Patched Studio

Research

AI Fairytales

2024

Inhoud

Introduction

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Competitor Analysis

Introduction

We have a project where we want to generate (bedtime)stories for children, for this project we need to do research, and in this document, I did a competitor analysis.
I researched the competitors and searched for comparable products.

Competitors

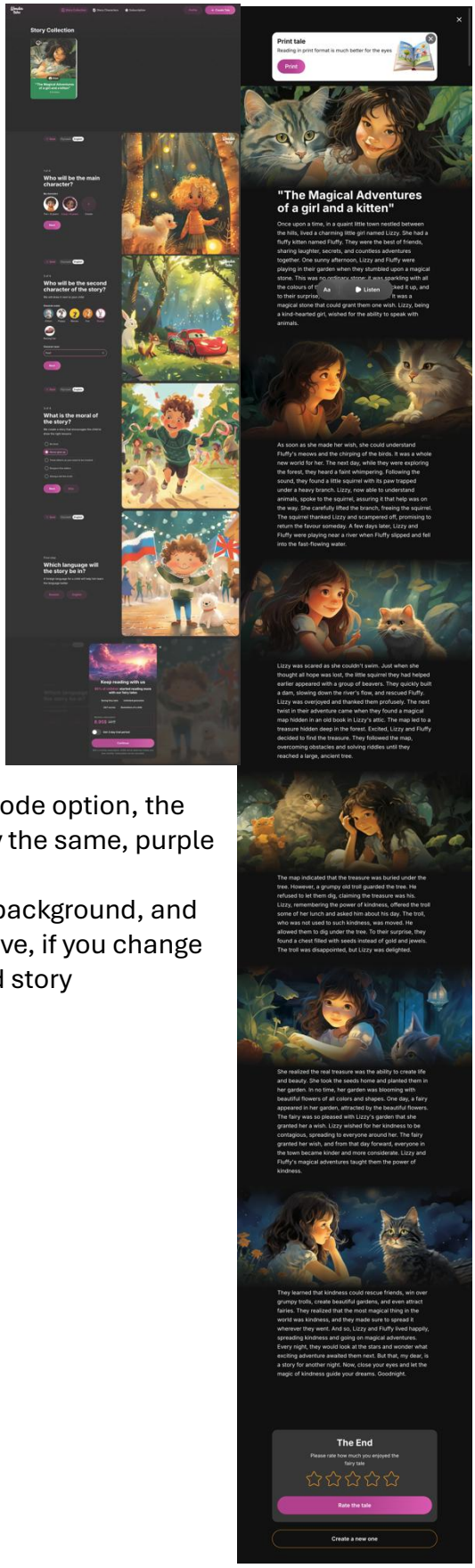
I started to investigate similar products, if there already are some existing ones. The competitors are products that are/have almost the same idea that we want to create. There are lots of competitors, I focused on 8 different products that are in some way almost the same.

Products: Wonder tales, DreamKid, Storyleo, Wendy StoryTeller, StoryBooks, Storyspark, Oscar stories, Milo.

What all the products have in common, are generation of stories, audio function, and some customizability.

Name	Favicon	Logo/branding	Platform	App img	Account	Subscripsion	Customisability	Accecibility	export for print	Languages	Audio	Scource
Wonder tales		logo: App name in a specialinfont. Branding: pink	Website	x	yes	1 free story after registration, $8,95 monthly	5 options for moral of the story, change names of pets	dark/light mode	yes	english and russian	yes	https://app.wondertales.io/
dream kid		purple, green, gen img, logo is used as favicon, the app is mostly purple	App		yes	2 free stories, after 3,99 euro per story	10 story settings	no	no	english, german, french, dutch, spanish, turkish	yes	https://www.dreamkid.ai/
Storyleo		purple gradient buttons, orange buttons, app is pretty dark themed, one background img,	App, mobile and tablet/ipad		no	3 free stories, monthly/yearly subscription, 3,99/34,99. you can also buy start, one star = one story, 8 stars - 1,99 / 20 stars - 9,99 / 40 stars - 6,99	yes, names, side character, some set character for child, story themes, story length	enable/disable Haptics	no	english, german, vietnamese	yes	https://storyleo.app/
Wendy StoryTeller	none	yellow, gradient background	App		yes	free stories, only with audio you pay with in app coins? App is sponsored by other companies	yes, you can select different kind of themes and characters	no	no	list of different languages	yes, need to pay	https://wendystoryteller.com/?via=topaitools
Storybooks		yellow, and white	App		yes	$4,99 per month, 49,99 per year	prompt bar for story idea, illistration style	dark/light mode	yes	list of different languages	yes	https://www.storybooks.app/
Storyspark		light purple, use of a lot of emoticond	Website	x	yes	1 free story after registration, 5,99 or 9,99 monthly	a bit	yes, included disabilities	download option	6 langueages	yes with subscription	https://storyspark.ai/
Oscar stories		dark purple and some orange	App		yes	2 free stories, buy 5 coins for 9,99. or monthly subscription 4,99	few	no	no	6 langueages	yes, 1 coin per story	https://oscarstories.com/
Milo		purple and white, color ful icons	App		yes	yes only subscribtion	idk	idk	idk	idk	idk	https://www.getmilo.io/

Wonder tales
Wonder tales only works on a website, the website has some information about the product, and some reviews.



Platform
- Website

Features
- Account
- You can change names and only choose the moral of the story
- Dark/light mode
- Export for print
- 2 languages
- Audio
- Change font size

Subscription
The website gives you one free story after registration, after the first story you need to pay, $8,95 monthly.

Design
Wonder tales is a dark themed, but there is also a light mode option, the dark background will turn white, the other colors will stay the same, purple

the story itself is shown with a Fullscreen picture on the background, and the story itself above the picture. The webapp is responsive, if you change the size, the picture of the story will be above the text and story underneath.

Dream kid
Dreamkid had a website, here they explain who they are and what their product is, the product itself only works on their app.

Platform

- App

Features

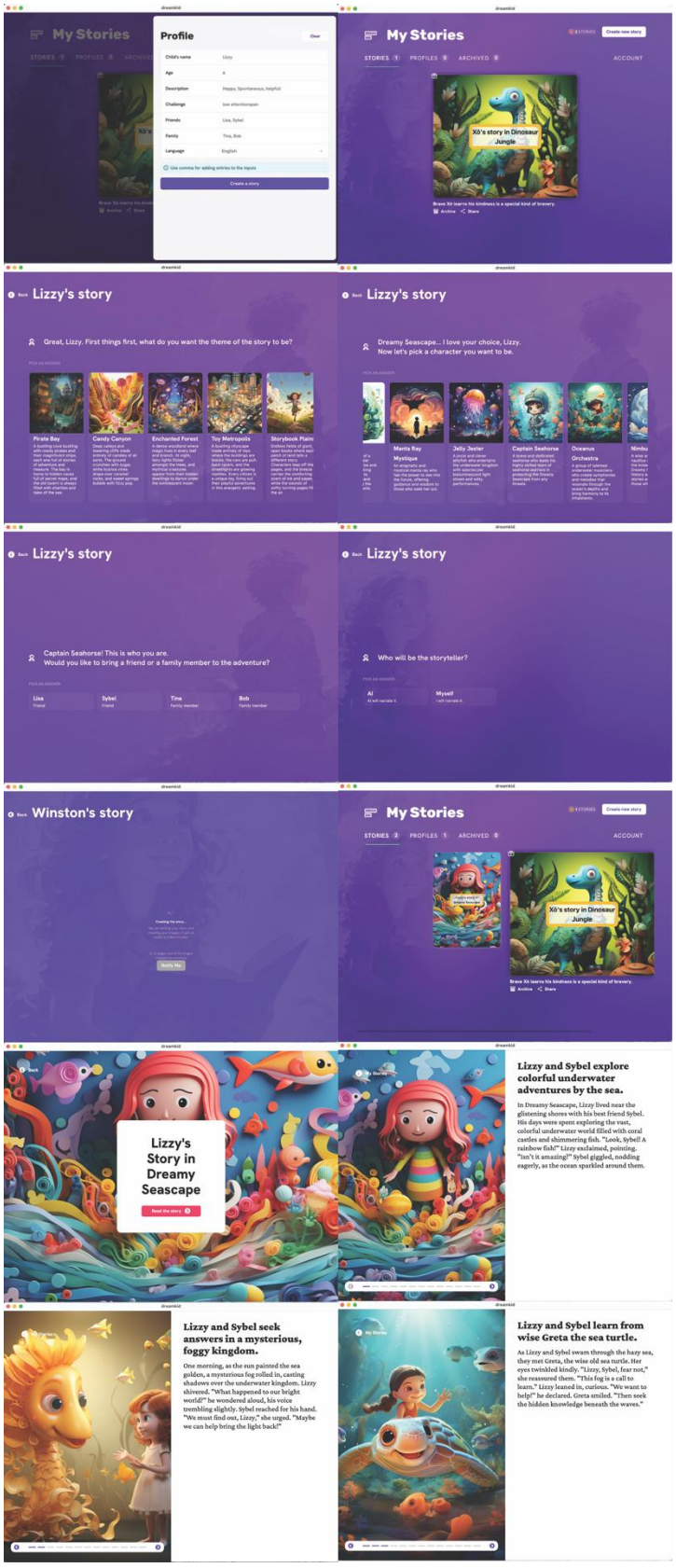
- Account
- Some customizability
- Dark/light mode
- Export for print
- Audio
- Languages: English and Russian
- Featured stories

