

Pigslexia, Interactive Dyslexic Children's Book

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By

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I. ABSTRACT

Pigslexia is a children's book about a guinea pig with dyslexia. The main character in the book is my guinea pig Tootsie and the other pigs are modeled after guinea pigs my friend has. The book has many puzzles and interactive activities. I wrote the story, I created the puzzles, and I digitally painted the illustration in the book. My goal with this project was to teach children about dyslexia and that it is ok to have it. This book is dyslexia friendly and is meant for children with and without dyslexia. I have dyslexia and I know that it can be very challenging to grow up with dyslexia. I never saw a book like this when I was a child and I think that it would have helped me accept myself and help non-dyslexic children accept me.

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IV. ACKNOWLEDGMENTS

I would like to thank the creators of two fonts: justhearforprettyfonts23, the creator of Cute Written, and salstudiees, the creator of Winkle. I used these fonts throughout my book, the fonts helped me bring my book to life and were dyslexic friendly.

Thank you also to my advisors Dean O'Donnell and Adryen Gonzalez. These two wonderful people helped me throughout my journey of creating this book. Professor O'Donnell was a helpful guide when it came to creating my puzzles. With his assistance I created fun and unique puzzles that fit the theme of my book. Professor Gonzalez was extremely helpful when it came to the creation of the art in my book. She helped me discover the style of art I wanted and helped me review my art pages throughout the creation process.

I also want to thank WPI for giving me the opportunity to make such a fun and educational project for my MQP. Thank you also for all the support and education WPI has provided me these past four years.

A final thank you to the amazing guinea pigs that helped inspire me to create this book. Thank you Tootsie, Curry, and Mocha.

V. EXECUTIVE SUMMARY

My MQP, titled Pigslexia, is an interactive children's book. This book is a tool to learn about dyslexia. I researched information on children's books to make sure I properly crafted a good story. I also researched information on dyslexia. As a person with dyslexia, I know a lot about it, but I wanted to make sure my book was a proper fit for others suffering from this condition.

The story follows three guinea pigs, one of which is diagnosed with dyslexia. She hides her secret from her friends because she is ashamed. She attends extra help classes to improve her reading skills. In the end she is brave enough to tell her friends her secret. Her friends accept her for who she is. The story is based on my own life and what I went through while growing up with dyslexia. It is supposed to inspire children with dyslexia and teach them that it is ok to be dyslexic. This story is also supposed to help non dyslexic children understand what dyslexia is, since there are many misconceptions. I want this story of acceptance to help children and people suffering from dyslexia.

To help people understand what it feels like to have dyslexia, I created puzzles for my book. The puzzles in my book simulate what it feels like to read as a dyslexic person. These puzzles were all unique in style and featured fun aspects of my guinea pig story. The illustrations in my book were all digitally painted on Photoshop. I tried to have my art style be light hearted and cute. I did this by keeping the art looking hand drawn and sketchy around the edges. I wanted them to be recognizable and have features of a guinea pig but also have a fun whimsical element to them. The paintings used watercolor and pastel brushes to create a playful child look to them. They also had sketchy outlines to them, making them look hand drawn and painted.

Once I had finished my project, I created an eBook. I originally wanted my project to be a physical book; but due to time restraints and Covid-19 I chose to switch the format to an eBook. After my project was complete I created a survey for playtesters to fill out as they read through my book. I received some interesting feedback from my playtesters, most of which was positive. I did receive a few suggestions on my book, which I thought was interesting to consider. Over all my playtesters really enjoyed my book and learned a great deal from it. After reviewing my feedback from my surveys and looking over my book as a whole, I feel that my MQP was a success. I think I accomplished my goal in creating a fun, interactive, and educational book for children to learn about dyslexia.

VI. INTRODUCTION

Growing up with dyslexia is a very hard experience for many people. Children in school do not learn what dyslexia is, which means they do not understand how dyslexia affects people (Commonwealth Learning Center, Common Misconceptions about Dyslexia). It is extremely important for people to learn from a young age what dyslexia is. If people of all ages had tools to help them understand this disability, it would make the world a better place for people with dyslexia.

When I was diagnosed with dyslexia at the age of five, I was extremely scared and upset. I had no idea what it meant to be dyslexic. All I knew was that I was different from my other classmates. Not only did I know I was different, but I felt that this difference made me bad and caused me to keep my dyslexia a secret (Dyslexic Advantage, Breaking the Cycle of Shame). People can be very mean to individuals who are different from them, especially if they do not understand this difference. I felt that hiding who I was would keep me safe from ridicule and bullying (Dyslexic Advantage, Breaking the Cycle of Shame).

The following nine years after I was diagnosed I attended special classes in school. I would miss some fun class periods, such as art, to go to these classes. At the time I felt like I was being punished for having dyslexia; by having to go to these classes and miss out on what my other classmates were doing (Dyslexic Advantage, Breaking the Cycle of Shame). I also would go to reading classes over summer break, which again at the time felt like a huge punishment. But I learned over time that the extra help classes were very important for me. I was able to improve my reading and learn strategies on how to read faster and more accurately. But something these classes did not help with was me self esteem (Dyslexic Advantage, Breaking the Cycle of Shame).

I learned from my reading classes that it was ok I had dyslexia and that I can function like anyone else, but my classmates did not learn this. This lack of knowledge about dyslexia caused me to still hide who I was, even after I no longer had to attend the reading classes (Dyslexic Advantage, Breaking the Cycle of Shame). It took me three more years after my classes ended to feel like I was brave enough to come out about my dyslexia. I felt that since it was my last year of highschool I owed it to myself to be honest about who I was and not feel ashamed about my disorder. I also hoped that since my classmates were adults now that they would be mature and understand. I soon found out I was wrong about them.

When I began casually mentioning my dyslexia to my classmates, I found all my fears about how people viewed dyslexic people were right (Commonwealth Learning Center, Common Misconceptions about Dyslexia). My classmates said that they could not believe I was dyslexic since all dyslexic people are dumb and incompetent and I get good grades (Dyslexic Advantage, Breaking the Cycle of Shame). I will always remember the feeling of horror and sadness I experienced from these comments. I expected myself in that moment to never mention my dyslexia to another person again; but I grew braver. I was brave enough to take on hurtful comments in the hope that I could teach people that anyone can have dyslexia and still have a normal life. I felt I owed it not only to myself to be honest but I owed it to everyone in the world who was viewed as different.

When I arrived at WPI I never hid my dyslexia from anyone, I was honest about who I was and not ashamed of it. I knew I wanted my MQP to have guinea pigs as the main characters because I love them but I did not know what topic to feature in my book. The guinea pigs were modeled after my own guinea pig, Tootsie Roll, and my friends guinea pigs, Mocha and Curry. When it was time to come up with a topic for my guinea pig MQP, I wanted to create something

that would be positive for people. I decided that creating a book about dyslexia for people who may or may not suffer from dyslexia would be an extremely important item for many people. My goal of this MQP is to create a fun and cute childrens book that teaches people what dyslexia is and that it is fine to be dyslexic. My hope is that dyslexic children will have this tool to learn about themselves and to grow brave about who they are. I also hope that children who do not have dyslexia will learn from this book that anyone can have dyslexia and that they are really no different than anyone else.

I decided to model the story of the book after events from my childhood. I wanted to create a story that truly showed what people with dyslexia go through. I combined these true events with cute characters to help keep children reading the book interested.

I tried to create a children's book that was fun and educational about dyslexia; based on the final product and my data analysis I believe I succeeded.

VII. RESEARCH & USER EXPERIENCE

My MQP involved some research into different fields. The main fields I looked into were facts about dyslexia, children's books, children's books about dyslexia, and printing a book. These areas of research helped me create a book that was user friendly to children with and without dyslexia. I want the people who read my book to experience what it is like to be dyslexic.

A. About the Characters

I knew I wanted the characters in the book to be guinea pigs. I wanted a book starring this type of animal because I love guinea pigs and I own one named Tootsie. The characters are directly based off of real guinea pigs I know.



Figure 1. Curry, in real life

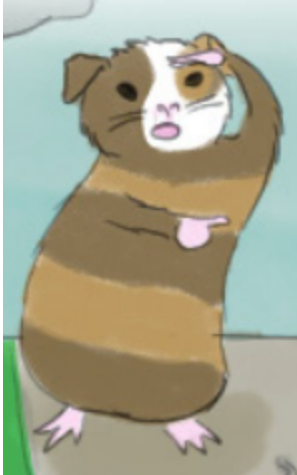


Figure 2. Curry, in the book

Figure 1 shows a picture of Curry in real life. Figure 2 shows a picture of what Curry looks like in the book. Curry is a guinea pig that my friend Nikki has. In the book, he is one of Tootsie's very good friends.



Figure 3. Mocha, in real life



Figure 4. Mocha, in the book

Figure 3 shows a picture of Mocha in real life. Figure 4 shows what Mocha looks like in the book. Mocha is the other guinea pig that my friend Nikki owns. He is the brother of Curry. Since they are brothers, they always appear together in the book I made.



Figure 5. Tootsie, in real life



Figure 6. Tootsie, in the book

Figure 5 shows a picture of Tootsie in real life. Figure 6 shows what Tootsie looks like in the book. Tootsie is my guinea pig, who I have had for almost two years now. She is the main character of the book and the guinea pig that suffers from dyslexia. Her character in the book was modeled after what I went through when I was diagnosed with dyslexia.

B. Dyslexia

Completing research about dyslexia was extremely important because this book is a tool for people to learn about dyslexia. I luckily had an advantage about what to put in my book regarding dyslexia since I am dyslexia. I also conducted some research to support the dyslexic elements I wanted to add to my book.

A part of dyslexia that I struggle with is flipping letters around. The letters that I, and others suffering from dyslexia, flip most often are p, q, d, b (Mayo Clinic, Dyslexia, 2021). I knew that I wanted to include this in my book and include it in at least one of my puzzles. Another part of dyslexia that I, and others suffering from dyslexia, struggle with is jumbling letters in words (NHS, Dyslexia Symptoms, 2021). When I read and write words, I often find myself mixing up where the letters in the words should be. This was another element of dyslexia that I added to my book and to a puzzle. Another type of puzzle or puzzles that I knew I needed in this book were puzzles having to do with art. People with dyslexia often find they can express themselves through art (Nessy, 9 Strengths of Dyslexia, 2017). I made sure to dedicate a few of the puzzles in my book to art because I knew dyslexic children would be good at them and find them fun. Dyslexic people also often are very good at patterns and enjoy finding them (Nessy, 9 Strengths of Dyslexia, 2017). I personally love finding patterns in games and patterns around me in my life. I think part of the reason I am good at finding patterns is because when I, and other dyslexic people, read they have to find partners. When I was in my extra help reading classes, I often was taught to read by looking at patterns of letters to figure out what the words were. The puzzles in my book were not only about dyslexia, but were created to simulate how it feels to be dylexic. While completing the puzzle, the reader will have the same sensations that dyslexic people have when reading.

There also were more general parts of my book that were created to help people with dyslexia enjoy my book. I made sure to use a font that was easy to distinguish what each letter was. Some fonts have letters that look really similar to each other, which can make it hard to read (Mayo Clinic, Dyslexia, 2021). Choosing a font that has the letters clearly stated helps with clarity when reading. Another difficulty dyslexia have when reading has to do with when the

words are too close together. When the words in a sentence are too close to each other, they begin to appear to merge (NHS, Dyslexia Symptoms, 2021). This makes reading the words very difficult because it is hard to tell where one word ends and another begins. I made sure that my words were spaced out in an appropriate manner. I also made sure to separate large bodies of text into paragraphs so the words were not too overwhelming to read.

C. Children's Books

Creating a children's book is much different than creating a book for adults. There are six main steps of crafting a children's book to keep in mind; Story and Language, Structure, Illustrations, Storyboard, Themes, and Target Audience (Luminare Press, 2018). When creating my book I tried my best to keep these six steps in mind.

The Story and Language step is extremely important because it has to do with the text in the book. I knew that I wanted the text in my book to be simple to read and understand. People with dyslexia often have a hard time reading bigger words, especially when they are children. I tried my best to use simple terms in the book so the dyslexic children would be able to read it. Another part of Story and Language has to do with the story content. The story should be interesting enough to keep children interested (Luminare Press, 2018). Children often have minds that wander, so keeping them engaged in the book is important.

The Structure of a children's book is important for comprehension. The story should be told in a clear linear way for children to understand. It is important not to jump around in place or time because the children reading will become confused (Luminare Press, 2018). Many children's books have a rhythm to the words and sentences. This rhythm should be consistent

throughout the book. I did not have a rhythm in my book because I was trying to keep the sentences as simple as I could for dyslexic children.

The next step of creating a children's book is my favorite, Illustrations. Before I even started thinking about the content in my book, I knew my book would have many illustrations. As a person who loves art and to digitally paint, having fun illustrations in my book was important. I also needed to have many illustrations to show off my artistic abilities as an IMGD Visual Art Major. When crafting the illustrations, I had to make sure they related to what was happening in the story at that point in time. It is important to have the story and illustrations roughly match, because it might confuse the children reading the book if they do not match. Illustrations should not only match the text they go along with but also enhance and add to the text. Pictures can show what is happening in a story far better than any amount of words can. By using illustrations in the book, I was able to bring the story to life and provide a complete narrative. The last part of illustrations to keep in mind was having the style of theme match the tone of the book (Luminare Press, 2018). For example, if I am creating a children's book I do not want the illustrations to be grotesque or frightening in style. Having the illustrations and story match in style adds unity to the book.

Storyboarding is an important step of children's books to consider when actually putting the books together. Storyboarding is a way of formatting a book in a comprehensive way. It is important to think about what pictures and texts will go where in the book (Luminare Press, 2018). It is also vital to decide how to split up the text in the story. It is extremely important to separate the text in a proper way from page to page. The text should not be too long, because it will be overwhelming for children to read. The text on a single page should all relate to each other and to what is happening at that point in the book. The total length of the book is also an

important part of this step. Children's books should not be too short or too long for the reading age of the book. For example, if you make a children's book that is a few hundred pages long the children reading this book will become exhausted from it. Keeping the book an appropriate length for the age groups keeps the children engaged and increases the readability.

The step regarding Theme for a children's book is extremely important to my story. I knew that I wanted the main theme of my book to be about dyslexia and acceptance. The goal for my book was to create a story that taught children about dyslexia and inspire children to be accepting of it. I want the children who read my book to learn about this language processing disorder, since many children and people do not understand what it is. I also want the children who have dyslexia to learn from this book and understand that others like them go through what they are going through. Another important theme of the book is to inspire children. I want the dyslexic children reading my book to know it is fine to be dyslexic and there is nothing to be ashamed of. They should not feel the need to hide who they are and they should not think any less of themselves. I truly hope that my story is able to inspire children and teach them in a positive way.

Picking a Target Audience for a children's book is very important because it lets children of different ages know if the book is suitable for them. Children have many different levels of reading, which can be affected by age and dyslexia (Luminare Press, 2018). This made it very hard for me to pick an exact age group for my book. I wanted this book to be reader friendly to both dyslexic children and non dyslexic children. This decision made it basically impossible to pinpoint an age for my book. Dyslexic children often have a reading level much lower than other children of their age. When I was a child, I remember reading books that were meant for much younger children while my classmates read books meant for our age group. If I were to assign an

age group for my story, I would have to pick whether this was based on dyslexic children or non-dyslexic children. I decided not to put a label on the book for the target audience because I want children with and without language processing disorders to read my story.

D. Children's Books about Dyslexia

When I was growing up, I never read a fun book about dyslexia. I read books that explained what dyslexia was and how to try to overcome it. The books I read never had a story or a main character, but rather were just an explanation as to what dyslexia was. Even now that I am an adult, I have never read a fun book about dyslexia. I decided to do some research on dyslexia books for children, more specifically, what elements I should include in my book to make sure it is dyslexic friendly.

An element of dyslexic children's books that was perfect for what I wanted to create was hands on books. Children with dyslexia love activities that are hands on and allow them to be physically creative (Aulexic, 2021). I always knew I liked activities, especially when they were art projects, so having a book with activities seemed perfect. I knew that my idea of creating a children's book with puzzles would be a fun book for dyslexic children.

