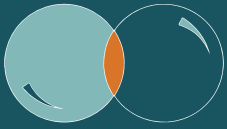


Master Thesis



by Xiao-Mei Huang

Pop your Bubble

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A Lesson Plan for Teenagers to Rethink their online
Filter Bubbles





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Executive Summary

This graduation thesis report describes the research activities investigating the education on filter bubbles in Dutch secondary schools towards teenagers between 14-16 years old, and the design to improve this through including critical thinking techniques.

During this research the context and two main target groups were explored through literature research, observations, generative sessions and interviews. Insights from this research led to the design brief containing the design goal, interaction vision, design criteria, and learning objectives.

The design brief was formulated after exploring the context, media literacy, and stakeholders and target group. From this research it was found that Dutch secondary schools are still at the beginning stages of implementing media literacy in itself in their curriculums, which means that filter bubbles are even less discussed in schools. Teenagers are confident about their media literacy and often confuse this with tech savviness. This results in that they often think they learn more through Social Media. But even though teenagers nowadays in 2021 are raised alongside Social Media, teenagers are not necessarily media literate. Especially when it comes to critical thinking about the media consumed. To stimulate critical thinking in education, pupils have to be encouraged to come up with their own ideas and opinions and be able to discuss the different ideas with other people. Pupils also have to be able to connect subjects to their daily lives. For this to happen, a safe space needs to be created for pupils to be able to share perspectives with each other.

Following these insights the design goal was **to design an intervention that can be used as an addition to the “social studies” course in secondary schools in The Netherlands. This intervention should teach teenagers to critically think about the content they consume within their filter bubbles, through meaningful conversations among other teenagers about the content.**

Ideation involved creative sessions and individual brainstorming and soon went into testing and iterating concepts. The final concept was evaluated with Social Studies teachers and teenagers.

In conclusion, the Pop your Bubble: Lesson plan has created an opportunity in class for pupils to explore their own filter bubbles and discuss them with each other. Though further testing in context and research on the long-term effects of this lesson plan is required, teachers and participants agreed that this is a useful way to teach pupils that filter bubbles can have an influence on opinions and that it helps teenagers discuss them.

Motivation

Looking back at the year 2020, I noticed how much Social Media had become a part of my life. Especially during the pandemic when a lot of people were forced to stay at home. Due to the fact that I spent hours a day on Social Media, it felt like the whole world collectively decided to join TikTok and spend their time there. People all over the world were sharing knowledge, stories, and funny videos, which made me feel more connected to the world. It felt like we were all in the same boat living through the pandemic. A feeling which is not fully unimaginable, as Social Media nowadays has become the most significant communication channel (Statista, 2021) and the numbers of TikTok users in The Netherlands has tripled in 2020 (Statista, 2021).

Then the Black Lives Matter protests started to happen in May and I started to notice some cracks in my idealistic Social Media world. Suddenly there were people with totally opposite views. I had surrounded myself with so much content that I liked, that it actually surprised me how crooked my view on the world has become. Even communicating with people I know in real life about some subjects became more difficult. Haven't they seen all the content that I have been seeing? The information is out there, so how can you still decide to believe otherwise? When the documentary "The Social Dilemma" was released in September 2020, explaining the different rabbit holes algorithms trick you to fall into. Which explains quite a lot, but knowing this, how do we deal with this phenomenon of filter bubbles? Surely staying away from Social Media is not "the solution"?

This project deals with that question. Knowing the effects of "Social Media filter bubbles" how do we educate people to actually see through them? Not just people, but our future generation who actually grow up with Social Media, while they don't fully comprehend society yet. How do we minimise unwanted effects of filter bubbles in the next generation growing up from secondary schools?



Acknowledgements

Hi!

Before we get into this report, I would like to use this page to show my gratitude to the people who have helped me during the graduation project.

Firstly I would like to thank my little sister for letting me use her and her friends over and over again during this project and for answering all my annoying questions I had randomly texted throughout the project. She and her friends have helped me tremendously with gaining insights in their world view, which has led me to my final concept.

Secondly I would like to thank both my supervisors; Annemiek and Ianus for the great conversations we've had and guidance you have given me. They have challenged me to make things concrete, while I was still floating in the abstract level of the project. Furthermore they have supported me through a process with moments of total self doubt, insecurities, and confusion, where they have always managed to make the big things in my head small and manageable again. Here I learned that sometimes, all you can do is just your best.

Thirdly I would like to thank all the teachers who were so excited to test my concept and provide feedback during the process of the project.

Furthermore I would like to send a special thank you to my best friends whom I studied with during this project; Jeanine Mooij, Tiara Spalburg, and Maaïke Weber for all their support, brainstorming sessions, feedback, and pomodoro check-ups. I am most grateful for them giving me space when I needed it, but always making sure they were still there for me. My roommates Dimitri Kool and Ennio Donders for supporting me at home during my mental breakdowns and testing my concepts. My other best friend Nadhira Doekhie for always being there and listening to me and always testing every concept I have had during my whole studies cause she thought it was fun. A special thanks to my boyfriend Thomas Nieuwendijk, for helping me find people within the target group but especially for bringing my graduation kick-off to a good start. Indah, for knowing Puk's name. She's called Puk. She is amazing. Also, thank you Puk. For your comfort purrs when I was crying. And lastly thank you to my mother for spending most of her life trying to provide for me.