Subscription
The app starts with two free stories, after those are used you need to pay €3,99 per story.

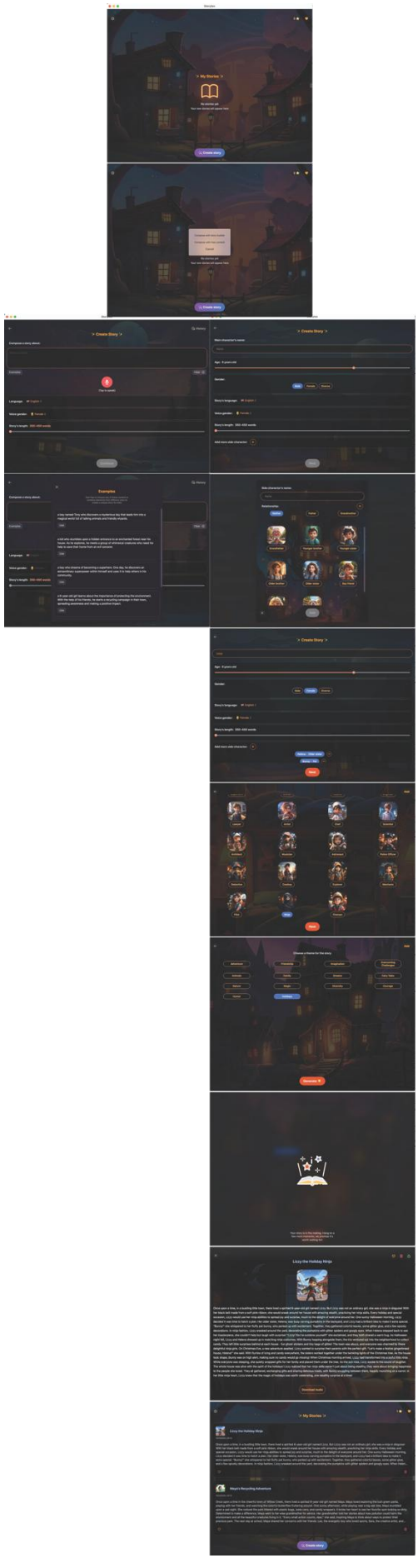
Design
The app design of wonderkid is simple and does not have a lot of different colors.
Main color is purple and white. Everything has rounded edges

The story is on half the page, and the other half are images.
There is an indication bar for the next/ previous page, in between the arrows you can see grey lines indicating the pages, and the pages you have read will turn purple.

On the page “my stories” you can scroll left and right to see the stories, when scrolling, the story in the middle turns bigger.



Storyleo
Story leo has a website and an app, on the website they have a description of their app, and what features the app has.



Platform

- App

Features

- Account
- Customization
- Enable/disable haptics
- 6 languages
- Audio
- Create story
    - Story builder
        - You can customize the story by choosing characters etc.
    - Free content
        - You can give your idea trough the prompt bar, and the app generates a story

Subscription
The app gives you 3 free stories, after those are used there are different subscription options
Monthly €3,99 – yearly €34,99
8 stories €1,99 – 20 stories €6,99

Design
Story Leo's design is quite dark, the colors used are purple, orange and green.

There is one consistent background set, and your stories are underneath one another, with the story half written.

The story itself only has one small, generated picture, and the story itself is displayed as a full text, small font, and the contrast with dark background and white font is very bright.

Wendy StoryTeller
Wendy storyteller has a one-page website, with a video introducing the app, buttons leading to the Appstore/play store.
Underneath the store buttons is a link to the webapp version of the app.
On the website are also some partnerships displayed.

Platform

- Webapp
- App

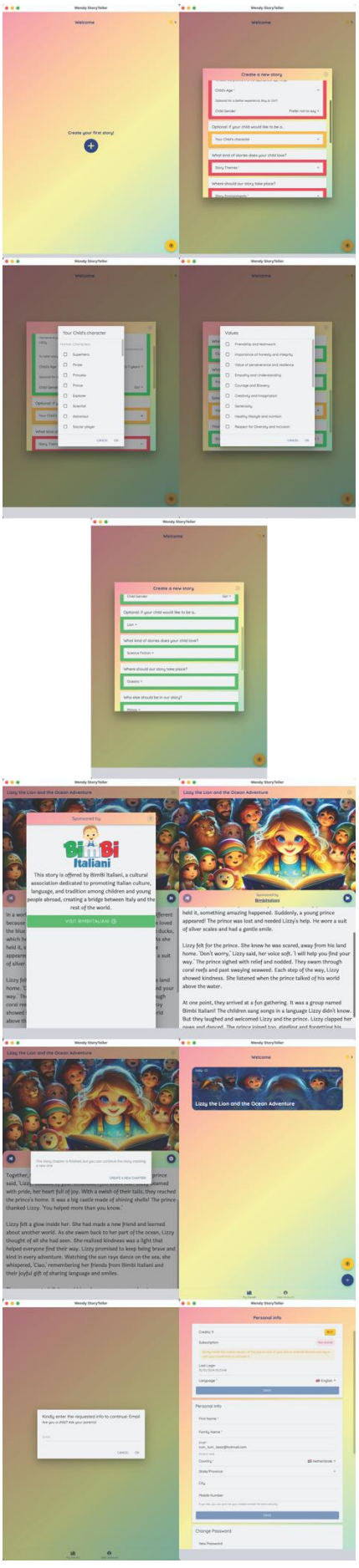
Features

- Account
- Some customizability
- A list of different languages
- Audio

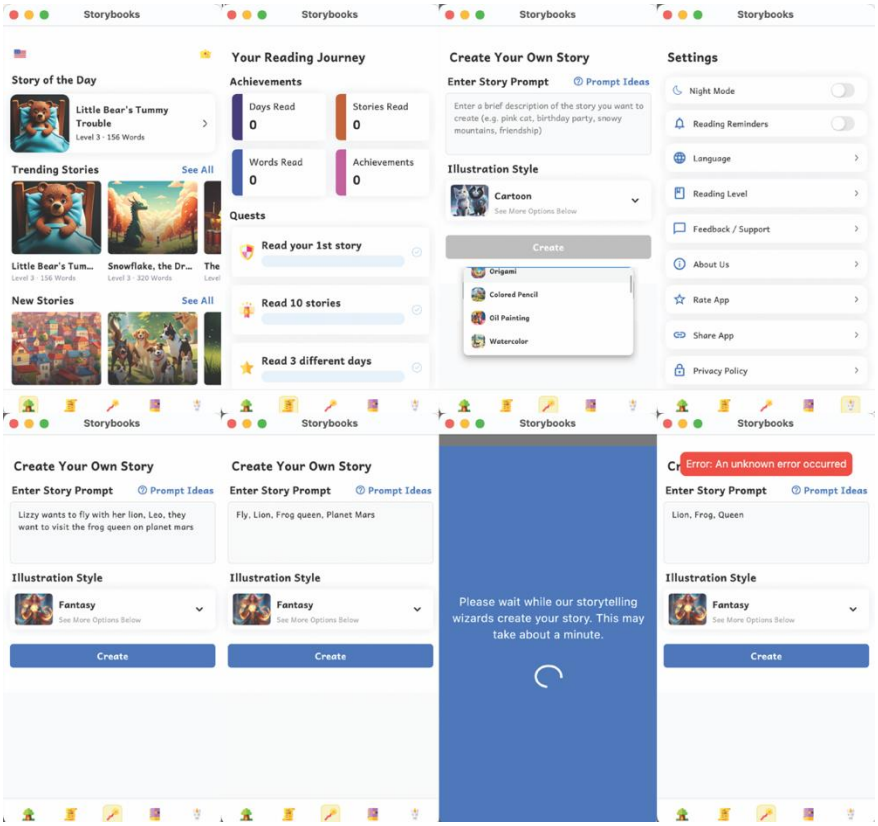
Subscription
Free stories, the application is sponsored by different companies.
Only if you want to use the audio function you need to pay

