questionnaire. Original version (Spanish)

La Universidad Autónoma del Estado de Morelos y el Laboratorio de Comunicación Humana y Cognición le invitan cordialmente a participar en este proyecto de investigación:
Personalización de Cuentos y Aprendizaje de Palabras

La lectura de cuentos es una oportunidad valiosa para interactuar y convivir con nuestros hijos. Es un momento en el cual logramos conectarnos con ellos de tal forma que llegamos a conocerlos más.

Los niños disfrutan enormemente esta actividad porque les permite por un momento adentrarse a mundos fantásticos y llenos de aventura dónde lo más excitante es vivir con el personaje sus experiencias.

¿Qué pasaría si su hijo/a se convirtiera en ese personaje? Le invitamos a hacer eso posible contestando este cuestionario que nos permitirá personalizar un cuento para su hijo esperando por una parte que la experiencia llegue a ser enriquecedora para ustedes y por otra nos permitirá encontrar datos que nos darán información necesaria para conocer más acerca sobre cómo los niños aprenden nuevas palabras y desarrollan el lenguaje.

Toda la información será confidencial y de uso exclusivo del Laboratorio de Comunicación Humana y Cognición y sus investigadores.

Nombre del niño/niña: _____

Edad: _____ años _____ meses

Cuestionario para la personalización de cuentos

Por favor responda los siguientes campos de la manera más precisa posible. Muchas gracias.

1. Escriba el nombre con el que llama regularmente a su hijo/a y dos formas en las que le dice de cariño.

2. Escriba el nombre del papá, la mamá y dos hermanos/hermanas de su hijo/a especificando el parentesco que tienen con él/ella. Ejemplo: Paco- hermano. En caso de no tener hermanos/hermanas, por favor escriba el nombre de primos/primas.

3. En caso de tener mascota escriba su nombre y especie. Ejemplo: Max- perro

- _____
4. Escriba el nombre de una avenida principal que su hijo/a reconozca.
- _____

5. Escriba el nombre de la Colonia en la que vive su hijo/a.
- _____

6. Escriba el nombre de un parque que su hijo/a conozca.
- _____

7. Escriba el nombre de una Plaza o Centro Comercial que su hijo/a conozca.
- _____

8. Mencione cuál es la comida preferida de su hijo/a.
- _____

9. Mencione cuál es el sabor preferido de helado de su hijo/a.
- _____

10. Mencione cuál es la golosina preferida de su hijo/a.
- _____

11. Escriba el nombre del personaje favorito de su hijo/a. Ejemplo: de películas o comics, o caricaturas o cuentos.
- _____

12. Mencione cuál es el cuento preferido de su hijo/a.
- _____

13. Mencione cuál es el juego favorito de su hijo/a. Ejemplo: pelota, escondidas, bicicleta, videos, rompecabezas, etc.
- _____

14. Mencione cuál es el juguete favorito de su hijo/a.
- _____

15. Mencione cuál es el nombre de la canción favorita de su hijo/a.

16. Escriba una razón por la que habitualmente regañaría a su hijo/a. Ejemplo: no quiere comer, no recoge sus juguetes, no quiere hacer tarea, etc.

Appendix 2. Non-personalized story (male). Fields outlined in blue correspond to the information to be replaced in the personalized stories.



Vinicio, era un niño que disfrutaba mucho ir a la escuela y estudiar.

Un día, casi al llegar a su casa, no podía creer lo que veía:



Había unos letreros enormes pegados por todas partes del vecindario. Estaban pegados en la Avenida Principal, en los

árboles, en las paredes y hasta en la cabeza de un animalito que iba pasando por ahí.



Pero lo que en verdad sorprendió a **Vinicio**, fue que al ver esos letreros supo que no podría guardar por más tiempo su gran secreto.

Los letreros mostraban a los 4 monstruos que **Vinicio** escondía debajo de su cama.

Con unas letras gigantes estaba escrito:



¡MonSTRUOS dEsAPARECIDOS!

SI ALGUIEN CONOCE SU PARADERO FAVOR DE
COMUNICARSE AL TELÉFONO 1-23-45-67



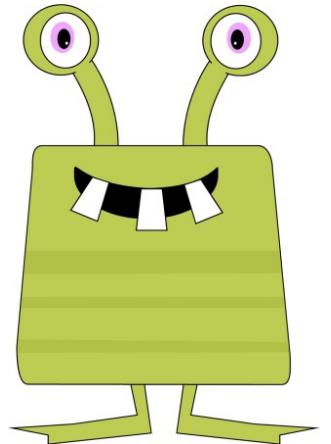
¡Atención!
Sus nombres son
muy importantes

¿Sus nombres son muy importantes?
Vinicio no entendió muy bien que querían decir con eso, pero después pensó qué tal vez los monstruos estarían en peligro si él no recordaba el nombre correcto de cada uno.

Fue hasta entonces que Vinicio supo que él monstruo azul que amaba el helado era Roco.