Table of Content

Executive Summary
Motivation
Acknowledgements

	Introduction	10
1	Problem Definition	11
2	Project Approach	12
3	Methods used towards Design	14
	Contextual Exploration	16
4	Setting the Scene	16
4.1	Observations of Social Media Bubbles.	18
4.2	Media Literacy in the Physical Context of Dutch Classrooms.	20
4.3	Conclusions, why there is a need for education on filter bubbles.	23
5	How critical thinking can counteract complications of filter bubbles	24
5.1	What is critical thinking?	25
5.2	How critical thinking is stimulated in education	25
5.3	Analysis of Existing Products involving Critical Thinking	26
5.4	Conclusions: the key elements of critical thinking brought back in education.	30
6	Target Group and Stakeholders	31
6.1	Stakeholders	32
6.2	Target Group: Teachers and their Role of Facilitating the Design	33
6.3	Target group: Teenagers between the age 14-16 and their use of Social Media	34
6.4	Personas	38
6.5	Conclusions: The needs to meet the stakeholders and target group	40

	Design Exploration	41
7	About Social Studies and Creating a Course	41
	7.1 Social Studies in The Netherlands	41
	7.2 Needs regarding Lesson Material for the Target Group	42
	7.3 Conclusions: Developing a Course	43
	Defining Phase	44
8	Design Brief	44
	8.1 Design Goal	45
	8.2 Interaction Vision: Salsa Mixers	46
	8.3 Criteria formulated from the conclusions in the exploration phase	48
	8.4 Learning Objectives	49
9	Journey Map: Steps Towards Critical Thinking	50
	Developing Phase	52
10	Concept Testing	52
	10.1 Context: Digital vs Physical	52
	10.2 Context: Class Work vs Homework	53
	10.3 Context: Collecting set of content vs a time frame to scroll	53
	10.4 Awareness: Examples, exploring and comparing your own bubbles.	54
	10.4 Critical Thinking: Remixing bubbles through dialogues, debates or interviews.	58
	10.5 Revisit: Long term interactions	59
	10.5 Materials: Teacher vs Pupil	59
11	Delivering Phase	60
	11.1 Final Concept Proposal	60
	11.2 Concept in Phases	61
	11.3 The Lesson Plan	62
	11.4 The Application	66
	11.5 Interactive Presentation	70
12	Revisit: Poster Template	71
	12.1 Concept Evaluation	72
	12.2 Method	72
13	Results & Discussion	73
14	Conclusion and Recommendations	78
	Reflection of the Process	80
	References	
	Appendix	



Introduction

In this report you'll find the design journey towards the Pop Your Bubble educational program to counteract the effects of filter bubbles on teenagers. This report has been divided into five phases: Introduction, Exploration, Define, Develop and Deliver. Note that information written in the subchapters are not necessarily in a chronological order of the design activities executed during this project, rather they explain all the relevant data that has been gathered throughout the project that has resulted in the design decisions made. In the introduction the problem definition will be explained and the approach that has been used during the project. The exploration phase will start with an explanation of the methods that were used to gather the required insights to formulate the criteria in the defining phase. The knowledge gathered has been divided into three

categories. A contextual exploration of Social Media, media literacy and the educational system in The Netherlands, called "Setting the Scene". After this literature research on stimulating critical thinking in education has been conducted. Combined with knowledge gathered in a generative session with teenagers, insights have been formulated. The third area explored are the possible stakeholders and target group. The conclusions of these explorations led to the design goal described in the Define phase. To attain the design goal, criteria have been listed based on the insights found during the Exploration phase and a journey map has been created. This Journey map has become a leading thread for the Ideation which will be discussed in the Developing phase. Where several ideas were tested and iterated upon resulting in the final design proposal in the delivery phase.

“In a **personalized world**, important complex or unpleasant issues are likely to come to our **attention**”
Eli Pariser

Chapter One

Problem Definition

Social Media has proven to have many benefits such as for people to learn about other cultures on the other side of the world, educating yourself by following experts online, advertising your business, and building online communities (Akram, 2017). The world is literally at the palm of your hands. But with all these benefits that social media has to offer, some negative side effects are destined to form with something that is used on such a large scale. Some of these effects for example are social media addiction, distorted body image, filter bubbles, and misinformation (Akram, 2017). Because where information can be shared, misinformation can also be shared.

During this project the focus lies on one of these side effects, which is "the filter bubble".

The filter bubble is a term coined by Eli Pariser who is an Internet activist. As explained in the glossary, the term refers to a state where your online information flow is based on your online behaviour. This makes it hard to find diverse resources with different points of views (Mediawijshheid, 2020). This phenomenon is caused by algorithms on Social Media platforms such as Google, Facebook, Twitter, Instagram, and TikTok (Mediawijshheid, 2020). In a world where information seems endless and accessible, it makes sense that social media platforms use

