



FINAL PROJECT REPORT



Wordhunters: Magical Forest: *Let's turn challenges into adventures and struggles into victories*

Group 2 – Tutorial 1

Lara Cordes 2844796

Zeynep Erki 7607601

Yiwen He 5146313

Lydian Li 7229127

Katerina Novotná 9874674



Contents

Problem Statement	3
Solution	3
Business model	4
Unique value proposition	4
Unfair advantage.....	4
Cost structure.....	5
Revenue stream.....	6
Financial plan.....	6
References	8
Appendices.....	10



Problem Statement

Dutch elementary schools lack engaging and effective tools to support children with dyslexia in their learning. Reading is essential for dyslexic children, yet many don't enjoy it, limiting the practice they need to do to improve (NOS, 2024). Making reading more fun could enhance their reading and spelling abilities. Additionally, awareness of how to effectively support children with dyslexia is limited. At the PABO (Dutch Teacher Training College), dyslexia is only briefly mentioned, and teachers are simply advised to be more patient, without receiving special and thorough training.

The lack of support significantly hinders the learning development of children with dyslexia. This creates challenges for schools and parents, who often struggle to motivate their children and lack effective ideas on how to help them. Schools are aiming to meet educational standards for all students, and face difficulties in guiding students effectively without necessary teacher training.

Currently, schools often rely on special tutors, leaving children feeling excluded and harming their self-esteem. Parents often resort to available websites and apps that provide dyslexia support, but many of them are concerned about negative health effects of excessive screen time.

In summary, current support systems for children with dyslexia are insufficient, leaving gaps in effective learning tools, proper guidance and motivation. This affects the children but also creates difficulties for parents and educators. A more engaging, inclusive, and practical solution is needed to help children improve their reading skills in a supportive environment, both at school and at home.

Solution

We developed an engaging, first of its kind board game designed specifically for children with dyslexia. This board game incorporates spelling and grammar exercises into the gameplay, making learning fun and enjoyable. In 'Wordhunters: Magical Forest,' a dyslexic child plays alongside a parent or an adult with strong language skills, creating an interactive and collaborative experience for both players.

Educational components are intertwined with fantasy themes to keep the gameplay exciting and immersive, helping children improve their reading abilities. Furthermore, as a physical board game, Wordhunters eliminates screens or Wi-Fi, allowing children to focus without digital or technical distractions.

The game design is based on our MoSCoW analysis (see *Figure 1*), prioritizing essential features to enhance the gameplay experience. A detailed explanation of the game can be found in Appendix 1. In Addition, we conducted a variety of interviews (Appendix 2) to test our ideas and ensure they align with the needs of our target audience

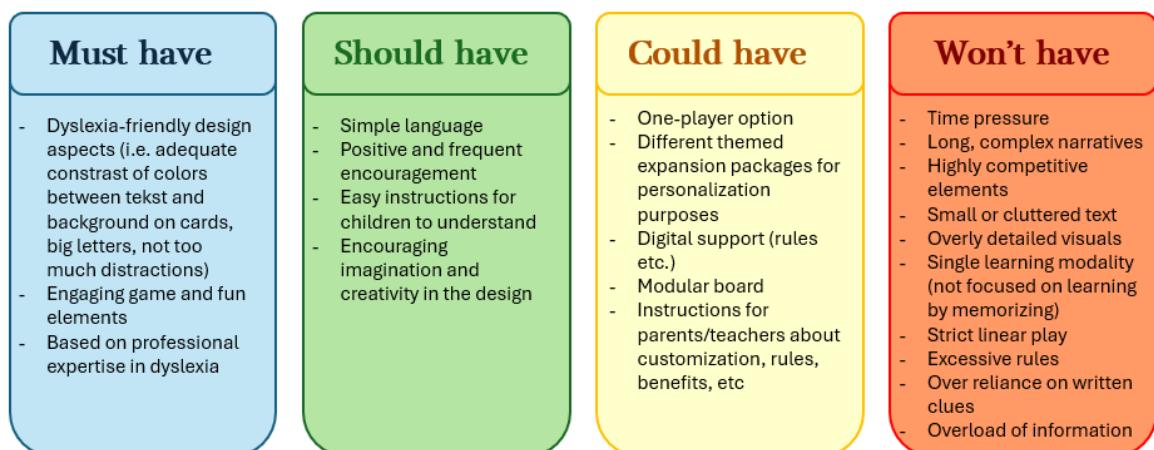


FIGURE 1: MOSCoW ANALYSIS OF WORDHUNTERS: MAGICAL FOREST



Business model

Our business model for the board game targets two key markets: parents and educational institutions, particularly those with special education programs. Parents seek educational tools that can support their children's learning, while schools need specialized learning materials to assist students with learning difficulties. The board game offers an engaging, interactive solution that boosts literacy skills while building children's confidence in reading and spelling in a fun, low-pressure environment.

We will have 4 distribution channels:

1. **Online Sales** via our official website to reach parents directly.
2. **Institutional Sales** to schools, offering bulk discounts or subscription models for updates and expansions.
3. **Partnerships** with organizations focused on learning with disabilities to promote and distribute the game as part of their educational resources.
4. **Retail Partnerships** with stores that sell educational products and learning materials.

Key activities include the development of dyslexia-friendly game mechanics, targeted marketing efforts, and continuous research to improve the game. Customer relationships will be built by providing online resources and guides, and creating a community through social media.

Key partnerships involve special education professionals for feedback on game development, dyslexia advocacy groups for promotion and endorsement, and schools and educational organizations that are willing to pilot the game in classrooms. Our cost structure will focus on production (manufacturing and distribution) and marketing costs, alongside continuous development and outreach costs. This comprehensive approach ensures the game will meet the needs of dyslexic students while providing value to parents and educators. *Appendix 4* shows the Lean Canvas model of our business.

Unique value proposition

Wordhunters: Magical Forest is a board game specially designed for children with dyslexia, offering a hands-on, interactive experience that engages children in a playful, supportive environment. Unlike traditional educational tools such as apps or websites, our game transforms learning into an enjoyable adventure, helping children improve their spelling and language skills while building confidence.

Our mission is to make learning accessible and fun for all children, including those with learning disabilities. With an unique inclusive design tailored specifically to dyslexic children, Wordhunters: Magical Forest provides immersive, mystical gameplay through storytelling and adventure-based challenges. Instead of frustration, children experience learning as an exciting journey in a magical world

Unfair advantage

Unlike other word games, our unique approach combines learning with collaboration and fun that turns learning into an exciting adventure. In contrast to digital tools that can damage eyes (Mehra & Galor, 2020), our game is hands-on, creating room for social interaction in a screen-free way. Through engaging gameplay and language development, Wordhunters empowers children to tackle their challenges enthusiastically while enhancing essential skills in a supportive environment.



Cost structure

Our cost structure (*Table 1*) consists of both fixed and variable expenses essential for the development, production, and marketing of our board game. Fixed costs include initial payments for product development, legal trademarking, website development, and ongoing maintenance. We also consider liability insurance and IP protection as fixed costs, even though they provide coverage for a period of 5 to 10 years. These expenses ensure long-term security for our brand by safeguarding our intellectual property.

Fixed costs	Euros
Product development	
- Initial cost for product developer and designer	€483,35 (one-time payment)
- Legal fees for trademarking the brand	€244,00 (one-time payment)
Marketing (initial cost)	
- Brand identity (logo design, packaging design)	€5,00 (one-time payment)
Website	
- WIX subscription	€32,00 (per month)
- Initial cost for web developer	€671,85 (one-time payment)
- Web developer for bug fixes	€49,00 (per month)
Liability and asset insurance	
- Liability insurance	€70,00 (per month)
- IP protection and copyright fees	€6345 (one-time payment)
Regulatory permits	
- Business registration (Dutch Chamber of Commerce)	€80,10
Variable costs	
Manufacturing	
- Costs for producing the physical board game	€17,50 (per unit)
Shipping	
- Shipping to customers	€5,95 (per unit)
Marketing	
- Performance-based marketing campaigns	€300 (per month)
- <i>Retailer commissions</i>	40% (per unit)
- <i>Influencer/Affiliate marketing</i>	10-20% (per unit)
Licensing fees	
- Royalties per unit sold	€2,00 (per unit)
Transaction fees	
- Fee per transaction	€0,50 (per unit)

TABLE 1: COST STRUCTURE OF WORDHUNTERS: MAGICAL FOREST

In terms of variable costs, each unit's production and shipping represent significant per-unit expenses. Marketing efforts will include monthly campaigns and partnerships with retailers and influencers, with commission-based fees adding flexibility depending on sales performance. Licensing fees and transaction costs are tied to each unit sold, adding to our operational costs.



Revenue stream

We aim to diversify our revenue streams with several key strategies. Our primary source will come from direct sales on our own webshop, which allows us to control the customer experience and maintain higher profit margins, though it may increase marketing costs. We'll also explore partnerships with retail stores, toy shops, and educational suppliers to expand our reach, and consider including our game in educational, child-focused subscription boxes to boost brand awareness and generate recurring income.

Secondly, we will leverage crowdfunding platforms like Kickstarter and Indiegogo to raise pre-launch funds, validate our product, and build a network of early supporters, which will increase brand visibility and allow us to gain traction before official launch.

Additionally, we will license our game to larger companies or educational brands, expanding our market reach without handling all production and distribution ourselves. Expansion packs with new action cards or themes will increase replayability, encouraging repeat purchases and steady income. Finally, we'll offer advertising space on the underside of the game box to brands aligned with children's health, education, and play.

Financial plan

We expect to sell around 300 units a month for €35 euro, generating €10,500 in monthly cash receipts.