Que la monstruo verde que le gustaba comer todo era Sasi



Que el monstruo naranja que se divertía siempre jugando era Bori



Y que el monstruo amarillo que disfrutaba leer era Dodo



Después de ver los letreros, Vinicio comenzó a llorar porque sabía que los monstruos no eran suyos y que tendría que regresarlos, pero no quería hacerlo, ¡eran sus mejores amigos!

Ya sentado en su cama, mientras comía los dulces que le regaló su papá el **Sr. Zerbini**, decidió que iba a devolverlos, después de todo, la familia de los monstruos debería de estar extrañándolos muchísimo.





Cuando la **Sra. Ottavia**, mamá de Vinicio, llamó por teléfono al número que vio en el letrero, le dijeron que era muy importante que al entregar a los monstruos , recordara cuáles eran sus nombres, ya que de lo contrario podrían quedarse solos y perdidos para siempre.

¡Para siempre! ¡Solos! ¡Sin sus papás! ¡No eso no! -pensó **Vinicio**, y comenzó a imaginar a sus amigos perdidos y solos si él no lograba recordar sus nombres correctamente.

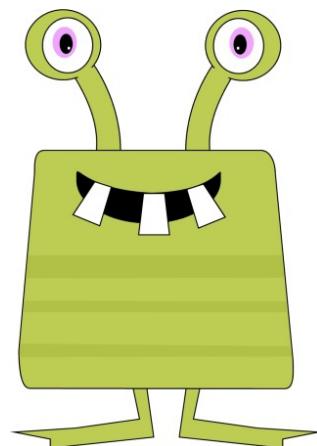


Así que comenzó a practicar:

El monstruo con tentáculos y que ama el helado es Roco.



La de dientes grandes y que le gusta comer todo se llama Sasi.



El monstruo con tres ojos y que se divertía siempre jugando es Bori.



Y el monstruo con cuernos que disfruta leer es Dodo.

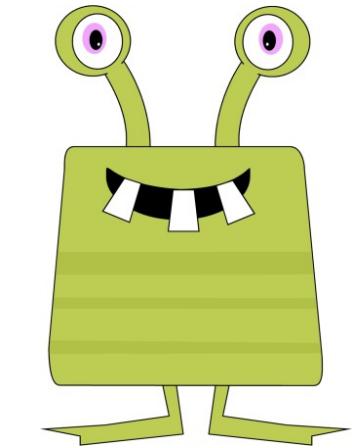


Así estuvo practicando Vinicio hasta que por fin llegó el momento de entregar a sus amigos los monstruos, y como éstos eran muy educados, cada uno le dio un regalo de despedida a Vinicio como agradecimiento por su hospitalidad.

El **cuento** fue un regalo de Roco.



La **comida** fue preparada por Sasi.



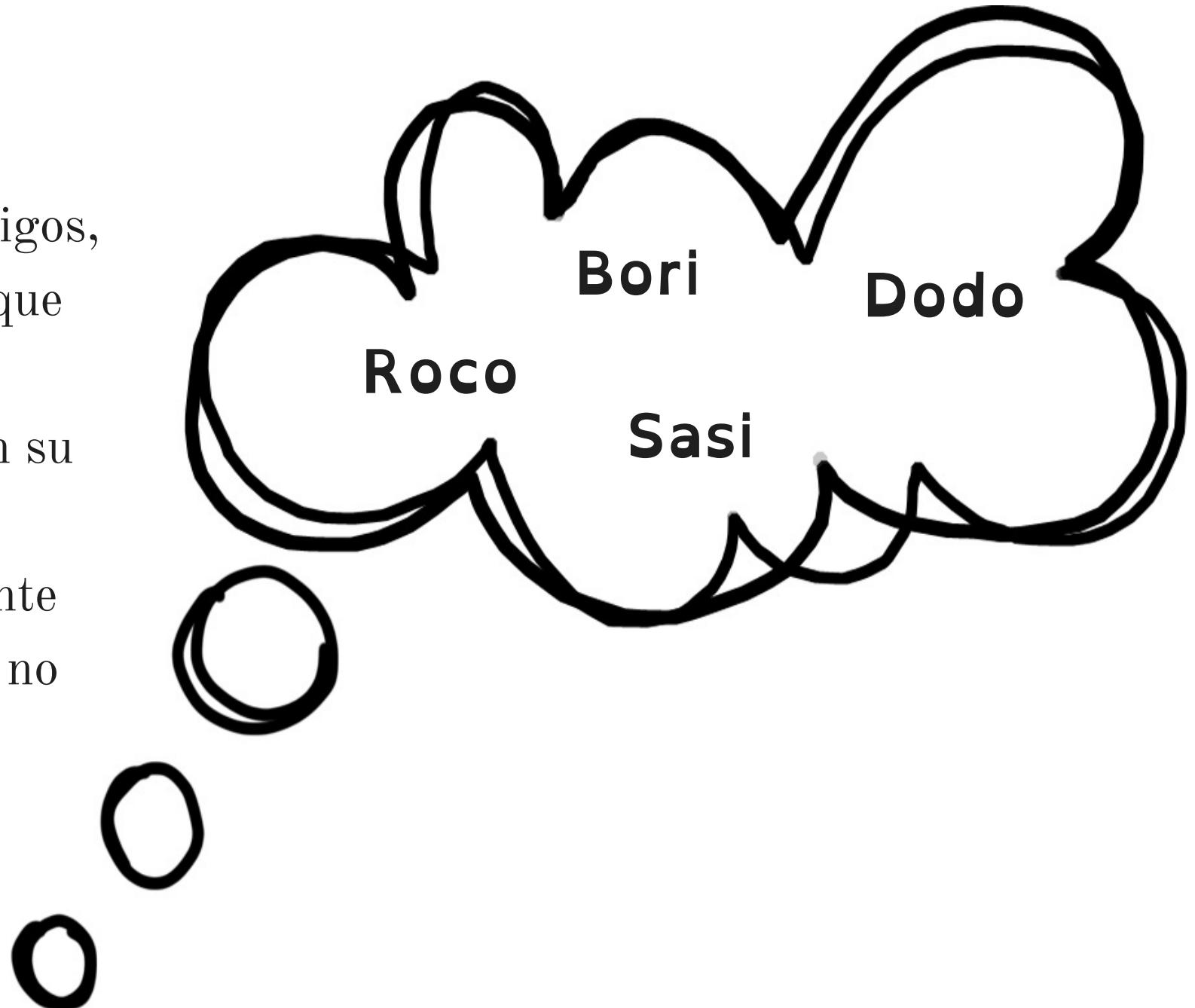
El **disfraz** lo diseñó Bori.