Another element that fit well with what I wanted was having a main character dyslexic children can relate to (Reading Rockets, 2018). Dyslexic children find reading to be difficult and mentally straining, so it is important to keep them interested in the book. An effective way of keeping dyslexic children interested is by having a character they can relate to and understand. This element fits perfectly with the main character of my book, Tootsie. The main character of my book has dyslexia, which will allow dyslexic children to instantly form a connection with her. I also hope that throughout the book the children reading will grow closer to Tootsie by

seeing the similarities between what she went through with dyslexia and what they are going through. Another part of dyslexic children's books that fits with this idea is having the world set in a place they can relate to. It is recommended that the setting of the story take place in a world very similar to the real world so dyslexic children can easily understand where the characters are. The places featured in the book should be places they can understand and hopefully feel a part of. I have three places the story takes places; at home, on the way to school, and at school. Children will be able to relate to all three of these places because they have these places in their real personal lives.

A part of a dyslexic children's book that is the same for other children's books is to have animal characters (Aulexic, 2021). Children of all different types of background love animals. Having animal characters in a children's book is a simple way to make the book fun for children and to keep them interested in what is happening. I have always loved animals and I knew that I wanted my children's book to be about animals. I chose to make the main characters in the book guinea pigs because I love them and I also think that children will think they are cute and engaging to look at.

E. Printing a Book

When making a children's book, one has to think about where to actually get it printed after it is completed. For my MQP, I had to do some research into different printing companies and I had to decide what exactly I was looking for.

The company that I ended up planning on having my book printed from was Lulu. Many printing companies want you to buy multiple books at a time, for example you have to buy ten books as the minimum. Lulu allows you to buy just one book, which I personally liked (Lulu,

2021). Having to buy more books than you want feels wasteful, not eco-friendly, and costs you more for these items you do not want. Lulu also offered printing a book at a very affordable price. Other printing companies would charge a very large amount of money for the books they produce, but making a book from Lulu with the specs I wanted would cost me around 13 dollars which was more in my price range of spending (Lulu, 2021). All of the options for Lulu fit what I wanted from my book, except I was confused about where they would place the binding on the book. I was able to contact them by email and they eventually got back to me and answered my question. It was good to know that they have helpful customer service, even if it did take longer than I was hoping for them to get back to me due to the Covid-19 pandemic. Another factor that made me choose Lulu was the fact that they had to size dimensions I wanted for my book. Based on the dimensions you chose for your book, Lulu provided a very helpful template to use when creating your pages. I chose to have my book be 7.25”x10.25” with a book trim size of 7”x10” and a live area of 6”x9”. Using the template Lulu provided, I also was able to account for the safety margin of 0.5” and the bleed area of 0.125” (Lulu, 2021).

I also looked into other printing companies, primarily Book Baby and Blurb. I did not end up going with Blurb because this was one of the companies that made you order a lot of books at a time. This also meant that I would have to end up paying over 50 dollars for a large amount of books I did not want (Blurb, 2021). Like Blurb, Book Baby charged more than I wanted to get my book printed. They also did not have the size dimensions I wanted for my book. The closest size they had to what I wanted was 9”x7”, which was not close enough (Book Baby, 2021). When creating a book having your exact sizes decided on is extremely important because it affects everything you create for the book. These negative factors against them made me decide to look elsewhere to get my book printed.

Due to time it takes to get a book printed and longer wait times because of Covid-19, I decided it would be better to make an eBook. All the printing companies I looked into said they were experiencing long delays in getting books printed because of the slow down in the mail system and the pandemic. This means that if I wanted to physically have my book for D term, I would have had to send my book off for printing at the beginning of C term at the latest. This time schedule was not an option for me because I did not finish creating my book till the beginning of D term.

F. eBook

I created my eBook by using Google Slides. I added a slide for each of the spreads I needed in the book, including the front and back covers. I used JPEGs of each of my pages and put them side by side in the spread. I made sure that they were lined up properly and that they were sized correctly.

After all my pages were in my Google Slides correctly, I added animations. For all of the slides I chose an animation that I felt looked like a page in a book flipping. The slides appeared to flip to the left just like when you turn a page in a book. The full visual and animations of the book can be viewed in the “Present” mode in the Google Slides presentation. Once you click the “Present” mode, the project becomes full screen and truly becomes an eBook. You are able to then flip through the whole book, reading and solving the puzzles.

VIII. METHODS

Creating a children's book involves many steps, and creating an interactive one involves even more. The main parts of creating my book involved the creation of the story, the illustration, and the puzzles. Each of these sections required a large amount of time and many drafts to complete.

D. Story

Creating the story for the book was a fairly simple process because it was based on my life. I have a very clear memory of what I went through while growing up with dyslexia, so that became the frame of my story. When looking back on my life, I knew there were some key moments that I had to include in the story.

I had to have the moment where Tootsie finds out she was dyslexic. This moment sets the stage for the rest of the book and was also a big surprise to the reader. The next two big steps of the story was Tootsie having to go to reading classes and Tootsie hiding her secret from her friends. The reading classes show that Tootsie had to work hard to deal with her dyslexia and learn strategies to read. This also shows the struggle that Tootsie felt with the classes. When she went to the extra help classes she was missing out on what the other animals were doing at school, making her feel isolated. Keeping her dyslexia a secret was an extremely important part of the book because it showed how she felt she could not be her true self around her friends. She feels that she has to hide this secret from them because she is ashamed of her disorder and worried they will not understand. This part of the book is really important to me because it is what I struggled with the most in my life. The need to hide who you really are from your friends and peers in school is an overwhelming and awful experience. The next part of the story that was

needed was for Tootsie to make progress with her reading and her bravery. Tootsie learned that it was ok to be dyslexic and that she should not feel ashamed of it. I felt I absolutely needed this in the story so that children reading the book will learn from this. Having dyslexia makes you feel like you are not as important or as good as other people, so having a moment in the story to address this is vital. I want the children reading this to know that it is fine to be dyslexia and it is nothing to be embarrassed of. This bravery allowed her to move to the next step of the story, telling her friends. Telling Mocha and Curry about her dyslexia was an important part of the story for Tootsie because she felt like she could be honest to herself and the people around her. Growing brave enough to tell people a secret is a really big moment for people. The final part of the story I knew I needed was the acceptance. Tootsie told Mocha and Curry that she was dyslexia, and they accepted her for who she was. They do not care that she has this disorder and are happy to have their friend back. This part is really important because it shows that true friends do not care about mental or physical problems, they just care about being your friend. I want children to know that being honest with your friends allows you to be honest with yourself and that if they are true friends they will not treat you any differently.

The story as a whole goes through the main parts of my life I went through from the age of 5 to the age of 17. I do not want children to feel discouraged by having dyslexia, but instead to understand it and grow. They are just like the other children in their classes and with a little extra work they can read just as well or even better than the others.

E. Illustrations

The illustrations I created in my book were done in a three step process. First I created the roughs, second the final lines, and third the final color. This process guided me in creating well crafted scenes for my book.

a. Roughs

The first part of creating my illustrations were the roughs. This was the part that involved the most creativity but it also was that more difficult for me. I had to create 14 different illustrations for the inside of my book, as well as an illustration for my cover page. The process could be difficult because I did not want my illustrations to look too similar to each other.

The way I created these roughs was first by reviewing the story text that went along with the picture. I had to make sure that the picture was greatly related to what was happening in the story at that point. Once I had reviewed what was happening in the story, I started to brainstorm how to show this in an illustration. I had to think about if I wanted to be completely literal with what was happening or if I wanted it to be a bit abstract. After I came up with my idea I would sketch out an idea of what I wanted the illustration to look like. These sketches were very rough and done on traditional paper, which is why they are called roughs.

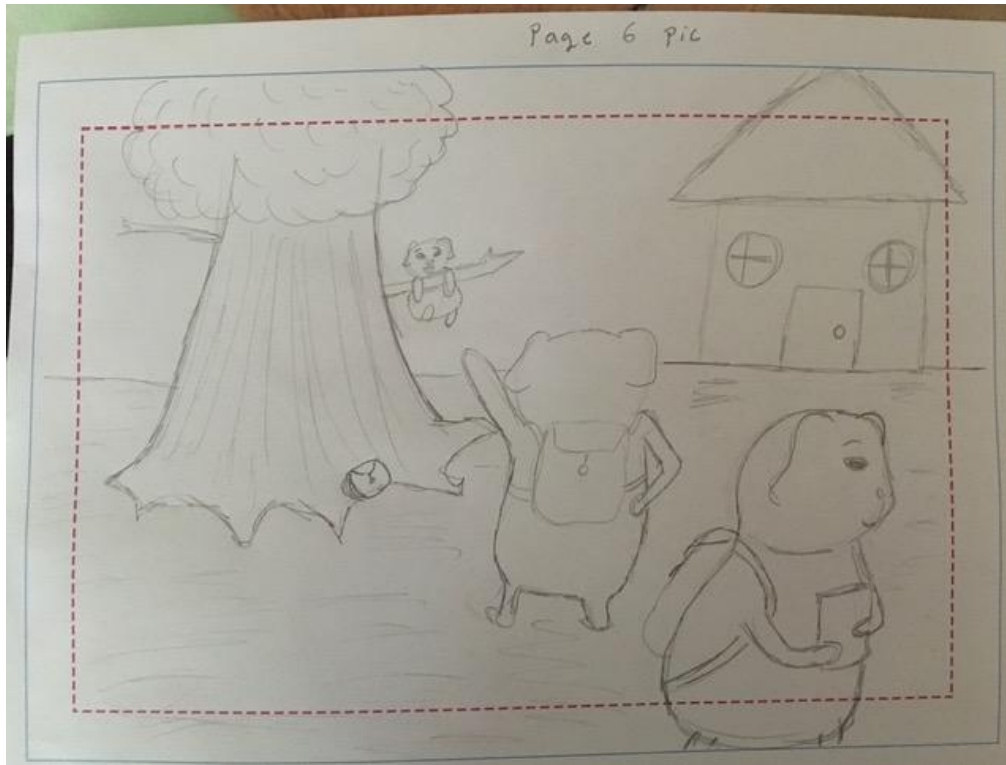


Figure 7. Rough Illustration Page 6

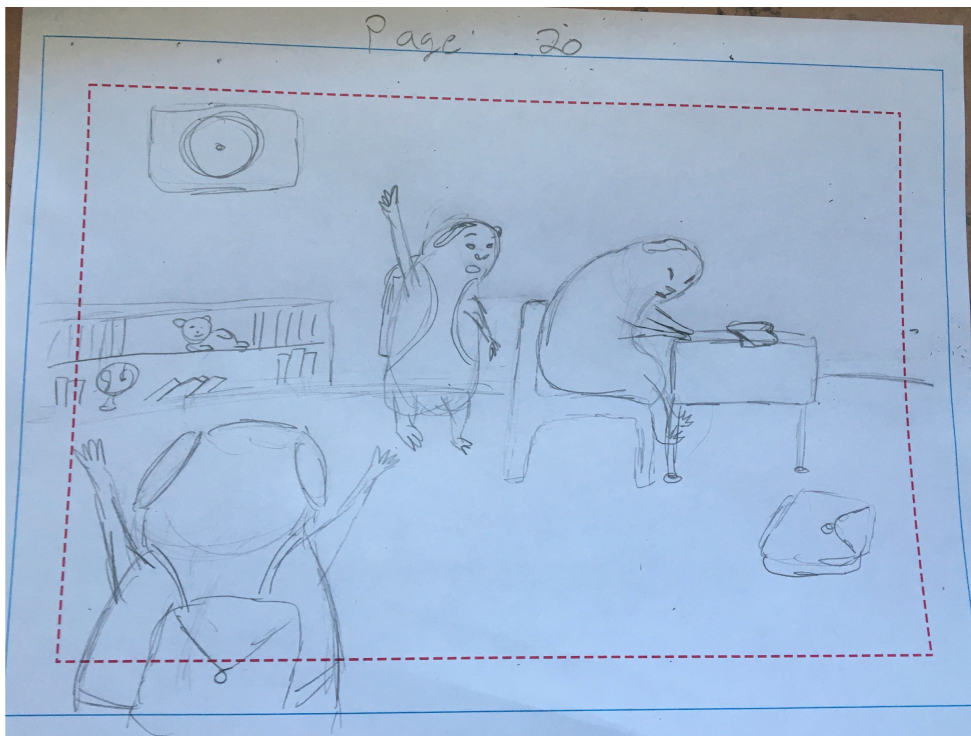


Figure 8. Rough Illustration Page 20

Figures 7 and 8 are examples of two of my rough pages from my book. The pictures show how the drawings were done on traditional paper and are very sketchy in nature. These pictures are good examples of the first step in my creation process.

b. Final Lines

The final line processes is the second step in creating illustrations. These lines are based on the roughs. They are a cleaned up and more detailed version of the rough picture. These lines are very important because they will be featured in the final illustrations. The style of art I used in my illustrations involved having a black outline on the elements in my illustrations. I like the style of having elements outlines so I decided to include them in my illustrations.



Figure 9. Final Line Page 6

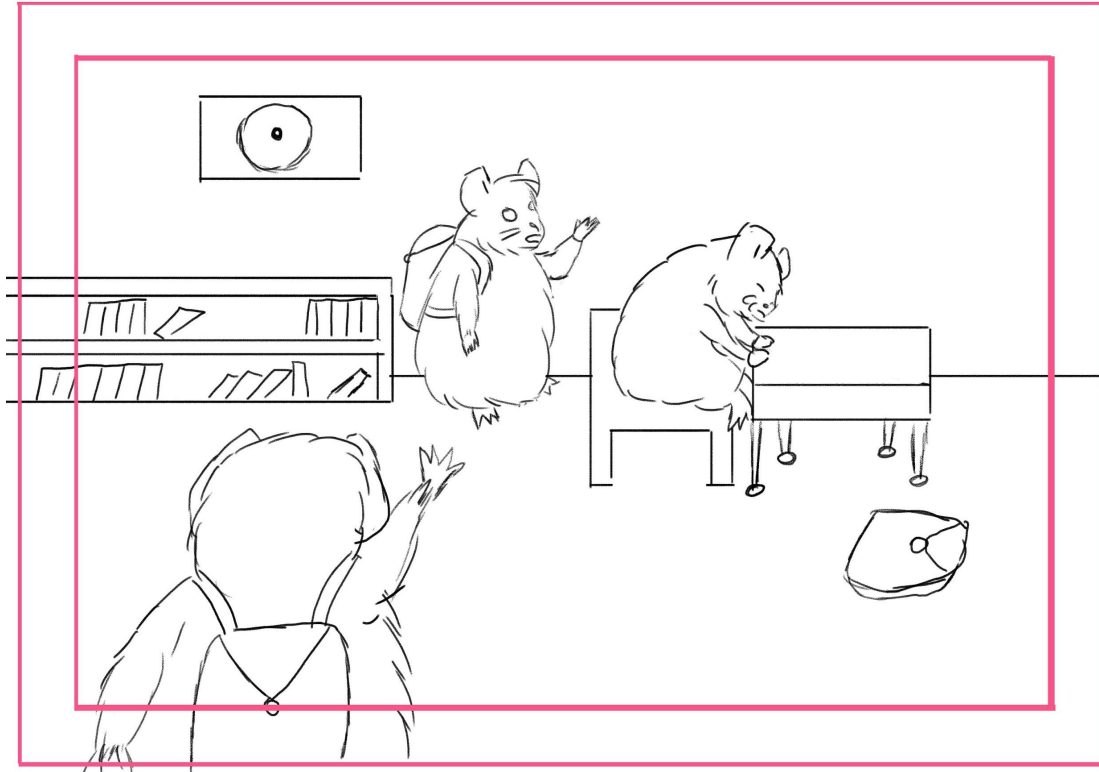


Figure 10. Final Line Page 20

Figures 9 and 10 show two examples of the final lines for illustrations in my book. There are two major differences between the final lines and their rough counterparts. The first difference is that they are much cleaner. The lines on the page all have meaning and are supposed to be there. The rough lines are much more messy and some lines are not supposed to be there long term. The other main difference is that these final lines were created in Photoshop. Pictures of the rough pages were taken into Photoshop and I created the final lines based on those. I had the rough picture as a bottom layer in my Photoshop file and I drew the final lines on top of the picture. For my final lines, I chose to use the paintbrush called Happy HB. I thought this paintbrush was a perfect fit for the final lines because it had a little of a scratchy look to it but in a professional way, which fit with the style I was going for.

c. Final Color

The final color part of creating my illustrations was my favorite. I took the final lines for my illustrations and I painted them. I had the final lines be on a layer above where I was painting so I would not paint over them. I then would choose the different colors I wanted for the subjects of my paintings and I would color them in. This was a really fun and relaxing process because it brought my illustrations to life.



