



ANDROID DUO- PROJECT

YOANA
LAZAR

INTRODUCTION

In these four weeks, we were supposed to create an app as it had to be Android. This time was different from the previous time because we were supposed to choose the persona and the topic of the app that we have to create. So, the generator gave us **Education** and after that, we wanted to choose a persona that will be close to the topic that we chose. Lazar, who is my groupmate, and I choose to **stay home Alex**. Again like the previous time, we had to create an app from scratch as we used the Human-Centered Desing as a design method and for implementation, we were supposed to work with Kotlin in Android Studio.

We liked the HCD as a method because we can understand a lot more from the actual users what is their need, what is their daily life and what they are struggling with, so we as designers and developers help them to solve their problems through the app. For instance, at the begging, our team wanted to create an app for students who are going to study at home, however, after conducting interviews and surveys, we understood that most parents want their kids to study at school, mainly because of the social aspect. So, we changed our idea to our current one, which is to help, improve or challenge the kid with a platform where they can study. Moreover, the parent has the ability to choose the content of his kid in the best way. The app will be interactive in a fun way for the kid.



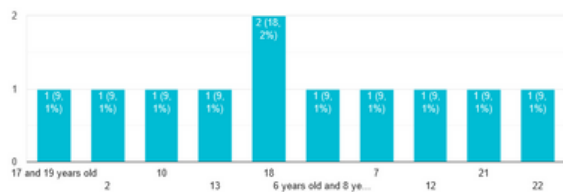
INSPIRATION

Survey

How old is your kid?

11 отговора

Копирање



To what extent would you like to be involved in your child's education from 1 to 10?

11 отговора

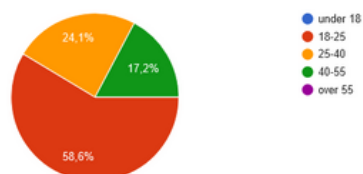
Копирање



What is your age?

29 отговора

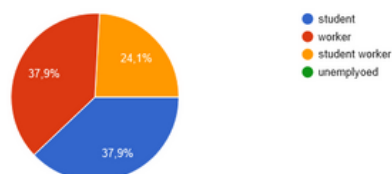
Копирање



What is your occupation?

29 отговора

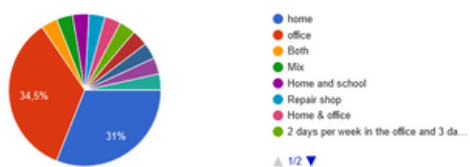
Копирање



From where do you work?

29 отговора

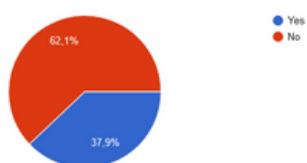
Копирање



Do you have kids

29 отговора

Копирање





INSPIRATION

Survey

Survey results

This survey was conducted to gather basic user information and needs - to be able to narrow down the scope of our idea and make things more real. Our findings in general confirm that our idea is a true need.

There are a couple of things worth noting - people with kids want to be involved in their lives as well as in their education. Of the participants that have kids all of them have marked above average interest, with the majority being at the two highest possible rates. Another thing would be the subject that people needed help with - in this case, language has the top score with an impressive difference from all other categories and math's come second right before literature and sport.

No matter the age group or if the people have children or not, almost all of the participants have used a tool to help themselves throughout their academic experience. One thing that is easy to notice is that everyone used different tools with different goals, but the most common one - is YouTube. This shows how untamed this market is and that people don't have a place to turn to with all the channelled information that they need. This as well as the fact that the majority of the participants believe that an app to help their (future) kids with school is of great importance, leads us to believe that an application like this is truly needed.

INSPIRATION

Interviews

Another method that we chose to do is interview because of the questions that we wanted to ask them to assume to be on a deeper level. They are individual and we could ask them easily why or to understand better the users.

Test Materials:

- Laptop and phone
- Messenger and Whatsapp
- **Time:** 10-15 mins

Interview questions:

Hello, we are a group of people, who were supposed to create an app for the education of kids between first and fourth grade. So, to develop our product in the best possible way by asking you a couple of questions. So, would you like to participate? Let's begin, shall we?