Y el **juguete** se lo regalo Dodo.

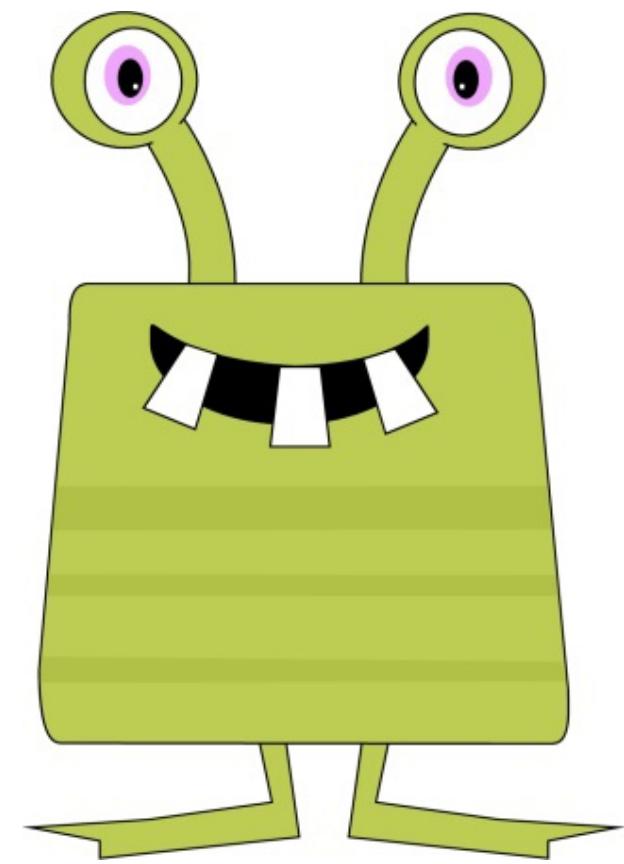


No fue fácil para
Vinicio decidir
regresar a sus amigos,
pero él no quería que
los monstruos se
quedaran solos sin su
familia. Por eso,
practicó nuevamente
sus nombres para no
olvidarlos.





Roco



Sasi



Bori



Dodo

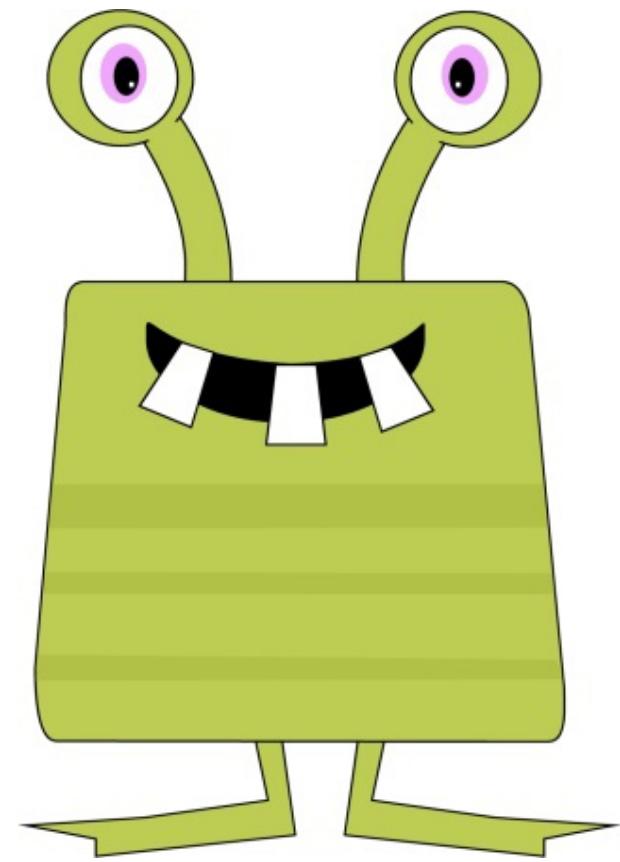
Cuando terminó de practicar, logró sentirse mejor. Claro que ayudó mucho la **rica fruta** que se comió mientras escuchaba un poco de música.