Figure 11. Final Color Page 6



20

Figure 12. Final Color Page 20

Figures 11 and 12 are two examples of my final colored illustrations from my book. These illustrations look much more alive and dynamic now that they have color to them. The color allowed me to show values and shadows, making them closer to life. I used two different brushes in Photoshop to paint my illustrations. The first brush I used was called Watercolor Soft, this was used to paint the backgrounds of my paintings. I picked this brush because it helped paint my backgrounds in a soft way that made them less distracting to the eye. The background of my paintings were not supposed to be the main focus of what was being looked at, so I wanted them to be more subtly painted. The second brush I used was called Gouache A Go Go, this was used to paint the guinea pigs and main characters in the illustrations. This brush is a type of digital pastel brush, which I felt worked really well with my guinea pigs. The pastel brush strokes made the guinea pigs dominant in the scene and stand out from the background. When I

was experimenting with other types of brushes, I was finding my guinea pigs were getting lost in the paintings. With this brush I was able to make the piggies really pop to the viewers eyes.

F. Puzzles & Instructions

The process of creating my puzzles was quite similar to my process of creating illustrations. I first would create a rough idea of what I would want my puzzle to be. After creating my puzzle I would write the instructions that go along with that puzzle. I then would review my rough puzzle and make some changes to it. Once my puzzle was finalized, I decorated it to make it look more fun

a. Rough

Creating my rough puzzles was a very fun process that allowed me to be creative. I wanted all my puzzles to be unique from each other. I did not want my puzzles to be too similar because that would be very repetitive for the people reading my book. The first step of creating my rough puzzle was to think about the type of puzzle I wanted to make. There are many well known types of puzzle in the world and many lesser known puzzles. Once I had decided on the type of puzzle, I had to think about how to apply it to my book. All of the puzzles featured in my book have to do with the story in some way. They often have to do with the characters and the plot of the story. I then would do my best to create a fun puzzle that featured elements of the story while also staying true to the format of the puzzle. The puzzles I created varied in difficulty greatly. Some puzzles were less traditional and more of a fun activity for children, while other puzzles were much more true to what people think a puzzle would be.

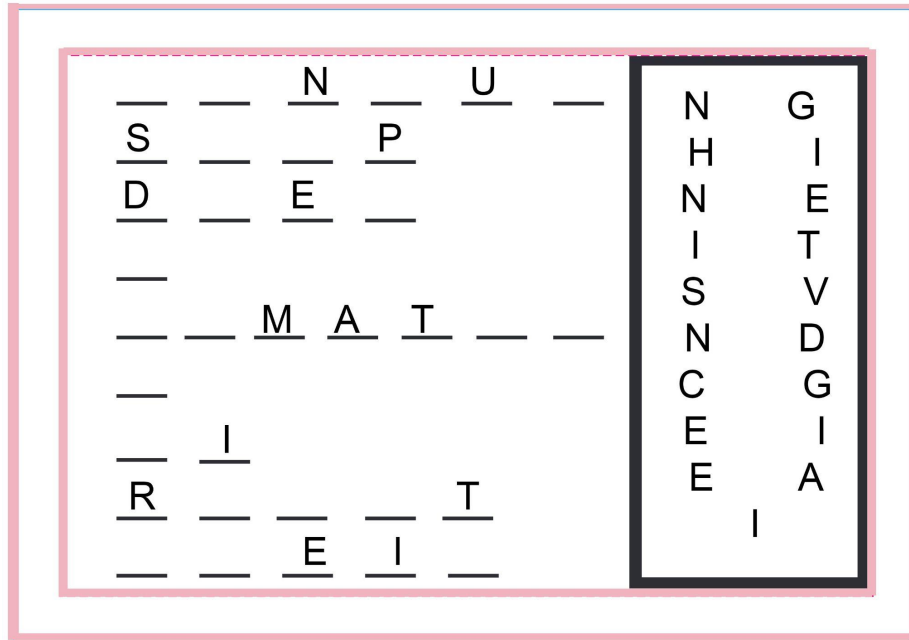


Figure 13. Page 50 Rough Puzzle

How to Draw a Guinea Pig!

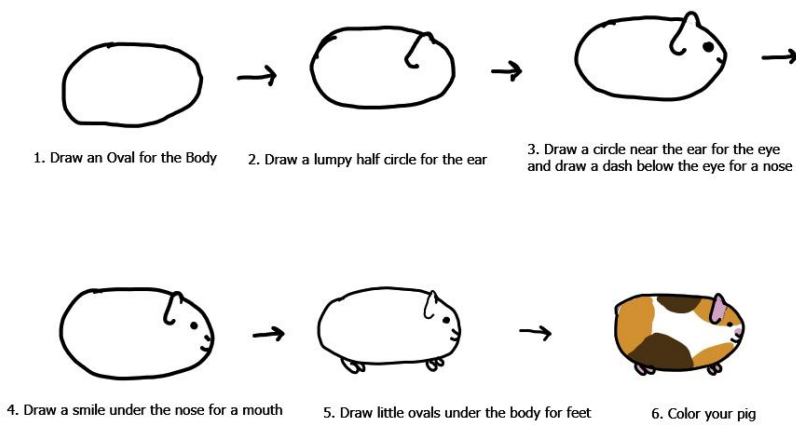


Figure 14. Page 4 Rough Puzzle

Figures 13 and 14 are examples of rough puzzles I created. Figure 13 shows a more traditional puzzle that involves having the fill in missing letters. This is one of the more

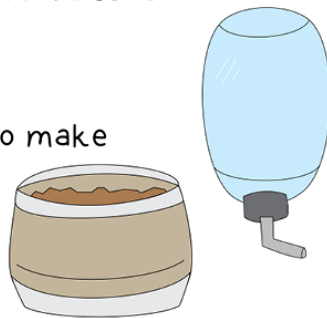
challenging puzzles but when completed it shows a hidden message for the reader, which motivates them to try and complete the puzzle. Figure 14 shows a puzzle that is less traditional and more of a fun activity for the readers to do. It is a fun drawing activity that teaches children how to draw a simple guinea pig. I wanted to make sure to keep the guinea pig really easy to create so all children will be able to draw it easily.

b. Instructions

Creating the instructions for my puzzles seemed like it would be easy, but it had some challenges. It was extremely important that I explained exactly what to do in the puzzles. I had to make sure my wording was clear and did not mislead the person trying to solve the puzzle. I made sure that I broke up my sentences into sections, spacing them out, so there were not too many words tight together. I did this to make it easier for people with dyslexia to read. My main goal was to have my instructions both clear to read and comprehensive.

Sometimes piggies with dyslexia
like to work with numbers instead
of letters.

Connect the numbers to make
the hidden picture.



25

Figure 15. Page 25 Instructions

Figure 15 shows an example of one of my finished puzzle pages. This figure shows how I space the sentences into sections to make it easier to read. I also have the page number on the

instructions in the left bottom corner. I also have some decorations on my puzzle, which I will talk about in the Decorating section of the paper.

c. Final

Making the final versions of my puzzles involved cleaning up and fixing my roughs. Many of my roughs were done by hand on a piece of paper, so for the final version I had to create them in Photoshop. Photoshop was a really useful tool to correct the mistakes in my puzzles. It allowed me to make elements of my puzzle look uniform and sleek. During the process of finalizing my puzzles, I also made sure that there were no mistakes. Sometimes when creating the puzzles I would make a mistake which was hard to spot because I would have to decode the puzzle to see it. After my puzzles were corrected and professional looking, I decorated them. I used motifs I created to decorate the puzzles to make them look more fun and appealing to complete. I will explain the motifs in creator detail in the Decorating section of my paper.

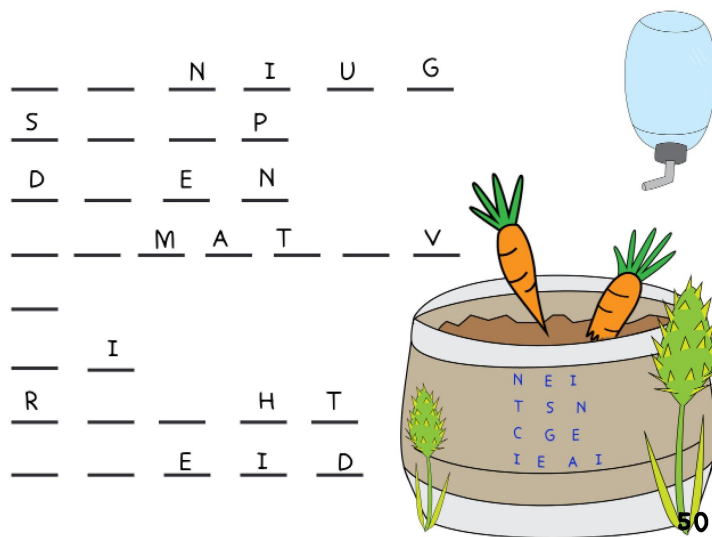
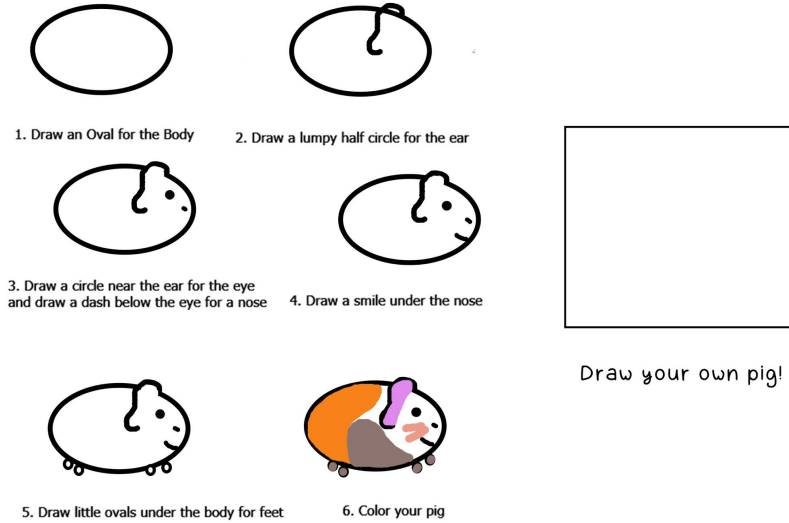


Figure 16. Page 50 Final Puzzle



4

Figure 17. Page 4 Final Puzzle

Figures 16 and 17 are examples of two finalized puzzles in my book. Both of the puzzles show how I cleaned them up compared to my rough versions. The puzzle on page 50 started off as very boring and intimidating looking. It also had its letters too tight together, making the puzzle harder to solve. In my final version I added fun decorations, such as the bowl of treats, to hide the missing letters on. This allowed the puzzle to look a lot more appealing to solve and easier to read. The puzzle on page 4 really shows how I was able to clean up my puzzles. The piggies in the rough puzzle looked very shaky and unprofessional. In the final version I was able to make all the guinea pigs uniform and just add on to this uniform body as the activity continued. Both of these figures show what an improvement the puzzles have from their rough versions to their final versions.

d. Decorating

After all my puzzles and instructions were completely finished, I felt I should make them look even more fun. I chose to create a handful of motifs that I could use multiple times for different pages. These motifs were all related to guinea pigs and what they like to eat.

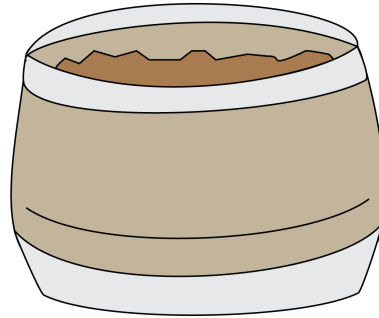


Figure 18. Food Dish Motif

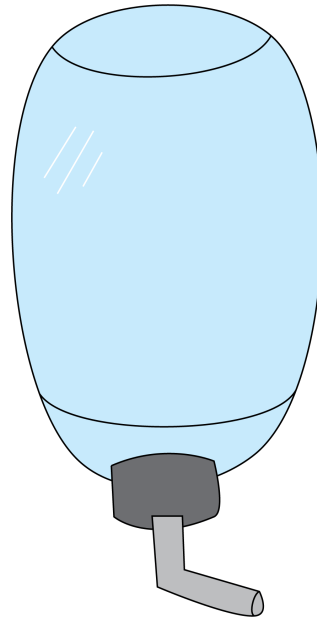


Figure 19. Water Bottle Motif

Figures 18 and 19 are motifs I used in my book. I created these motifs by using Adobe Illustrator. I was able to use the pen tool to create these simple shapes. When I was finished creating them I exported them as PNGs with transparent backgrounds. This allowed me to drag

and drop them into my instruction and puzzle pages. This method allowed me to easily decorate my pages that looked a bit boring.

e. Answer Key

A very important part of a puzzle book that can be overlooked is the Answer Key. It is very important to include an answer key for puzzles. It is important because it shows the correct answers, allowing people to see if they completed the puzzle correctly. It also is important because some puzzles might be too hard for certain people to solve, allowing them to see what the answers were even if they were not able to solve the puzzle.

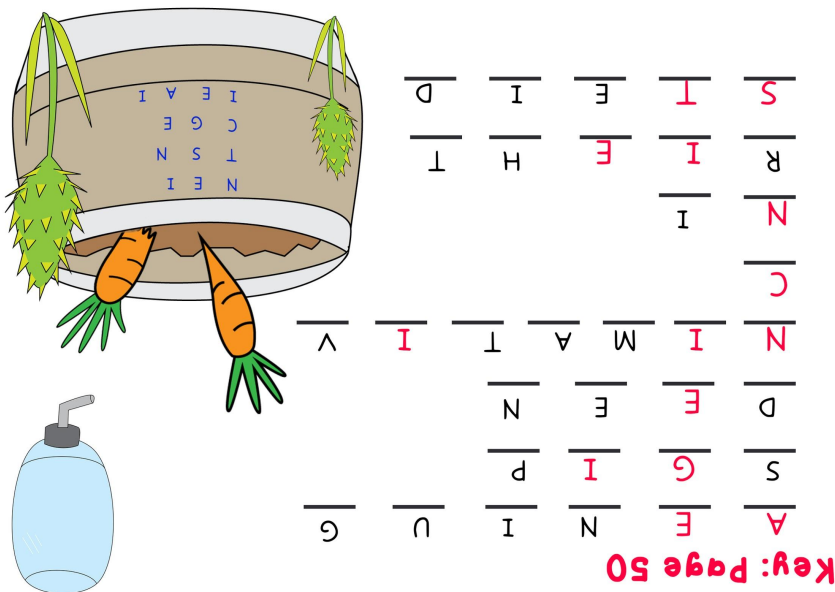


Figure 20. Page 50 Answer Key

Figure 20 shows the Answer Key for the puzzle on page 50. The Answer Key is flipped upside down so people will not spoil the answer of the puzzle if they accidentally look at this page. The puzzle is filled in with red letters to easily distinguish what parts of the puzzle are the answers.

IX. DATA ANALYSIS

An important part of interactive mediums is playtesting. Playtesting helps the creators establish where their product succeeded and where it did not succeed. After I had completed my book, I created a survey. This survey was created on Google Forms and asked questions about my book (See Appendix A). The goal of my survey was to see where my project accomplished what I was hoping and where I needed to improve it.

The survey was conducted in the first few weeks of D term 2021. I conducted the survey at this point in time because I had finished my book in the first week of D term. I only conducted this survey for a few weeks and not longer because I needed time to incorporate my findings from my surveys into this paper. After the few weeks of playtesting was complete, I had a total of 7 participants (See Appendix B). I had hoped for a larger number of participants but I accepted this number because of the time restraint.

A. Question 1: Do you have dyslexia?

The first question on the survey asked the participant if they had dyslexia. I unfortunately only had one person answer my survey who suffers from dyslexia. I had been hoping to get a much higher percentage of people with dyslexia to complete my survey.

B. Question 2: After reading the book, how did you feel about the story?

The second question on the survey was a likert scale where I asked participants how they felt about the story. This scale ranged from 1-6, 1 being they really disliked it and 6 being they really enjoyed it.

After reading the book, how did you feel about the story?