1. Fixed costs for 6 months:

1. One-time payments:

- €483.35 (Product developer)
- €244.00 (Legal fees)
- €5.00 (Brand identity)
- €671.85 (Web developer)
- €6345.00 (IP protection, copyright fees)
- €80.10 (Business registration)

Total one-time costs = €7,829.30 (= €483.35 + €244.00 + €5.00 + €671.85 + €6345.00 + €80.10)

2. Monthly recurring costs:

- WIX subscription: €32.00
- Web developer (bug fixes): €49.00
- Liability insurance: €70.00
- Marketing: €300.00

Total recurring costs for every months = €451 (= €32.00 + €49.00 + €70.00 + €300.00)

Total Fixed Costs = €8,280.3 (= €7,829.30 + €451)



2. Variable Costs

Variable cost per unit:

- Manufacturing: €17.50
- Shipping: €5.95
- Royalties: €2.00
- Transaction fee: €0.50

Total variable cost per unit = €25.95(= €17.50 + €5.95 + €2.00 + €0.50)

If we sell 300 units per month, we'll need €16,065.30 (€8,280.30+€25.95*300) in financing for the first month. To cover this, we plan to raise money through crowdfunding and personal investment.

Crowdfunding makes sense because it's easy and our product has a positive impact on society, encouraging people to support it.

Burn rate: (€16,065.30 - €21,820)/6 = - €959.1167

- The initial capital we will crowdfund in the first month= €16,065.30
- The money that will be left over in six months= €21,820 (= €16,065.30+€10,500*6-€7,829.30-€451*6-€25.95*300*6)

Our negative burn rate allows us to reinvest in growth opportunities, ensuring the sustainability and profitability of our business moving forward.

The total fixed costs over 6 months are € 10535.3

Break-even Point over 6 months= €10535.3 / (35 - 25,95) = 954 units

To cover the total fixed costs of €10,535.30, we must sell approximately 954 units over the 6-month period. Every unit sold beyond 954 will contribute to profit.



References

Mehra, D., & Galor, A. (2020). Digital Screen Use and Dry Eye: A Review. *Asia-Pacific Journal Of Ophthalmology*, 9(6), 491–497. <https://doi.org/10.1097/apo.0000000000000328>

Van Der Horst, A., Moerland, S., Van Der Horst, A., & Moerland, S. (2024, 18 januari). *In Ierland lukte het om kinderen weer goed te laten lezen*. NOS. <https://nos.nl/artikel/2505388-in-ierland-lukte-het1-om-kinderen-weer-goed-te-laten-lezen>

Cost overview

Brand Design

- Service: Board Game Design Concept, Rules, Playing Cards, Logo
- Provider: [Fiverr - chichiruzdor](#)
- Cost: €5

Liability Insurance

- [Business Liability Insurance](#)
- Cost: €70 per month

Copyright and IP Protection

- Copyright Registration: [BOIP](#)
- Cost: €45 for 5 years
- Patent: [European Patent Office](#)
- Cost: €6,300 one-time fee

Trademark

- Registration: [BOIP Trademark Registration](#)
- Cost: €244 for 10 years

Business Registration

- [Chamber of Commerce \(KvK\) Registration](#)
- Cost: €80.10

Website Subscription

- Platform: [Wix Subscription](#)



- Cost: €32 per month

Royalty Fees

- [Pine Island Games](#)
- Rate: €2 per unit (calculated as a percentage of a €35 game price)

Transaction Fee

- Payment Method: [iDEAL Transaction Fees](#)
- Cost: €0.50 per transaction

Board Game Consulter

- Service: Game Playtesting and Expert Review
- Provider: [Fiverr - antonioszachos](#)
- Cost: €483.35

Website Development

- Service: Wix Website Design and Revisions
- Provider: [Fiverr - mjcagency](#)
- Cost: €671.85

Affiliate Marketing

- Commission Strategy: [AffiliateWP Guide](#)



Appendices

Appendix 1: Wordhunters: Magical Forest

A board game for children with dyslexia aged 8-11, focused on spelling and sentence building.

Overview:

This is a two-player board game designed to help children in grades 5 to 7 improve their spelling and grammar skills while having fun. One player can be a parent or someone proficient in Dutch, but the game is balanced so that every player, including children with dyslexia, has a fair chance to win.

Objective:

Players move their magical figures around the board to collect letters and double-sided word tiles. They use these to spell words based on picture cards and build sentences. The goal is to score the most points by forming correct words and grammatically correct sentences while using action cards and tiles to gain advantages along the way.

How to Play:

- Each player starts with a board containing 8 rows of spaces for letters.
- They draw a picture card and must spell the word that matches the picture by collecting letters from a bag.
- Players also work together to build a sentence or story using double-sided tiles with word variations like “the/a” or “big/bigger.”
- Action tiles on the board provide bonuses like extra turns, additional letters, or the ability to block the opponent.

The Board:

The board has a circular path, with different routes that players can choose, each offering unique rewards or challenges. The board contains fixed and special tiles:

- Fixed tiles allow players to collect letters or double-sided tiles.
- Special tiles add unpredictability, such as bonus points, swapping letters, or gaining extra turns. These tiles are randomized in each game, ensuring no two games are the same.
- A dice is used to decide how many steps you can walk on the board.

Action Cards & Tiles:

- Players can draw action cards that provide strategic advantages, such as stealing letters, skipping an opponent's turn, or doubling their word score.
- Action tiles on the board also offer benefits, like collecting extra letters or earning bonus points for completing words.

Key Features:

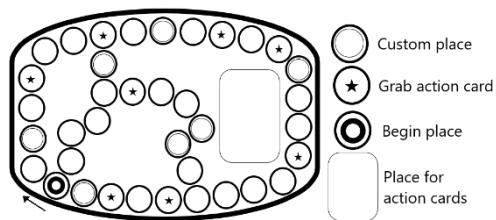


- Fair Play: Players with dyslexia get more opportunities to collect letters, giving them more chances to form words and score points.
- Strategy & Luck: The combination of action cards, tiles, and randomized board setup ensures that strategy and luck play a big role, so every player has a real chance to win, regardless of skill level.
- Magical Theme: The game takes place in a magical forest, with themed picture cards and tiles that engage children's imagination, making the learning experience fun.

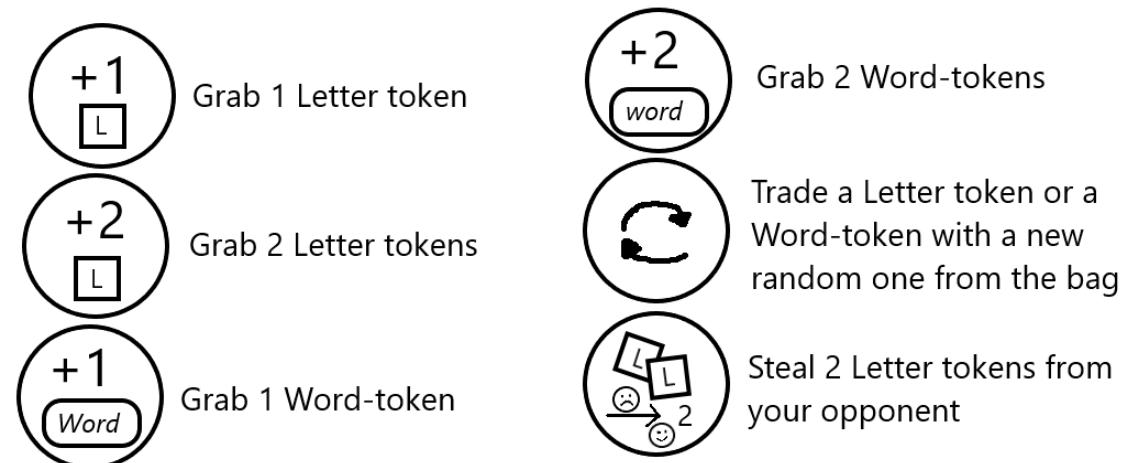
Winning the Game:

Points are awarded for correctly spelt words, completing sentences, and using action tiles effectively. The player with the most points at the end of the game wins.

Components:



This is an overview of what the board would look like. It has a starting point, different routes and different places that can trigger grabbing action cards.





A list of some of the 'random' fiches that can blindly be placed at the custom places on the board game.

During your walk in the forest you have found 4 letters!

If you are closer to the finish than your opponent; grab 2 word tokens, otherwise, switch places

You can change a picture for a random new one

Some examples of the action cards: they are more varied than the random fiches and have a story for reading improvement.

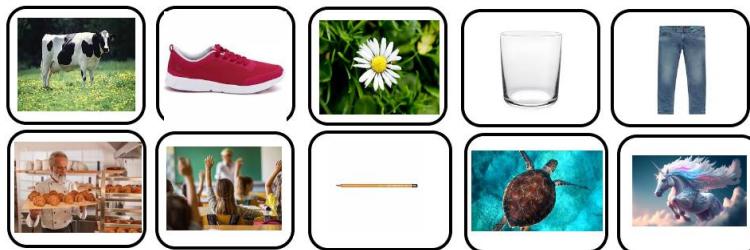


The letter tokens: same concept as Scrabble, only without having points on the letters.

LETTERS								
1								
2								
3								
4								
5								
6								
7								
8								



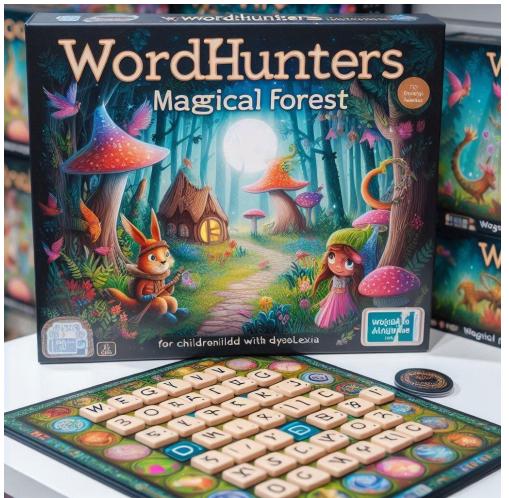
On the letterboard, the letters will be placed on the right. On the left you see numbers, the pictures will be placed there. It is not a problem if a person has a shorter word than 10 letters, it is the word that counts and sometimes it can be strategic to change the word.