Design
Wendy storyteller design is very colorful, a lot of pastel colors are used, and during creating the story there also are different colors, green – input given, red – needs input

There is no image generation in the app, the story is shown as a full text, with Wendy the storyteller as a picture.



Storybooks
Story books also have a website with their general information, about the app and about themselves, the product is also used on an app



Platform
- App

Features
- Account
- Customizable
- Prompt bar for story idea
- You can choose the illustration style
- Dark/light mode
- Export for print
- List of different languages
- Audio

Subscription
Storybooks works with a subscription
Monthly $4,99 – yearly $49,99

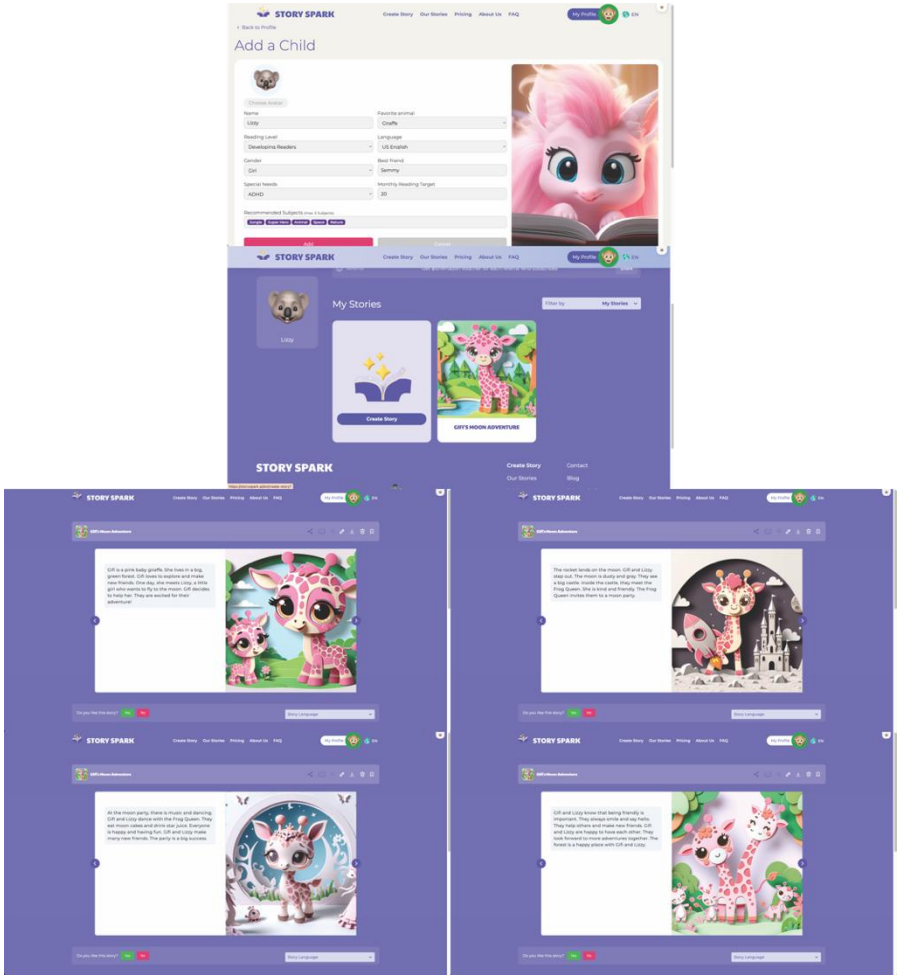
Design
The app design had a white background and uses a lot of emoticons as icons. Blue and white are used are the standard colors
As far as I can see, the app generates images, because you can choose the illustration style, and for the featured stories there also are different images.

I could not see how the generated story looks like, I tried to generate a story on multiple occasions, and it kept giving me an error.

Storysparks
Storysparks has a short description on their website, and they work with a webapp

Platform
- Webapp

Features
- Account
- There are some customizability's
- The app has an option to choose the disability (if the child has one)
- Download option
- 6 languages
- Audio



Subscription
One free story, after the trail story, you have 2 kinds of subscriptions, both monthly, but different amount of stories
- 5,99
- 9,99

Design
Story sparks use a lot of purple and uses emoticons.

The generated story is displayed with one page with the story and one page with the generated image.
There are no straight corners, everything has a radius

Oscar stories
Oscar stories have a website with their general information, about the app and about themselves, the product is also used on an app

Platform

- App

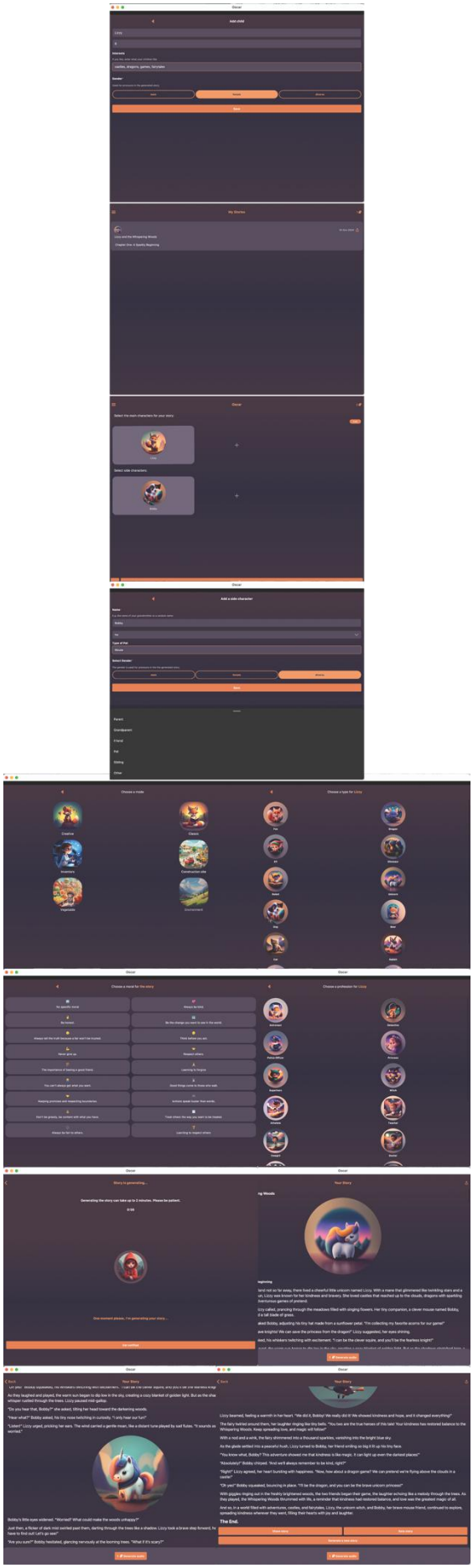
Features

- Account
- Few customizability
- 6 languages
- Audio

Subscription
Oscar stories give 2 free stories and used a subscription after you used the free stories.
5 coins/stories 9,99 – audio function 1 coin per story
Monthly 4,99

Design
Oscar stories is another dark themed app, dark purple, orange are their main colors

The app generates some images, and will be shown above the story, the story is underneath the image.