algorithms in order to help you find the content that suits your needs and interests. While the term "filter bubble" is novel, the effects of them have been around longer. Where in older days, it has been your demographics, surroundings, newspapers, and families which create your bubble of knowledge, now the digital algorithm is added to the list. This is especially beneficial for the Social Media platforms to increase their engagement. As they earn money by showing advertisements to you and also are able to provide you the best experiences on their platforms. While this seems like a perfect exchange of interests, it has been suggested that this mechanism can result in online polarisation and extremism (Schwind et al., 2012). When you are constantly shown the information that proves your point of view, you are more likely to get trapped in a loop of confirmation bias (Schwind et al., 2012,). One example could be the miseducation of Dylann Roof. An American man who has killed nine African Americans in Charleston in a church. In an extensive profile article about him, it has been suggested that Dylann has led to believe that the white race is in danger through online misinformation that has been led to him by the algorithm. He once typed in "Black on White crime" on Google after he got interested in a case that he saw on the news. After that, Google has presented him with propaganda of misinformation from groups of racist forums (Ghansah, 2017). While the "filter bubble" is widely discussed among popular media as a cause of polarisation and extremism, there is not sufficient evidence supporting this (Bruns, 2019). Rather the bigger filter would be in our own minds, where we would rather adopt dominant stances you are exposed to (Bruns, 2019), thus creating confirmation bias. Currently the only advice to avoid filterbubbles is either to delete Social Media, your cookies and use search engines that avoid "filterbubbles", depicting the algorithms as the core problem. But if the real filter is in our own heads, rather than to avoid filterbubbles, the focus should lie on the willingness to learn from different perspectives. Exposing yourself to different perspectives outside of your filter bubble could be an effective way to minimise confirmation bias. (Schwind et al., 2012,) This project will focus on learning from different "filterbubbles", specifically among teenagers.

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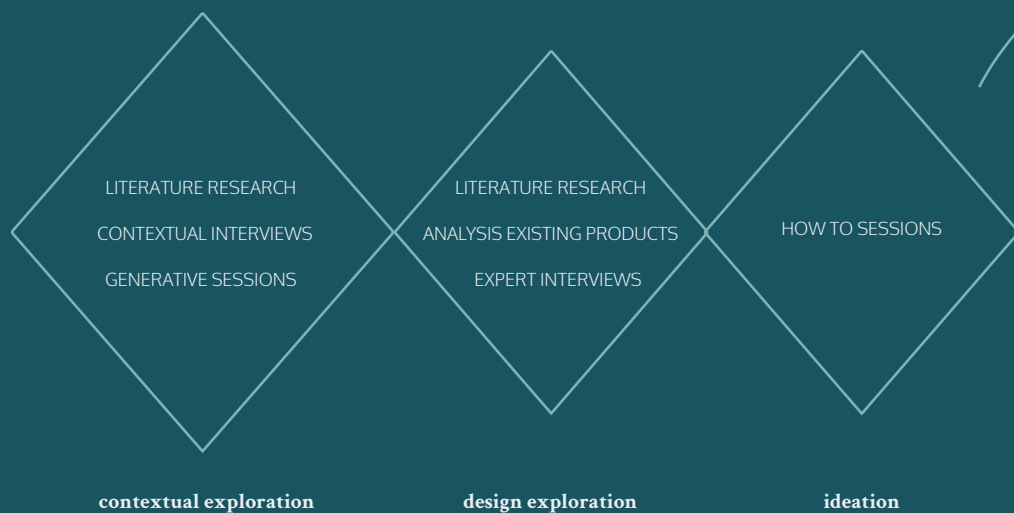
Chapter Two

Project Approach

Starting with mostly the reading of recent articles about filter bubbles, personal observations, and interviews with the target group of Dutch secondary school pupils between the ages 13-16, knowledge has been gathered about how Social Media and media literacy is experienced in practice and through the eyes of the target group. Literature research has also been conducted about critical thinking and confirmation bias. Through this **contextual exploration** a broad idea was created about the target group and their needs, combined with pinpointing what to focus on when trying to minimize the effect of filter bubbles.

After defining a more concrete context and solution for the problem, additional knowledge was gathered through literature research as **the design exploration**. This is where I dove deeper in critical thinking as a solution in education for filter bubbles. After this design exploration phase, I have started the **research through design** where several **ideas** have been minimally prototyped and tested. Through interviews with experts, testing and literature research I have arrived at the **final design proposal**. Figure 1 shows an overview of this approach.

Figure 1: Visualisation of the design approach



defining the design goal

defining criteria and journey map



Chapter Three

Methods used towards the design

This chapter explains the methods that are used during the first phase of the project. Five research methods are used to gather insights on the context, target group and critical thinking. These insights later are used to formulate the design goal, criteria and journey map. In this chapter, the research methods are explained including the research questions asked for each method.

Literature Research

Literature research has been conducted throughout the project to gain insights on the terms “Media Literacy” and “filter bubbles” and its relation to teenagers. During the first phase of this research, the research questions were also formulated for the first interviews during the exploration process (See Appendix B). Main research questions for the literature research were:

- What is media literacy?
- What are the effects of filter bubbles?
- How can critical questioning and thinking in class be learned and supported?

Contextual Interviews

To gain insights on how the target group actually experiences filter bubbles, contextual interviews were conducted through zoom. This interview was also conducted to find out what they observe on Social Media themselves (See Appendix B).

- Which social media platforms do teenagers between 13-16 years use? And why?
- What kind of social media filter bubble are the participants in?
- Are the participants aware of their own filter bubble?
- What do teenagers learn about media literacy in class?

Personal Observations

To gain personal insights on the digital contexts, observations were made in comments sections of online social media platforms.

- How do social media users in the target group experience their “filter bubbles”?
- What are examples of communities online?

Analysis Existing Products

There are no existing products yet regarding “filter bubbles” as this phenomenon is quite new. As though the consequences are quite similar to the consequences of “echo chambers”, which is confirmation bias. Existing tools for critical conversations have been analysed to gain insights on structuring discussions.