Ya llegado el momento,
Vinicio se despidió de cada uno de los monstruos:





¡Adiós Roco!



¡Hasta pronto Sasi!



¡Bye Bori!



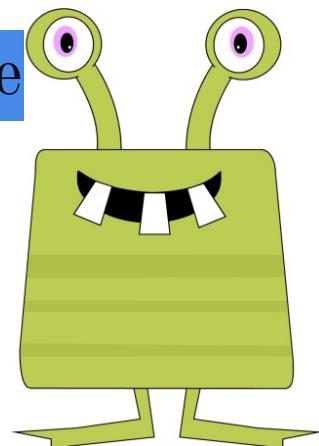
¡Te extrañaré Dodo!

Y así fue que **Vinicio** y **sus primos**
Fiero y **Angelo** fueron entregando a
cada uno de los monstruos según las
instrucciones, teniendo cuidado de no
equivocarse.

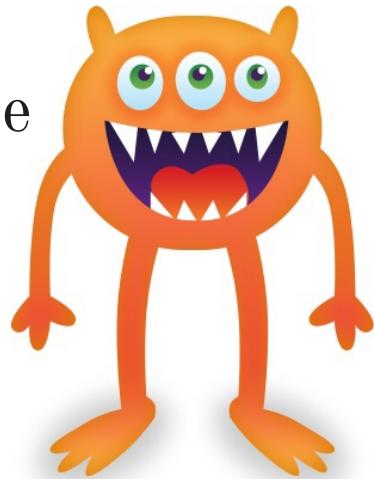
El monstruo que ama
el **helado** es...



La monstruo que **come**
todo es...



El monstruo que se
divierte siempre
jugando es...



Y el monstruo que disfruta
mucho **leer** es...



¡Listo! Misión cumplida. Todo salió a
la perfección y los monstruos
regresaron sanos y salvos a sus casas.

Un par de semanas después,
Vinicio recibió por correo una foto
de una linda playa en donde los
monstruos estaban felices junto
con toda su familia.

Vinicio ahora más que nunca se sintió
muy contento por haber sido honesto
y haber dicho la verdad a sus papás,
quienes por cierto, tenían una
sorpresa para él.



Al entrar a su recámara, Vinicio comenzó a escuchar un ruidos extraños que salían debajo de su cama.

Al principio, se sentía un poco nervioso, pero respiró profundamente, se acercó a la cama y entonces ¡Órale! ¡Ahí estaban!

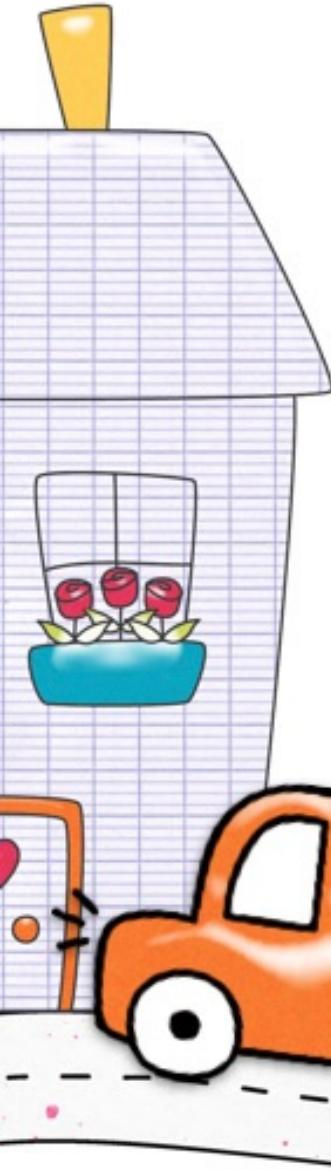


Appendix 3. Personalized story (example). Fields outlined in blue correspond to the interchangeable personalized information.





Bri, era una niña que disfrutaba mucho practicar artes marciales. Un día, casi al llegar a su casa, no podía creer lo que veía:



Había unos letreros enormes pegados por todas partes de la Barona. Estaban pegados en la Avenida de las Flores, en los

árboles, en las paredes y hasta en la cabeza de Donatello que iba pasando por ahí.



Pero lo que en verdad sorprendió a Bri, fue que al ver esos letreros supo que no podría guardar por más tiempo su gran secreto.

Los letreros mostraban a los 4 monstruos que Bri escondía debajo de su cama.