7 responses

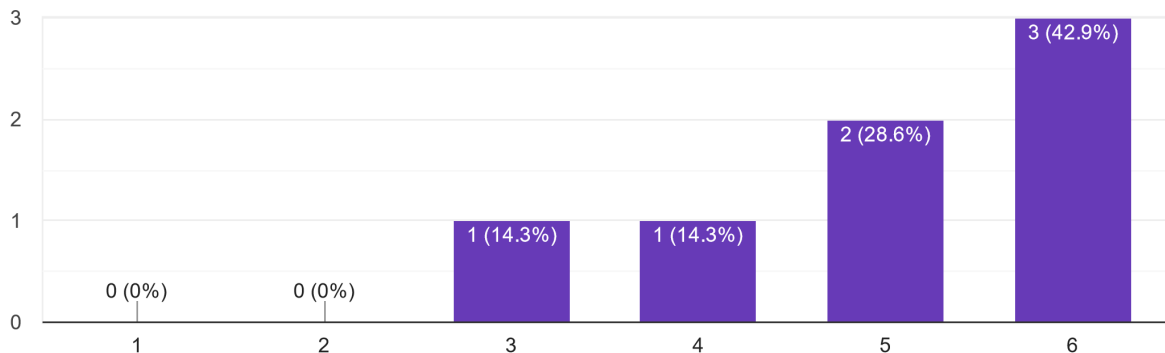


Figure 21. Survey Question 2 Responses Graph

Figure 21 shows a bar graph of the responses I received for question 2. A little less than half of the people who answered my survey really enjoyed my book, which I was happy about. I want my book to be a really fun experience for people of all ages. I would have obviously hoped that everyone would have answered 6 on this scale, but I understand not everyone will enjoy my book as much as I hope.

In question 3, I asked why the participants answered question 2 the way they did. Most people answered that they really enjoyed the story and that they thought it was cute and informative. One person said they wished that I had spent more time on character development of the guinea pigs. I think this is a really good idea and that if I made my book longer I would include this. Another comment was that the story seemed to be too sad. It is unfortunate this participant felt this way because the goal of my story was to be uplifting in the end. The last comment from a participant was that they felt the puzzles broke up the story too much. I can see what they mean, there is always a puzzle after a page of story. I created it this way because I wanted this book to be very interactive

C. Question 4: After reading the book, how did you feel about the illustrations?

Question 4 was another likert scale that was trying to gauge how much people enjoyed the illustrations in my book. This scale ranged from 1-6, 1 being they really disliked it and 6 being they really enjoyed it. The illustrations were an important part of my book and took up $\frac{1}{4}$ of the story. As an IMGD Visual Art major, I hoped that people would really enjoy and appreciate the illustrations in my book.

After reading the book, how did you feel about the illustrations?

7 responses

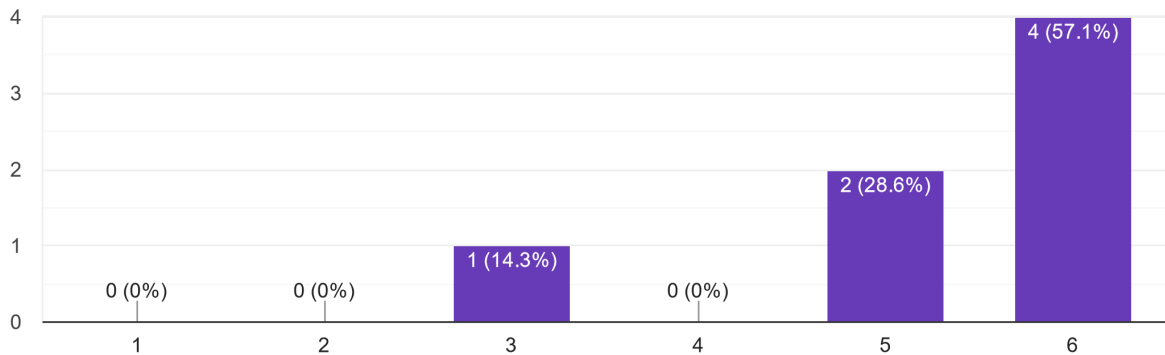


Figure 22. Survey Question 4 Responses Graph

Figure 22 shows a bar graph of the responses I received for question 4. Over half of the participants really enjoyed the illustrations in my book, which I was very happy about. 2 participants enjoyed the illustrations, which is also a really amazing response. This means that only 1 participant did not really enjoy the illustrations.

In question 5, I asked participants why they answered question 4 the way they did. Most people stated that they really enjoyed the illustrations and thought they were very cute. Most participants also said that they thought the art was consistent between pages, which is a good thing to have. One participant said that they thought the art could have looked a bit more clean

and polished. I understand what they mean by this since my art has a sketchy quality to it, but I purposely was creating my art to have this sketchy quality. Another participant said that they wished the illustrations had more details and objects within the scenes. I think this is a good suggestion and if I had more time I would definitely add more to my illustrations.

D. Question 6: How difficult was the puzzle on page 4 (Drawing a Guinea Pig)?

Question 6 addressed how difficult the puzzle on page 4 was. This puzzle was more of an activity where people learned how to draw a simple guinea pig. This was supposed to be a very fun and easy puzzle to do. This question asked participants to complete a likert scale of how difficult the puzzle was; 1 being not difficult in any way and 6 being too difficult to complete.

How difficult was the puzzle on page 4 (Drawing a Guinea Pig)?

7 responses

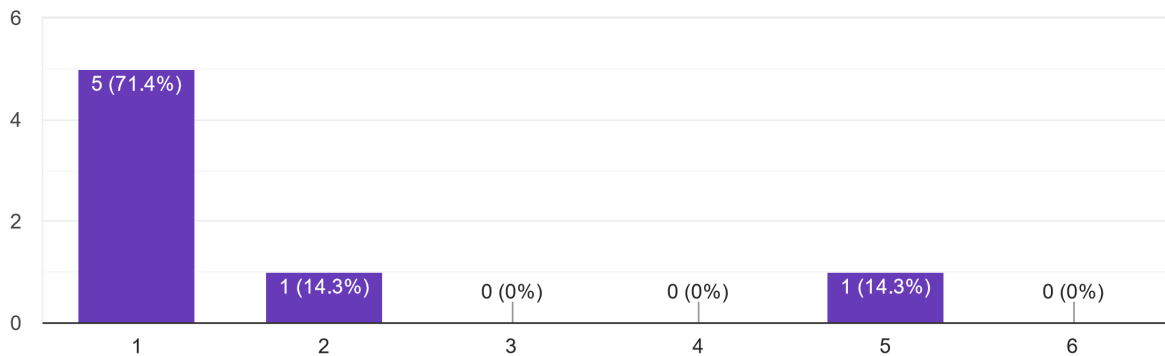


Figure 23. Survey Question 6 Responses Graph

Figure 23 shows a bar graph of the responses for question 6. As I had hoped, most participants thought this activity was very easy to complete. 1 participant through this was difficult to complete. I am guessing that this participant is not used to drawing so this was a difficult activity for them to complete.

In question 7 I asked the participants if there is anything they would like to add about the puzzle on page 4. 2 participants said they really enjoyed the puzzle and thought it was a fun drawing exercise. 2 participants suggested that I change the way I worded the step involving drawing the ear of the guinea pig. I do understand what they mean, there is no one way to describe the shape I wanted people to draw, so it is understandable people would have different opinions on how to describe this shape.

E. Question 8: How difficult was the puzzle on page 8 (Guiding the Guinea Pigs)?

Question 8 addressed how difficult the puzzle on page 8 was. This puzzle was more of an activity where people traced their finger along the path the guinea pigs took to school. This was supposed to be a very fun and easy puzzle to do. This question asked participants to complete a likert scale of how difficult the puzzle was; 1 being not difficult in any way and 6 being too difficult to complete.

How difficult was the puzzle on page 8 (Guiding the Guinea Pigs)?

7 responses

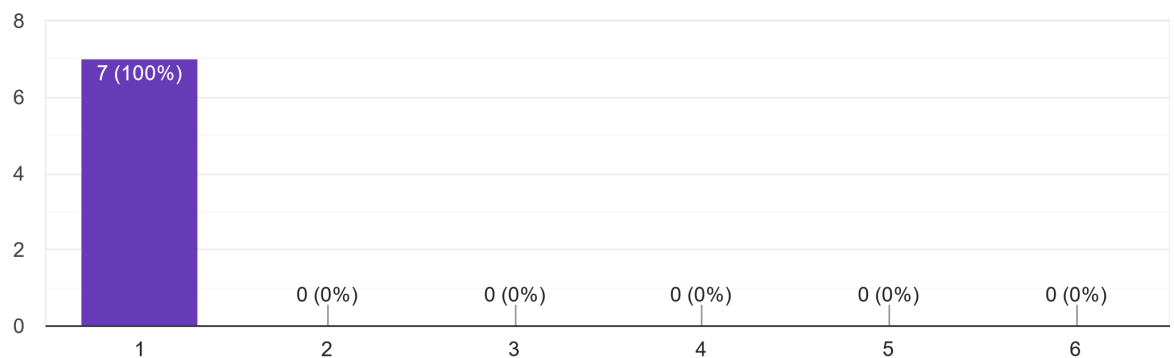


Figure 24. Survey Question 8 Responses Graph

Figure 24 shows a bar graph of the responses for question 8. Like I was anticipating, people thought this puzzle was very easy to complete. I was happy to see that every participant found this to be an easy puzzle.

In question 9 I asked the participants if there is anything they would like to add about the puzzle on page 8. 2 participants stated that they thought this was a really fun activity. They liked seeing all the places the guinea pigs stopped on their way to school and through it was a cute idea.

F. Question 10: How difficult was the puzzle on page 10 (The Hidden Message in the Illustration)?

Question 10 addressed how difficult the puzzle on page 10 was. This puzzle was supposed to be hard to find, because I did not say there was a puzzle on this page. This puzzle had no instruction and was hidden in one of my illustrations. Once the puzzle was spotted, it should have been fairly simple to complete. I thought I would get a mix of response for this question since this puzzle is a more strange one. This question asked participants to complete a likert scale of how difficult the puzzle was; 1 being not difficult in any way and 6 being too difficult to complete.

How difficult was the puzzle on page 10 (The Hidden Message in the Illustration)?
7 responses

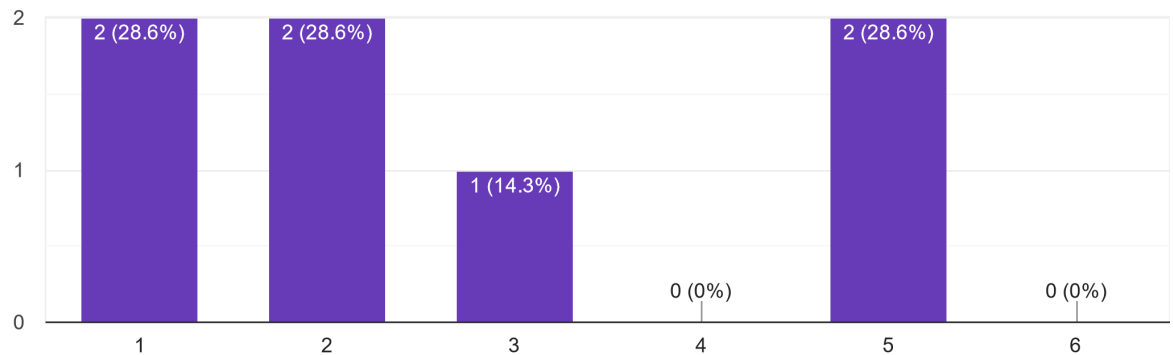


Figure 25. Survey Question 10 Responses Graph

Figure 25 shows a bar graph of the responses for question 10. As I expected, this question had a variety of responses. Most people thought this puzzle was on the easier side, but 2 people did think it was challenging. I am guessing some people did not see the puzzle hidden in the illustration, so they thought it was hard.

In question 11 I asked the participants if there is anything they would like to add about the puzzle on page 10. 3 participants said they liked the puzzle and enjoyed how it was hidden. They also said they liked how they were not told there was a hidden puzzle in the page. 1 participant said they liked how the puzzle popped out at them on the page but since the message was backwards it took longer to read. I am happy this participant thought this because this is exactly what I was going for. I went through several iterations of trying to get the puzzle to pop out at the reader, so the fact they thought it did pop was exciting.

G. Question 12: How difficult was the puzzle on page 14 (Crossword Puzzle)?

Question 12 addressed how difficult the puzzle on page 14 was. This puzzle was supposed to be hard to complete for two reasons. The first reason it was hard was because crosswords tend to be more challenging than other puzzles. The second reason it should have been hard was because some of the letters in the clues were backwards, making it harder to read. The letters that were backwards were q, p, d, b. This question asked participants to complete a likert scale of how difficult the puzzle was; 1 being not difficult in any way and 6 being too difficult to complete.

How difficult was the puzzle on page 14 (Crossword Puzzle)?

7 responses

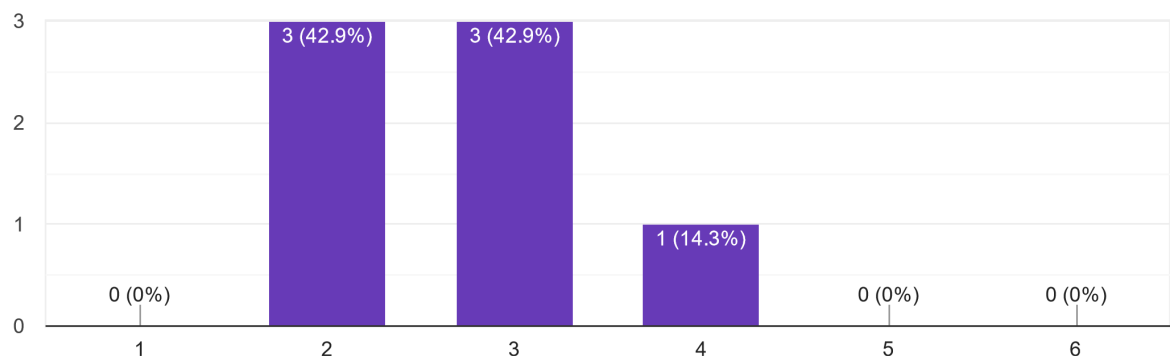


Figure 26. Survey Question 12 Responses Graph

Figure 26 shows a bar graph of the responses for question 12. The results of this question were different than I was expecting. Most people thought this puzzle was on the easier side of the likert scale, and only 1 participant thought it was on the harder side. I am surprised by this because I thought the majority of people would have struggled with this puzzle.

In question 13 I asked the participants if there is anything they would like to add about the puzzle on page 12. 1 participant stated that they were not good at crosswords, which led me

to believe they were the person who answered 4 on the question before. 1 participant suggested that I make the clues larger on the page because they were difficult to read. I do agree that the clues were in a small font and I would have liked for them to be larger. I unfortunately have them at this small font because that is the only way they would fit on the page with the actual crossword puzzle. 1 person also said that they thought this puzzle was creative and interesting for a non dyslexic person.

H. Question 14: How difficult was the puzzle on page 18 (Unscramble the Words)?

Question 14 addressed how difficult the puzzle on page 18 was. This puzzle was supposed to be hard to complete because the participants had to unscramble words. I always have felt that unscrambling words is challenging so I expected the participants to feel the same way. This question asked participants to complete a likert scale of how difficult the puzzle was; 1 being not difficult in any way and 6 being too difficult to complete.

How difficult was the puzzle on page 18 (Unscramble the Words)?

7 responses

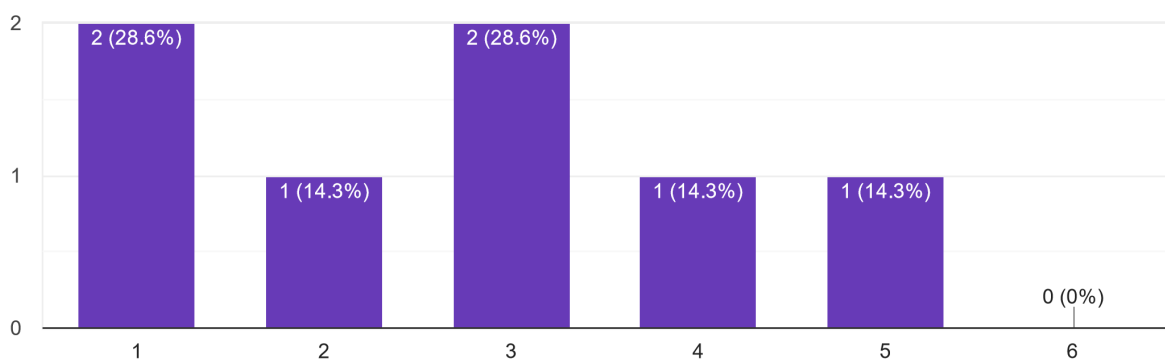


Figure 27. Survey Question 14 Responses Graph

Figure 27 shows a bar graph of the responses for question 14. I was surprised by how different the responses were for this question. The responses ranged from feeling the puzzle was very easy to difficult. I would have guessed that more participants would feel this puzzle was challenging, but only 2 participants thought it was on the more challenging size.