- Which key elements of critical thinking can be incorporated in design?

Generative Sessions

One of the dangers of filter bubbles is the decrease of tolerance as described in the “problem definition”. For critical thinking pupils have to be able to look from different perspectives (Dam & Volman, 2004). Therefore it is important to see how the target group actually behaves around the term tolerance. A generative session has been conducted to find out what the needs and values are of teenagers regarding tolerance. These were conducted with two groups through Zoom. See appendix C

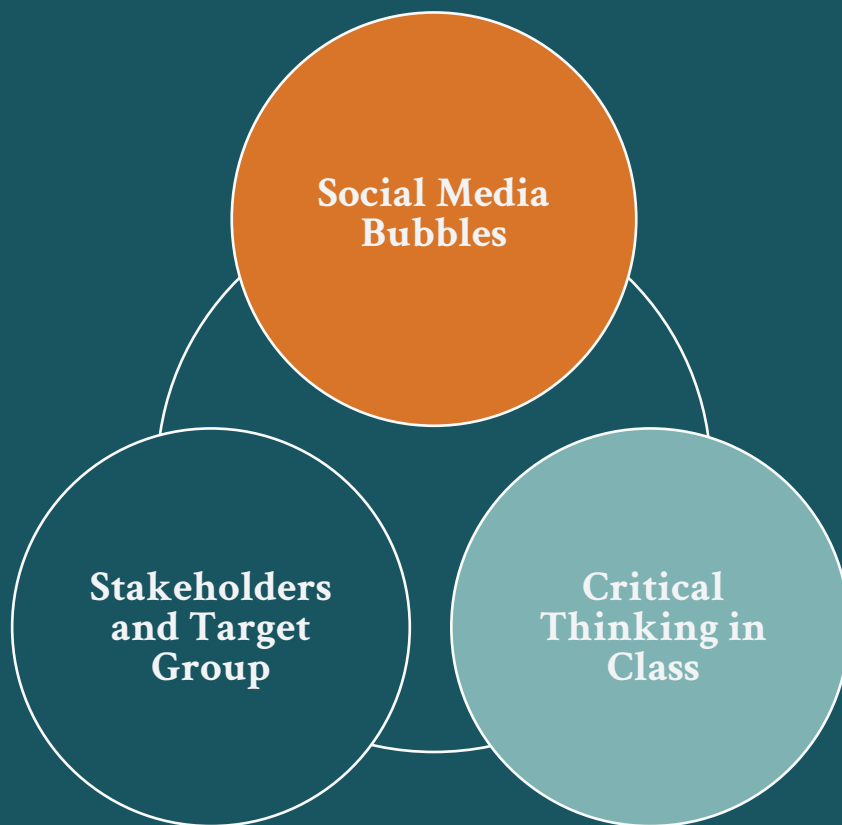
- What are the needs of teenagers when having discussions with people with different views?
- What do teenagers do when they want to get out of their comfort zone?
- What do teenagers do when they come accros someone who said something they don't like.



Chapter Four

Setting the Scene

This chapter describes an overall overview of the scope of this project. This context involves the effects of Social Media, media literacy and critical thinking, and stakeholders and target groups. The context has been explored through personal observations, literature research, interviews, and generative sessions, which can be found in the appendix. After mapping out the context, insights are used to find where in this context the focus lies for the final design, which stakeholders to consider and what their needs are.





Chapter Four point One

Observations of Social Media bubbles

When it comes to the online world, which is a whole other dimension outside of the classroom, new communities are formed as “filter bubbles”. Culture is defined as the beliefs, customs, practices, and social behavior of a particular nation or people (Davis, 2016). Where cultures normally are formed through for example geographic elements, family, and ethnicity, now online algorithms contribute to creating cultures too. (Davis, 2016) In this subchapter, some online communities are mapped out using insights of personal observations, online articles and individual interviews with the target group. Articles have been used, because they give a closer look on how online communities are actually experienced by the masses rather than the mechanics behind them. And in order for me to gain a better understanding of them, interviews with the actual target group were conducted.

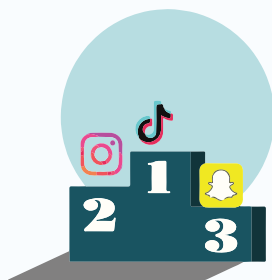


Figure 2: A representation of the most used Social Media platforms filled in by interviewees

Dutch Teenagers and Social Media

During the interviews with the target group, the three most used Social Media platforms by them were TikTok, Snapchat and Instagram, as shown in Figure 2. All three were used for different means. SnapChat often is reserved for chatting with close friends, their online social circles grow with Instagram and TikTok. With TikTok being the most used Social Media platform in the target group, most personal observations for the contextual research have been done on this app.

Sides of TikTok

TikTok is quite infamous for its accurate algorithm providing the user with personalised content that keeps the user scrolling endlessly. (Wang, 2020) The results of this recommendation engine other than its addictive features is that users get pushed into different sides of the platform. Stayhipp (Sommer, 2020) explains how everyone who has a new account on TikTok, starts out at “mainstream TikTok”, labeled by the users themselves. This side of TikTok is where the most current and popular content of TikTokers can be found such as Charlie d’Amelio, Addison Rae, etc. These TikTokers share content such as dancing videos, funny sketches and pranks as seen in Figure 3. But once you spend more time on TikTok, the algorithm will lead you to different communities based on your online behaviour. The different sides of TikTok. Through personal observations, testing with participants, and online articles some are mapped out in Figure 4 and 5. Some of these communities are based on ADHD, mental health, sustainability, small businesses, and more.