Con unas letras gigantes estaba escrito:



¡MonSTRUOS dEsAPARECIDOS!

SI ALGUIEN CONOCE SU PARADERO FAVOR DE
COMUNICARSE AL TELÉFONO 1-23-45-67



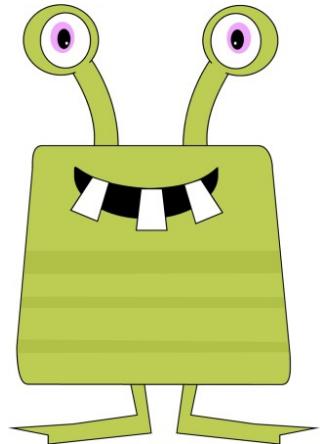
¡Atención!
Sus nombres son
muy importantes

¿Sus nombres son muy importantes? Bri no entendió muy bien que querían decir con eso, pero después pensó qué tal vez los monstruos estarían en peligro si ella no recordaba el nombre correcto de cada uno.

Fue hasta entonces que Bri supo que él monstruo azul que amaba el helado de galleta era Roco.



Que la monstruo verde que le gustaba comer enchiladas era Sasi.



Que el monstruo naranja que se divertía siempre jugando al Lobo Feroz era Bori.



Y que el monstruo amarillo que disfrutaba leer Peter Pan era Dodo.



Después de ver los letreros, **Bri** comenzó a llorar porque sabía que los monstruos no eran suyos y que tendría que regresarlos, pero no quería hacerlo, ¡eran sus mejores amigos!

Ya sentada en su cama, mientras comía el chocolate que le regaló su papá el **Sr. Freddy**, decidió que iba a devolverlos, después de todo, la familia de los monstruos debería de estar extrañándolos muchísimo.





Cuando la **Sra. Brenda**, mamá de **Bri**, llamó por teléfono al número que vio en el letrero, le dijeron que era muy importante que al entregar a los monstruos , recordara cuáles eran sus nombres, ya que de lo contrario podrían quedarse solos y bajo los truenos para siempre.

¡Para siempre! ¡Solos! ¡Bajo los truenos! ¡No eso no! - pensó **Bri**, y comenzó a imaginar a sus amigos bajo los truenos y solos si ella no lograba recordar sus nombres correctamente.

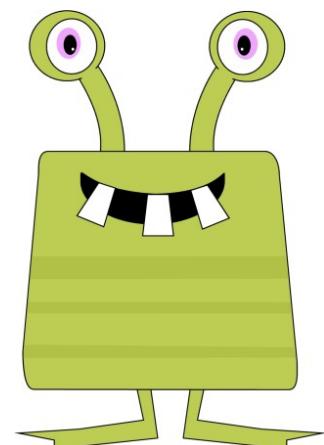


Así que comenzó a practicar:

El monstruo con tentáculos y que ama el helado de galleta es Roco.



La de dientes grandes y que le gusta comer enchiladas se llama Sasi.



El monstruo con tres ojos y que se divertía siempre jugando al Lobo Feroz es Bori.



Y el monstruo con cuernos que disfruta leer Peter Pan es Dodo.

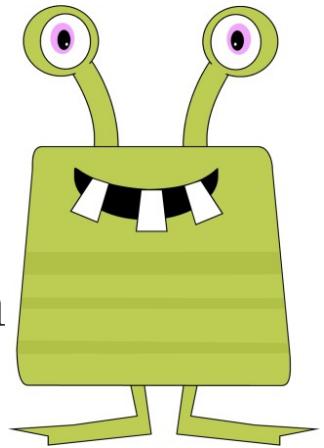


Así estuvo practicando Bri hasta que por fin llegó el momento de entregar a sus amigos los monstruos, y como éstos eran muy educados, cada uno le dio un regalo de despedida a Bri como agradecimiento por su hospitalidad.

El CD de Katty Perry fue un regalo de Roco.



Las **enchiladas** fueron preparadas por Sasi.