In question 15 I asked the participants if there is anything they would like to add about the puzzle on page 18. 2 participants said they thought the puzzle was fun and challenging and would not suggest changing it in any way. I was pleased that these 2 participants had fun with the puzzle and through it was appropriately challenging.

I. Question 16: How difficult was the puzzle on page 22 (Word Search)?

Question 16 addressed how difficult the puzzle on page 22 was. This puzzle was supposed to be in the middle of difficulty. I personally always found word searches to be on the easier side but I know many people think they are on the harder side. This question asked participants to complete a likert scale of how difficult the puzzle was; 1 being not difficult in any way and 6 being too difficult to complete.

How difficult was the puzzle on page 22 (Word Search)?

7 responses

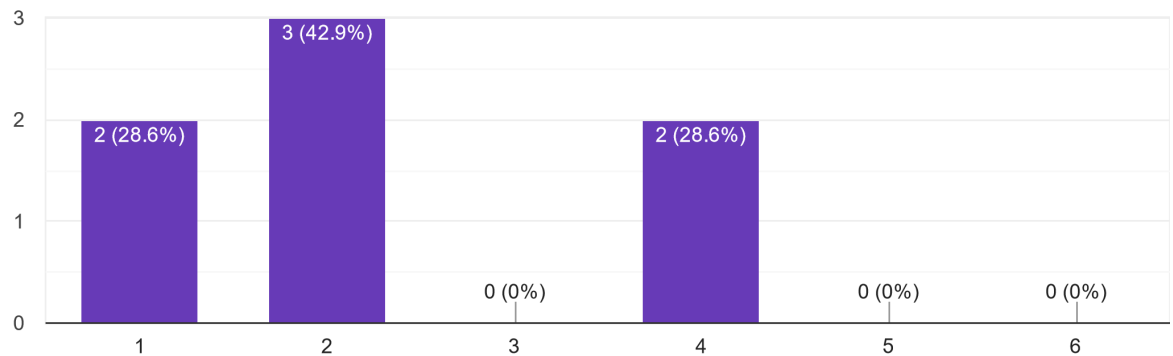


Figure 28. Survey Question 14 Responses Graph

Figure 28 shows a bar graph of the responses for question 16. The responses were about what I expected. Most people thought that the puzzle was on the easier spectrum but 2 participants thought it was a bit more challenging.

In question 17 I asked the participants if there is anything they would like to add about the puzzle on page 22. Only 1 participant left a comment for this question. This participant said that word searches have a defined method for solving them, so they tend to be on the easier side if people use that method. I agree with this and this is part of the reason I thought I would get such a range of results, depending on if people used this method or not.

J. Question 18: How difficult was the puzzle on page 26 (Connect the Dots)?

Question 18 addressed how difficult the puzzle on page 26 was. This puzzle was supposed to be easy for participants in college. This puzzle was more of an activity where if the participant connected the numbers in order it would reveal a picture. This question asked participants to complete a likert scale of how difficult the puzzle was; 1 being not difficult in any way and 6 being too difficult to complete.

How difficult was the puzzle on page 26 (Connect the Dots)?

7 responses

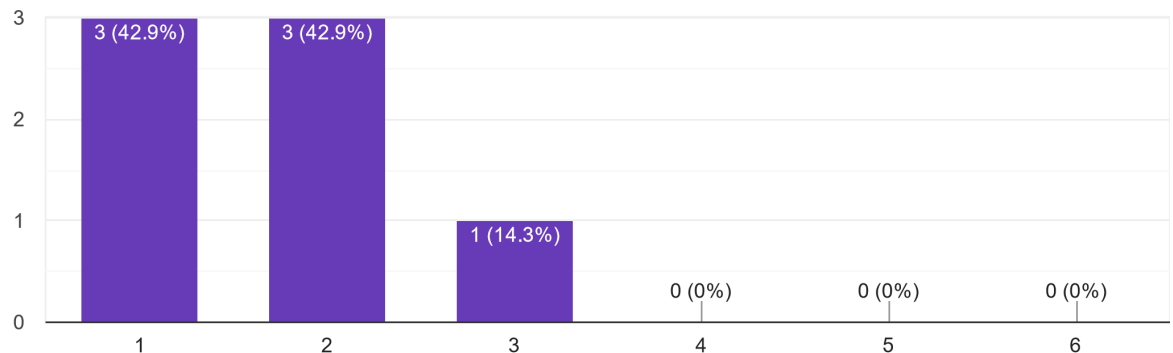


Figure 29. Survey Question 18 Responses Graph

Figure 29 shows a bar graph of the responses for question 18. The results of this question were as I was expecting, everyone thought this puzzle was on the easier side. I think that this puzzle will be a bit more challenging for younger participants since they may still be getting used to counting. For people in their college years, this puzzle should have been easy.

In question 19 I asked the participants if there is anything they would like to add about the puzzle on page 26. 1 participant stated that they liked how the puzzle made a hidden picture. I was happy that they liked this since connecting the numbers always shows a picture after completing it. 1 participant stated that it took them a long time to find the starting number, number 1. I am not sure if this was an isolated incident or if with more testing more people would feel this way. I think I could maybe make the number 1 larger so it is easier to find, but I was keeping the numbers all the same size for now.

K. Question 20: How difficult was the puzzle on page 30 (Maze)?

Question 20 addressed how difficult the puzzle on page 30 was. This puzzle was supposed to be on the easier side. There is a clear method of solving mazes, so if people use this method they tend to be easy to solve. This question asked participants to complete a likert scale of how difficult the puzzle was; 1 being not difficult in any way and 6 being too difficult to complete.

How difficult was the puzzle on page 30 (Maze)?

7 responses

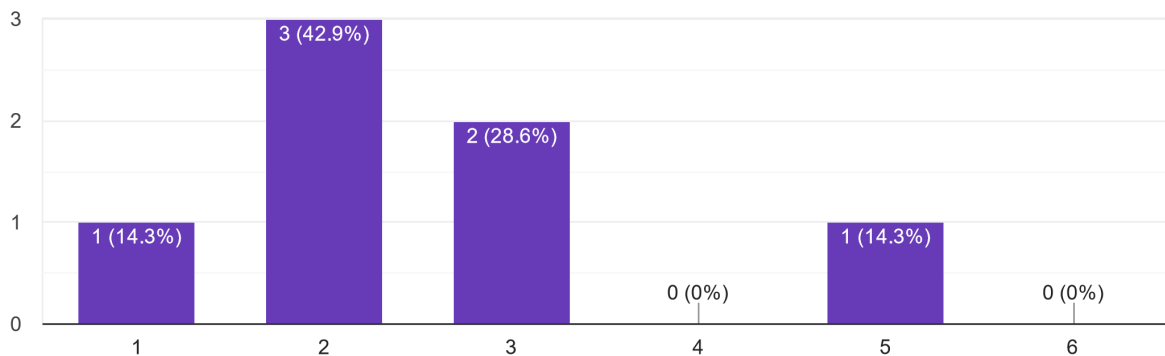


Figure 30. Survey Question 20 Responses Graph

Figure 30 shows a bar graph of the responses for question 20. The results of this question were as I was expecting, everyone thought this puzzle was on the easier side. I am guessing that this puzzle will be more challenging for people who do not know the method of solving mazes. This means that I expect younger readers to find this puzzle more challenging than people in their 20s.

In question 21 I asked the participants if there is anything they would like to add about the puzzle on page 30. Only 1 participant left a message for this question. The participant said that they liked the shape of the maze. I am happy this participant liked the shape because I tried to make the shape look like the head of a guinea pig.

L. Question 22: How difficult was the puzzle on page 34 (Animal Letter Representation)?

Question 22 addressed how difficult the puzzle on page 34 was. This puzzle was supposed to be on the easier side. This puzzle was easy because the reader just had to take the first letter of each of the animals' names to solve the puzzle. This puzzle was less about being challenging and more about having children learn different animal names. This question asked participants to complete a likert scale of how difficult the puzzle was; 1 being not difficult in any way and 6 being too difficult to complete.

How difficult was the puzzle on page 34 (Animal Letter Representation)?

7 responses

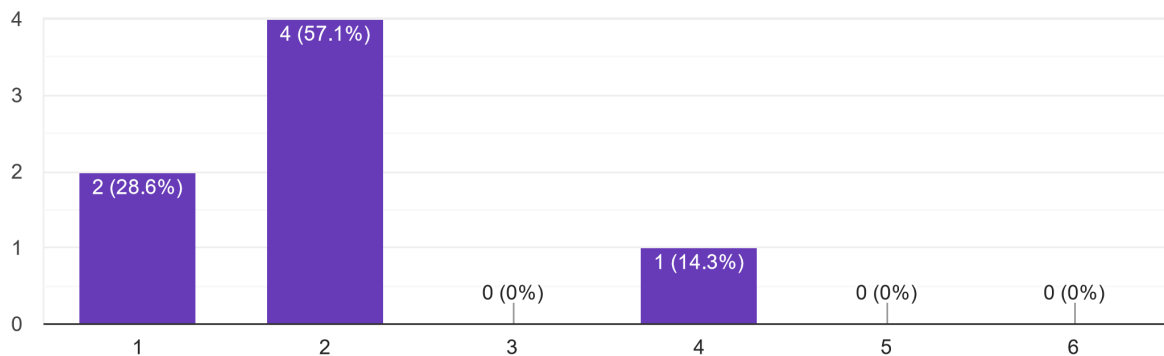


Figure 31. Survey Question 22 Responses Graph

Figure 31 shows a bar graph of the responses for question 22. The results of this question were as I was expecting, almost all the participants thought this puzzle was on the easier side. Only 1 participant thought this puzzle was on the more difficult side. I am pleased that most people did not think this was very challenging because it was supposed to be an easier puzzle about animals.

In question 23 I asked the participants if there is anything they would like to add about the puzzle on page 34. 1 participant stated they liked reading different animal names, which I was happy about. 1 participant said that they thought the animal names in each line made a different word and when this was not the case they were confused. I think that I made the instructions clear and I never stated each line would make a word. I feel this participant just got confused with this puzzle and I do not need to change anything.

M. Question 24: How difficult was the puzzle on page 38 (Spot the Difference)?

Question 24 addressed how difficult the puzzle on page 38 was. This puzzle was supposed to be on the easier side. I personally always really enjoy spot the difference puzzles and find them to be fairly easy and relaxing. This question asked participants to complete a likert scale of how difficult the puzzle was; 1 being not difficult in any way and 6 being too difficult to complete.

How difficult was the puzzle on page 38 (Spot the Difference)?

7 responses

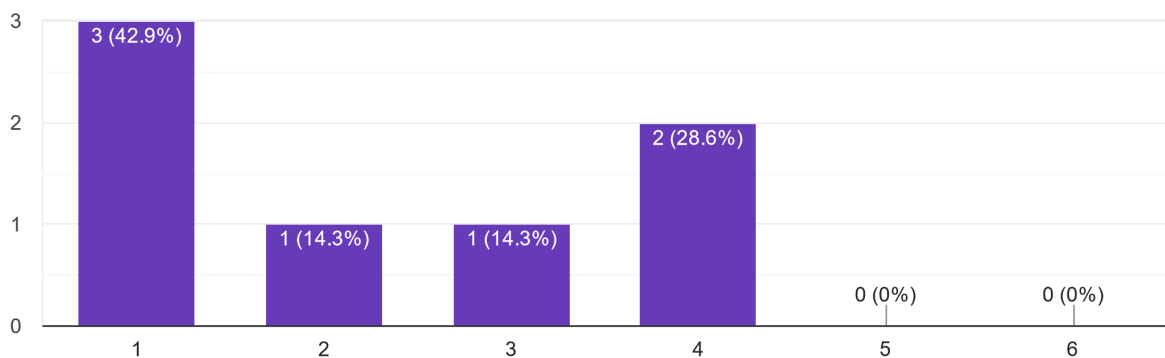


Figure 32. Survey Question 24 Responses Graph

Figure 32 shows a bar graph of the responses for question 24. Most of the participants thought that the puzzle was on the easier side of the scale. 2 participants thought that this puzzle was on the harder side. This is similar to what I was expecting to see in these results.

In question 25 I asked the participants if there is anything they would like to add about the puzzle on page 38. The participants that responded were very positive about this puzzle. They thought this puzzle was really fun and cute to look at. 1 participant even said that this puzzle was their favorite. I am happy that so many people enjoyed this puzzle since this is one of my favorites. I like this puzzle so much because it is all about illustrations.

N. Question 26: How difficult was the puzzle on page 42 (Fill in the Missing Words)?

Question 26 addressed how difficult the puzzle on page 42 was. This puzzle was supposed to be challenging. Trying to fill in the missing words in sentences can be challenging, even when there is a key of the missing words. This question asked participants to complete a likert scale of how difficult the puzzle was; 1 being not difficult in any way and 6 being too difficult to complete.

How difficult was the puzzle on page 42 (Fill in the Missing Words)?

7 responses

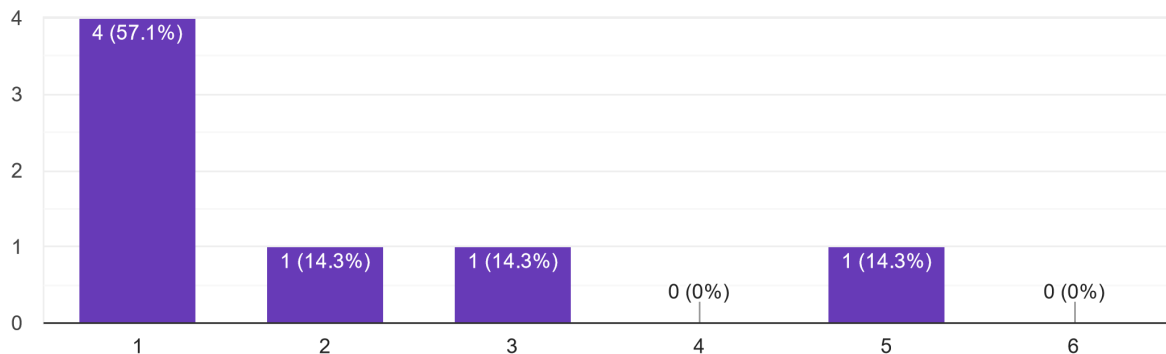


Figure 33. Survey Question 26 Responses Graph

Figure 33 shows a bar graph of the responses for question 26. I was very surprised by the results of this question. I thought that most people would think this puzzle was on the more challenging side, but all the participants except 1 thought that this was on the easier spectrum of puzzles. I am not sure why people thought this puzzle was easier than I was expecting.

In question 27 I asked the participants if there is anything they would like to add about the puzzle on page 42. Only 1 participant left a comment for this question. The participant said that they thought this puzzle was a good difficulty for children. I think this is good because I was expecting this puzzle to be challenging for people.

O. Question 28: How difficult was the puzzle on page 46 (Decode the Numbers)?

Question 28 addressed how difficult the puzzle on page 46 was. This puzzle was supposed to take a long time to solve but not be too challenging. The answer to the puzzle is clear once you go through and decode the numbers, so it is just time consuming but not difficult. This question asked participants to complete a likert scale of how difficult the puzzle was; 1 being not difficult in any way and 6 being too difficult to complete.

How difficult was the puzzle on page 46 (Decode the Numbers)?