These are examples of pictures that could be on the numbers on the left. It is possible to be creative with words. For the first picture both 'cow' and 'animal' should be correct.

Front	Back
Huisje	Huis
Groot	Grote
De	Het
Met	Zonder

Example of the Word tokens (in Dutch). They have two sides and there is a great variety of types of words so it is easier to make longer sentences.



An impression of the game box of Wordhunters: Magical Forest. The design reflects the magical elements of the game, specifically created to engage and support children with dyslexia.



Appendix 2: Interview Summary

Our hypotheses:

1. Many Dutch elementary schools lack engaging and effective tools to support children with dyslexia in their learning.
2. A dyslexic-friendly game that enhances motivation and promotes fun elements, supports the learning process of dyslexic children.

Our conclusion with results included:

Hypothesis 1:

The interviews strongly support this hypothesis, highlighting the lack of dyslexia-specific tools, insufficient teacher training, and limited personalized support in primary education. Many interviewees noted that the available technology was either insufficient or outdated, tools like robotic-sounding text-to-speech software are not engaging for learning. Interviewees also mentioned a need for more interactive and customizable learning tools, which were generally unavailable in their educational experiences. Moreover, teachers expressed a need for more targeted training to support dyslexic children effectively.

These findings suggest that addressing these needs could improve the educational experiences of dyslexic students, enhance teacher efficacy, and provide benefits for learning experiences of dyslexic children.

Hypothesis 2:

The interviews strongly support this hypothesis. Many interviewees suggest that the game could be effective, because it specifically addresses the learning needs of dyslexic children, such as spelling. According to the interviewees, using a high ratio of visual elements and interactive scenarios reduces cognitive load, making the game more accessible for children with dyslexia.

In conclusion, the findings suggest that a game can be effective in promoting the learning process of dyslexic children, if it addresses dyslexia-specific challenges, including motivation-boosting elements, and engagement.

We validated these hypotheses with the following interviews:

Interviews about problem

Interview 1

Name: Lena

Occupation: Primary school Teacher

Age: 21

Location: Ermelo, Netherlands

Interests: reading, scouting, music

Who is Lena?

Lena is a 21-year-old experienced teacher who has worked at both schools for highly gifted children and



regular schools. After completing a two-year internship at a school for highly gifted students, she started working as a full-time teacher at various institutions. Some of these schools had personalized learning programs where students could study subjects at their own level. Lena has encountered children with severe dyslexia, but she feels uncertain about how to support them effectively, as her teacher training did not focus much on dyslexia, and there is limited time in the classroom. Lena strongly believes that fostering a positive attitude towards reading can help dyslexic children improve, as she has observed that the more "reading kilometers" students make, the more progress they achieve.

What are Lena's pain points based on the interview?

Lena often finds it challenging to help dyslexic children. Currently, these students receive one-on-one support from a special teaching assistant and are given extra work to take home. While Lena acknowledges that one-on-one attention can be the most effective way to learn, she is also aware of the negative impact on children's self-esteem when they are pulled from the classroom for extra training. Another challenge for Lena is that her school offers limited time for her to personally guide these students, and she lacks insight into what occurs during the external dyslexia training sessions.

What is Lena's solution based on the interview?

Lena believes that dyslexic students should have the option to choose whether they want to attend special training sessions. She emphasizes the importance of making reading enjoyable, as it leads to more "reading kilometers," which helps to improve reading skills. Lena wants that children have the freedom to choose whether they want to participate in additional training for their dyslexia.

Interview 2

Name: Tim

Occupation: Primary school student

Age: 8

Location: Tilburg, Netherlands

Interests: playing outside with friends, drawing.

Who is Tim?

Tim is an energetic and cheerful eight-year-old boy who attends primary school in Tilburg. He loves spending time outdoors with his friends, where they play imaginative games and explore their surroundings. He also enjoys drawing, because he loves creativity. While he is a happy and social child who enjoys school, Tim has challenges due to his dyslexia.

What are Tim's pain points based on the interview?

Tim's pain points are that he needs more time to read than his peers, which makes him feel insecure about his abilities. He often notices that his classmates finish reading tasks faster, which sometimes makes him feel left behind. He also has a hard time with processing long words, as he has to stop often and start over. In addition, he gets tired when he has to read or write for long periods, which makes it harder for Tim to stay focused. Tim also feels different than his peers when they can do things faster than he can.

What is Tim's solution based on the interview?

Tim believes that more one-on-one time would help him get extra practice he needs. He also likes to do interactive learning methods or games, because it makes reading more fun compared to reading from a plain book. He also likes to work together with his peers and prefers to use tools to make reading easier,



such as speech-to-text or audiobooks. These tools will help him understand content without getting overwhelmed by hard words.

Interview 3

Name: Remco

Occupation: Physical Labor

Age: 24

Location: Purmerend, Netherlands

Interests: driving, wrapping cars, chilling with friends.

Family: mom and dad, sister and a cat.

Who is Remco?

Remco is a 24-year-old individual with dyslexia who experienced challenges in school due to the condition. He was diagnosed later in his education and had difficulty with reading, writing, and focusing, which impacted his ability to keep up with his classmates. Remco also had to rely on certain technological tools to help overcome these challenges. Mainly because of his hardships with dyslexia, he now works in physical labor and also only had a lower level Dutch education degree because of his hard time learning.

What are Remco's pain points based on the interview?

Remco faced several pain points throughout his school experience due to dyslexia. He struggled significantly with reading and writing, particularly with keeping letters and numbers in place, which made it difficult for him to keep up with his peers. Additionally, many of his teachers didn't fully understand the challenges he faced, and some were too busy to provide the support he needed. Traditional learning methods, such as tests and materials that were only available on paper, further complicated his learning experience, as these formats didn't cater to his needs. Moreover, being in a classroom with students who didn't share or understand his challenges made him feel unsupported and isolated.

What is Remco's solution based on the interview?

Remco suggests the use of technology as the primary solution. Specifically, he believes that iPads with apps designed for dyslexia, such as those allowing text customization (size, fonts), would have greatly improved his learning experience. He also requests for smaller, more tailored classrooms where students with dyslexia can receive focused attention without being mixed with students who don't share the same struggles.

Interview 4

Name: Dilek

Occupation: Mechanical Engineer

Age: 50

Location: Massachusetts, USA

Interests: Child advocacy, reading, hiking, family activities

Family: Married with two children—an 11-year-old son with dyslexia and a 7-year-old daughter.

Who is Dilek?

Dilek, a 50-year-old mechanical engineer and mother of two. He has an 11-year-old son, Ethan, has dyslexia, and watching him struggle in school due to the lack of the right tools, like text-to-speech software, has been tough as a parent. The school's efforts were limited, and the teachers weren't trained enough to



provide the support Ethan needed. The parents had to invest in extra resources and tutoring outside of school, which have been emotionally and financially draining. Dilek is dedicated to advocating for better technological support in schools to ease the burden on families and help kids like Ethan succeed.

What are Dilek's pain points based on the interview?

Dilek's pain points as a parent of a child with dyslexia revolve around the lack of proper support in schools, both in terms of technology and teacher training, which leaves her son struggling to keep up. Watching her son's self-esteem decline as he associates school with failure is emotionally distressing, and she feels helpless knowing the system isn't meeting his needs. To bridge the gap, Dilek has had to invest in costly resources like specialized programs and tutoring, placing a financial strain on her family. The pressure to take on more of her son's learning at home has been mentally and emotionally exhausting, as she constantly worries about whether she's doing enough. Despite her efforts, she fears that her child is being left behind academically, which adds to her frustration and sense of guilt. These challenges highlight the broader issue of inadequate support for dyslexic children in schools, leaving parents like Dilek to shoulder the emotional, financial, and practical burdens.

What is Dilek's solution based on the interview?

Based on the interview, Dilek's solution involves advocating for schools to be better equipped with the right technology and resources to support children with dyslexia. This includes tools like text-to-speech software and other assistive technologies that can help children like her son succeed in their learning. She also sees the need for better teacher training, ensuring educators have the knowledge and skills to support dyslexic students effectively. Dilek emphasizes the importance of parents advocating for their children and seeking outside resources when necessary, while also connecting with other parents for support. Her ultimate solution is for schools to adopt a more inclusive approach that provides the necessary tools and training to meet the unique needs of dyslexic children, reducing the burden on families.

Interview 5

Name: A (anonymously)

Occupation: Student

Age: 22

Location: Netherlands

Interests: Writing

Family: Single

Who is A?

A is a student who lives in the city and has dyslexia. She experienced several challenges with reading during her learning process when she was younger.

What are A's pain points?

The technological tools that existed when A was young were, in her opinion, terrible and ineffective.

What is A's solution?

A needs an effective and human-centered product that helps children with dyslexia improve their reading skills.

The challenges A faces during her learning process include difficulties with spelling and slow reading. The support provided in elementary school included extra time for tests and seating her near the board. She



also had a reading buddy who helped her read in a separate room. While this assistance was effective, A felt uncomfortable doing something different from her classmates, like reading with a buddy in a different room. She also used text-to-speech software, but found it terrible because it was read in a robotic voice. She would have preferred it to be human-narrated.

Additionally, A noticed that teachers rarely accommodate students with dyslexia. They provide limited time for reading and understanding assignments in class, and often ask students with dyslexia to randomly read aloud. These situations caused significant stress, as she had to understand and read quickly. She felt it would be better if she could indicate that she did not need to read aloud.