- *What's your name and age?*
- *What's your occupation?*
- *What do you do in your free time?*
- *Do you have kids? If yes, what is their age?*
- *What do you think about the education of your kids? Are you satisfied with it?*
- *To what extent would you like to be involved in your child's education from 1 to 10?*
- *Would you like your kids' primary education to take place at home if you were a stay at home parent?*
- *In what way would you like your kid to be examined?*
- *Who would you like to check his work - you, the teacher or the software? (maybe all, both)*
- *Is your kid going to additional courses?*
- *What courses?*
- *Would you use an app to support and enhance your child's academic and personal growth?*
- *Would you use an app where you can track your kid's progress better?*
- *If there is such an app what features would you expect?*
- *Having a microphone to record your kid's work(language/music) would you use these features?*
- *Have you used a similar app or heard about one?*

Thank you very much and have a nice day/evening.

INSPIRATION

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Thank you very much and have a nice day/evening.

INSPIRATION

Interview participants:

Participant 1: Maria, 45, Photographer

Participant 2: Kremena, 45, Banker

Participant 3: Vesela 59, Event Manager

- **Do you have kids? If yes, what is their age?**

P1: Yes, I have, they are 17 and 19 years old

P2: Yes, I have, they are 18 and 20 years old

P3: Yes-22

- **What do you think about the education of your kids? Are you satisfied with it?**

P1: Yes, I was satisfied, but after the classes, they were tired, because they were playing and not learning, so in the evenings they had to study.

P2: It depends on the subjects they studied.

P3: Somewhat. It could have been better, but I'm satisfied with the outcome.

- **To what extent would you like to be involved in your child's education from 1 to 10?**

P1: 10, because I did not want my kids to have omissions. These years are important thus in these ages kids are making their habits for learning and the basic knowledge as well.

P2: 5, I wanted to be informed, to help them and to be involved to some point. I wanted my kids to be more independent

P3: 9

- **Would you like your kid's primary education to take place at home if you were a stay at home parent?**

P1: No, because of the contact with students/other kids, more interesting in school and they are specialists

P2: NA

P3: I'm not entirely sure. perhaps not for the sake of social contacts.

- **In what way would you like your kid to be examined?**

P1: To have more attention on how he/she is doing the homework, to have mini rewards when he does well and punishment when he is not

P2: N/A

P3: Practically as well as technically. I think that the system that was used is slowly changing towards a more practical approach, so less of the typical tests.

INSPIRATION

- **Who would you like to check his work - you, the teacher or the software? (maybe all, both)**

P1: Software, because it is impartial and the teacher - knows better than the student

P2: Software, because it is impartial

P3: I would like to be informed and I would like to check his work out of curiosity, but i definitely prefer a professional to check assess and consult my child

- **Is your kid going to additional courses?**

P1: Yes

P2: Yes

P3:Yes,

- **What courses?**

P1: English, Maths, Sports

P2: English, Saxophone, Football, Maths

P3: German, English and Sports

- **Would you use an app to support and enhance your child's academic and personal growth?**

P1: Yes

P2:Yes

P3:Yes

- **Would you use an app where you can track your kid's progress better?**

P1: To follow the progress, as you can see where there are weak places and the software and to generate similar tasks

P2: Results, how much he was studying, results of the others in the class and the mistakes

P3Yes

- **Having a microphone to record your kid's work(language/music) would you use these features?**

P1:Yes, connecting with others, parents can help each other since someone is good in maths, others not

P2:That would be nice since I am not good at languages and saxophone

P3:Yes

INSPIRATION

- **Have you used a similar app or heard about one?**

P1: Yes, ucha.se, shkolo.bg, math.bg, solema7klas

P2: Yes, gesttip(Spanish app), showing the progress, it was customised with colours so to know which kid profile you are following it. Having the whole progress as well as notifications

P3:I've been interested in a couple. the main one I can remember is UchaSe

Interview analysis

People that we interviewed had the same mixed feelings about the education that their kids had. Average the number of parents involved in their kid's education is 8. Some of them what in this way to learn them to be me more independent and responsible in small age, however, others thought that this is the ages that are creating study habits and learning the basics, so it's important to be part of their process of learning. We wanted our app to be focused on home education but after the interviews, our idea changed as now the app will be focused on helping the student to improve or challenge himself. The way that they want to be examined their children is to be more practical since they can use it in their life and it would be more interesting for them. Another thing that we asked them is whom would you like to check their work - you, the teacher or the software and their answer are that the software is impartial, however, they would like is the teacher, because he knows better the student and he has learned to be specialist so he knows how to approach the kid. All of our participants said that their kids went to courses as mainly they went to languages, maths and sports. From this, we can focus on what subjects are important for the kids and parents to have. All of them would use such an app. They would like to follow their progress, but also to understand the level of their kids to know if he is on the right track. Also, maybe it will be good to generate similar tasks to what are their weaknesses. They would use a microphone as a feature. Last but not least our participants use similar apps, but they do not have exactly our idea. Moreover, that would help us with the competitive research that we would like to do.