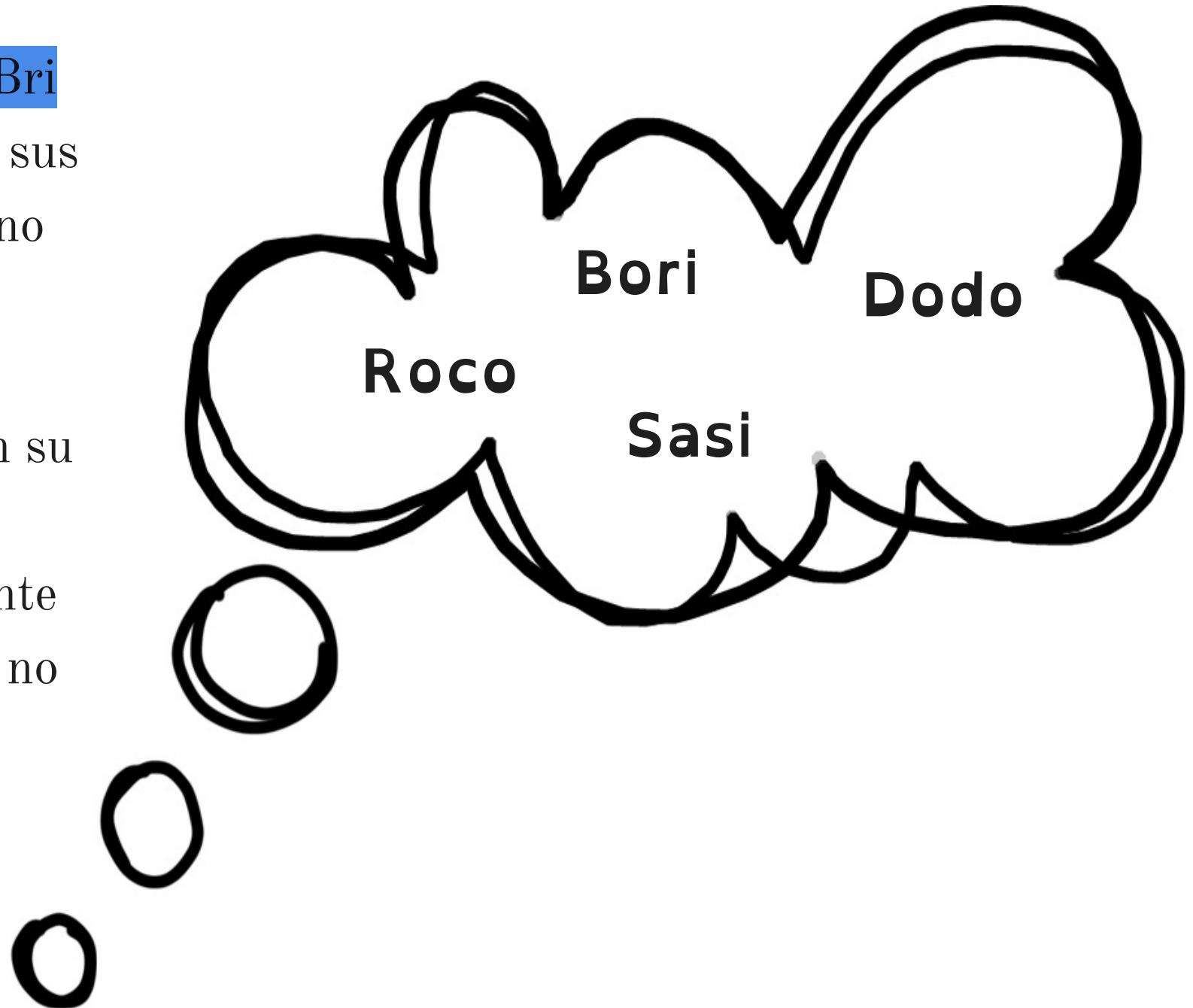
El **disfraz** de Tinker Bell lo diseñó Bori.

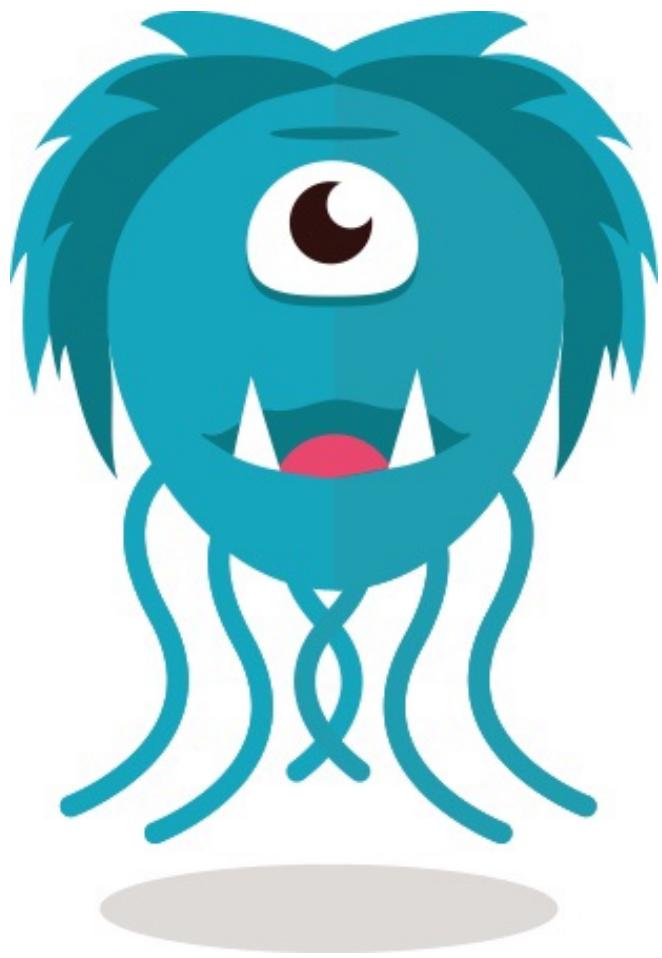


Y la **avalancha** se lo regaló Dodo.