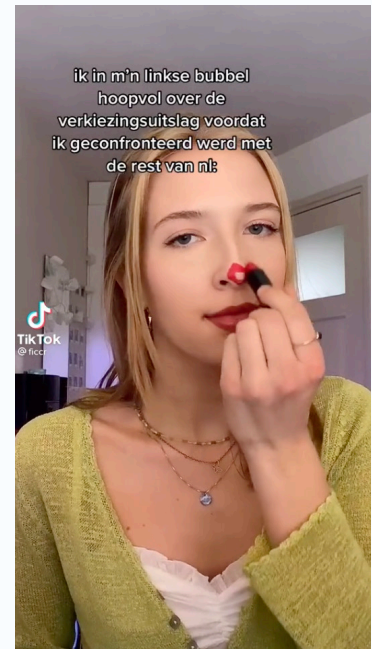


Figure 3: Famous “mainstream” Tiktokkers

The target group tend to watch memes that relate to their daily lives. Most content is used for entertainment. One participant also uses Instagram as her news source, saying that news programs like NOS are more for adults, while these pages on Instagram are more adjusted to her.

Being divided in these filter bubbles can be very entertaining for their users, which is part of the reason why this app is so popular. It creates the feeling as if the For You Page is actually really made for you and you feel understood. But, Figure 6 also shows the negative effect of these bubbles. Where one person made a video on how she felt like a clown, when she had so much confidence in the left parties during the Dutch elections in 2021. This false belief was created not only due to her own social circle, but also due to how the world was presented to her through Social Media. What if she did not have this false representation of the world? Would she have been able to take action?

Figure 6: A screenshot of a TikTok of someone who explains how she felt like a clown when she was hopeful for a leftist outcome during the Dutch 2021 elections. As she was in her "left bubble".



The challenge during this project would be to create an awareness among users, specifically Dutch secondary school pupils, that these barriers between the different sides of Social Media are there and to stimulate them to break through these barriers.



Figure 4: Themes on TikTok observed by me



Figure 5: Themes on Social Media sent in by the target group



Chapter Four point Two

Media Literacy in the physical context of Dutch Classrooms

The Need for Media Literacy

To obtain a clear understanding of the requirements for a solution on “filter bubbles” and their complications, it is important to orientate on what information is already out there. Filter bubbles are one of the issues that has created the need for Media literacy. Media literacy also known as “mediawijsheid” in The Netherlands has been defined by De Raad van Cultuur as: “Knowledge, competences, and mentality in which citizens are aware, critical and actively able to work in a complex, changing and fundamentally mediated world.” in 2005 (Mediawijsheid, 2021). On the official website of mediawijsheid many resources are available to educate people about media literacy. For example educational videos for schools and parents to educate their children about media literacy and dossiers on online media behaviour. One of those dossiers also mentions the “filterbubbel”. This dossier explains the dangers of filter bubbles and provides tips & tricks on how to avoid the filter bubble.

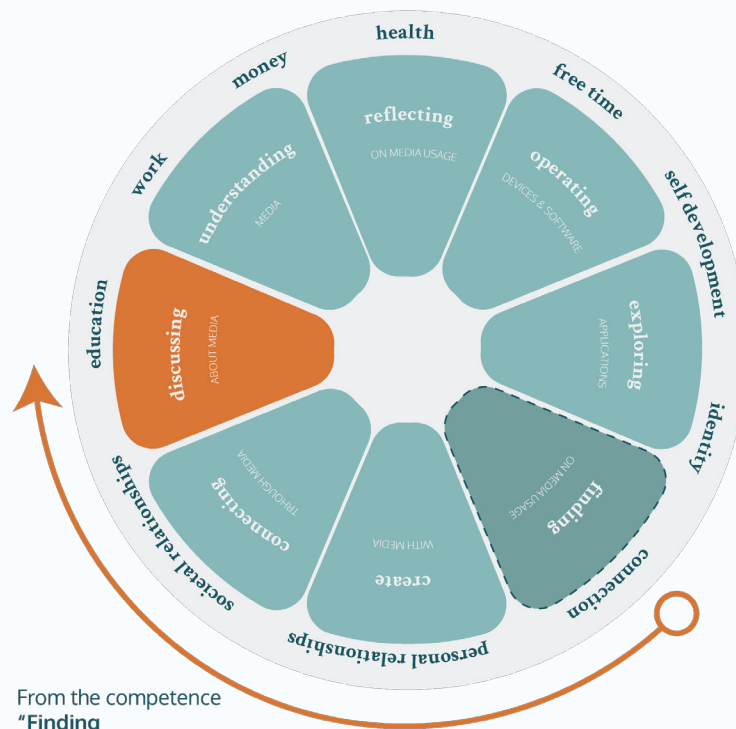
These tips would include doing your online searches anonymously and getting your resources from different resources. The website of Mediawijsheid has also explained that it is not possible to completely avoid filter bubbles and no other solutions have been found yet. While these techniques can be somewhat effective, the step towards applying these techniques can be too large to take for secondary school pupils. Social Media users actually appreciate their filter bubble too much to let them go fully (Eeden, 2020). Currently the most popular online platforms are the easiest to use, also because everyone around them uses them, as explained during the contextual interview by participants. Also these platforms are made for short term satisfaction with one minute videos to endlessly scroll through. Finding different resources for dozens of one minute videos is not feasible for its users. For teenagers to change their behaviour by using different search engines, putting more energy in finding more resources, without even seeing the direct consequences of the “filter bubble” is simply too much to ask.