Milo
Milo has a website with their general information, about the app and about themselves, the product is also used on an app

Platform
- App

Features
- Account
- Customizability
- Upload of picture, and the app generates an illustration of yourself

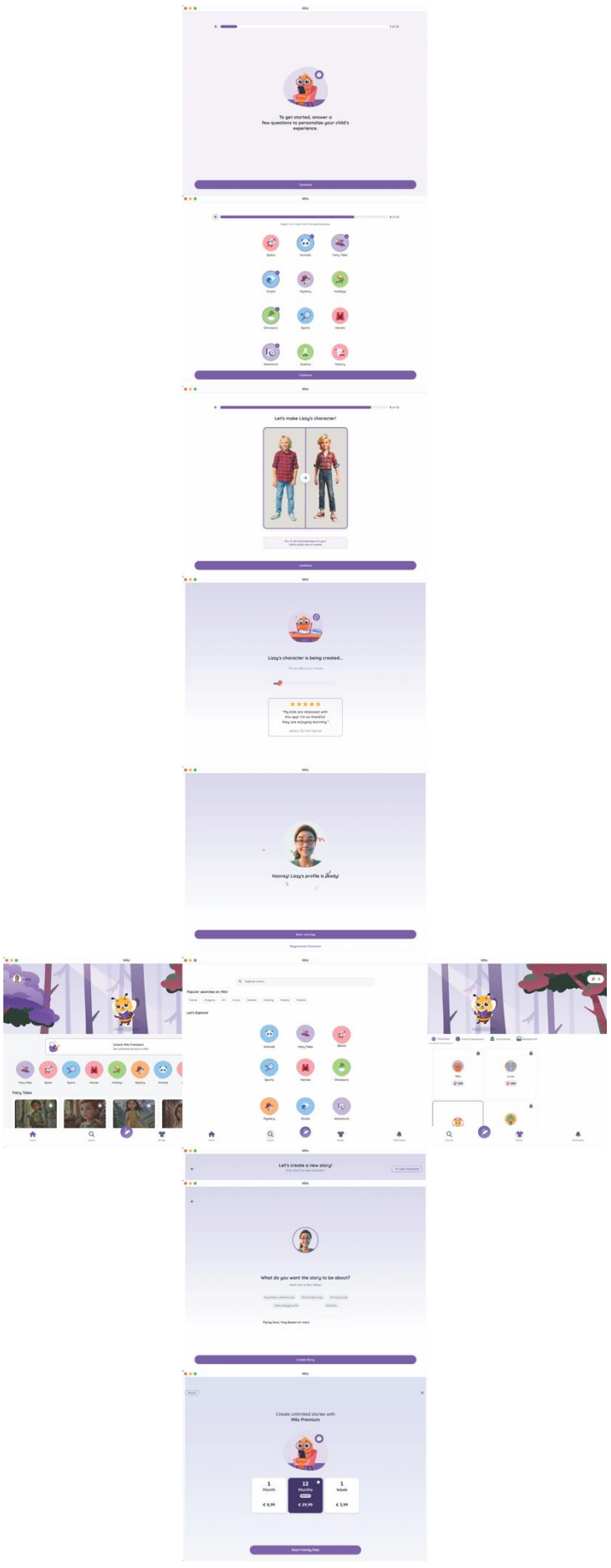
Subscription
Weekly - €3,99
Monthly - €8,99
Yearly – €59,99

Design
Light purple and pastel colors, gradient light purple white

The app uses a lot of circles

I could not see how the story generation worked, how the stories look like, and what kind of customizability's where, due to the need of a subscription

All corners are rounded



Conclusion

There are a lot of different and similar products, but some very simple and not very brought.

For the design there are a lot of similarities, rounded corners, images with every story/story page. There is a lot of use for purple and dark themes, and in combination with that there a lot of different colors used.

Every competitor I looked at, you need to have an account, and most use subscriptions, a lot have some free stories first. It is good to provide a few free stories first, to give the user a feel for the product before paying for a subscription. Some don't give free stories, but I did not get a good feel how the app works, because I could not see how the stories turnout.

Every app has an audio function, and some also had the option to export the story for printing, for the audio some with some apps you need to pay extra to use the function.

Only one app gave me the opportunity to select a disability for the child, but I did not get the idea it did anything for the story, 2 other apps have a dark/light mode, and one app has a function for enabling/disabling haptics.

Most apps had the function to change the languages, some have more language options than others.

The customization for the stories is all set options you can choose from, some apps had a prompt bar to type in your idea, but then you could not choose your own character. Another one with a prompt bar, you could only type in a few key words for the story.

The visuals for the stories were not all very child friendly, some only had one small picture and a full page with the stories text in a small font.

There are a lot of possibilities open to make this product better than the competitors

- Focus on accessibilities for children with disabilities
- Broaden the customizability's
- Story's layout
    - Reading mode
    - Reading font
    - Child friendly

Looking at the requirements and possible idea's, our app will be a lot broader and have a lot more UPS (unique selling points) compared to the existing products.

Sources

- https://app.wondertales.io/
- https://www.dreamkid.ai/
- https://storyleo.app/
- https://wendystoryteller.com/?via=topaitools
- https://www.storybooks.app/
- https://storyspark.ai/
- https://oscarstories.com/
- https://www.getmilo.io/

Competitor/branding analysis

Introduction

For the branding we did in combination with the competitor analysis, a quick overview what the branding of other competitors where, to see what there is now, and what we should/could do based on what the competitors have

Analysis

Competitors/sources	Design aspect	Ways of doing
www.fairytalegenerator.com fairytalegenerator.com	Whimsical/ fantasy, darker/dimmed/mystical colors dark mode, blue/purple	A lot of customizability (15 genre's, 20 settings customizable characters up to traits, no open options) step by step
www.kidotail.com kidotail.com	Modern, Simplistic, static, light mode, blue and orange colors	Limited customization (only name and age for main character, 12 options for included objects/beings in the story (max 3 per story). includes audio file for listening to story
www.domovoice.fundomovoice.fun	Warm colors, light mode but orange off-white color, 3d images, and moving aspects	No customizability, no generation, buy a speaker and 3d models of one of their characters put the character on the speaker and the story is told through the speaker. Focused on worldwide fairytales ex. Russian, Evenki and African.
www.fairytales.app fairytales.app	Purple and white, dimmed busy pattern with lots of icons, relaxing image in the background over the pattern.	Existing stories but AI is used to mimic your voice, so u listen to your own voice telling the story.
www.bedtimestory.ai bedtimestory.ai	White and orange, Simple, modern, more of a dashboard when you generate.	Open customization, mostly type a prompt yourself and it generates characters/story around it also generates images. Extra characters generated will be showed at the end of the story so you can save them and include them in later stories
www.oscarstories.com oscarstories.com	Warm, dark mode, orange and purple, gridded layout with cards. Small images	You can choose different morals for the story, add your own characters and give them a profession. includes an audio file for the story.
www.scarlettpanda.com scarlettpanda.com	Yellowish Off-white and dark blue, simple grid, Sans serif font + comic Sans(ish) font	Fill in your own text prompts, story about, characters and the moral, 74 languages and age of child illustration style. Then generates a story and images which you can also buy as a printed book

Color analysis

Based on the moodboards made during research, we wanted to analyze the colors from the moodboard, what does each color represent, and what could we use for the branding of the product.