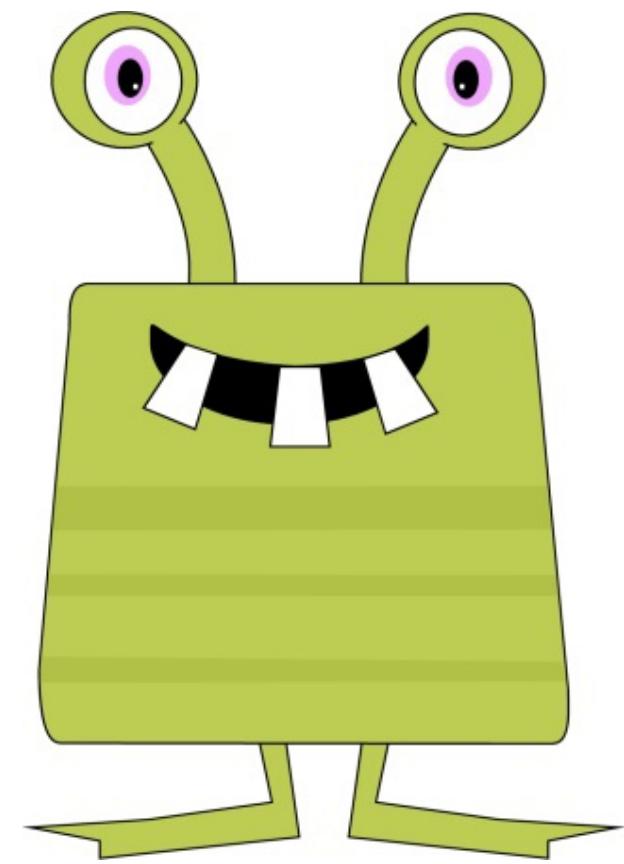


No fue fácil para Bri decidir regresar a sus amigos, pero ella no quería que los monstruos se quedarán solos sin su familia. Por eso, practicó nuevamente sus nombres para no olvidarlos.





Roco



Sasi



Bori



Dodo

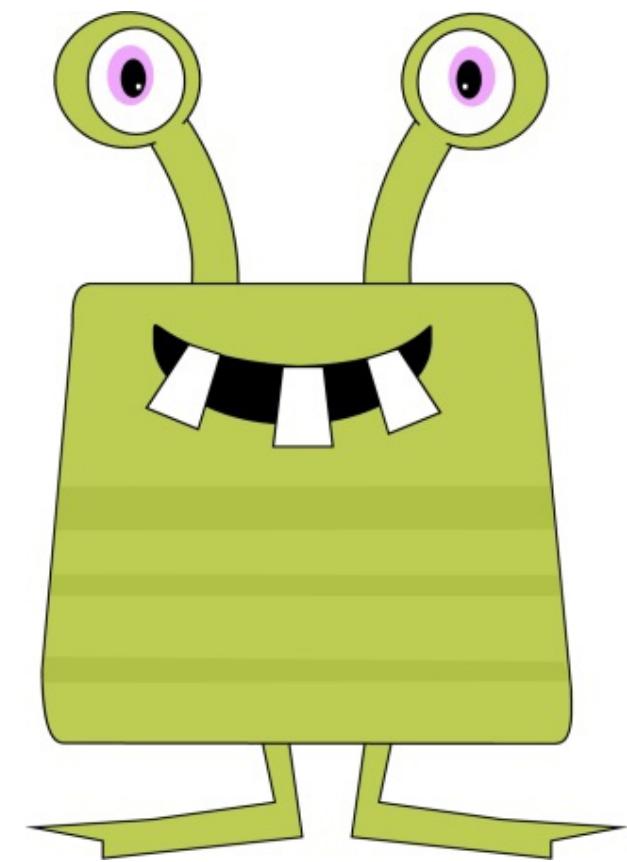
Cuando terminó de practicar, logró sentirse mejor. Claro que ayudó mucho la rica sandía que se comió mientras escuchaba la canción *Me enamoré.*

Ya llegado el momento, Bri se despidió de cada uno de los monstruos:





¡Adiós Roco!



¡Hasta pronto Sasi!



¡Bye Bori!



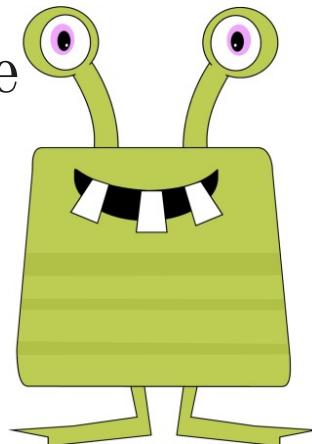
¡Te extrañaré Dodo!

Y así fue que Bri y sus **prima Jennifer**
y su hermana Frida fueron entregando a cada uno de los monstruos según las instrucciones, teniendo cuidado de no equivocarse.

El monstruo que ama el **helado de galleta** es...



La monstruo que come **enchiladas** es...



El monstruo que se divierte siempre jugando al **Lobo Feroz** es...