Changing Strategy

Figure 7 shows the Media Literacy Competency Model provided by Mediawijsheid. The inner ring shows the eight competencies that contribute to media literacy and the outer ring shows the areas in your life that can be improved through these competencies. Currently the existing advice to avoid filter bubbles is based on the competence “finding information”. The competence “finding information” includes being able to find, judge, filter, and select reliable and useful information. Another part of this is to be able to recognise misinformation (Netwerk Mediawijsheid), 2021. As explained in the previous paragraph, finding information can be too much to ask from teenagers when it comes to their filter bubbles on Social Media pages. Therefore, teenagers first need to be triggered to want to do this and be aware of the possible side effects of their filter bubble. During this project, the focus will be on the competence “discussing about media”, which is the competence of discussing media usage and society through an open dialogue. This competence creates opportunities for people to share different perspectives with each other, become more aware of their filter bubble, and trigger them to look into finding more information from different sources.

Current Education on Media Literacy

The importance of media literacy has been stressed by several parties like Mediawijsheid (2020) and the national Dutch curriculum development initiative (SLO, 2019). Through interviews conducted with three secondary school pupils in Maastricht, The Netherlands, (See appendix B) show that there are still schools that do not offer any education on media literacy. This would mean that for the final intervention to work, basic knowledge on filter bubbles still needs to be explained to the pupils and teachers to create awareness on the problem. Especially, since filter bubbles is only one issue of the whole list of dangers online that media literacy protects you from.



From the competence
**"Finding
 Information"**
 towards **"Discussing
 about Media"**.

Figure 7: Visual how the strategy on the media literacy competence model is changed in this project.

During the same interviews with secondary school pupils, some have mentioned that there is no need for media literacy classes at school, because they think that they can learn it through Social Media. This suggests that teenagers have more interest in learning through Social Media than learning in class. With teenagers having this much faith in learning through the internet, learning about filter bubbles is an important phenomenon that these pupils should be aware of, as they might not be aware of the fact that they have no control of what information they are exposed to, nor see the need of broadening their point of views.



Pupils' Awareness of Filter Bubbles

At Utrecht University an Anti-Bubble application has been developed focused on filter bubbles. A Utrecht University student has written a thesis about "teenagers' appreciation of Social Media filter bubbles after an intervention that aims to increase knowledge and awareness" where this application has been tested among 15 pupils of 13-14 years old. This study (Eeden, 2020) shows that teenagers are often aware of their "filter bubbles", but experience it as something positive (Eeden, 2020). The teenagers that participated in this study know that the internet provides a never ending source of content and appreciate how algorithms help them get to the interesting content that they prefer.

According to the same study these pupils also are aware of the basic tips&tricks on how to avoid filter bubbles mentioned before (Eeden, 2020). But even though teenagers can somewhat be aware of online algorithms, they might not fully comprehend the long term complications that filter bubbles can create in society. Therefore a connection needs to be made between society and filter bubbles. In Dutch secondary schools Social Studies classes are provided, which teach teenagers about society. Therefore the intervention can be connected to Social Studies class, to help teenagers comprehend these complications better. Social Studies class is an existing curriculum class in VMBO year 3 and 4 which prepares the pupils to become citizens in society.

In a report from Kennisnet (2013) on how to implement "media literacy" in classrooms, it has been explicitly mentioned not to confuse "techsaviness" with "media literacy". Teenagers are confident in their Social Media usage, due to the fact that they grow up with it, in contrast to previous generations. But, this does not suggest that they are "media literate" and know how to critically think about all the information handed to them (Marwick, 2014). Teenagers develop innovative mechanisms online to keep their privacy, for example strategically deactivating their accounts so their accounts can only be found when they are online themselves. But even though teenagers are able to find many ways to stay private online, it does not mean that they can comprehend what privacy is and what the context and boundaries of their privacy are. As these boundaries are changing throughout your life, you could say this too for media literacy.

The final design should also focus on pupils' ability to critically think about their opinions, how they can change, and reflect on whether Social Media content has influence on them.

Pupils and their Teachers

As explained, Dutch teenagers on Social Media are quite tech savvy, and grew up alongside Social Media. Nowadays in 2020 this is mostly not the case for their teachers, which enlarges the generational gap between them. Due to this, Dutch teenagers on Social Media tend to distrust their teachers when it comes to problems that occur on Social Media (Korevaar, 2016). But teachers do play a crucial role in the lives of their pupils, as they are part of the ones responsible for preparing the teenagers to function in society (Pardoen, 2019). With Social Media becoming such a large role in society, it seems evident that teachers should have some grasp in this part of their pupils' lives too. This is also suggested in Korevaars research, which also proved that many teachers are willing to learn more about Social Media in order to gain insights on how to educate their pupils. This could be done through their pupils by creating an exchange of knowledge. Here the teacher would gain insights of their pupils and their online behaviour and teenagers learn about media literacy.