Interview 6

Name: Chloe

Occupation: Student

Age: 23

Location: Netherland

Interests: Dancing

Family: Single

Who is Chloe?

Chloe is a student who studies at University Utrecht and has dyslexia.

What are Chloe's pain points?

Chloes finds it difficult to read and write due to her dyslexia.

What is Chloe's solution?

An effective product would include text-to-speech software, apps that visually enhance text, planning and organization tools, and interactive learning platforms or language games.

During primary school, Chloe experienced challenges with reading and writing, with letters often being difficult to organize and Chloe struggling to get her thoughts onto paper. This often led to frustration and a feeling of falling behind her classmates. The resources that were available, such as extra time on tests and reading flashcards, provided some help, but were not enough. Traditional reading methods and books without digital support were less effective, as were additional spelling lessons that did not provide visual support. Effective resources would include text-to-speech software, apps that visually enhance text, planning and organization tools, and interactive learning platforms or language games.

Interview 7

Name: Lars

Age: 10 years old.

Interests: Drawing, solving math puzzles, and playing soccer. Enjoy building things with Lego, and am now starting to get interested in animals, especially birds.

Family: Mom, dad, and younger sister, Emma, who is 6 years old.

Pet: A dog named Max.

Location: Utrecht, the Netherlands.



Who is Lars?

Lars is 10 years old and lives in Utrecht, in the Netherlands, with his parents, his little sister Emma, and their dog Max. He has dyslexia, which means reading and writing can be tough for him, but he gets help at school and home. He really loves drawing, playing soccer, and building things with Lego. Math is one of his favorite subjects because he's pretty good at solving problems. Even though he finds reading hard, he tries his best and uses tools to make it easier. He's always happy to play with his dog Max after school, and spending time outside helps him relax.

What are Lars's pain points based on the interview?

Lars struggles with recognizing letters, reading quickly, and spelling, making learning more challenging for him. Lars also has to spend extra time reviewing and practicing outside of school. There are moments when he feels unfairly treated, especially when he can't keep up with his classmates during certain tasks.

What is Lars's solution based on the interview?

His teachers give him extra time on assignments and tests, which helps reduce his frustration, and use Audiobooks and Reading Tools to help learning.

Interview 8

Name: Quentin

Age: 20 years old

Location: Netherlands, Nieuwegein

Occupation: gap year student - grocery store employee

Interests: football, astrology, lego, human body

Family: oldest sibling of 4

Who is Quentin?

Quentin is a 20-year-old student from Nieuwegein, Netherlands, currently on a gap year while working at a grocery store. He has diverse interests, including football, astrology, Lego, and the human body. Quentin has faced the challenges of dyslexia throughout his academic life. He has learned to adapt by using memory and auditory learning to compensate for his difficulty with reading and spelling. Despite these challenges, Quentin demonstrates resilience and self-awareness, having developed personal strategies to overcome the limitations posed by his dyslexia.

What are his pain points based on the interview?

Quentin's main pain points revolve around the struggles he faced in school due to dyslexia. In primary school, he felt particularly concerned about his disability and had to work hard to develop coping mechanisms. He experienced mixed levels of support from his teachers—while some were understanding and provided accommodations like extra time and not penalizing him for spelling, others treated him the same as "normal" students, which felt unfair to him. He also feels that while accommodations in higher education were helpful, they may have gone too far, as they don't align with the real-world demands, where no extra time or allowances are made for dyslexia.

What is his solution based on the interview?

Quentin's solution to dealing with dyslexia has been to develop personal strategies centered around memory and auditory learning. He adapted to school challenges by using software that reads text aloud



and by taking advantage of additional test time provided by the school system. Quentin believes that in primary school, more should be done to help students develop personal coping mechanisms for their dyslexia. In higher education, schools should balance support with preparing students for real-world conditions, where such accommodations are not typically available. His approach emphasizes a pragmatic balance between support and self-reliance

Interviews about solution

Interview 1

Interview summary with 8 year old kid with dyslexia, Milan(Chatgpt):

Milan liked that the game gives more chances to collect letters, which makes it easier for kids that are struggling with spelling. He thinks it's great to build sentences together because it offers help when needed. Milan suggested adding hint cards to help when they get stuck on a word, without feeling dumb. He also asked for extra time to think and suggested including funny or silly pictures to make word-building more entertaining. Milan suggested adding magical helpers like a fairy or a talking tree, which can give hints or special powers. He also recommended adding a treasure chest on the board where players can find special letters or cards that help them make longer sentences. Another idea was for these magical helpers to give out small riddles or challenges for extra rewards so the game would be more adventurous.

Interview 2

Fei(22 year old student with dyslexia, lives in Ermelo, likes to watch Netflix, baking cookies and hang out with her friends):

After Fei saw the MVP she came with the following statements: She would have found the game very fun if she was young. The rules are still not totally clear for her. Finding letters and making words are clear, but not how the point system works. She was wondering what the limits are from choosing which word a player is allowed to use when making words for the picture. She gives an example of the cow; is 'black' or 'white' also good? The picture also contains 'grass', is that correct as well?

She thinks it's helpful because of creating awareness and for children with dyslexia to be busy with grammar and other language aspects. She thinks it looks nice, however, it's unclear if you have to work together for the sentences or alone. She also suggested adding more theme aspects. .

Interview 3

Interview summary with Max (Chatgpt):

In the interview, Max, an 11-year-old child with dyslexia, emphasized the importance of making learning feel fun rather than like schoolwork. He appreciated the game feeling like an adventure, such as battling monsters, expanding villages, and solving word-building challenges. Max found the mix of word challenges, resource management, and sensory feedback engaging and liked that the game encouraged interaction between players. He mentioned the need for a gradual increase in difficulty, as too many hard challenges too quickly could lead to frustration or discouragement.

Max suggested that having the game read instructions and words aloud would be helpful, as it would prevent frustration when encountering difficult text. He was enthusiastic about the idea of customizing



voices for the characters or monsters, which could make the game more immersive and enjoyable. He also enjoyed the sensory feedback, like sound effects and textured tokens, as these would make the learning process more interactive and memorable. Max liked the flexibility of the game, which allows parents or players to adjust the difficulty.

To improve the game, Max recommended adding hidden treasure hunts or special missions, which could add an extra layer of excitement and adventure. He also stressed the importance of ensuring the word challenges were not too difficult from the start, as this could discourage players. Additionally, having an option for easier challenges or assistance cards would help children feel successful and keep them engaged. Max expressed that the game could be something he would play regularly because it balances fun with learning, but it needs to avoid overwhelming players with difficult tasks too early on.

Interview 4

Interview summary with Anna (23 year old student with dyslexia):

In the interview with Anna, a 23-year-old reflecting on her childhood experience with dyslexia, she highlighted the importance of non-technical, visual aids in learning. Anna recalled how drawing cakes and using pictures helped her grasp math concepts and stressed that visual elements are key to making learning accessible for children with dyslexia. She believed that the game would have been helpful to her, particularly if it relied heavily on visual learning tools rather than text-based ones, which can be overwhelming for dyslexic learners.

When asked about playing the game regularly, Anna found it difficult to say whether she would have engaged with it consistently, as her childhood experiences were far behind her. However, she did express a preference for playing with her parents rather than with other children, especially during her early years. This stemmed from the feeling of being out of place and awkward in front of peers due to her learning challenges. She suggested that, over time, as she became more comfortable with her dyslexia, playing with friends or others with similar challenges might have been enjoyable.

For improvements, Anna recommended incorporating more visual aids and memory-based learning techniques, which she found most helpful in her experience. She emphasized that assistance cards, while useful, should not be the only support system; instead, the game should focus on making information more memorable and accessible through pictures and sensory tools. This could help children with dyslexia build confidence and rely less on external support while playing.

Interview 5

Interview summary with Jemaya:

Jemaya has a few questions about the solution. She wonders how the game distinguishes between "regular" children who are learning spelling in a basic course and children with dyslexia. Does the game focus on all words, or specifically on words that dyslexic individuals often struggle with, such as plural forms from 's' to 'z' or double letters like 'pp' and 'bb'? Is the game in Dutch or English? According to her, there is a difference in the grammatical mistakes made in both languages. Another question Jemaya has is how the game can maintain children's motivation to keep learning. She suggests paying close attention to the goal: you win by scoring the most points, but what happens then in the story? Do you defeat a final boss, like a



powerful wizard who has enchanted the entire forest? Or do you need to play the game multiple times with side quests to eventually gather enough words to complete the story and face the final boss?

Jemaya also thinks that this could be a fun game for the "dyslexia groups" at school. It could not only be played with a parent or facilitator and a child, but also by three children at the same time, with a teacher or facilitator present. This way, it creates a sense of competition, which is motivating for children. Perhaps they aren't even playing against each other, but rather with each other.

Jemaya also likes the idea of each child having a character with a specific power, maybe even based on their strengths. For example, one could be a super sleuth with a large vocabulary and good at reading, while another is the captain of letters, excelling at writing and spelling. This way, they can use each other's strengths when they face challenges.

Finally, Jemaya appreciates the aspect of building the story yourself, along with the theme and fantasy element of the solution. Dyslexics are good at associating ideas, and she believes the game could really help to enhance that strength.

Interview 6

Interview summary with Charlie (Chatgpt):

Charlie thinks that game can create an engaging learning environment for children with dyslexia through its multi-sensory features, like auditory and tactile feedback. The word challenges are customizable to different reading levels, making it adaptable for various age groups. The game's structure promotes cooperation and problem-solving, encouraging children to work together through resource trading and collaborative tasks. However, to make it even more dyslexia-focused, the game could introduce more specific challenges that target common dyslexic difficulties, like decoding or phonetic confusion.

Additionally, clearer progression goals and rewards within the storyline could help maintain motivation and track learning outcomes more effectively.