7 responses

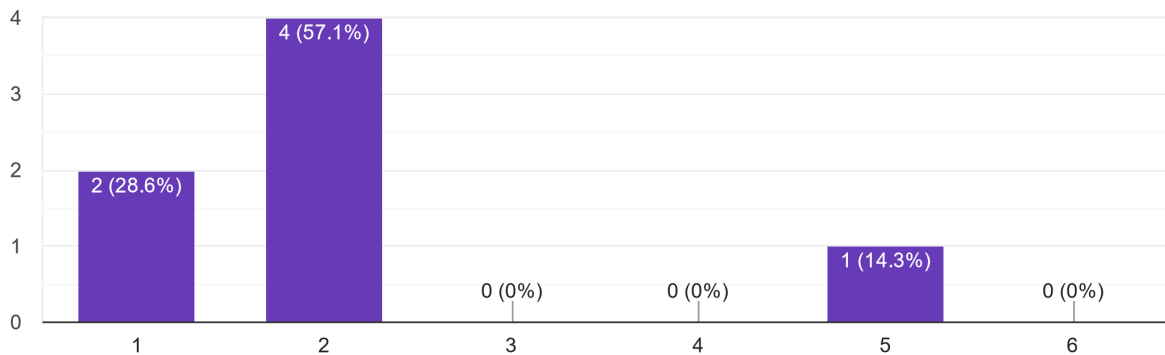


Figure 34. Survey Question 28 Responses Graph

Figure 34 shows a bar graph of the responses for question 28. These results are what I expected to see. Almost every participant thought his puzzle was fairly easy to solve. I think it is good that only 1 participant struggled with the puzzle since it was supposed to be simple.

In question 29 I asked the participants if there is anything they would like to add about the puzzle on page 46. Only 1 participant left a comment for this question. They said that they thought that this puzzle was really interesting. They thought it was cool that this puzzle used a cypher to find the answer.

P. Question 30: How difficult was the puzzle on page 50 (Fill in the Missing Letters)?

Question 30 addressed how difficult the puzzle on page 50 was. This puzzle was supposed to be one of the most challenging puzzles in my book. I expect that all people, dyslexic or not, struggle with figuring out what words are when letters are missing. This question asked participants to complete a likert scale of how difficult the puzzle was; 1 being not difficult in any way and 6 being too difficult to complete.

How difficult was the puzzle on page 50 (Fill in the Missing Letters)?

7 responses

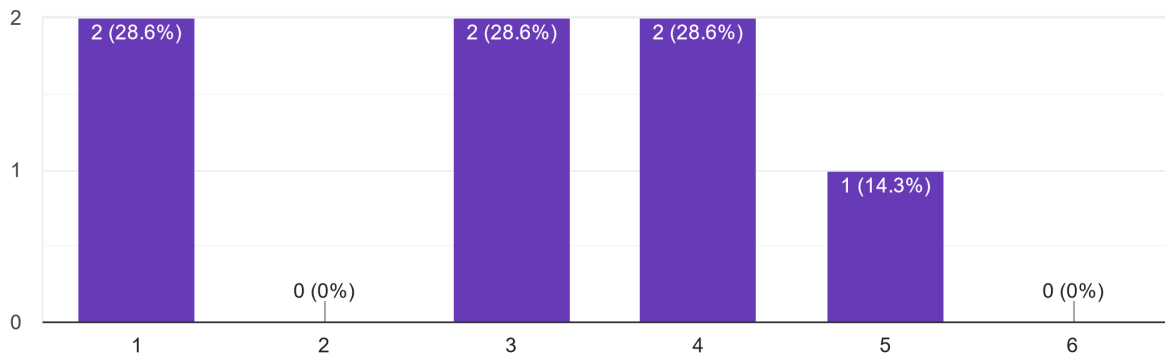


Figure 35. Survey Question 30 Responses Graph

Figure 35 shows a bar graph of the responses for question 30. About half the participants thought this puzzle was more challenging while the other half thought it was easier. I am a bit surprised by these results because I thought almost everyone would think it was more challenging. I think that I underestimate people's ability to figure out what words are when they are missing letters.

In question 31 I asked the participants if there is anything they would like to add about the puzzle on page 50. Only 1 participant left a comment for this question. They said that they thought figuring out the word vitamin was the most challenging in the puzzle. I think this makes sense because it was the longest word in the puzzle. It also had the letter v in it and people do not know many words that start with v.

Q. Question 32: How difficult was the puzzle on page 54 (Fill in the Patterns)?

Question 32 addressed how difficult the puzzle on page 54 was. This puzzle was supposed to be a bit challenging. I think that people will find this challenging because it is a very

unique puzzle. This puzzle has number patterns and shape patterns in it. This makes me think that some people might be good at one part while they struggle with the other part. This question asked participants to complete a likert scale of how difficult the puzzle was; 1 being not difficult in any way and 6 being too difficult to complete.

How difficult was the puzzle on page 54 (Fill in the Patters)?

7 responses

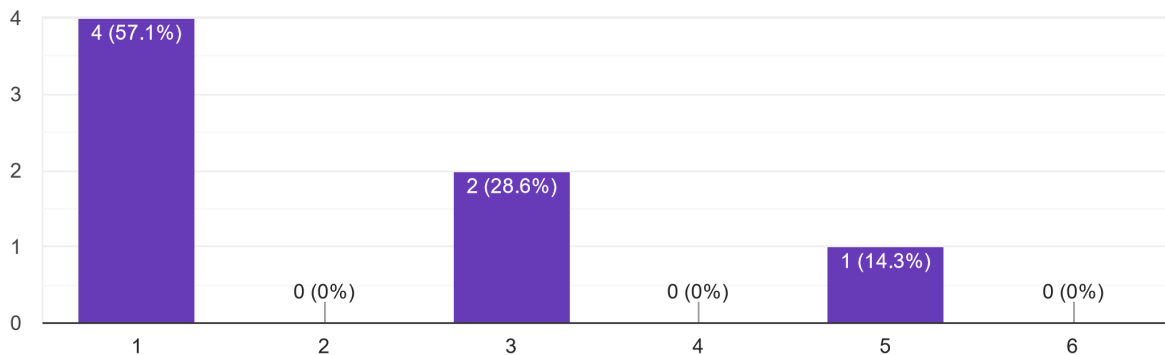


Figure 36. Survey Question 32 Responses Graph

Figure 36 shows a bar graph of the responses for question 54. I am very surprised that only 1 participant thought this puzzle was challenging. I thought that almost everyone would find this puzzle a bit challenging. I think that this could be caused by the participants' age. I think this puzzle will be much more challenging for younger people. The number pattern will be especially challenging for younger people since they are still getting used to numbers, adding, and multiplication.

In question 33 I asked the participants if there is anything they would like to add about the puzzle on page 54. Only 1 participant left a comment for this question. This participant said that they thought pattern thinking was a good puzzle to have in my book. I am happy that they

liked it and recognized the type of puzzle it was. I think I did a good job incorporating different types of puzzles in the book.

R. Question 34: Do you have any other feedback you would like to share about the book?

Question 34 was the last question of this survey. This question was supposed to see if anyone had any more inside on the book. It was an open response question so people could say whatever they wanted to. 5 participants decided to leave comments about the book. 4 of the participants thought that this book was very unique and cute. They thought it was a really good idea for a book and enjoyed reading it. 1 participant said that they felt that they thought dyslexic children would enjoy this book but have no way of qualifying that statement. 1 participant also said that they thought I should have my credits pages before I have my answer key pages for the puzzles. I think that is a valid suggestion and I thought about changing the order of things. I decided to keep the credits last because I thought people would be the least interested in this part of the book and it was the most disjointed section from the rest of the story.

X. POST MORTEM

Whenever something is created, there are aspects that go well and aspects that do not go as planned. Looking back on my book, I can definitely identify parts of my project I am proud of and parts I would have liked to have done differently.

If I could go back in time and complete my project again, there is one element that I would want to change. The part of my project I would want to change is to make my book longer. If I had more time or managed my time more efficiently, I would have liked to explore more themes in the book. Looking over my playtesters responses and my own personal feelings, I think my book could have been improved in regards to the characters. I feel that Tootsie's pain of being dyslexic and her struggle with dyslexia was shown well, but other parts of her story were lacking. I would like to explore the ways Tootsie gained self confidence and also reading strategies she learned. I think that including how she became brave would help develop her character more and make her journey more believable. Exploring reading techniques would be an educational part of the story to explore. If the children reading the book are dyslexic, they could learn from these reading strategies and apply them. I also feel that the characters Mocha and Curry were lacking in character development. The book was about Tootsie, but Mocha and Curry were both important side characters. I would have liked to include more about their personalities to flesh out their characters. I also would have liked to explore how Tootsie distancing herself from them made them feel. It would be interesting to see conversations just between Curry and Mocha discussing their thoughts on why Tootsie was not around as much. If I had more time for my book, I would definitely have explored these ideas.

When reviewing my final product, I can say that I am very proud of what I accomplished. I am really happy with how my book turned out in the end. I am most proud of my illustrations

and puzzles featured in my book. Creating unique and interesting puzzles and illustrations was a great accomplishment. My book was over 50 pages long, half of these pages were made of puzzles and illustrations. This means that I had to create new fun pictures and puzzles throughout all of these pages. I was able to have all my puzzles be unique types of puzzles. This means that none of my puzzles overlapped in style and they all were unique from each other. I also did my best to make my illustrations as unique as possible. I tried not to repeat the same format of my illustrations. I also am very proud of the knowledge I gained through completing my project. I learned more digital painting skills and skills regarding making a book. I already had some skills regarding digital painting at the beginning of the project, but my skills definitely improved throughout the process of creating my book. I learned new techniques regarding brushes and layers in Photoshop. When putting my book together, I learned about layout and elements needed in a book. I used the program InDesign and learned how to properly layout a book properly in that program. I also gained insight on elements that should be on different pages of a book. For example, on the cover page it is important to include the author of the story and illustrations.

XI. CONCLUSION

I tried to create a children's book that was fun and educational about dyslexia; based on the final product and my data analysis I believe I succeeded. My final product is a book rich with information and activities for children. The book is filled with illustrations and an interesting story. I feel that this book is a success in creating a fun way to learn about dyslexia. This book also achieved its goal to simulate what it feels like to be dyslexic. A book like this is an amazing tool for all children in the world, whether they are dyslexic or non dyslexic. I hope to have Pigslexia published and printed so people can access this fun and inspirational story.

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XIII. APPENDIX

APPENDIX A: Survey Questions

Questionnaire: Pigslexia

My name is Courtney Flokos and I am an IMGD Visual Art senior at WPI. For my MQP I am making an interactive children's book about dyslexia. This book is meant to be for children with or without dyslexia. I was hoping to gain some insight from participants on the puzzles in the book. If you feel uncomfortable and/or upset while taking this questionnaire please feel free to stop at any point. If you have any questions or concerns after taking this questionnaire please feel free to reach out to me at crflokos@wpi.edu.

Do you have dyslexia?

Yes

No

After reading the book, how did you feel about the story?

1 2 3 4 5 6

Really disliked it Really enjoyed it

Please explain why you felt this way about the story.

Short answer text

.....

After reading the book, how did you feel about the illustrations?

1 2 3 4 5 6

Really disliked them Really liked them

Please explain why you felt this way about the illustrations.

Short answer text

.....

How difficult was the puzzle on page 4 (Drawing a Guinea Pig)?

1 2 3 4 5 6

Not difficult in any way Too difficult to complete

Is there anything you would like to add about the puzzle on page 4?

Short answer text
.....

How difficult was the puzzle on page 8 (Guiding the Guinea Pigs)?

1 2 3 4 5 6

Not difficult in any way Too difficult to complete

Is there anything you would like to add about the puzzle on page 8?

Short answer text
.....

How difficult was the puzzle on page 10 (The Hidden Message in the Illustration)?

1 2 3 4 5 6

Not difficult in any way Too difficult to complete

Is there anything you would like to add about the puzzle on page 10?

Short answer text
.....

How difficult was the puzzle on page 14 (Crossword Puzzle)?

1 2 3 4 5 6

Not difficult in any way Too difficult to complete

Is there anything you would like to add about the puzzle on page 14?

Short answer text
.....

How difficult was the puzzle on page 18 (Unscramble the Words)?

1 2 3 4 5 6

Not difficult in any way Too difficult to complete

Is there anything you would like to add about the puzzle on page 18?

Short answer text
.....

How difficult was the puzzle on page 22 (Word Search)?

1 2 3 4 5 6

Not difficult in any way Too difficult to complete

Is there anything you would like to add about the puzzle on page 22?

Short answer text
.....

⋮

How difficult was the puzzle on page 26 (Connect the Dots)?

1 2 3 4 5 6

Not difficult in any way Too difficult to complete

Is there anything you would like to add about the puzzle on page 26?

Short answer text
.....

How difficult was the puzzle on page 30 (Maze)?

1 2 3 4 5 6

Not difficult in any way Too difficult to complete

Is there anything you would like to add about the puzzle on page 30?

Short answer text
.....

How difficult was the puzzle on page 34 (Animal Letter Representation)?

1 2 3 4 5 6

Not difficult in any way Too difficult to complete

Is there anything you would like to add about the puzzle on page 34?

Short answer text
.....

How difficult was the puzzle on page 38 (Spot the Difference)?

1 2 3 4 5 6

Not difficult in any way Too difficult to complete

Is there anything you would like to add about the puzzle on page 38?

Short answer text
.....

How difficult was the puzzle on page 42 (Fill in the Missing Words)?

1 2 3 4 5 6

Not difficult in any way Too difficult to complete

Is there anything you would like to add about the puzzle on page 42?

Short answer text
.....

How difficult was the puzzle on page 46 (Decode the Numbers)?

1 2 3 4 5 6

Not difficult in any way Too difficult to complete

Is there anything you would like to add about the puzzle on page 46?

Short answer text
.....

How difficult was the puzzle on page 50 (Fill in the Missing Letters)?

1 2 3 4 5 6

Not difficult in any way Too difficult to complete

Is there anything you would like to add about the puzzle on page 50?

Short answer text
.....

How difficult was the puzzle on page 54 (Fill in the Patters)?

1 2 3 4 5 6

Not difficult in any way Too difficult to complete

Is there anything you would like to add about the puzzle on page 54?

Short answer text
.....

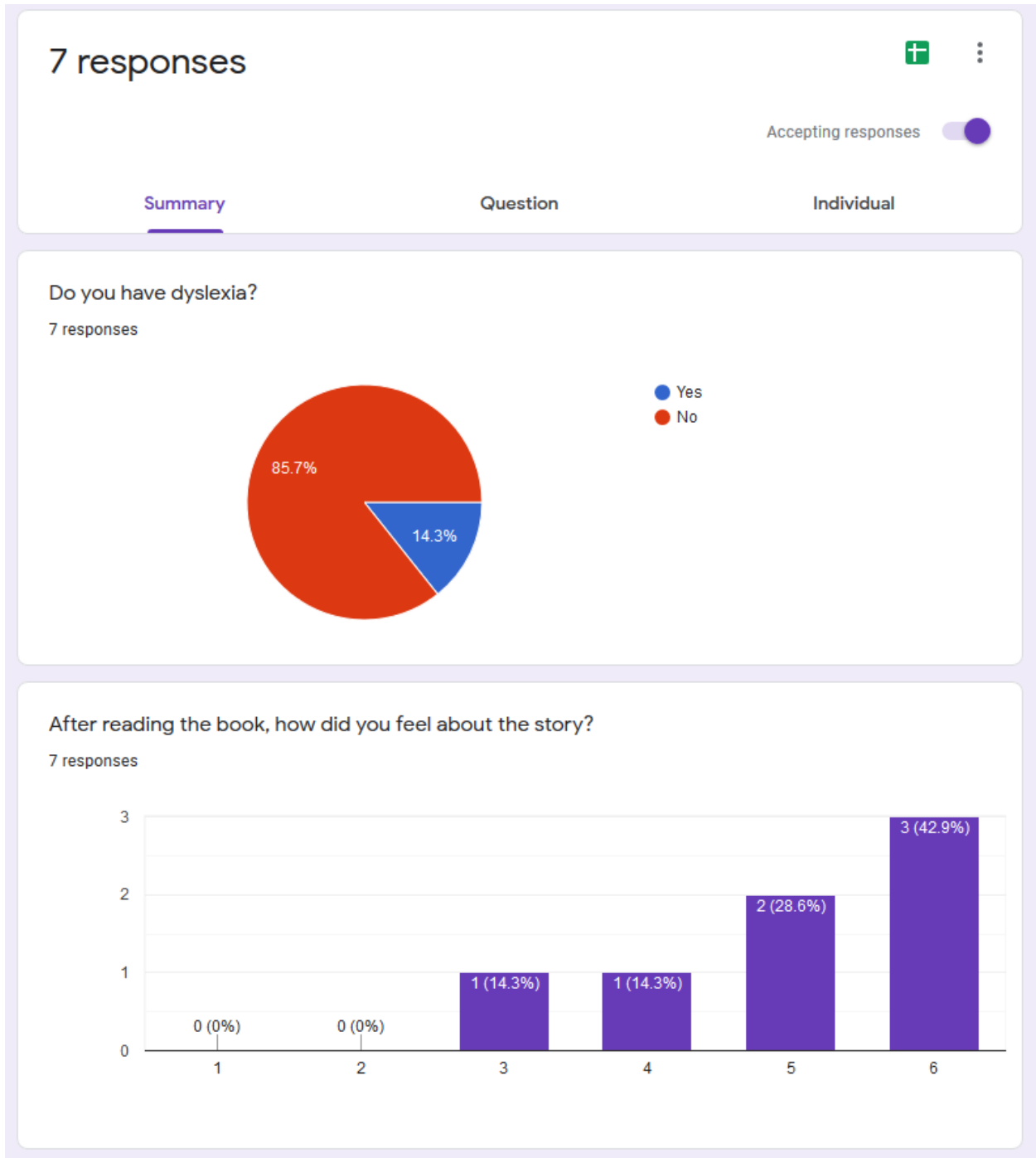
Do you have any other feedback you would like to share about the book?