INSPIRATION

Competitive analysis

One of the main resources that we used for this method is the survey because most of our participants used some apps or tools to study. As we have already mentioned earlier, our participants used a lot of different apps, but no app offers what we would love to create, so our concept, for now, is unique, which made us happy with this fact.



INSPIRATION

Personas

The persona is a useful method to see your target goals and needs as well as his frustrations.

Vanessa

ABOUT THE USER

Vanessa works a 60 hour workweek as a single mom. She doesn't have the time to properly dive into her child's education.

DEMOGRAPHIC INFORMATION

- Age: 31
- Location: The Hague
- Occupation: Restaurant manager
- Monthly Income: 4 000

MOODS AND PERSONALITY

(Caring, busy, dedicated)

PROBLEMS

- Not enough time
- Technical terms
- Can't keep up with child's development

CHALLENGES

- Not enough time
- Expenses
- Personal attention to child's academic development

GOALS AND NEEDS

- To keep track of how her child is doing with school material
- To have a way to help her child with school



Bob

ABOUT THE USER

Bob is a successful business owner. He has two kids and they are both young at the ages of 7 and 8, they have just started school.

DEMOGRAPHIC INFORMATION

- Age: 40
- Location: Amsterdam
- Occupation: Business owner
- Monthly Income: 10 000

MOODS AND PERSONALITY

(Serious, disciplined, strong)

PROBLEMS

- Under challenged children
- Technical terms
- Typical school work is too easy and boring for his kids

CHALLENGES

- Not enough time
- Wants what's best for the kids
- Limited information

GOALS AND NEEDS

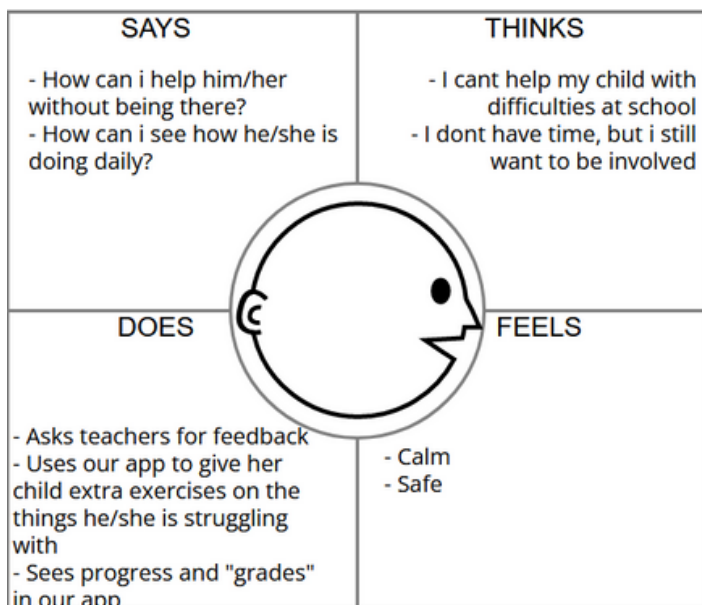
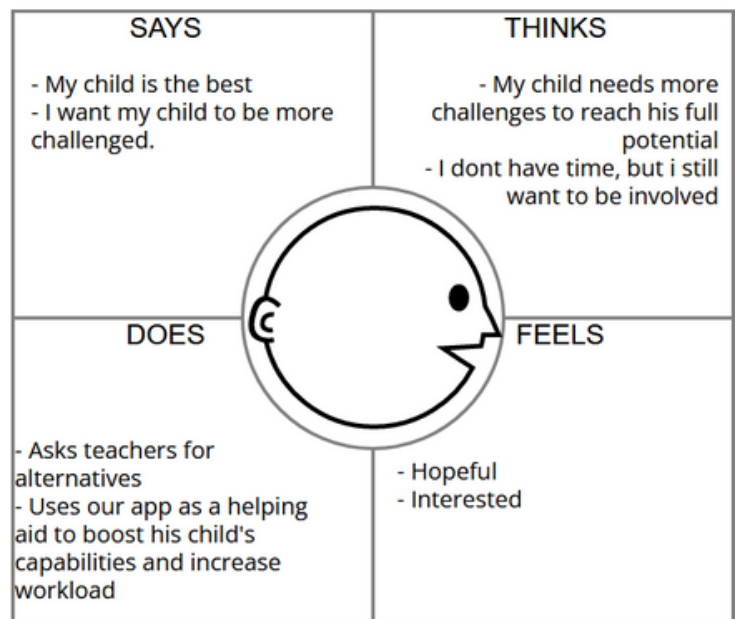
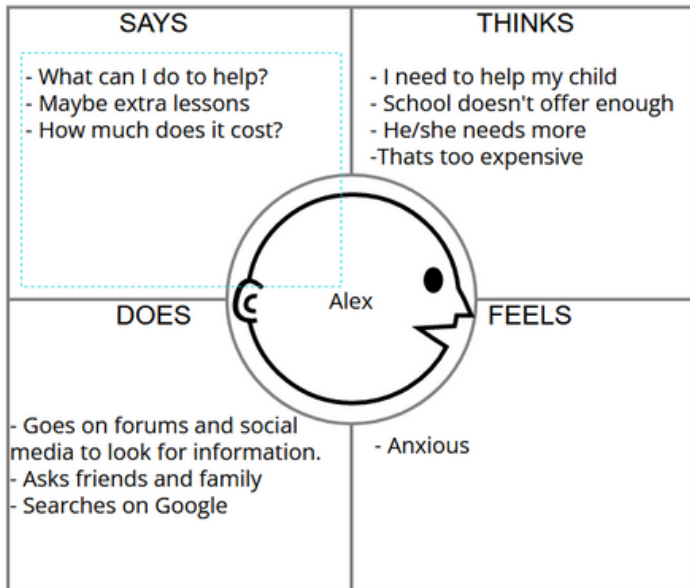
- To challenge his kids more
- To have a way to be sure of his kid's development