Y el monstruo que disfruta mucho leer **Peter Pan** es...



¡Listo! Misión cumplida. Todo salió a la perfección y los monstruos regresaron sanos y salvos a sus casas.

Un par de semanas después, Bri recibió por correo una foto de una linda playa en donde los monstruos estaban felices junto con toda su familia.

Bri ahora más que nunca se sintió muy contenta por haber sido honesta y haber dicho la verdad a sus papás, quienes por cierto, tenían una sorpresa para ella.



Al entrar a su recámara, Bri comenzó a escuchar un ruidos extraños que salían debajo de su cama.

Al principio, se sentía un poco nerviosa, pero respiró profundamente, se acercó a la cama y entonces ¡Órale! ¡Ahí estaban!



Appendix 2. Word learning test (translated to English)

Answers sheet

Name: _____
Date of birth: _____
Date: _____

Imaging test

Incorrect answer = 0

Expected answer = 1

Don't know / don't answer = 0

Section I: The 4 words are named (while presenting all 4 monsters simultaneously)



1. Who is Roco? ()
2. Who is Sasi? ()
3. Who is Dodo? ()
4. Who is Bori? ()

Section II: Monsters are presented in pairs



1.1 Who is Sasi? ()

1.2 What is its name? (pointing to one of the monsters) () Expected response: Dodo



2.1 Who is Bori? ()

2.2 What is its name? (pointing to one of the monsters) () Expected response: Roco

Prueba de aprendizaje de palabras (original versión)

Hoja de Respuestas

Nombre: _____

Fecha de nacimiento: _____

Fecha: _____

Respuesta incorrecta = 0

Respuesta deseada = 1

No sabe/ no responde = 0

Sección I: Se presentan las 4 palabras

1. ¿Quién es Roco? ()

2. ¿Quién es Sisi? ()

3. ¿Quién es Dodo? ()

4. ¿Quién es Bori? ()

Sección II: Se presentan en pares

1.1 ¿Quién es Sisi? ()

1.2 ¿Cuál es su nombre? () Respuesta esperada: Dodo

2.1 ¿Quién es Bori? ()

2.2 ¿Cuál es su nombre? () Respuesta esperada: Roco

Appendix 5. Adaptation of the *Empathy and Identification Scale*. Translation to English.

Answers sheet

Unexpected answer = 0

Expected answer = 1

Don't know / don't answer = 0

1.- Did you like Rosella? ()

2.- How did you feel when Rosella found out that she had to give up the monsters? ()

3.- Which of these characters do you think is like you? ()

4.- If the same thing that happened to Rosella had happened to you, what would you have done? ()

5.- Before delivering the monsters, do you remember where Rosella used to hide them? ()

6.- Do you think you look like Rosella? ()

7.- Did you worry about what was happening to Rosella? ()

8.- Why did Rosella decide to return to the monsters? ()

9.- Have you ever felt sad like Rosella? ()

10.- Would you like to be like Rosella? ()

11.- Did you think that Rosella was going to give up the monsters? ()

12.- Did you ever feel like you were Rosella? ()

13.- Why do you think Rosella felt sad when she found out that she had to return to the monsters? ()

14.- At some point, did you imagine that you were inside the story? ()

15.- When Rosella saw the signs with the photos of her monsters, what did you think she was going to do? ()

16. Why do you think Rosella had the monsters hidden under her bed? ()

17.- Did you ever think that you could be Rosella? ()

Adaptación de la Escala de Empatía e Identificación con los Personajes. Spanish version.

Hoja de Respuestas

Respuesta inesperada = 0

Respuesta esperada = 1

No sabe/ no responde = 0

1.- ¿Te cayó bien Rosella? ()

2.- ¿Cómo te sentiste cuando Rosella supo que tenía que entregar a los monstruos? ()

3.- ¿Cuál de estos personajes crees que es como tú? ()

4.- Si te hubiera pasado lo mismo que a Rosella ¿qué hubieras hecho? ()

5.- Antes de entregar a los monstruos ¿Recuerdas en dónde los escondía Rosella? ()

6.- ¿Crees que te pareces a Rosella? ()

7.- ¿Te preocupaste por lo que le estaba pasando a Rosella? ()

8.- ¿Por qué decidió Rosella regresar a los monstruos? ()

9.- ¿Alguna vez te has sentido triste igual que Rosella? ()

10.- ¿Te gustaría ser como Rosella? ()

11.- ¿Pensaste que Rosella iba a entregar a los monstruos? ()

12.- ¿En algún momento sentiste como si fueras Rosella? ()

13.- ¿Por qué crees que Rosella se sintió triste cuando supo que tenía que regresar a los monstruos? ()

14.- ¿En algún momento, te imaginaste que estabas dentro del cuento? ()

15.- Cuando Rosella vio los letreros con las fotos de sus monstruos, ¿Qué pensaste que iba a pasar? ()

16.- ¿Por qué crees que Rosella tenía a los monstruos escondidos debajo de su cama? ()

17.- ¿En algún momento pensaste que tu podrías ser Rosella? ()