We went for 3 directions:

- Magical & Imaginative
- Adventurous and educational
- Warm and cozy

Colour palette per moodboard

Magical & imaginative, second version:

- **#AE95BF – Thistle**: represents softness, dreaminess and Fantasy.
- **#403273 – Purple**: purple is used to convey mystery and loyalty

  https://www.adobe.com/nl/creativecloud/design/discover/color-meaning.html
- **#3B6D8C – Steel Blue**: blue is calming and refreshing, yet also keeps things mysterious
- **#87A658 – Olive Drab**: is a refreshing calming green which is also contrasting with the mysterious purple colors
- **#F2D2B6 – Peach-puff**: A soft, peaceful color to make sure there's a balance between mysterious and friendly

Magical & imaginative, first version:

- **#2C2F73** – This dark blue is used to convey the mysterious earth of magic
- **#95BF39** – green is for the natural aspects
- **#BF7C2A** – Peru this orange/brownish color is an earthly color to keep the theme more grounded and the orange also brings energy.
- **#A62E2E** – Redish Brown this red is also to keep the theme grounded and symbolizes bravery
- **#0D0D0D** – Black is used to bring balance in between all the colors

Adventurous and educational second version:

- **#A0C3D9** this blue color is soothing and relaxing and represents water and the sky
- **#D98F07** this orange is used to give a pop of fun, energy and conveys happiness, to make the color palette less serious
- **#A66933** this brown represents groundedness and ruggedness of mountains and terrain
- **#F2E0D0** this pinky beige is soft, friendly and relaxing to give a feel of how adventure can also be chill and doesn't have to be active all the time.
- **#592F16** This brown also grounds everything and represents the brown you could find in the soil

Adventurous and educational first version:

- **#3B9ABF** This blue / turquoise color is used to represent the sky and water that you could find whilst on a journey it's vibrant, yet calming and refreshing
- **#A0BF30** This light green color is energetic yet refreshing it also conveys the nature you would find on an adventure
- **#A3A64E** This darker green color is still refreshing but at the same time soothing too
- **#BF2011** This red represents passion and confidence you should get learning new things
- **#0D0D0D** A contrasting dark color to ground the design as a steady base.

Warm and cozy second version:

- #735364 this purple is rich yet warm, it brings a bit of color in the palette
- #A69B8D this neutral gray is simple and keeps the palette calm
- #f2CEAE this beige is soft yet inviting and warm
- #8C5230 this rich brown brings comfort
- #40180F this deep brown adds a touch of protection in the coziness

Warm and cozy first version:

- #A69E2D green this green color feels organic and is comforting
- #F2C777 this yellow is radiant and warm, bringing optimism and light
- #A63A12 this reddish brown is a grounding color, signifying comfort and tradition
- #F29979 this coral is inviting and calming
- #0D0D0D black brings a touch of elegance and contrast in the whole palette

Conclusion

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Effect blue light on children

Blue light, particularly from screens like smartphones, tablets, and computers, can have several effects on children. So if we plan on making an app intended for children we should make sure it's not harmful to them in anyway. These are the consequences of consistent exposure to blue light:

1. Disrupted Sleep Patterns: Exposure to blue light, especially in the evening, can interfere with the body's production of melatonin, a hormone that regulates sleep. This may make it harder for children to fall asleep, leading to sleep deprivation.

2. Eye Strain and Discomfort: Extended screen time can cause digital eye strain, leading to symptoms like dry eyes, blurred vision, and headaches. While there's no strong evidence that blue light causes permanent eye damage, it can contribute to discomfort and fatigue.

3. Potential Impact on Development: Poor sleep quality due to blue light exposure can affect cognitive functions like attention, learning, and memory. Sleep is crucial for brain development in children, and disruptions can have long-term impacts.

4. Increased Risk of Myopia: While not directly linked to blue light, excessive screen time has been associated with a rise in myopia (nearsightedness) among children. Time spent outdoors has been shown to reduce the risk of myopia, suggesting that screen-heavy lifestyles may play a role.

To minimize the effects of blue light on children, experts recommend limiting screen time, especially before bed, and using blue light filters or night mode settings on devices. Encouraging outdoor activities during the day can also help maintain eye health and improve sleep patterns.

Conclusion:

Basically blue light is quite harmful to people, especially children, so its important to try and keep it away from them as much as possible. It's shown that it also effects sleeping, in terms of quality and how long it takes to fall asleep. Also blue light can affect someone's eyes in terms of strength and overall sight. So it would be a good idea to try and think of an alternative to the smart devices.

Sources:

https://health.ucdavis.edu/blog/cultivating-health/blue-light-effects-on-your-eyes-sleep-and-health/2022/08
https://www.optometrists.org/childrens-vision/guide-to-childrens-eye-exams/8-tips-to-protect-your-childs-vision/does-blue-light-affect-children/
https://blog.georgiachildrens.org/2021/02/08/kids-and-the-blue-light-effect/

Attention span children

It's important to understand how long children fairytales need to last, to make sure their attention doesn't wander of, we need to make sure the stories don't exceed their attention span. The attention span of children between the ages of 2 and 10 varies significantly based on their developmental stage, individual interests, and environmental factors. When it comes to listening to a story, here's a general breakdown of typical attention spans for this age group:

1. Ages 2 to 3: At this stage, children have very short attention spans, typically around **2 to 5 minutes** for focused listening, especially if the story is simple, engaging, and involves interactive elements like pictures or sounds. Their attention tends to wane quickly unless they are highly interested.

2. Ages 4 to 5: By preschool age, children's attention spans improve, allowing them to focus for **10 to 15 minutes.** They can enjoy slightly longer and more complex stories, especially if the stories involve repetition, familiar characters, or vivid illustrations.

3. Ages 6 to 7: School-aged children in this range can sustain attention for around **15 to 25 minutes.** They are better able to follow multi-step narratives and can appreciate stories with more developed plots. Interactive storytelling or asking questions during the reading can help maintain their engagement.

4. Ages 8 to 10: Children in this age group can maintain focus for **20 to 30 minutes** or more, especially if the story is well-structured and aligns with their interests. They are capable of understanding more complex narratives and can follow longer chapters in books.

Key Factors that Impact Attention

- Engagement: Stories that involve interaction, ask questions, or are related to a child's interests can hold attention longer.
- Story Complexity: Shorter, more visual, and easier-to-follow stories work better for younger children, while older children can handle longer and more detailed narratives.
- Environment: A calm and quiet setting can significantly improve a child's ability to focus.

This progression in attention span is part of natural cognitive development, as younger children have more difficulty filtering distractions and maintaining focus for extended period.

Conclusion:

The attention span of children between ages 2 and 10 goes from 5 minutes to up to 30 minutes, so we now know that compared to the ages of the children reading our stories, how long these stories should be.

Sources:

https://www.brainbalancecenters.com/blog/normal-attention-span-expectations-by-age

https://readykids.com.au/average-attention-span-by-age/

https://www.kids-houston.com/normal-attention-spans-for-kids/

AVI Reading level of children

To make sure the stories we provide for children aren't too difficult we need to understand what level of difficulty they can handle, luckily the Netherlands has a system called AVI which corresponds to the year a child is in, and what their reading skills should be.

AVI Reading Levels Explained Briefly:

The different reading levels are indications. But how does AVI work? Each letter stands for:

- **E =** end, the final phase in each grade in primary school, leading to the start of the next grade.
- **M =** middle, the phase around the middle of the school year.

As you can see, most reading levels always overlap with the next school year. This is because children move up a step in reading each year.

AVI-Start, M3, and E3: The Early Years

Learning to read well begins with simple words, which usually happens in year 3 (first grade in the Netherlands), right after kindergarten.

Reading level explanation: Simple words and short sentences.
Age: 5-8 years
Primary school group: Beginning of year 3 up to the beginning of year 4.

AVI M4 to M5: Building and Exploration

Once they have mastered the basics, children move on to the next reading level. Words and sentences become slightly more challenging. If they don't reach this level yet, it's advisable to step back a bit first.

Reading level explanation: Increased complexity with longer sentences.
Age: 7-9 years
Primary school group: Middle of year 4 to the middle of year 5.

AVI E5 to M6: The Middle Years of Reading Development

As children advance further in reading, they move to a higher level. Now, words and sentences form the foundation for fully independent reading.

Reading level explanation: Advanced sentences and storylines.
Age: 9-12 years
Primary school group: End of year 5 to the middle of year 6.

AVI E6 to E7: Mastery and Preparation for Advanced Reading

At this level, children go one step further, preparing for secondary school.

Reading level explanation: Advanced language and complex storylines.

Age: Corresponding to year 7 and 8.
Primary school group: End of year 6 to the end of year 7 and year 8.