Chapter Four point Three

Conclusions: why there is a need for education on filter bubbles

To conclude this chapter, some insights have been listed from the research described in the previous subchapters:

- This project will focus on triggering Dutch teenagers in secondary schools to reflect on what they are exposed to online.
- Basic knowledge on the effects of “filter bubbles” and the term need to be communicated in the design, since not everyone is aware of what it actually is.
- The final design should help teachers to gain insights on what is going on in the lives of their pupils regarding Social Media.
- Teenagers' have more interest in learning through Social Media, the final design should make them think that you might not get all the information from your own phone.
- The final design should train pupils to be more aware about their filter bubbles.
- The final design should be accessible for teenagers to use.



Chapter Five

How critical thinking can counteract complications of filter bubbles

As explained, this project focuses on the ability to comprehend the consequences of “filter bubbles” and to create the desire for Dutch teenagers to burst out of their bubble. A competence that can be trained for this is to talk about the media that these pupils are exposed to everyday. But also through questioning ones own truths. This could be done through developing critical thinking skills, to counteract the confirmation bias that “filter bubbles” can cause. Instead of for the Dutch teenagers just believing everything they consume online, wonder whether there is information that they are still missing.

This chapter explains how critical thinking can be implemented and stimulated in education, help develop Dutch teenagers’ critical thinking skills regarding their own filter bubbles.

Chapter Five point One

What is Critical Thinking?

To design an intervention that promotes critical thinking, first critical thinking should be defined in how it needs to be manifested in the final design.

Ennis (1991) defines critical thinking as “reasonable reflective thinking that is focused on deciding what to believe or do”.

Critical thinking is a competence promoted by many schools. To see whether Ennis’ definition of critical thinking also fits the curriculum of Dutch schools, the preamble of SLO has also been checked what their definition is for critical thinking. According to the website of SLO, critical thinking also is described as a competence where someone is able to arrive at decisions through well-considered and reasoned considerations. Here it has also been described that it does not only require skills, but also the right attitude, reflection and self-regulation.

In the generative session (Appendix C) it has also been shown that teenagers do not necessarily ask a lot of questions and reflect on the content that they are exposed to.

Therefore during this project the focus will lie on training thinking skills and questions. Here the goal for the pupils is to reflect on the Social Media content that is recommended to them and consider how they might influence their point of views.

Chapter Five point Two

How critical thinking is stimulated in education

As explained, critical thinking is a crucial competence that is taught Dutch secondary schools. It is in fact in the preamble of the Dutch core educational goals (SLO, 2021). As schools are expected to prepare their pupils for citizenship. Nowadays it does not only revolve around “knowing your place in society” but also to “determine your place in society” (Dam & Volman, 2004). But this can be difficult for pupils to learn within the confines of classrooms, protected from the outside world (Araya, 2020). As the goal is to support pupils to connect the societal implications that filter bubbles could have, literature research has been conducted on how critical thinking can be supported in education.

Instructional Strategies

Pupils learn best when their thinking involves the exchange of perspectives or frames of references (Paul, 1990). Therefore it is beneficial to regularly ask pupils for their point of view on issues in the classrooms, and share them with each other. In order to think critically, rather than letting pupils find ideas in their text it would be more beneficial for them to brainstorm their own ideas and argue about them for possible solutions for themselves. This could be as simple as letting pupils think of categories and modes of classification without providing them in advance. Here discussion and dialogue play a key role (Dam & Volman, 2004). Another methodology that works well with fostering critical thinking in classrooms is “project based” learning and connected with objects from their everyday lives. As this promotes participation and for pupils to engage in creativity (Araya, 2020). When pupils are able to connect with the subjects and encouraged to participate actively, this could help them to find their position in the world and influence each other.

It has also been argued in literature that “critical thinking” cannot be taught in itself as it involves all kinds of areas (Dam & Volman, 2004). Therefore it makes more sense to include the final intervention in an already existing course like “Social Studies”.



Chapter Five point Three

Analysis of Existing Products involving Critical Thinking

To gain some inspiration on designing for critical thinking two existing products were taken to analyse. This has also been done to find key elements that could return in the final design. These products are Kialo and PlayDecide. These two products are both designed to cultivate critical thinking through conversations. One of them focused on online while the other one focused on offline group conversations.

Kialo

Kialo is an online discussion platform with a very clear structure. Kialo is an online discussion platform with over 16.000 debates (Kialo, 2021). This platform has been chosen to analyse due to its clear structure. Figure 8 shows an overview of the main steps in the debating platform with "All humans should be vegan" as an example. The overview was made in order to find the key elements that could be used in the final intervention.