Short answer text
.....

Thank you for answering the questionnaire. Please put your wpi email if you completed this for playtesting credit.

Short answer text
.....

APPENDIX B: Survey Responses



Please explain why you felt this way about the story.

7 responses

It was very informative, and very cute.

It was sweet and great to read- and it made me think about how much I would have loved this book as a kid.

I liked how the puzzles went along with the story, but I feel like I didn't get to know the characters (mocha, curry, and tootise) well. I wish I knew a bit more about their personalities and demographics like age or interests.

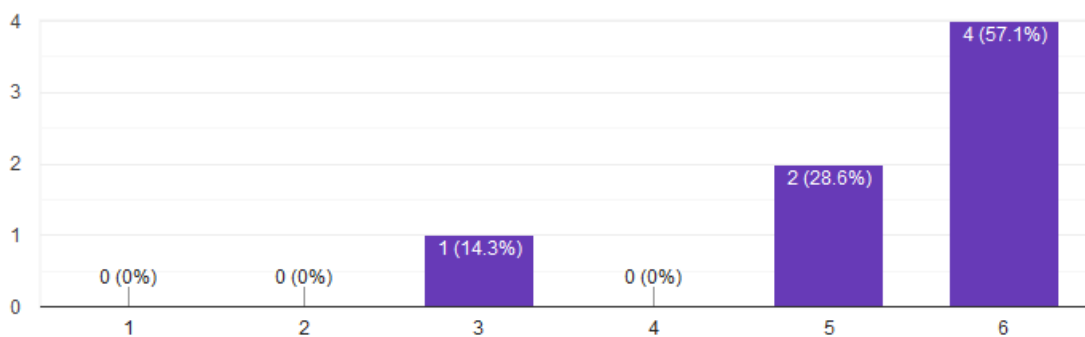
I understand that it was for children - but I feel that there were too many puzzles breaking everything up, especially puzzles that could be extra difficult for somebody with dyslexia

I liked the guinea pigs and thought the story was informative

Overall, the message was clear and the growth arc was simple/effective, but it may have focused too much on the pigs feeling bad, and not enough on why they felt accepted at the end. The jump from page 47 to 51 is a bit abrupt

After reading the book, how did you feel about the illustrations?

7 responses



Please explain why you felt this way about the illustrations.

7 responses

It was adorable, and really fit with the children's book theme.

They were really cute, and the art was really consistent, so the pages fit together well

I thought the illustrations were very cute and lighthearted. I do think sometimes it was unclear what an object was supposed to be. I also wish there was more detail or objects within the scenes, like in the classroom setting.

I feel like more time should be spent cleaning up the artwork and making it look professional

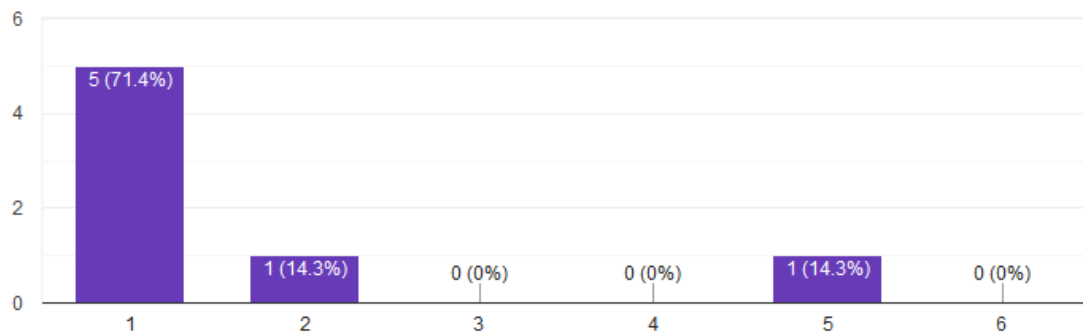
The guinea pigs were cute

The pigs were cute and the art style felt consistent across the book

They are cute and the pastelle color palette seems good for a young audience

How difficult was the puzzle on page 4 (Drawing a Guinea Pig)?

7 responses



Is there anything you would like to add about the puzzle on page 4?

4 responses

It is perfect

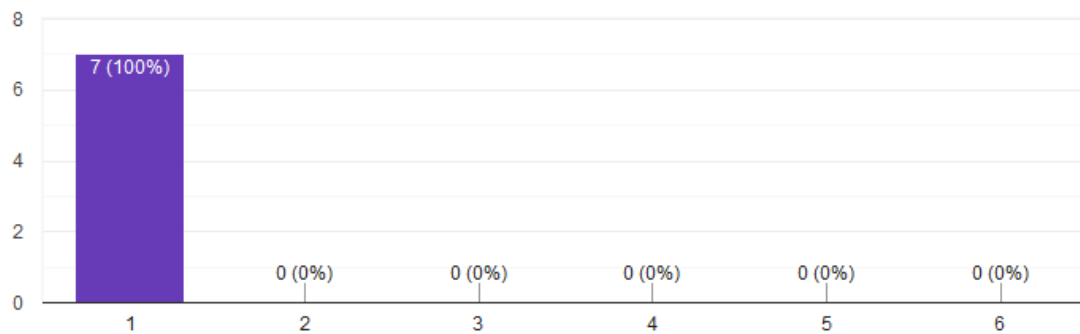
I love having a drawing puzzle

Maybe step 2 could be "draw a backwards 3" or something? All the other instructions were super simple, and that might make it easier for young kids

The "lumpy circle" step for the ear seems sort of like a "draw the rest of the owl" situation. A more detailed description of the shape might be helpful

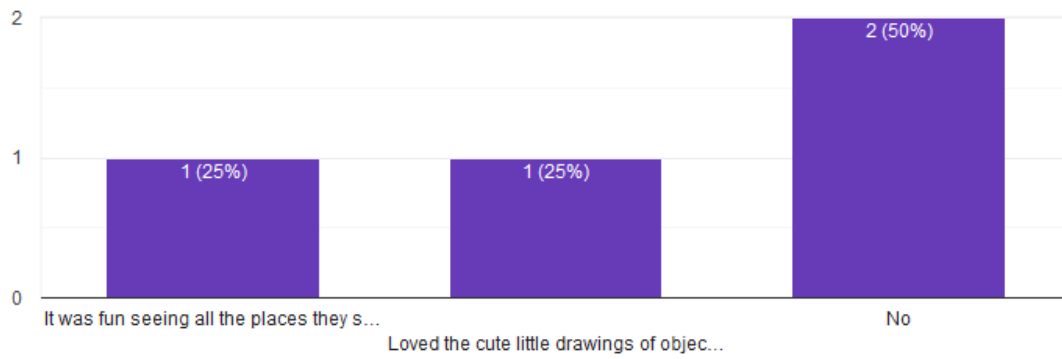
How difficult was the puzzle on page 8 (Guiding the Guinea Pigs)?

7 responses



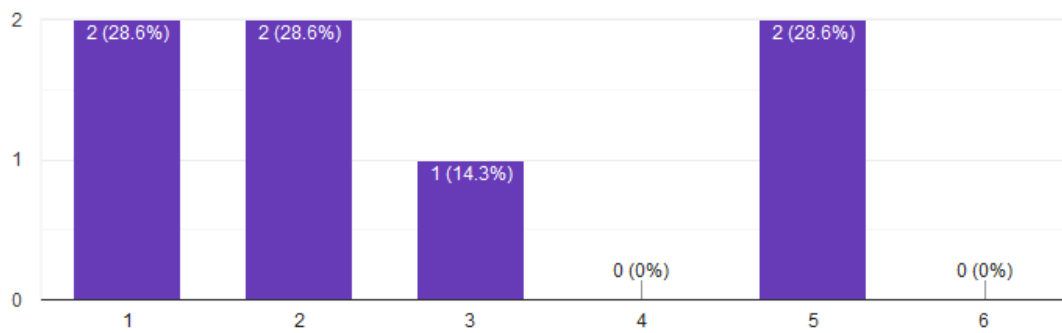
Is there anything you would like to add about the puzzle on page 8?

4 responses



How difficult was the puzzle on page 10 (The Hidden Message in the Illustration)?

7 responses



Is there anything you would like to add about the puzzle on page 10?

4 responses

I like that it is a hidden game, a bit difficult to spot, but it works!

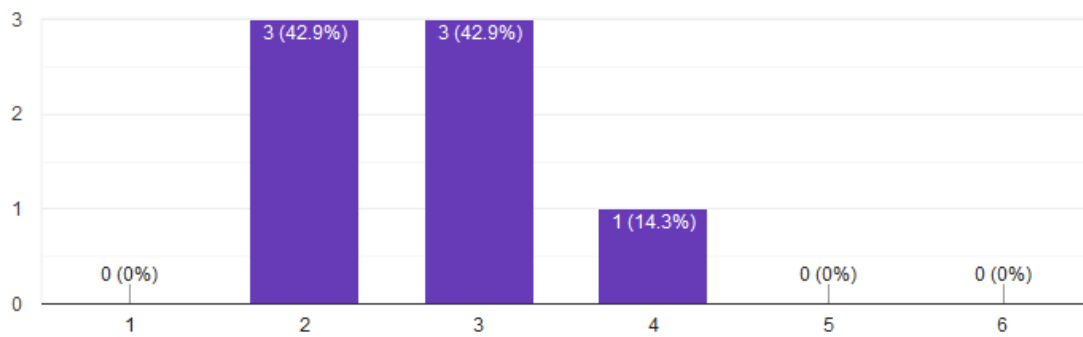
I like how you were not told it was there

No

I liked this message. The fact that something is written there immediately "pops out", but it takes further examination to read it

How difficult was the puzzle on page 14 (Crossword Puzzle)?

7 responses



Is there anything you would like to add about the puzzle on page 14?

6 responses

Very creative, as a non dyslexic person it confused me for a few of the words.

might help to make the clues a bit bigger

I'm no good at crosswords

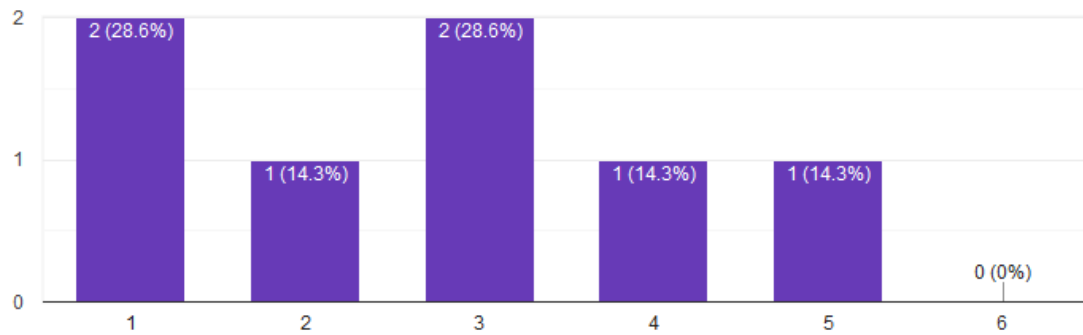
Na

No

The individual words are quite easy, but fitting them together involves some level of challenge

How difficult was the puzzle on page 18 (Unscramble the Words)?

7 responses



Is there anything you would like to add about the puzzle on page 18?

4 responses

I wouldn't change anything, can be a bit difficult for some though.

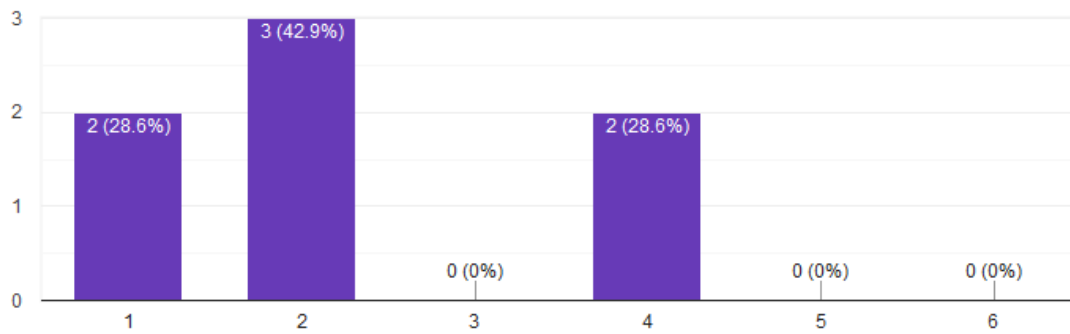
It was fun and challenging

No

If the first letter of a word is the "correct" letter, it is pretty easy to unscramble it. If the first and last are correct, it is generally possible to just read it smoothly even if the middle is jumbled. If The first is wrong, it is far more challenging. I don't know which way accurately represents the experience of reading with dyslexia

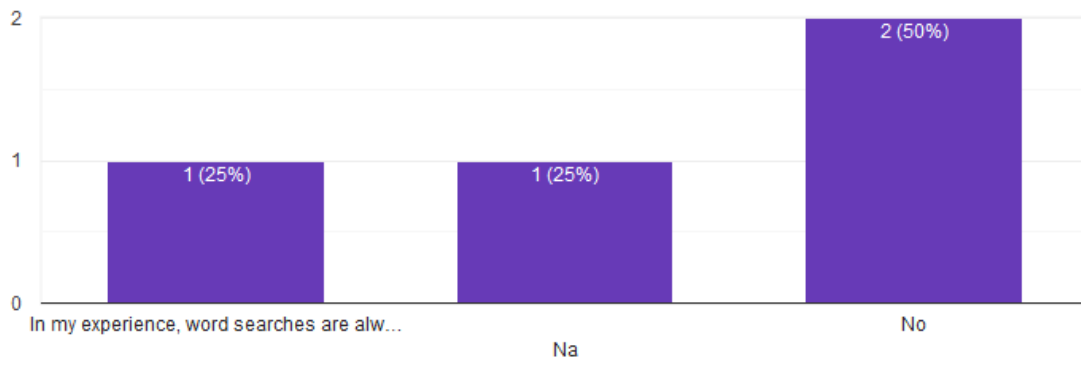
How difficult was the puzzle on page 22 (Word Search)?

7 responses



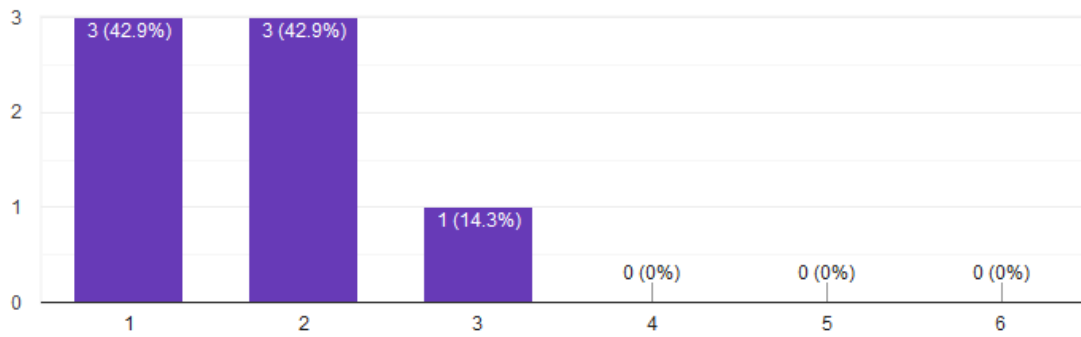
Is there anything you would like to add about the puzzle on page 22?