AVI Plus
Reading level explanation: AVI Plus is the final reading level. Children reach this level in year 8. They can then read more difficult books. But E7 is the average reading level in year 8.

Conclusion:

Now we know what the average level is compared to each age we now also know how difficult each story has to be. Basically each year in elementary school past year 3 corresponds to the same year in AVI, so year 3: AVI 3, year 4: AVI 4, etc..

Source: https://www.kinderboekenland.nl/blogs/nieuws/avi-leesniveau-uitleg-hoe-werkt-avi

Research Target Audience – Frequency of reading bedtime stories

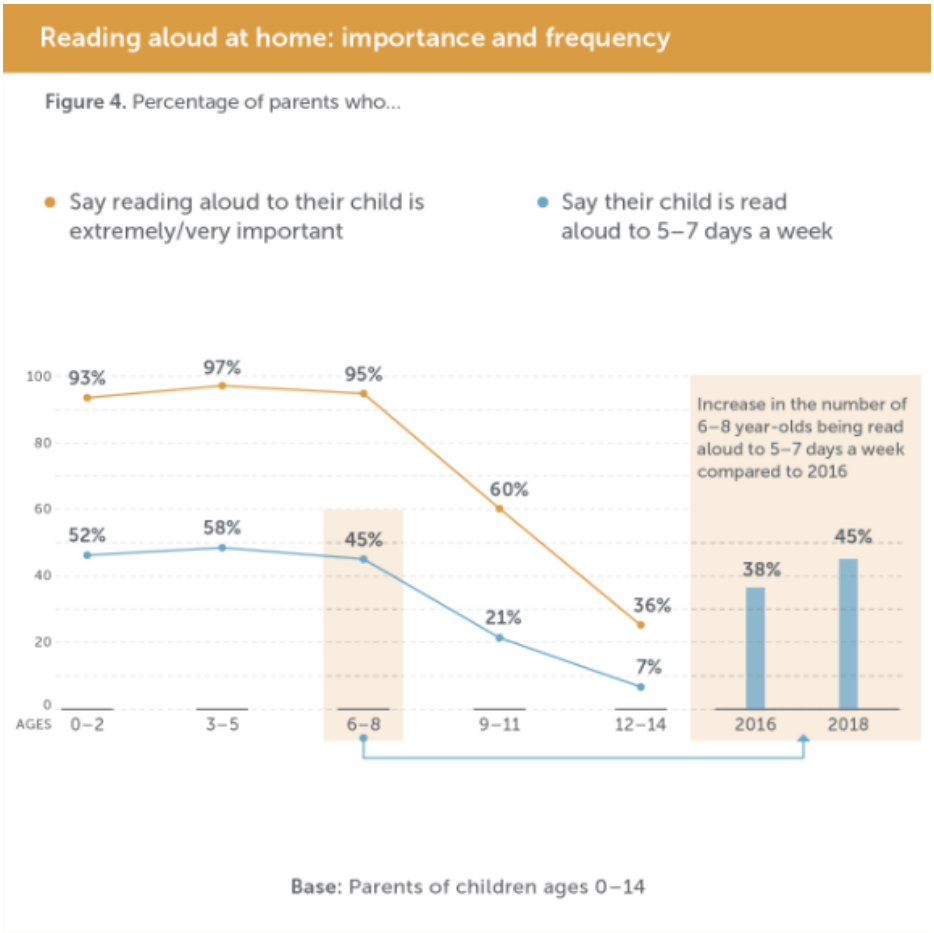
Introduction

This research study investigates the frequency of bedtime stories read to children across different countries. It also aims to analyze how often parents in various cultures engage in reading as part of their child's bedtime routine. The focus is on identifying factors that will contribute to variations in reading habits.

Frequency of reading aloud

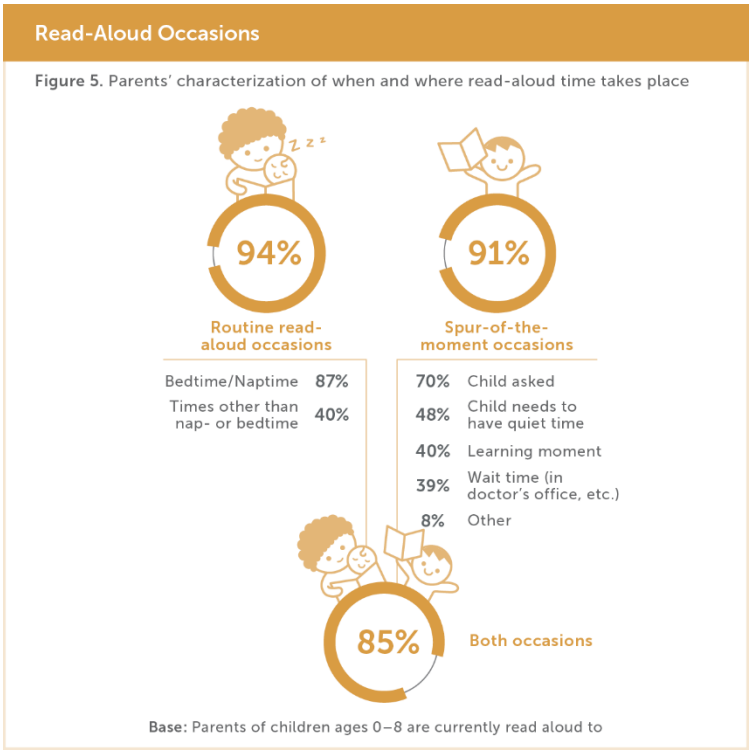
The Kids & Family Reading Report shows that more parents are starting to read to their kids earlier than before. In 2014 only 30% of parents with children aged five or younger read to them before they turned three months old, but now that number has gone up to 43%. Also by their first birthday, 77% of parents have started reading to their kids. Overall, Parents and kids really enjoy reading together. More than 80% of them say they love or like read-aloud time. The report also shows that kids aged 6–8 and their parents have grown to love this time more than they did in 2016. Parents and kids both agree that reading aloud is special because it gives them time to be together.

For children ages 0–5, 55% are read to at least five days a week, and 37% are read to every day. Some of these kids, around 52%, are even read to more than once a day. There's also a rise in the number of kids aged 6–8 being read to, going from 38% in 2016 to 45%.
But as kids get older, the amount of read-aloud time drops quickly. Most parents read to their kids 5–7 days a week before they start kindergarten, but after age five, the numbers go down a lot. Parents say this happens because kids start reading on their own. It's also mentioned that families with lower incomes read aloud less often than those with higher incomes.



Occasions

Studies say that 94% of parents with kids aged 0–8 include reading aloud as part of a routine, like during bedtime, naptime or even at mealtime and bath time. Another 91% of parents say they read to their kids at random times like when their child is curious or wants to learn something. Most parents, 85% do both routine and impromptu reading. It also mentions that more moms read to their kids than dads (93% vs 79%), but in 66% of cases reading includes more than just the parent and child often with the other parent or siblings joining in.



Conclusion

Reading aloud to kids is something both parents and children really enjoy, as it gives them a chance to spend quality time together. But once kids begin reading on their own, the amount of time spent reading aloud drops significantly. Also, families with lower incomes tend to read aloud less often. These are areas where we could definitely improve to help build more consistent reading habits for all families.

The information from the report is especially valuable for the app I'm developing. Knowing that parents recognize the special bonding time that comes with reading aloud, I can focus on creating features that enhance this experience. Also understanding that read-aloud time drops as children get older will help me design tools to keep older kids engaged and motivated. The app can also help families with less frequent reading habits by offering prompts and tips for incorporating more read-aloud sessions into daily life, whether during routine activities or spontaneous moments of curiosity. By leveraging AI, the app can give parents personalized suggestions and real-time feedback to make reading aloud more fun, effective, and engaging for both kids and adults.

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Research AI – How can AI ensure the stories are age related and align with education

Introduction

This research investigates how AI can help ensure stories are suitable for different age groups and align with educational standards. AI is being used more in education to personalize learning and improve content. When it comes to storytelling, AI can analyze text to make sure it matches the right age level, both in terms of complexity and themes. It can also help ensure that stories meet specific learning goals, making them both engaging and educational. This study explores how AI does this and the impact it could have on teaching and learning.