INSPIRATION

Empathy mapping

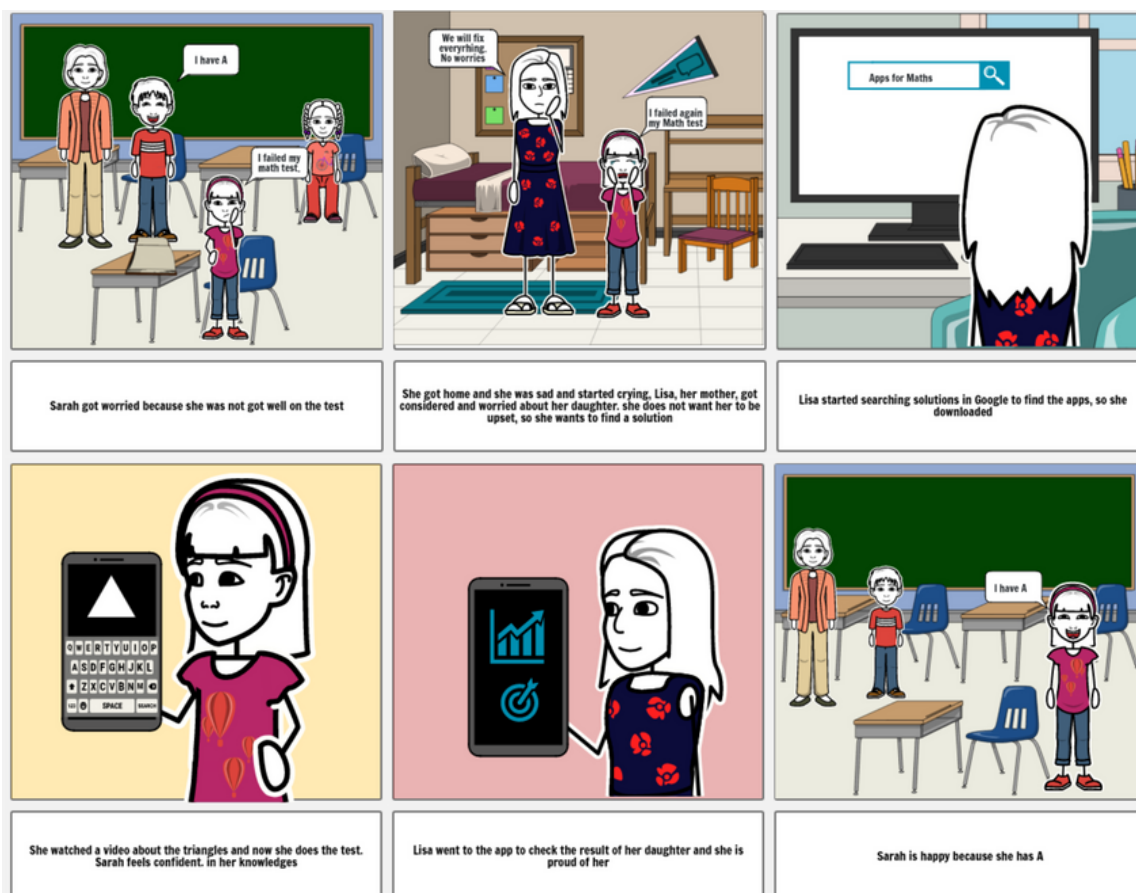
They helped us to understand what he feels, thinks or does and based on that solve his problem.