4 responses



How difficult was the puzzle on page 26 (Connect the Dots)?

7 responses



Is there anything you would like to add about the puzzle on page 26?

3 responses

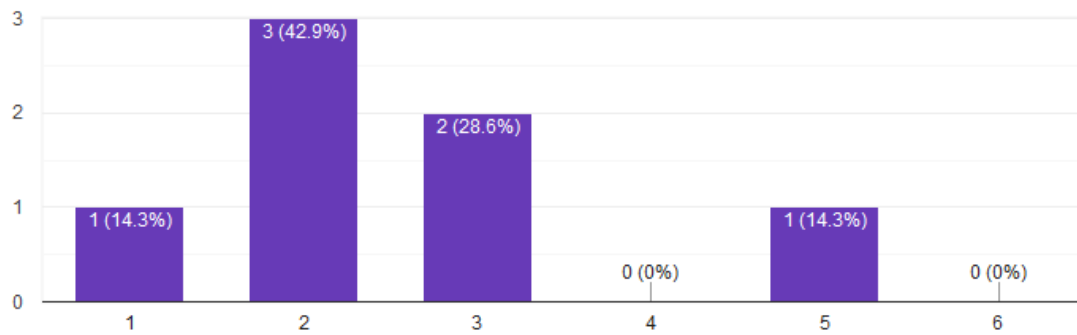
No

I like how it made a picture

It took me a surprisingly long time to find dot 1

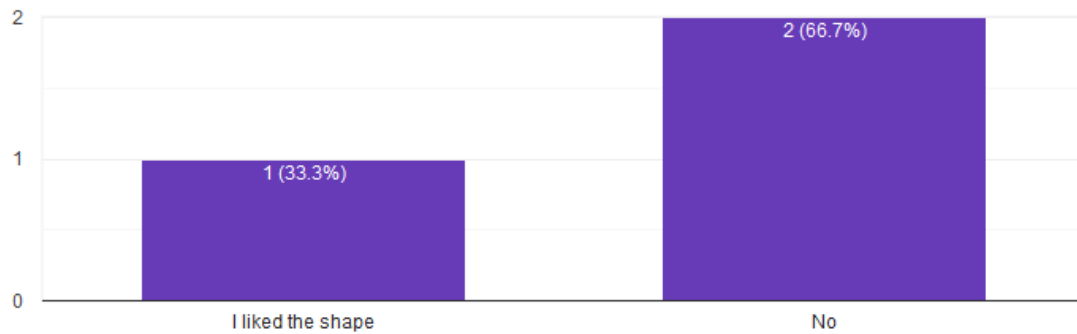
How difficult was the puzzle on page 30 (Maze)?

7 responses



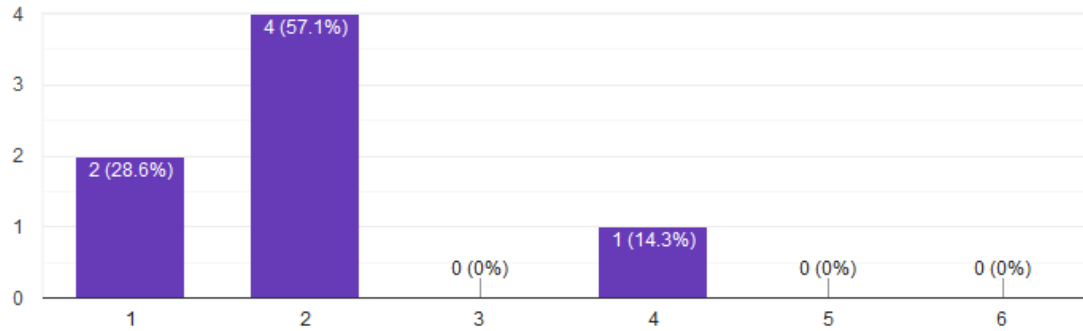
Is there anything you would like to add about the puzzle on page 30?

3 responses



How difficult was the puzzle on page 34 (Animal Letter Representation)?

7 responses



Is there anything you would like to add about the puzzle on page 34?

4 responses

Easy concept to understand, but I would recommend putting on word per line or specify that it isn't one word per line.

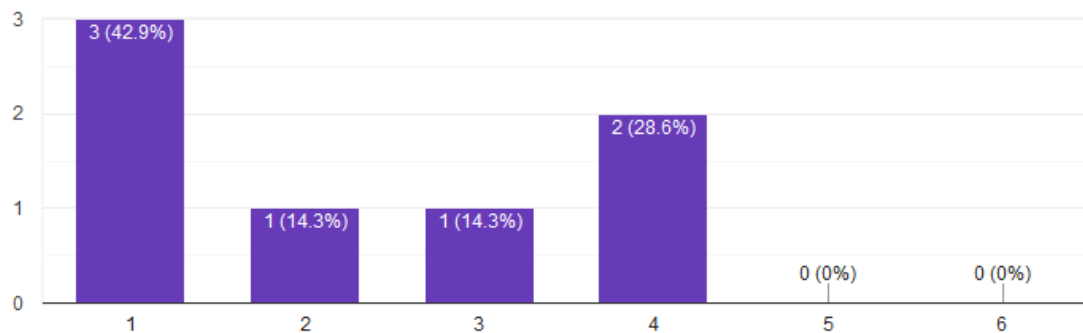
I was confused by the animal names with two words. I kept counting Indian rhinoceros as "IR" and got confused

I liked seeing different animal names

No

How difficult was the puzzle on page 38 (Spot the Difference)?

7 responses



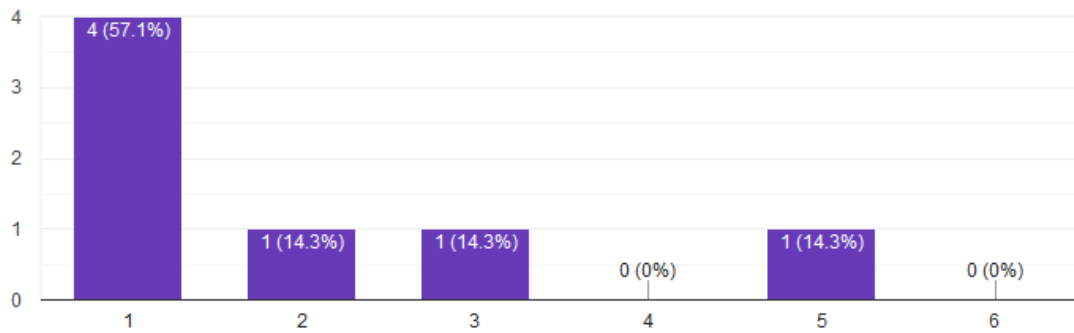
Is there anything you would like to add about the puzzle on page 38?

4 responses

- Perfect
- I liked the pictures
- No, this was my favorite puzzle
- Very fun

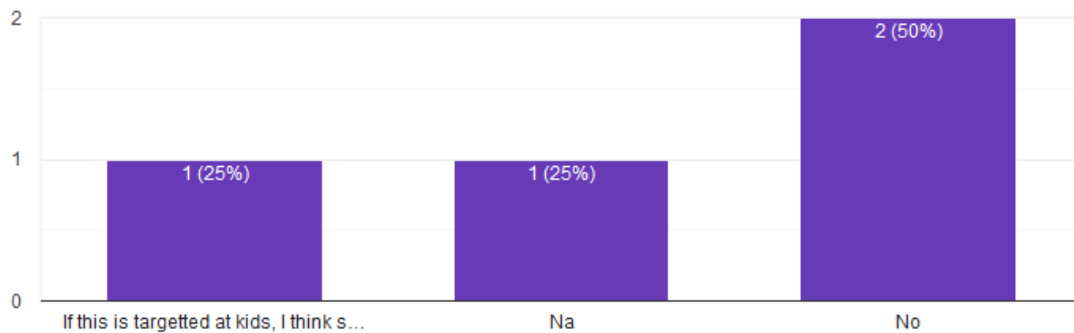
How difficult was the puzzle on page 42 (Fill in the Missing Words)?

7 responses



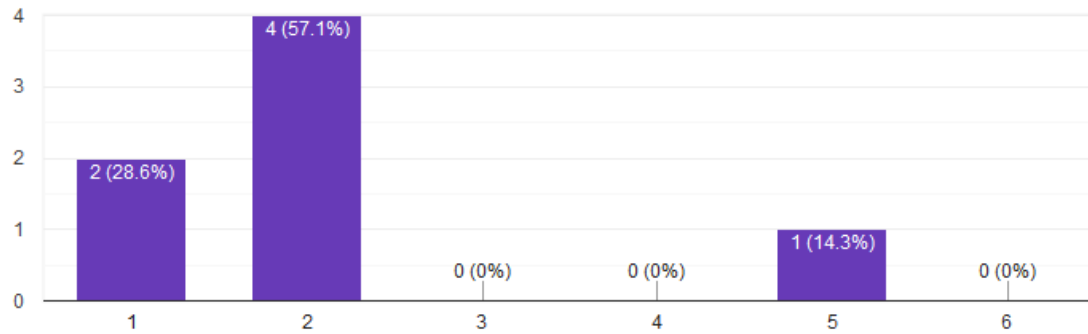
Is there anything you would like to add about the puzzle on page 42?

4 responses



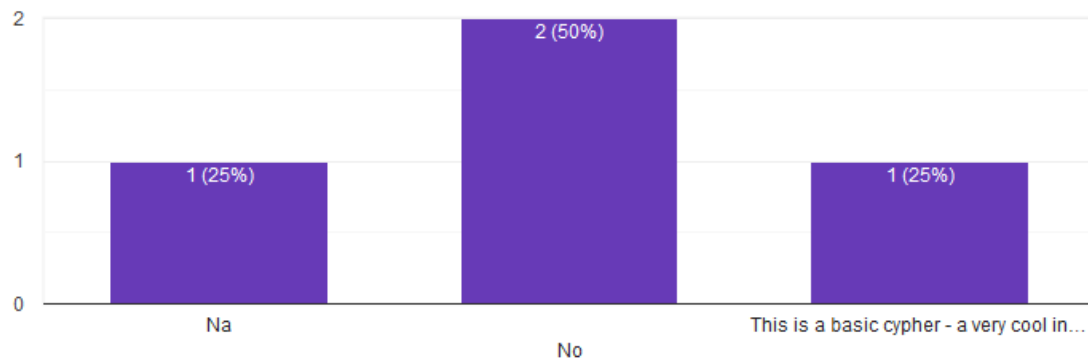
How difficult was the puzzle on page 46 (Decode the Numbers)?

7 responses



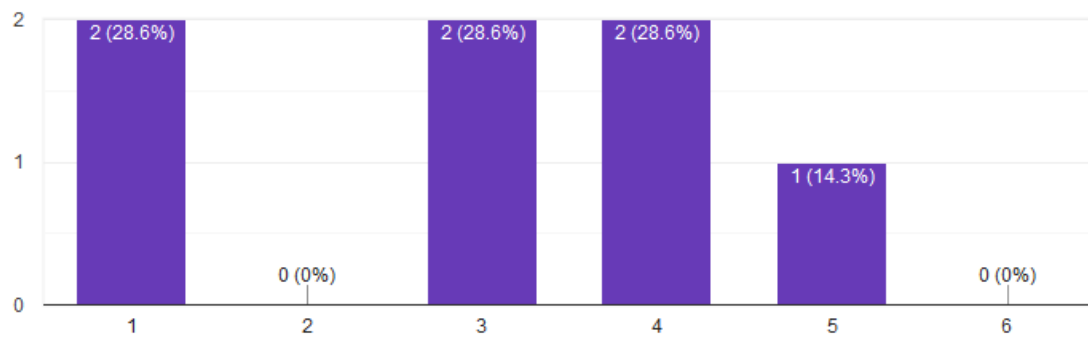
Is there anything you would like to add about the puzzle on page 46?

4 responses



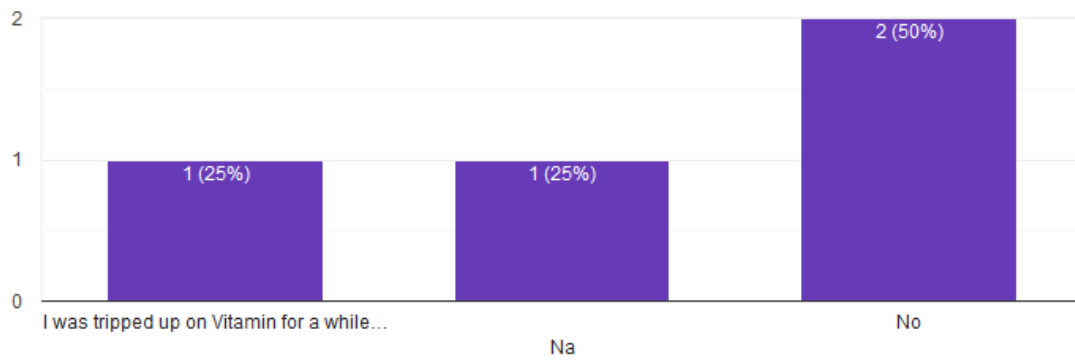
How difficult was the puzzle on page 50 (Fill in the Missing Letters)?

7 responses



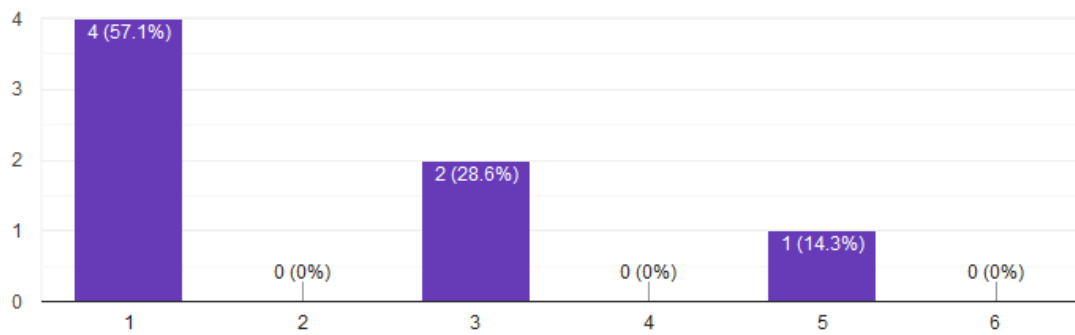
Is there anything you would like to add about the puzzle on page 50?

4 responses



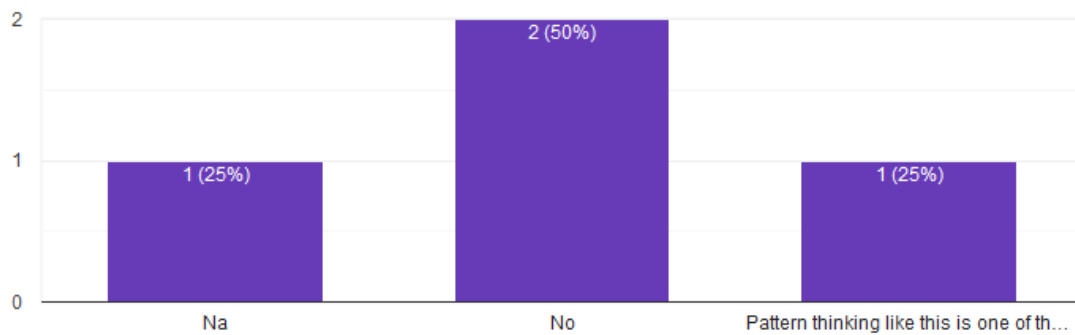
How difficult was the puzzle on page 54 (Fill in the Patters)?

7 responses



Is there anything you would like to add about the puzzle on page 54?

4 responses



Do you have any other feedback you would like to share about the book?

5 responses

Love the artstyle, love the puzzles, overall really good.

It's really cute and id love to see it published- seriously, maybe try kickstarter?

It would be nice if there was a page separating out the puzzle solutions. Maybe the credits could come first? I just got confused when I started seeing the puzzle solutions. I found one typo on page 49: "Luckily" not "luckly." I really enjoyed seeing you pigs in the puzzle book. I think the concept it really creative. I especially liked the pig expressions in some drawings and the cute objects.

I really liked the book

This was a cute and fun puzzle book. I dont feel qualified to say how well it describes dyslexia

Thank you for answering the questionnaire. Please put your wpi email if you completed this for playtesting credit.

3 responses