Storytelling

AI generated story telling can be defined using the criteria whether the story is sensible, specific, interesting, safe and to realism. To be able to understand this you'll have to know the weaknesses of AI generated stories:

Inability to explore and exercise curiosity: AI can generate content based on the data it has, but it doesn't actually wonder or explore new ideas like humans do. It can't independently get curious or think outside of what it already knows.
Inability to understand context: While AI can process a lot of information, it struggles to grasp the deeper meaning behind situations. It often misses context, which can lead to misunderstandings in storytelling or other tasks.
Lack of emotional intelligence: AI doesn't experience emotions, so it can't truly understand or respond to feelings. It can mimic empathy or sympathy in stories or conversations, but it doesn't really "feel" what it's communicating.
Questionable ethical judgment: AI follows the rules it's programmed with, but it doesn't have moral values. It might give inappropriate responses or make decisions that are ethically questionable because it can't make true ethical judgments.
Limited adaptability: AI can handle the tasks it's trained for, but it's not great at adapting to completely new or unexpected situations. It can struggle when there's no clear pattern or data to follow.

Difference between human and AI story telling

There are clear differences between stories written by humans and those generated by AI. These differences are most noticeable in areas like creativity, emotional depth and ethical understanding.

Creativity and Originality
Human-written stories tend to be more creative and original. Humans bring a personal touch, creating detailed characters, unique plots, and adding subtle descriptions that make stories feel more authentic. AI on the other hand, generates text based on

patterns in data it has been trained on. While it can produce content quickly, it often lacks originality and relies on existing ideas, leading to more formulaic or repetitive writing.

Context and Emotional Depth
Human writers excel at capturing emotions and complex human experiences, making their stories richer and more relatable. They are able to weave in personal feelings and reactions, creating characters with depth and a range of emotions. However AI doesn't actually "feel" anything and can only simulate emotional content based on data patterns. This often results in stories that feel flat or fail to convey the emotional nuance that human readers connect with.

Personal Experience and Judgment
Humans draw on their own experiences and knowledge when writing, allowing them to add context, personality, and perspective to their stories. This gives human-written content a more authentic and grounded feel. AI lacks personal experiences, and therefore its stories may come across as generic or lacking the subtlety that comes from real-life insight.

Ethical Understanding
Human writers have the ability to understand and evaluate the ethical implications of their stories. They can think through the consequences of the actions of their characters or the message the story sends. AI, however, doesn't understand ethics or moral values. It follows the instructions given to it without considering the ethical weight of the content it produces.

Adaptability and Problem-Solving
Human writers can adapt their writing style or narrative approach based on the audience or the situation. They can pivot if a story needs to take a new direction or if a particular challenge arises in the writing process. AI, on the other hand, follows a set pattern based on its training data and has limited ability to creatively solve problems or adapt to unexpected story developments.

Image Generation

AI image generation refers to the process of creating images using artificial neural networks, which are trained to produce visuals from scratch based on text input provided in natural language. These AI systems have the capability to generate original, realistic images by interpreting descriptions and combining various styles, concepts, and attributes into a cohesive output. This process is part of Generative AI, a branch of artificial intelligence that focuses on content creation.

These generators are trained on large datasets containing a vast array of images. During this training, the algorithms learn the features, styles, and patterns within the images. As a result, they become capable of generating new images that resemble the

characteristics of the data they were trained on. These systems use different techniques to produce visuals, with the most common being:

Neural Style Transfer:

This method allows the AI to apply the style of one image onto another. It's useful for blending the aesthetic of different images or artistic styles into new content.

Generative Adversarial Networks (GANs)

GANs consist of two neural networks—a generator and a discriminator—that work together. The generator creates new images, while the discriminator evaluates them against real images from the training data. Over time, the generator improves its ability to create highly realistic images.

Diffusion Models

These models work by simulating a process similar to the diffusion of particles, where an image starts as random noise and gradually transforms into a structured, recognizable visual. The result is a clear, realistic image.

How AI Image Generators Work

AI image generators rely on two key technologies: Natural Language Processing (NLP) and Generative Adversarial Networks (GANs).

Text Understanding Using NLP

AI image generators start by processing text prompts using NLP models like CLIP. These models translate the text into numerical data called vectors, which capture the meaning and relationships of the words. For instance, if the prompt is "a red apple on a tree," the AI encodes "red," "apple," and "tree" and uses this data to generate an accurate image where the apple is positioned on the tree.

Generative Adversarial Networks (GANs)

GANs involve two neural networks: a generator that creates images and a discriminator that judges their realism. These networks compete, with the generator improving its ability to produce lifelike images over time. GANs are a widely used model in AI image generation, known for their ability to create highly realistic visuals.

Limitations and capabilities

While AI image generators have shown impressive capabilities in creating visually stunning and often overly realistic images, there are several limitations and controversies surrounding their use. These challenges primarily relate to issues of quality, authenticity, and bias in the images produced.

Quality and Authenticity Issues

AI-generated images often exhibit imperfections, especially when it comes to producing realistic human faces or objects. For example, models like StyleGAN and DALL-E have struggled with small details such as unnatural facial features, misaligned teeth, or distorted hands. Common errors include hands with extra fingers or other odd

proportions. These visual inconsistencies reduce the authenticity of the generated content, despite the AI's overall ability to create lifelike images.

Dependency on Pre-Trained Images and Bias

The quality of AI-generated images depends heavily on the datasets used to train the models. These pre-trained datasets may carry inherent biases, which can lead to skewed or inaccurate representations of certain groups or concepts. A well-known study, the Gender Shades project, revealed significant bias in commercial AI systems, particularly in their accuracy across different skin tones and genders. The research showed that AI models performed better for lighter-skinned males and were less accurate for darker-skinned females. This highlights the need for more diverse training data to improve fairness and reduce bias in AI-generated imagery.

Conclusion

it's clear that AI-generated storytelling and image creation have a lot of potential but also face some serious hurdles. While these technologies can whip up stories and visuals in no time, they still struggle with things like emotional depth, context, and ethical understanding—qualities that human creators naturally bring to the table. This is especially important when we think about storytelling for kids, where the nuances and personal touches can make all the difference.

As I work on my app to help parents read aloud better to their children using AI the insights from this report are very helpful. Understanding AI's limitations means I can design features that guide users toward more engaging and age-appropriate storytelling. I can focus on enhancing emotional connection by suggesting ways to infuse personal experiences into the reading. I could also incorporate tools that help parents address any biases or inaccuracies that might arise from AI-generated content, ensuring that the stories shared are not only entertaining but also fair and relatable. Importantly blending the strengths of AI with the warmth of human storytelling will create a richer experience for both parents and children making reading aloud a special moment.

Competitive analyses of trending AI image generators

Overview

DALL-E is known for its high-resolution images and flexibility in generating diverse styles, including pixel art, oil paintings, and abstract imagery. Built on an advanced diffusion model, DALL-E combines CLIP with the GPT-3 model to accurately interpret text prompts and generate images. It also features out painting, allowing users to expand on existing images.

Midjourney leans heavily toward artistic and painterly styles, focusing on creating visually striking images with balanced compositions and vibrant colors. Users generate images by inputting prompts into a Discord bot, making it a unique social experience. Midjourney is known for its preference for aesthetically appealing and symmetrical images, but it currently offers lower resolution images compared to competitors.

Competitive Analysis AI IMAGE GENERATORS

Competitors	Strengths	Weaknesses	Pricing	Suitable
Dall-E	• High resolution, diverse styles, outpainting	• Expensive credit system, inconsistencies with human details	• $15/115 credits	• Professional artists, high-quality images
Midjourney	• Artistically appealing images, strong community	• Lower resolution, Discord-based usage	• $10-$120/month	• Artists, designers, community-driven creation
Stable Diffusion	• Open-source, affordable, detailed generation	• Less user-friendly, occasional server issues	• $0.0023 per image, free trial	• Developers, hobbyists, open-source enthusiasts

Stable Diffusion is an open-source text-to-image model known for its flexibility and detail-oriented image generation. It utilizes a Latent Diffusion Model (LDM) and supports features like inpainting, outpainting and image-to-image transformations. As an open-source tool, it is highly customizable and accessible, allowing users to run it on consumer-grade hardware.