INSPIRATION

Customer journey map and storyboard

	AWARENESS	CONSIDERATION	PURCHASE	RETENTION
ACTIVITIES	UNDERSTANDS FROM ANOTHER MOTHER ABOUT THE APP	RESEARCH MORE DETAILS ABOUT THE APP	DOWLOADING THE APP AND DOING THE FIRST LESSON	SEEING THE FIRST RESULT
MOTIVATIONS	HELP HER KID TO IMPROVE HIS SKILLS	CONSIDERING DOWNLOADING IT	IMPROVING THE SKILLS	HAPPY TO SEE THE POSITIVE RESULT OF THE KID
EMOTIONS	🤔 INTRIGUED	🤔 CURIOUS	😄 EXCITED	😊 SATISFIED
BARRIERS	COMPETITION	LACK OF INFORMATION AVAILABLE	INABILITY TO GENERATE WANTED RESULTS	DEPENDS ON HER AND HER KID



IDEATION

Brainstorming

After all the data that we analysed, we brainstormed our idea, so to have a better view of what exactly we are going to create and from the idea to become a concept.

5W AND H

It helped us to specify for instance who is going to be our app or what will be the purpose of it.

- For who is the app?

Our app has two types of groups that will be used by the users. One is the kid, who is going to study from there and the parent who is going to monitor the progress of his kid and track what he is doing.

- Which grade is going to be included in the app?

The grade that we are focusing on is a kid at the age of around 8 years old(second grade) because there is a huge difference between a student in second grade and a student in fifth grade. In this way, it will be easier to build an app if the target audience is smaller range.

- What is more focused on kids who have troubles or kids who wanted to be challenged?

We decided that the parent should choose that when he is creating the account of the kid and in future development may be even the app to have a test to decide what is the level and the goal of the kid.

- Why there is going to have such an app?

Helps the parent to track what is happening with kids as well as help kids to learn in an interesting environment.

- Which subject is going to be in the app?

For demo purposes, we decided to have English and Maths, however, the app is going to have all the subjects.

- How the app is going to evaluate?

Through a microphone and camera.