Interview 7

Interview summary with Mina (Chatgpt):

In the interview, Mina, a 7-year-old girl with dyslexia, shared her thoughts on what makes games enjoyable and supportive for children like her. She loves games that feature happy sounds, such as "dings!" and cheering when she succeeds, and appreciates tactile pieces that feel nice to touch. Mina prefers being rewarded with fun pictures or stickers, as these little surprises make her feel special. She likes the idea of the game gradually increasing in difficulty, allowing her to improve at her own pace.

Mina enjoys playing with friends and family and values teamwork, often helping each other understand the game better. She expressed a desire to improve her reading skills and suggested that larger or differently styled letters would make learning feel easier. She likes receiving hints from games when she feels stuck, as this keeps her engaged without frustration.

What she enjoys most is having fun with others and exploring new experiences together. Colorful visuals and cute characters enhance her learning, making it more exciting. Finally, Mina favors games that allow her to move pieces around and make decisions, finding joy in the interactive aspects of gameplay that spark her imagination.

Interview 8



Interview summary with Lina (25 year-old girl with dyslexia) :

Lina shared insights on how to improve the board game designed for dyslexic students. She suggested that instead of focusing solely on reading skills, the game could be centered around learning specific topics (such as historical figures) through multiple learning methods. This would make the game less stressful and more engaging.

She emphasized the importance of visual elements, noting that games with a 1:1 text-to-image ratio or more visuals would be more effective. For example, when they were young, they found it easier to learn using illustrated books rather than dense text, such as using graphic versions instead of reading text-only books.

She also recommended incorporating interactive, role-playing elements, where players take on specific roles or scenarios that require both physical and cognitive engagement. This approach could make the game more dynamic and less rigid, encouraging movement and creative thinking, which can be particularly beneficial for dyslexic students who may struggle with static, text-heavy activities.

Lastly, she suggested incorporating breaks between tasks to reduce the cognitive load and simplifying the text by using larger fonts and fewer words. Games that encourage drawing or visualizing written descriptions could also help confirm a child's understanding without overwhelming them with words. Adding sensory elements, such as sound or tactile aids, could further enhance the experience and support different learning styles.

Interview 9 and 10

Based on the interviews with Mia and Dilek, to improve the product, it would be beneficial to streamline and simplify the customization elements, such as sensory selections and difficulty levels, for easier use, as suggested by the interviewees. Parents and teachers should be able to adjust the settings of the game with ease and not get annoyed, as this will make it accessible and encourage frequent use. Sensory clues seem useful, but to avoid overstimulation, they should be regulated. If there are options to control the frequency and intensity of these cues, it will be simpler to maintain their utility without overstimulating the child. A significant improvement would be to incorporate a progress-tracking tool that allows parents and educators to monitor a child's development. This can be used in conjunction with supportive words or visual rewards to encourage kids like Mia to keep trying and feel happy with what they've accomplished. The multiplayer element should encourage teamwork rather than competitiveness so that kids don't feel discouraged or left behind. Including cooperative gaming elements would keep players interested and collaborative. To avoid learning distractions, voice customization should only be utilized in moderation, even though it can increase interest. The text-to-speech feature must also be of the highest standard, with flawless alignment to the text on the screen and clear pronunciation to prevent robotic voices that can alienate or confuse kids. Children should be able to connect physically with the game through interactive and tactile features since this will help young learners stay engaged. It is best to keep the layout and visuals simple and uncomplicated to avoid overwhelming smaller children. Finally, the game should be easy to set up, with a quick start process that allows for immediate involvement, making it easier for both children and adults to include the game in regular play and learning routine.



Appendix 3: AI report

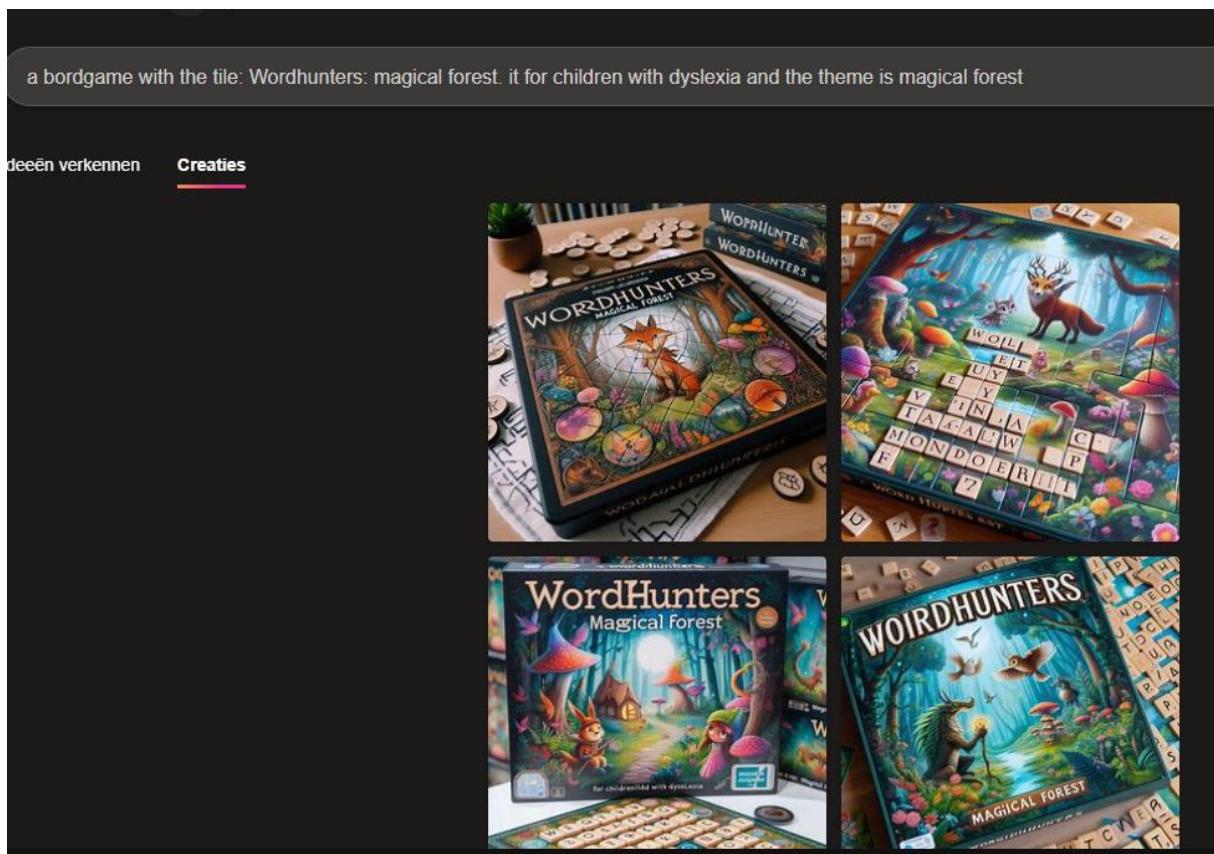
Lara:

Project Idea:

I used ChatGPT during the brainstorming phase, asking numerous questions and exploring different solutions. I was very critical of the ideas, and through discussing them with ChatGPT, I eventually came up with my own idea. Link to the conversation with ChatGPT:

<https://chatgpt.com/share/66f1dd35-9650-8011-b366-222e81b64466>

For the weekly updates, I used Bing AI Generator to create images of the game. This is one of the last ones I made:



Report:

I used ChatGPT to research costs for the project and to identify which information I needed to search for online. It also helped me better to understand some of the definitions, such as:



◀ ▶ ⌂ ⌃ ⌄

nee wat bedoelen ze met cash receipts from customers enzo



Ah, I see you're asking about financial terms like "cash receipts from customers" in the context of your Glowtech business. Let me explain these terms:

1. Cash Receipts from Customers:

This refers to the actual money the company receives from customers when they purchase products or services. In your Glowtech company, this would be the cash or electronic payments made by customers who buy glow-in-the-dark products. These receipts might come from:

- Direct sales: Customers buying from your website or store.
- Wholesale orders: Retailers or other businesses purchasing products in bulk.
- Online sales platforms: Like Amazon or other e-commerce platforms where you sell products.

2. Payments to Suppliers:

These are the payments the company makes to suppliers for the materials needed to make your products. For Glowtech, this could include:

- Costs for glow-in-the-dark materials: Special pigments or chemicals that make products glow.
- Manufacturing costs: Paying factories or production teams to assemble the products.
- Packaging materials: Boxes, labels, and other materials used to pack the products.

3. Operating Expenses:

These are all the day-to-day costs of running the company. They can include:

- Salaries: Wages paid to employees.
- Rent: For office or warehouse space.

Additionally, I used ChatGPT to improve my English writing. First, I wrote my ideas in simple English with some mistakes, then I asked ChatGPT to refine the text. Afterward, I reviewed and compared the improved version with my original text, making further adjustments if needed.

(charge 17,50 a unit if you buy 5000 units)

is dit een goede zin?: ik wil zeggen van dat ze zoveel geld vragen voor zoveel units, maar niet het woord 'they' of 'we' gebruiken



Your sentence is almost clear, but to make it more formal and grammatically correct, you could say:

"The charge is 17.50 per unit when purchasing 5,000 units."

This way, the sentence is more neutral and avoids using "they" or "we."



Sometimes I would ask the bot how I could make a sentences when I could not find the right words.

verbeter mn engels:

Amount of money we need for a 6 months runway. Since the burn rate is positive, we would only need money for 'Cash paid to suppliers and employees'. If we would sell in the first month already 250 units, we only need financing for the first month what is a total of 6000 euros.

Our plan is to get this money through crowdfunding and using our own money. We think that this is the best option for us due to 2 reasons:

We think our product has a positive influence for society and therefore people may be eager to contribute to our business idea.