Conclusion

Each AI image generator has its strengths depending on what users are looking for. Dalle-E is great for producing high-quality, professional visuals with lots of flexibility, though it can be more expensive. Midjourney shines for those who want visually creative and artistic images, especially in a collaborative, community-based setting. However, its lower resolution might be limiting for more polished, professional work. Stable Diffusion stands out for being more affordable and flexible, offering an open-source platform that's perfect for developers and people who want to customize their experience.

In short, the best platform really depends on what you need whether it's professional-quality images, a more artistic approach, or the flexibility of open-source customization.

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Research Target audience Accesibility

This research is about the main question “How do we make use of AI to read out fairytales to children between the age of 2-8 years old, so they can generate personalized fairy tales/stories for children between the age of 2 – 8, which are also educative by default?”

Introduction

In this research report I investigate how storytelling can benefit people with disabilities and how it can help them.
Secondary question:
“How can we adapt our product to be accessible to people with different disabilities, such as epilepsy and autism spectrum disorders?”

Benefits of reading aloud to children with disabilities in general

Reading aloud will stimulate children with disabilities and special needs drastically it will encourage them to develop early literacy skills. Research indicates that reading aloud in small groups will be valuable to them, children with LD (Learning disability) who received reading instruction in smaller groups had more increase in skill than the children that had individual instruction.
Children with Autism that had co-occuring learning disability are capable of reading fluently yet they’ll have difficulty understanding what they read, but these children also saw improvement when they received reading aloud instruction in smaller groups.

Benefits of reading aloud in family groups

Research shows that when assigning one family member as a leader of the reading group they should be responsible to stay close to child with the disability and share the book while pointing to pictures, while other members take turns to read out loud, This method requires 2 of the same books, due to one member is reading while the other is sharing it.

Conclusion

Storytelling, particularly through reading aloud, can have significant benefits for children with disabilities, supporting the development of crucial literacy skills. Research shows that reading aloud in small groups can enhance learning outcomes for children with learning disabilities (LD), with group instruction proving more effective than individual instruction. Similarly, children with autism spectrum disorder (ASD) and co-occurring learning disabilities may read fluently but struggle with comprehension. However, group-based reading aloud exercises have been shown to improve their understanding. Additionally, incorporating family members into the reading process, with a designated leader and the use of shared books, fosters an inclusive learning environment that further encourages engagement and development. These insights can guide the development of tools within our application to better support children with disabilities, using storytelling as an effective medium.

Sources:
Fahim, D. (2024, May 3). *Value of Reading to Children with Special Needs*. Donia Fahim. https://doniafahim.com/value-of-reading-to-children-with-special-needs/

Alternative ways to use fairytales

Augmented Reality (AR) Glasses:

Parents or kids could use these thin, light AR glasses in place of a tablet or phone. Without using blue light from a screen, the glasses would transmit the fairy tale narrative and images straight into their range of vision. This would produce a fully immersive experience without requiring any kind of screen. The story could appear to be happening in the child's room as it is projected in three dimensions via the glasses.

Interactive Story Pillow:

Picture a cuddly pillow with speakers integrated into it and a tiny projector that softly projects the fairy tale's images onto the ceiling. The youngster can create a pleasant and welcoming environment by lying on the pillow and listening to the narrative. It might be possible to incorporate a vibrating component that imitates gentle movements, such as breathing or heartbeat noises, to help infants go asleep.

Customizable Night Light Storyteller:

An essential component of storytelling is a night light. By touching the night light, the youngster can engage with it and activate different scenes from the fairy tale. It may tell the tale in a tranquil voice and project peaceful pictures onto the wall or ceiling. An app allows parents to adjust the settings, and the night light's primary purpose is to soothe children without exposing them to screens directly.

Storytelling Plush Toy:

You could make a plush toy that has a speaker that activates with voice commands and a few little projection features built in. The toy would broadcast low-light animations onto the wall from its belly, narrating the fairy story. This gives the child a comfortable and familiar companion with interactive storytelling features.

Research Epilepsy and flashy visuals disturbances

Introduction

In this research rapport I will investigate the effects of flashing visuals on individuals with epilepsy. Everything that's conducted in this report is meant for our product that we are making as a group for our stakeholder of AI-Fairytales.

Photosensitive Epilepsy effects and triggers

Seizures can be triggered not just by flashing lights but also by certain visual patterns. Even images without flickering, like stripes or backlit blinds can affect people with photosensitivity or epilepsy. Research shows that specific visuals, especially those with high contrast or symmetry, are common triggers.

A key factor behind these seizures is a type of brain activity called gamma oscillations, which occur at a frequency of 30–80 Hz. Normally, the brain balances excitatory and inhibitory neurons, but in people with photosensitive epilepsy, this balance can get thrown off, leading to synchronized bursts of activity. When these bursts get out of control, they can result in a seizure.

it's still unclear whether these gamma oscillations directly cause seizures, it's known that images that amplify this brain activity increase the risk of triggering one. Understanding which visual patterns cause these reactions can help people with epilepsy avoid potential triggers and reduce their risk.

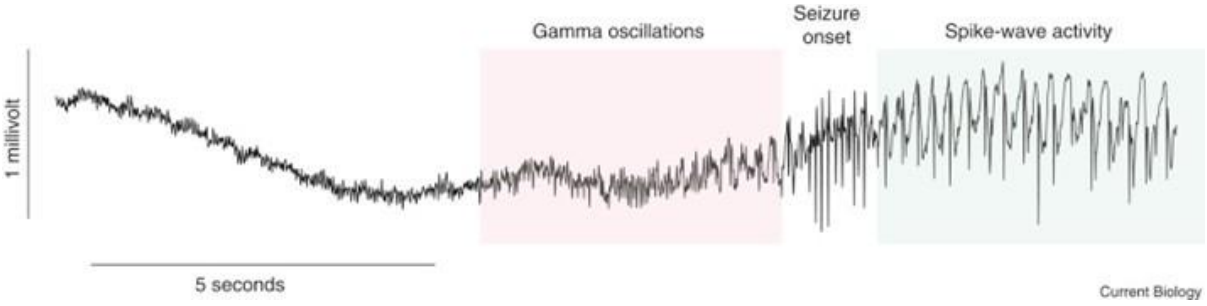

Figure 1: a of brain activity recorded from an electrode on the neocortex, shows rhythmic gamma waves building up in the moments to a seizure.

High contrast

Certain images with large high-contrast patterns can trigger seizures in people with photosensitive epilepsy by driving strong gamma oscillations in the brain. These oscillations are caused by the way neurons in the visual cortex respond to specific visual stimuli. Normally, inhibitory neurons control brain activity, but in people with epilepsy, this control can fail, causing an overexcitation of neurons and leading to a seizure.

The link between certain visual patterns, gamma oscillations, and seizures is still being studied, but it's believed that the brain's feedback system in photosensitive individuals struggles to handle these patterns, which increases the risk of seizures.

Figure 2: The upper part of the forest scene (A) is monochromatic symmetric and has a dominant orientation, making it higher in contrast than the lower part (B). This means the top half is likely to produce stronger gamma oscillations in the visual cortex and may increase the risk of seizures. Interestingly, while the top car image (C) generates significant gamma oscillations, the bottom car image (D) does not. These variations in gamma activity can be influenced by other image properties that are not yet fully understood.

Conclusion

In conclusion, it's clear that visual patterns, especially high-contrast images, can really affect people with photosensitive epilepsy. By understanding how gamma oscillations trigger seizures, we get a better idea of why some visuals can be harmful. If we can identify and steer clear of certain patterns, those with photosensitivity can lower their risk of having seizures, making their daily lives safer and easier.

As I work on my app to improve the read-aloud experience for kids, this research highlights how important visual content is. My main goal is to help with reading skills, but I also need to think about the visual elements in the app. It's essential to make sure that the images we use are not only engaging but also safe for everyone, especially those who might be sensitive to certain visuals. By considering these aspects, I can create a more inclusive and supportive reading environment for both children and their parents.

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