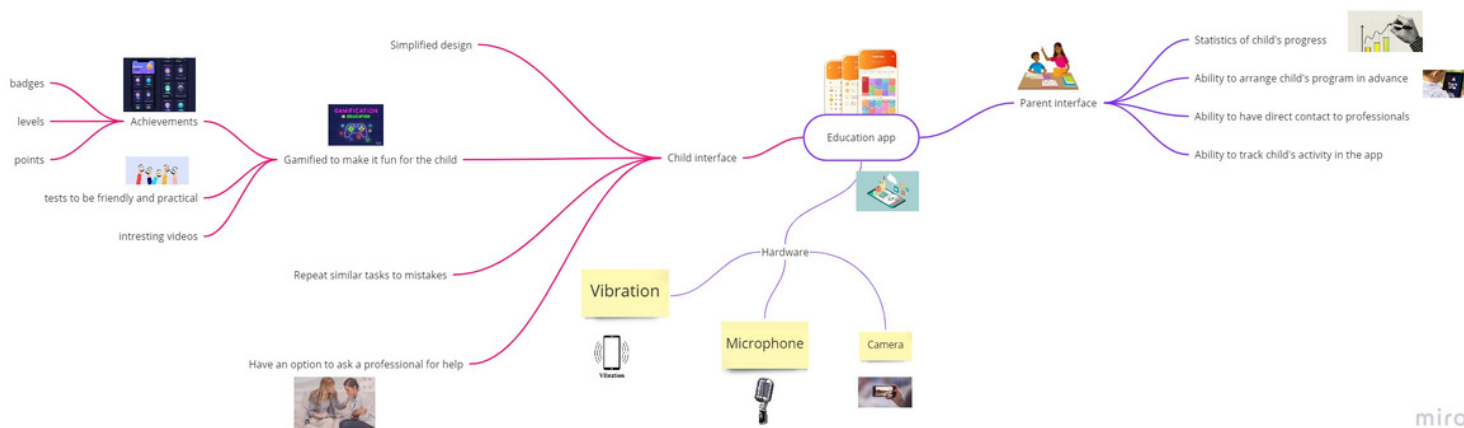
- How the app is going to interact?

As having a character, who is to be his study guide/friend in the app. Moreover, the app will be gamified as having achievements for instance.

IDEATION

Mindmapping

It helped us to visualize our idea.



Concept

Our concept started as a home education app for parents that work from home or stay at home parents. After a discussion with our teachers, we decided to make it a study helper app. As Alex is our persona, we decided that she needs some way to keep track of the activities and progress her kids have in school or their academic process in general. Further down the line, we discovered that Alex's case isn't quite the norm and our teachers advised us to focus more on a real problem than to create one that we can solve. Our concept initially revolved around all the subjects and all the grades as we wanted our app to reach and help as many people as possible. For the scope of this project though – taking into consideration the time and technology we have at our disposal our teachers advised us to take a different course of action and narrow it down to one or two grades and perhaps one or two subjects, with the promise that the concept could grow if it was to be developed in the future and would perhaps implement all the things we initially wanted.

In the end, we are left with the following – our “Study helper” app, which is meant to help kids in primary school and mainly the first two grades. After the above-mentioned feedback, we also decided to focus on two subjects, namely the ones that people need the most help with – Mathematics and Language. This was found through our survey. We aim to provide video lessons to go in parallel with the ones taken in school as well as exercises and tests. All of these activities are simplified as much as possible and are

IDEATION

made interactive through the use of a microphone to ask questions directly to a teacher and a camera to take pictures of the finished mathematical exercises. Our goal is to have artificial intelligence check the mathematics equations as well as to have the option of speaking to a real teacher, a professional, that can have a personal approach and help the child with the specific difficulties. Another key feature for the kids is what we call the “Buddy”. It’s a weird, animated creature that is the child’s “friend” in a way that helps him/her navigate the app more easily and makes it a little more fun. One cool thing is our levelling system in which the child can unlock more buddies and achievements the more he/she levels up. We also aim to offer deeper help with difficulties – for example, if the child is struggling with multiplication tasks our app would generate an additional exercise we currently call “correction” so that he/she can practice what they are struggling with more.

Here it is also important not to forget that we are talking about kids between the ages of six to nine – we cannot leave them to control their day to day, otherwise, they would be eating ice cream for breakfast. What I am trying to say is, that as much as our app is devoted to helping kids with the school our persona is Alex – the mother and our main goal is to please her needs and wants to be more involved in her children’s future and academic process. We achieve this by separating the functionalities in a way that gives control and insights to the parent. This is realized by having a “parent” and a “child” profile, which of course the parent can control. What we offer on the parent’s side is a couple of things:

- A convenient way to see how much work the child has done so far for the day using percentages
- A way to contact the teachers helping the child directly
- The possibility to arrange your child’s program for the next day – what tasks he/she should complete
- And last but not least an overall tracking of their progress

It is important to mention that we also have the option to create multiple child and parent accounts and to diverge between the children’s tabs easily.

In general, we believe our concept would be helpful and is needed in a world that expects more and gives less to its young ones.