Since we only need little money, it is very maintainable for us to get it through crowdfunding.

Here's an improved version of your text:

Amount of money needed for a 6-month runway:
Since we have a positive burn rate, we only need funds to cover 'Cash paid to suppliers and employees.' If we manage to sell 250 units in the first month, we would only need financing for the first month, which amounts to €6,000.

Our plan is to raise this money through crowdfunding and personal investment. We believe this is the best option for two main reasons:

1. We think our product has a positive societal impact, which may encourage people to support our business idea.
2. Since we require a relatively small amount of funding, it is feasible for us to secure it through crowdfunding.

iets makkelijker engels

Here's a simpler version of your text:

Amount of money needed for a 6-month runway:
Since our burn rate is positive, we only need money to cover 'Cash paid to suppliers and employees.' If we sell 250 units in the first month, we'll only need €6,000 for the first month.

Our plan is to raise this money through crowdfunding and using our own savings. We believe this is the best option for two reasons:

1. Our product has a positive impact on society, so people might be willing to support our idea.
2. We don't need a lot of money, so crowdfunding is a manageable way for us to get the funds we need.

But I also asked him to improve it. I would take the text and make some adjustments if necessary.

Lastly, I used ChatGPT to order all the links for the cost structure. It took me a lot of time to find all the right pages, so I put them unorganized in a word document. I asked ChatGPT to order it so I could copy it from it. I have checked if every link is right, because that is a thing that can go wrong so now and then:



ik wil bij mn referenties ook een linkje doen naar alle bronnen en sites die ik had gevonden maar het staat heel siordig. kan je een wat beter overszichtje maken?:

Brand design: https://www.fiverr.com/chichiruzzdor/board-game-design-concept-rules-of-game-idea-playing-cards-logo-casual-puzzle-ar?context_referrer=subcategory_listing&source=category_tree&ref_ctx_id=167a6a1660e74befa65d65aa1d2de82e&pckg_id=1&pos=2&ad_ke=y=ffb45840-b82f-4d0a-b1df-e1e9e2b04fe&context_type=rating&funnel=167a6a1660e74befa65d65aa1d2de82e&imp_id=36c0b680-ac09-45eb-9a30-5bb3a76dc6ce5 euro

Liability: <https://www.wa.nl/en/liability-insurance/business-liability-insurance/> 70 euro

Copyright en ip protection: copyright
https://www.boip.int/nl/ondernemers/deeen/deeen?gad_source=1&gclid=Cj0KCQjw99e4BhDARisAISE7P9cIO_RV9iczoUSHHchIql22-nW0edNGSxKkLWo6DVYghfqbQGC1laAnW0EAJw_wcB45 (for 5 years)

Patent: <https://www.epo.org/en/new-to-patents/how-to-apply-for-a-patent/6300> (one time payment)

Trademark:
<https://www.boip.int/nl/ondernemers/merken/tarieven#registeren>
trademark 244 (10 jaar)

Business registration:
<https://ondernemersplein.kv.kv.nl/inschrijven-bij-kvk/> 80,10

Wix sub scription: 32 per maand
<https://support.wix.com/en/article/pricing-plans-about-the-my-subscriptions-page>]

Royaltie fees: <https://www.pineislandgames.com/blog/breaking-down-a-game-licensing-contract> (2,00 euro because it is a percentage and we sell the game ft. ↓ 3 euro)

References and Cost Overview

Brand Design

- Service: Board Game Design Concept, Rules, Playing Cards, Logo
- Provider: Fiverr - chichiruzzdor
- Cost: €5

Liability Insurance

- Business Liability Insurance
- Cost: €70 per month

Copyright and IP Protection

- Copyright Registration: BOIP
- Cost: €45 for 5 years
- Patent: European Patent Office
- Cost: €6,300 one-time fee

Trademark

- Registration: BOIP Trademark Registration
- Cost: €244 for 10 years

Business Registration

- Chamber of Commerce (KvK) Registration
- Cost: €80,10

Website Subscription

- Platform: Wix Subscription
- Cost: €32 per month

Zeynep:

Prompt 1: alright, I have to conduct an interview with parents of dyslexic on the issue of "Many schools are not equipped with the right technology to aid children with dyslexia in their learning." to test whether the hypothesis of {Why is there this problem? (our hypothesis): Lack of funding for specialized technology (text-to-speech software, fonts, reading apps), educators not aware or not have enough training about technological tools, one-size-fits-all approach, and lack of prioritization on helping students with dyslexia} is true or not. this intterview will help me shape my startup on helping kids education with dyslexia. So, give me sample questions that I can ask

GPT answer prompt 1: Here are sample questions you can ask parents of children with dyslexia to explore the issue of schools lacking the right technology and test your hypothesis:

General Experience

1. Can you share your experience with your child's education as it relates to their dyslexia?
2. What specific challenges has your child faced in school due to their dyslexia?
3. Did the school provide any specialized technological tools to support your child's learning (e.g., text-to-speech software, dyslexia-friendly fonts)?

Technology Usage in Schools

4. Were you satisfied with the technology the school offered to help your child? Why or why not?
5. If the school didn't offer these tools, do you think they would have improved your child's learning experience?



6. How often did your child have access to specialized technology in the classroom? Did this differ from home use?

Educator Awareness and Training

7. Do you feel that your child's teachers were knowledgeable about the technologies available for children with dyslexia?

8. Were there any discussions with teachers or school administrators about using specific tools to support your child's dyslexia?

9. Do you think teachers were trained to use or recommend technology that could help your child? How could this have been improved?

Funding and Access

10. Do you believe that the school's budget or funding affected its ability to provide adequate technological support for students with dyslexia?

11. Were you ever told that there wasn't enough funding for specialized tools or technologies for your child?

12. Were there any additional costs for using the necessary technology, such as requiring you to provide devices or software at home?

Prioritization and One-Size-Fits-All Approach

13. Do you think that helping students with dyslexia was a priority at your child's school, or did they take a more generalized approach to learning?

14. Did the school tailor its learning environment to your child's needs, or did they rely on a one-size-fits-all approach?

15. How effective were the strategies and tools used by the school in addressing your child's specific challenges? What would you have liked to see implemented?

Recommendations and Insights

16. If you could recommend a specific type of technology or tool that would have made a big difference for your child, what would it be?

17. How do you think schools can improve their use of technology to better support children with dyslexia?

18. Do you believe it is crucial for educators to receive more training on how to use technological tools to support students with dyslexia?

Personal Involvement

19. Did you find yourself having to supplement your child's learning with technology at home? If so, what tools did you use?



20. How responsive was the school when you raised concerns or suggestions about using technology to help your child's learning?

Prompt 2: Now, I want you to imagine yourself as a parent of a dyslexic kid. First we will create a persona for you, are you ready? {Persona: Occupation: Age: Location: Interests: Family: Who are you in more detail and how are you related to my problem? .} we will take this example into account and fill it up

GPT answer to prompt 2:

Persona:

- Occupation: Mechanical Engineer
- Age: 50
- Location: Massachusetts, USA
- Interests: Child advocacy, reading, hiking, problem-solving
- Family: Married with two children—an 11-year-old son with dyslexia and a 7-year-old daughter.

Who are you in more detail, and how are you related to the problem?

I'm Dilek, a 50-year-old mechanical engineer and mother of two. My 11-year-old son, Ethan, has dyslexia, and watching him struggle in school due to the lack of the right tools, like text-to-speech software, has been tough. The school's efforts are limited, and the teachers aren't trained enough to provide the support he needs. We've had to invest in extra resources and tutoring outside of school, which has been emotionally and financially draining. I'm dedicated to advocating for better technological support in schools to ease the burden on families and help kids like Ethan succeed.

Prompt 3 (questions asked by me, answered by GPT as Dilek):

1. What are some of the most difficult moments you've experienced as a parent when trying to support your child's learning?

One of the hardest moments was when I realized that despite my best efforts, Ethan was falling further behind in school. We spent hours at home trying to go over his assignments, but the frustration would build up for both of us. I could see how discouraged he became, knowing he was trying so hard but not progressing at the same rate as his peers. It was heartbreaking to watch him feel like he wasn't smart when I knew it was just about finding the right way to support his learning.

2. Can you share what it's been like to watch your child navigate school while dealing with dyslexia?

Watching Ethan navigate school has been a mix of frustration and hope. Frustration because the school system isn't designed for kids like him, who learn differently, and hope because when we do find tools that work, like audiobooks or text-to-speech software, the transformation is amazing. But those moments of hope are often overshadowed by the fact that the school doesn't offer these solutions, and we have to look for them on our own.

3. Did you feel the school understood your child's specific needs? How did they respond when you raised concerns about dyslexia-related challenges?



At first, it felt like they didn't understand the full scope of Ethan's needs. The teachers were supportive, but they didn't have the training or resources to give him the help he required. When I raised concerns, they acknowledged them, but the response was often limited to extra time on tests or generic accommodations, which wasn't enough. It felt like they were trying, but their hands were tied due to a lack of tools and training.

4. Was there ever a time when you felt like your child was being left behind because the teachers didn't have the tools or knowledge to help? How did that make you feel?

Yes, there were many times I felt that way. It was clear that Ethan was slipping through the cracks because the school didn't have the right tools to help him. It made me feel helpless and, at times, angry. It's not that the teachers didn't care, but without the proper technology and training, they couldn't meet his needs. I often felt like the system was failing him.

5. Have you ever had to purchase or provide additional resources or technology for your child's learning? How did managing these extra costs affect you and your family?

We've had to purchase resources like specialized reading programs, audiobooks, and tutoring sessions. These costs add up quickly, and it's a strain on the family budget. We're fortunate enough to afford some of these resources, but I often think about families who don't have that option. It shouldn't be this way—every child deserves the support they need to succeed in school.

6. As a parent, what has been the hardest part of seeing your child struggle in school without the right support?

The hardest part is watching Ethan lose confidence in himself. When he was younger, he was curious and loved learning, but now he associates school with failure. Seeing that shift has been tough. It's hard to explain to an 11-year-old that it's not his fault—it's the system that's not equipped to help him.

7. Have you felt pressure to step in and take on more of your child's learning at home? How has that affected you emotionally and mentally?

Yes, there's pressure to take on a more active role at home. I've had to spend so much time researching dyslexia, finding the right tools, and helping him with his schoolwork. It's exhausting, emotionally and mentally. There's this constant worry that I'm not doing enough or that I'm missing something that could help him. It's draining, and there's always a feeling of guilt—like I should be doing more.

8. What advice would you give to other parents who are also struggling to get the right support for their dyslexic children in school?

My advice would be to advocate fiercely for your child. Don't be afraid to push the school to provide more support or seek outside resources if necessary. Also, connect with other parents who are going through similar struggles—there's a lot of comfort in knowing you're not alone. Most importantly, remember that your child's worth isn't tied to their academic performance. Celebrate their strengths and make sure they know that dyslexia doesn't define them.

Prompt 4: U are Dilek again. we have made a board game that has this planing outline: Must have:
Dyslexia-friendly fonts and layout (i.e. adequate contrast of colors between text and background) Simple language The educational aspect of helping children read/write Positive and frequent encouragement (i.e.



sensory cues) Easy instructions for children to understand Should have: Multiplayer option Sensory play Customization Of difficulty → gets progressively harder (if tech - also Text and layout Digital support → text-to-speech, rules etc. Easy to manipulate with Instructions for parents/teachers about customization, rules, benefits etc (Yiwen) Could have: For digital board game personalize voice: Users can change the voice, such as low voice or high voice, ethereal or hoarse voice. So users can learn by the voice they like, which can increase learning interest. (Zeynep) Won't have: Time pressure Long, complex narratives Highly competitive elements Small or cluttered text Overly detailed visuals Single learning modality (not focused on learning by memorizing) Strict linear play Excessive rules Over reliance on written clues Overload of information. // now based on this product please answer: - How effective do you find the game in helping children improve their reading and writing skills? - Are there specific elements that support or hinder learning? - How intuitive is the customization for difficulty or sensory features? - How effective are the sensory cues in providing encouragement? - How well does the multiplayer mode work for children in group settings? - Do you feel there's enough support for you to customize the game for your child's or student's needs? - If there's a digital version, how well does the text-to-speech feature help the child? - Would the ability to personalize voices improve engagement? - Would you use this game regularly as part of your educational routine? Why or why not? - Is there anything you feel the game is lacking that could improve your experience? - Is there anything that would stop you from using this game on a regular basis?

GPT answer to prompt 4: Here's a balanced feedback with both positive and constructive points:

1. How effective do you find the game in helping children improve their reading and writing skills? The game seems well-designed for improving reading and writing skills, especially with dyslexia-friendly fonts and simple language. However, while the educational aspect is strong, it could fall short if the game doesn't provide enough repetition or structured learning progression. If it's too focused on play without clear educational goals, it might not be as effective long-term.
2. Are there specific elements that support or hinder learning? The sensory cues and positive reinforcement are definite strengths for keeping kids motivated. However, if the sensory elements are overdone or too frequent, they could become a distraction. If the cues are too stimulating—like flashing lights or loud sounds—they might hinder concentration rather than support it.
3. How intuitive is the customization for difficulty or sensory features? While customization is important, it needs to be simple. If the customization for difficulty or sensory features is too complex or requires too many steps, parents or teachers might get frustrated and skip this feature. A more streamlined process with a few quick adjustments would be ideal. If it's too involved, I can see it discouraging regular use.
4. How effective are the sensory cues in providing encouragement? Sensory cues can be really motivating, but they must be balanced. If they happen too often or aren't tied closely to achievements in the game, they could lose their impact. Also, different children respond differently to sensory input; for some, certain cues might be overwhelming or even off-putting.
5. How well does the multiplayer mode work for children in group settings? The multiplayer option is a great addition, but it could also introduce some challenges. If the game leans too much on competition, it could make some children, particularly those who struggle with dyslexia, feel more stressed or discouraged. Group dynamics can also be tricky—some children might dominate the game while others feel left behind, which would defeat the purpose of making it inclusive.



6. Do you feel there's enough support for you to customize the game for your child's or student's needs? While customization options are great, if they are not intuitive or require too much trial and error, it could become frustrating. If I have to spend too much time figuring out how to adjust the settings, I might not use the feature regularly. There also needs to be clear guidance—if the instructions aren't simple and clear, parents or teachers might miss out on valuable customization.

7. If there's a digital version, how well does the text-to-speech feature help the child? The text-to-speech feature is fantastic, but it depends on how well it's implemented. If the voice is too robotic or the speech doesn't align well with the text on the screen, it could confuse or disengage the child. Also, if the text-to-speech doesn't have clear pronunciation or struggles with more complex words, it might not be as helpful as intended.

8. Would the ability to personalize voices improve engagement? Personalizing voices could add to engagement, but it might also be a distraction. Children might spend too much time playing with the voices rather than focusing on the educational content. While personalization is fun, it could divert attention away from the learning objectives.

9. Would you use this game regularly as part of your educational routine? Why or why not? I would use it regularly if it consistently helps Ethan with his reading and writing skills. However, if it becomes too repetitive or doesn't adapt well as he progresses, it might lose its appeal over time. If there's not enough variety in the educational content, it could become less effective as part of a long-term routine.

10. Is there anything you feel the game is lacking that could improve your experience? The game could benefit from a more structured progress-tracking feature, so I can see Ethan's improvement over time. Without that, it's hard to measure whether the game is truly helping. Also, if there's no real progression or if the game doesn't adapt well as he gets better, it might not keep him engaged for the long term.

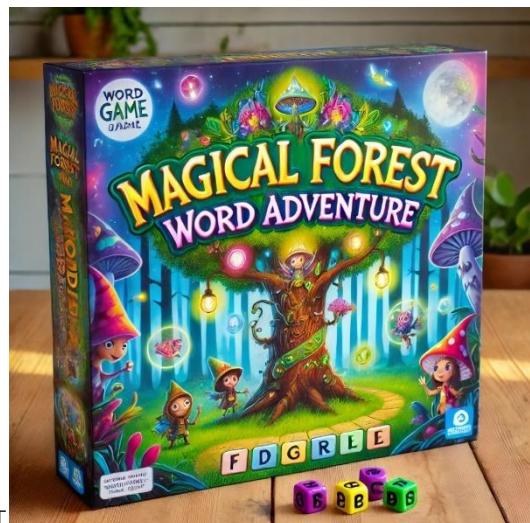
11. Is there anything that would stop you from using this game on a regular basis? If the game requires too much setup or the customization becomes cumbersome, I might not use it regularly. Also, if the sensory elements or multiplayer features aren't well balanced and end up being more of a distraction, that could deter me from using it as part of our routine. Lastly, if it doesn't show measurable improvements over time, I'd likely stop using it in favor of other tools.

Prompt 5 for creating the first AI generated image of our game: create an image of the board game which is described like: A board game for children aged 8-11, focused on spelling and sentence building.

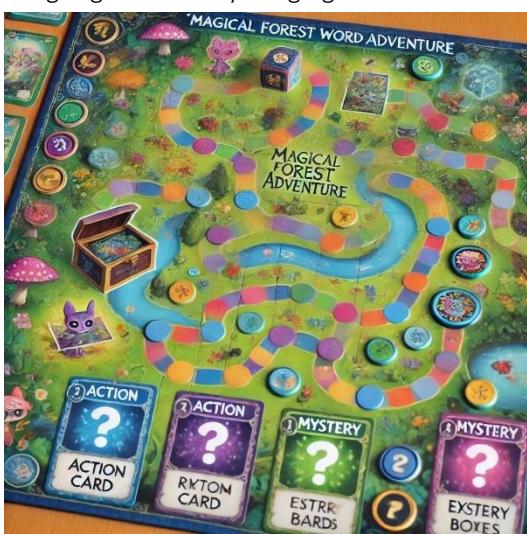
Overview: This is a two-player board game designed to help children in grades 5 to 7 improve their spelling and grammar skills while having fun. One player can be a parent or someone proficient in Dutch, but the game is balanced so that every player, including children with dyslexia, has a fair chance to win. Objective: Players move their magical figures around the board to collect letters and double-sided word tiles. They use these to spell words based on picture cards and build sentences. The goal is to score the most points by forming correct words and grammatically correct sentences, while using action cards and tiles to gain advantages along the way. How to Play: Each player starts with a board containing 8 rows of spaces for letters. They draw a picture card and must spell the word that matches the picture by collecting letters from a bag. Players also work together to build a sentence or story using double-sided tiles with word variations like "the/a" or "big/bigger." Action tiles on the board provide bonuses like extra turns, additional letters, or the ability to block the opponent. The Board: The board has a circular path, with different routes that players can choose, each offering unique rewards or challenges. The board contains fixed and special



tiles: Fixed tiles allow players to collect letters or double-sided tiles. Special tiles add unpredictability, such as bonus points, swapping letters, or gaining extra turns. These tiles are randomized each game, ensuring no two games are the same. A dice is used to decide how many steps you can walk on the board. Action Cards & Tiles: Players can draw action cards that provide strategic advantages, such as stealing letters, skipping an opponent's turn, or doubling their word score. Action tiles on the board also offer benefits, like collecting extra letters or earning bonus points for completing words. Key Features: Fair Play: Players with dyslexia get more opportunities to collect letters, giving them more chances to form words and score points. Strategy & Luck: The combination of action cards, tiles, and randomized board setup ensures that strategy and luck play a big role, so every player has a real chance to win, regardless of skill level. Magical Theme: The game takes place in a magical forest, with themed picture cards and tiles that engage children's imagination, making the learning experience fun. Winning the Game: Points are awarded for correctly spelled words, completing sentences, and using action tiles effectively. The player with the most points at the end of the game wins.