IMPLEMENTATION

Design Documentation

The first thing that we did after getting better was the idea, we started thinking about what our mobile will look like. In the beginning, we did sketches that helped us to visualize the idea that we had in our heads. Mainly there was no difference between the sketches and the wireframes. The only concern that we had is if it is going to be comfortable for the kid to study on their small screen/ mobile phones. That's why we decided to make a tablet version as well because it will have all the functionalities that we would like to implement on both devices. For instance, if it is on a desktop version it will be harder to use the camera for taking pictures. Based on our research we got inspiration from <https://ucha.se>. We decided to stick to Material Design. The typeface that we used is Nunito. For colours, we used black, white, purple and blue as the main because they represent creativity, intelligence and trust. This is what we would like our users to feel. Also, we believe that they give freshness, friendliness and playfulness.



white
#f8f7ff



black
#10002b



purple
#8600b3



blue
#abc4ff



shadow blue
#3399ff



IMPLEMENTATION

Testing

It helped us to validate our concept and our design concept. So if everything goes well, we could do the implementation as coding.

Test Materials:

- **Hardware:** Laptop and phone
- **Software:** Messenger and Whatsapp
- **Time:** 10-15 mins

Testing questions:

Hello, we are a group of people, who were supposed to create an app for the education of kids between first and fourth grade. So, to develop our product in the best possible way by asking you a couple of questions on our prototype and feel free to tell us your opinion. So, would you like to participate? Let's begin, shall we?

- *What's your name and age?*
- *What's your occupation?*
- *What is your overall impression of the app?*
- *Imagine that you are a parent and do the flow*
- *Imagine that you are a kid and do the flow*
- *How easy was it to complete the tasks/missions for you from 1 to 10?*
- *Are you confident in using it?*
- *What do you like the most about the product?*
- *What would you like to change about it?*
- *Are you satisfied with the rewards?*
- *Would you use it and share it with your friends?*
- *Do you like the idea?*
- *Do you like the design?*
- *Choose 3 adjectives from the table below that best describe our website:*

Thank you very much and have a nice day/evening.

Adventurous	Active	Authoritative	Bold	Brave
Bright	Bubbly	Calm	Carefree	Caring
Classic	Comfortable	Creative	Determined	Earthy
Elegant	Empathic	Enchanting	Energetic	Enthusiastic
Fancy	Focused	Friendly	Fun	Gentle
Glorious	Goofy	Graceful	Homely	Healthy
Helpful	Imaginative	Innovative	Kind	Lively
Luxurious	Modern	Natural	Nurturing	Optimistic
Organic	Playful	Pleasurable	Quaint	Reserved
Secure	Sophisticated	Spontaneous	Timeless	Trustworthy

IMPLEMENTATION

Interview participants:

Participant 1: Vanya, 40, Banker

Participant 2: Savina, 20, Graffice Designer Student

Participant 3: Kremena, 46, Banker

- **What is your overall impression of the app?**

P1: Yes, I like it, because it is friendly for both sides. For the kids is interactive and there is enough information for the parent as well the creature looks nice

P2: It is really good as design as well as it gives stimulating vibes

P3: It is well-structured, colourful and unique

- **How easy was it to complete the tasks/missions for you from 1 to 10?**

P1: I would say 10

P2: 10

P3: 10

- **Are you confident in using it?**

P1: Yes, I feel confident

P2: Yes, I am

P3: Yes, I am

- **What do you like the most about the product?**

P1: I like that it is colourful and playful. It got a huge variety of activities that makes the study process funnier and more interesting

P2: Yes, the idea for the software and the creature.

P3: That it is simple, funny and colourful.

- **What would you like to change about it?**

P1: I would change maybe only the icon of the test

P2: Maybe instead of asking the teacher to look more like a chat than a form, it will be more friendly and the home icon to be like a home, not a book.

P3: Maybe instead of kids typing have a microphone to record their questions and to know what the teachers are teaching

- **Are you satisfied with the rewards?**

P1: Yes, I am satisfied with

P2: Yes, because they stimulate the small student to study more.

P3: Yes, I am

IMPLEMENTATION

- **Would you use it and share it with your friends?**

P1: Yes.

P2: Yes

P3: Yes, seems something that I would share with my friends and give my kids to use

- **Do you like the idea?**

P1: Yes, it seems interesting and unique

P2: Yes.

P3 Yes, seems something that I would use

- **Do you like the design?**

P1: I adore the design.