Images generated by image generator on Chat-GPT



Prompt 6: this is the landing page i made for our start-up product: <https://zeyneperki0.wixstudio.io/magic-forest> how would u decribe it

GPT answer to prompt 6: Your landing page for the "Magic Forest" product has a playful and inviting design that instantly captures the essence of a child-friendly, educational game. Here's how I would describe it:



The landing page has a whimsical, forest-inspired theme with vibrant, nature-based visuals, which align well with the magical, adventure-focused brand for the board game. The colors are soft yet lively, providing a sense of excitement without overwhelming the viewer, making it visually appealing for children and parents alike. The use of large, easy-to-read fonts (hopefully dyslexia-friendly) and a clear layout ensures accessibility and ease of navigation, which is crucial for your target audience.

The messaging throughout the page emphasizes the educational benefits of the game, highlighting how it helps children with dyslexia improve their spelling and grammar skills in a fun and engaging way. The balance between imagery and text helps maintain focus on the product's key features and benefits, while the overall tone feels inclusive and supportive.

Overall, it feels welcoming, magical, and purpose-driven, effectively reflecting your mission to provide equal and entertaining learning opportunities for young minds.

Kačka:

The list of prompts is non-exhaustive. I decided to log in the most valuable and important ones, which shaped the final answer I decided to go with.

Task 1 - Interview helping to define and test our problem statement (ChatGPT)

Prompt 1: I will be doing an interview with you. You are a Dutch elementary school student with dyslexia. I need you to create a persona for yourself and answer questions accordingly. What is your name, age, and interests?

Prompt 2: Now imagine what it's like dealing with dyslexia in your daily life. What challenges do you encounter in your daily life and at school? How does dyslexia affect your learning?

Prompt 3: How do you cope with dyslexia on your own? Do you get any support from your teachers, parents or peers?

My commentary on the answers given: ChatGPT and its created persona viewed having dyslexia in a very black-and-white, straightforward way. When comparing the answers with the interview I did with an actual person, I could see how ChatGPT lacked nuance. I think ChatGPT got right the stereotypical aspects of having dyslexia, which were for that reason the one I focused on and included in the final report.

Task 2 - Interview testing our solution to our problem statement (ChatGPT)

Prompt 1: I will be doing an interview with you. You are a Dutch elementary school student with dyslexia. I need you to create a persona for yourself and answer questions accordingly. What is your name, age, and interests?

Prompt 2: Would you like to play our game? How do you think it would benefit your struggles with dyslexia?

Prompt 3: What do you like and not like about our game? Do you have any suggestions on how to make it more fun?

Prompt 4: What would make you not want to play the game?



My commentary on the answers given: The answers given were very valuable for minor improvements to our game. ChatGPT emphasized the importance of personalization of the game and also the importance of having fun during the game. The answers sometimes lacked nuance on how dyslexia affects encountering and playing with other children.

Task 3 - Brainstorming game ideas (ChatGPT)

Prompt 1: I am thinking of a product to create a startup company for, that would help dyslexic children in elementary school with their learning disability struggles. We are thinking of doing a board game or computer game. Provide me with 3 ideas for both.

Prompt 2: Elaborate on this idea: Letter Hero Quest

My commentary on the answers given: The answers were very helpful. I combined aspects of different ideas provided to create an overview of an idea for the game. I experimented with emphasizing different game elements, such as creating a storyline, being inspired by Scrabble and many more. This was the most helpful use of AI.

Task 4 - Help with creating the rules for the board game (ChatGPT)

Prompt 1: Write down the rules for the letter hero game that could be published on the website of the game. The key elements of the game should include a way for players to improve their spelling and word formation skills. The game must be engaging but not overwhelming, allowing children to play at their own pace.

Prompt 2: Change the concept of the game and its rules so the game is fun for children and they don't feel like they are learning. Also frequent (and if possible sensory) positive encouragement is necessary so the children keep playing. The game should also be fun to be played repeatedly and not be the same each time.

My commentary on the answers given: The answers were helpful as well. I emphasized the aspects of the game that should be present based on the interviews conducted prior. With the use of AI, I was able to come up with much more elaborate game rules, which I further tweaked to make sense to me. The answers were sometimes too complicated and not cohesive, so I had to simplify the rules. Having ChatGPT revise the rules with my commentary was helpful.

Yiwen:

Task 1 - Interview about the problem and need

Prompt 1: I want to do an interview with you. You are a student with dyslexia. I need you to create a persona and answer my questions. The persona contains the name, age, and interests.

Prompt 2: Can you answer these questions: What problems do you encounter by learning? What kind of equipment from school helped you and what not? Why? Do you have any improvement about the equipments?

Task 2 - Interview about solution



Prompt 1: I want to do an interview with you. You are a student with dyslexia. I need you to create a persona and answer my questions. The persona contains the name, age, and interests.

Prompt 2: What do you think about our game? How do you think it would benefit your struggles with dyslexia? What do you like and not like about our game? Do you have any improvement for our game?

I notice that the chatgpt can give a comprehensive answer to my questions. That has given me more insight into what kind of challenges a dyslexic child can face. On the other hand, the answer is superficial and I see little personal things. This makes it difficult for me to understand why something is challenging for a dyslexic child. In short, I think chatgpt can help me gain a broad and superficial knowledge, but to really understand a problem, it is important to talk to real people.

Lydian:

Task 1 - Interview about the problem

Prompt 1: Can you pretend you are an elementary school student with dyslexia and reading disorder studying in The Netherlands. and so I can ask some questions about your situation?

Prompt 2: 1. Please briefly explain your background and upbringing, including when did you know you had dyslexia? 2. How do you explain your situation to the teacher? 3. How is your study situation at school? 4. Have school units, teachers, and classmates provided assistance or handled it through special channels? 5. Have you ever felt that you were treated unfairly? How was it solved? 6. How are you studying or living after class? Will I need to spend a lot of time reviewing class content alone?

Task 2 - Interview about the problem

Prompt 1: Please pretend you are a 7 year old girl with dyslexia living in utrecht, Name: Mina and come up with some personality. And I am going to interview you with some questions about a board game for dyslexic students.

Prompt 2: 1.How would you like the sounds or feelings (sensory cues) that happen when you do something right? 2.Would you want more or different ways the game encourages you? 3.Would you like the game to get harder as you keep playing? 4.Do you like playing with others? Do you help each other while playing? 5.what do you want or need to learn in a more comfortable and smooth way?

Task 3 - Financial Plan

I use Chatgpt to check if I am doing the financial calculation correctly and also ask for some advice from it. In addition, I also have Chatgpt to help improve my English writing, to make the whole paragraph look better and more professional.



Appendix 4: Lean canvas model

PROBLEM	SOLUTION	UNIQUE VALUE PROPOSITION	UNFAIR ADVANTAGE	CUSTOMER SEGMENTS
<p>PROBLEM</p> <p>List your top 1-3 problems.</p> <ul style="list-style-type: none"> • Lack of engaging tools for children with dyslexia • Limited awareness and training for educators • Decreasing reading engagement among children with dyslexia <p>EXISTING ALTERNATIVES</p> <p>List how these problems are solved today.</p> <ul style="list-style-type: none"> • Digital dyslexia support tools • Tutoring services 	<p>SOLUTION</p> <p>Outline a possible solution for each problem.</p> <ul style="list-style-type: none"> • Engaging board game for dyslexic children • Training program for teachers on dyslexia • Interactive, read-aloud books <p>KEY METRICS</p> <p>List the key numbers that tell you how your business is doing.</p> <ul style="list-style-type: none"> • Number of sales • Customer satisfaction 	<p>UNIQUE VALUE PROPOSITION</p> <p>Single, clear, compelling message that states why you are different and worth paying attention.</p> <p>Unlike digital apps or websites, our product is a hands-on, physical game designed specifically for children with dyslexia, providing a unique and interactive way to improve their spelling and language skills.</p> <p>HIGH-LEVEL CONCEPT</p> <p>List your X for Y analogy e.g. YouTube = Flickr for videos.</p> <ul style="list-style-type: none"> • Dyslexia support tool, but as a fun board game 	<p>UNFAIR ADVANTAGE</p> <p>Something that cannot easily be bought or copied.</p> <ul style="list-style-type: none"> • Physical educational gameplay • Dyslexia focus 	<p>CUSTOMER SEGMENTS</p> <p>List your target customers and users.</p> <ul style="list-style-type: none"> • Parents of children with dyslexia • Primary schools (teachers, special needs educators) <p>CHANNELS</p> <p>List your path to customers (inbound or outbound).</p> <ul style="list-style-type: none"> • Website • Social media advertisements <p>EARLY ADOPTERS</p> <p>List the characteristics of your ideal customers.</p> <ul style="list-style-type: none"> • Caregivers and educators of children with dyslexia seeking motivating ways to support learning
<p>COST STRUCTURE</p> <p>List your fixed and variable costs.</p> <ul style="list-style-type: none"> • Fixed costs: <ul style="list-style-type: none"> - Product development - Marketing - Website - Liability and asset insurance - Regulatory permits 	<ul style="list-style-type: none"> • Variable costs: <ul style="list-style-type: none"> - Manufacturing - Shipping - Performance-based marketing - Licensing fees - Transaction fees - Website maintenance 	<p>REVENUE STREAMS</p> <p>List your sources of revenue.</p>	<ul style="list-style-type: none"> • Direct sales • Licencing and franchising • Advertising on and in the board game package • Expansion packages sales Crowdfunding 	