P2: Yes, because the purple symbolizes the creativity and this suits the concept to have an app, which to be more creative and interesting for small kids

P3: Yes, I like it

- **3 adjectives**

P1: friendly, innovative, creative and fun

P2: friendly, helpful, comfortable

P3: helpful, playful, friendly

Testing analysis

Mainly the feedback that we gather is positive because people did the task that we gave them pretty intuitively. This is nice because it means that the user flow is straightforward. All of the participants said that their first impression is that the app is colourful, and unique as well as that it is pretty interactive for the kids because of the app. Also, they felt that the app is stimulating for the students, which is one of the main goals to make it more appealing and interesting for them. The thing that they liked the most is the creature, the variety of activities that you can do and last but not least the software that we want to implement. The thing that we could change based on the feedback that we gather is that for the small students is going to be hard to type, so there are two solutions one of them is to look more like a chat rather than a form or we can use the microphone. So, we decided to use the second option.



IMPLEMENTATION

People liked the design as one of them said that purple is symbolizing creativity which is good thus small age is good to give freedom and creativity for the small kids to express themselves. All of them said that they believe that the app is friendly and helpful as well as that it is innovative, creative and fun, so this means that our goal is completed. Overall, we believed that our design is good and we are ready for implementation.

Coding part

As the heading states, our project is an Android app – we are using Kotlin and XML formats for coding and Android studio as an IDE.

Due to project restrictions – mainly time, we decided to focus more on the design part and less on the proper technical implementation. This results in a lot of hardcoded values and some not so smooth transitions and functionalities. We have dug deeper into what the capabilities of an Android application are – using the camera and microphone as key features. This requires an understanding of hardware, software and design to be able to implement these properly as well as the ability to work with storage to save and keep the audio recordings and images taken.

In conclusion, we can say that developing Android applications turned out to be more difficult than we anticipated, but through hard work and a lot of digging through Stack overflow, we believe we deliver a product that although not perfect, exceeds the expectations.

IMPLEMENTATION

Heuristic evaluation

- *Visibility of system status* - we have this on our app because it's visible for the user for instance what is his mistakes in the test and the parent can see the progress of the kid
- *Match between system and the real world* - it's easy for the user to understand the text everywhere and the images and icons that are used are been chosen to be closer to the user
- *User control and freedom* - we believe that we have that because people can go back to the previous section as well as that that the parent can create content for his kid or create an account
- *Consistency and standards* - we believe that our design is consistent because the user flow is pretty straightforward based on the testing of the prototype
- *Error prevention* - unfortunately, our app does not have error prevention, but in the future, this can be implemented
- *Recognition rather than recall* - everything is been made to be easy to remember and to be easy for the user to use especially it is important for the small children
- *Flexibility and efficiency of use*
- *Aesthetic and minimalist design* - our design choices were made that our design to be minimalistic, playful, and meaningful.
- *Help users recognize, diagnose, and recover from errors* - as we mentioned earlier we don't have recovery or prevention, but some kind of tips for the user when he uses the app through the creature that we have for the kids
- *Help and documentation* - we believe that we have it through the study buddy that we have for the kids that explain to them what they have to do

To sum it up, we believed that we did a user-friendly, playful and minimalistic design. Fortunately, most of the requirements we have, however, in the future is good to focus on error prevention, so our app is even friendlier.



CONCLUSION

In conclusion, this project was so interesting to dig out information because it is a problem that is becoming bigger and bigger since many people are using private lessons to improve their skills and knowledge. Our team believe that our concept is good and can be implemented even further because it has potential. Moreover, based on the tests and the feedback from teachers and friends we feel that we create a great, user-friendly, playful and helpful app. However, for us this time the coding was the hardest part of executing because it was a new language and we were struggling to find solutions. Even though our team believe that we create an app that is good and that will help a lot of parents and their kids.

IMPORTANT LINKS

- Survey: <https://forms.gle/Qgd9hTuHHNgqXnWh9>
- Gamification: https://www.gamify.com/gamification-blog/7-best-gamification-examples-2021?utm_source=canva&utm_medium=iframely
- Prototype: <https://www.figma.com/file/SutvIk6JK44baissgeTmnt/Duo-project?node-id=451%3A2847>
- Group Git PWA: <https://git.fhict.nl/I444180/duoprojectpwa>
- Group Git Android: <https://git.fhict.nl/I455146/duo-project-android>
- Yoana's Git: <https://git.fhict.nl/I455146/portfolio-yoana-churkina>
- Lazar's Git: <https://git.fhict.nl/I444180/lazargolomeevportfolio>