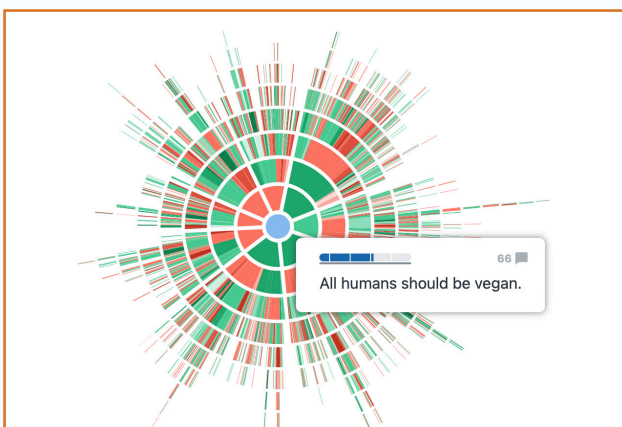
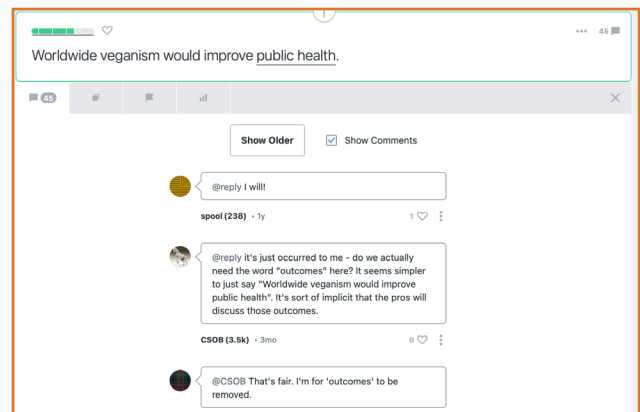
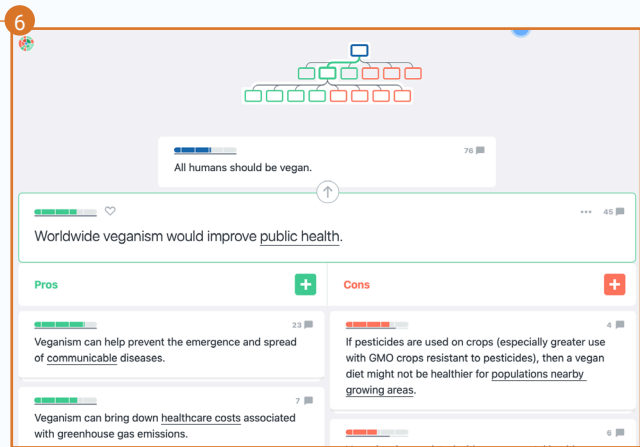
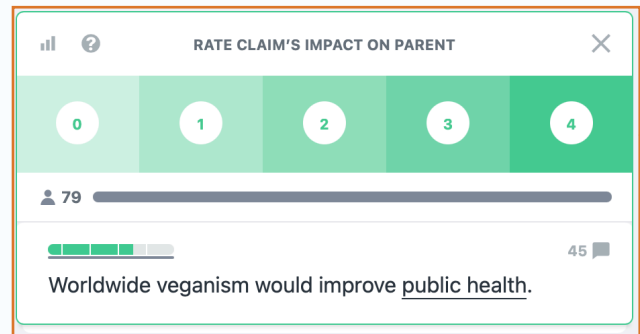
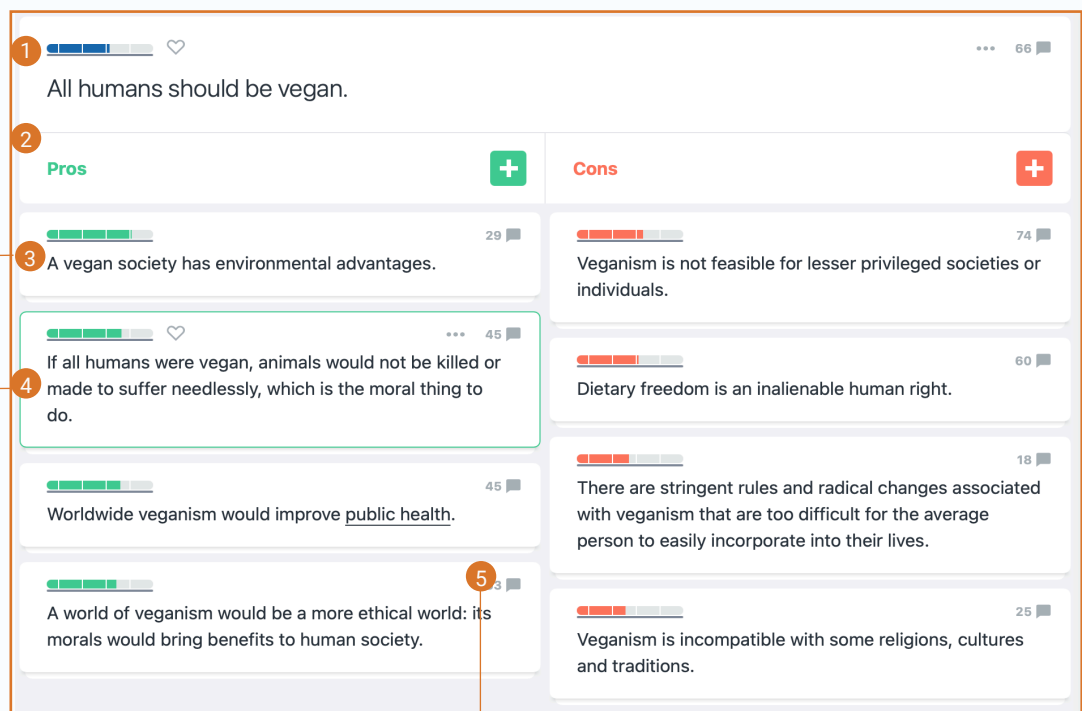


Figure 8: An overview of the workings of Kialo.



1

The thesis is where the discussion starts in Kialo.

2

People on the platform can send in argumentations for and against the theses. These are listed next to each other as pro- con list.

3

Some arguments can be more important than the other. This is called "impact" on the Kialo platform and people can vote on a scale from 1-5 how large the impact is.

4

Each argument can have their own subarguments. If you click on it, the argument tree goes further down and you'll see more argumentation.

5

People can also just comment on the arguments. For example asking for resources.

6

If you click on this icon you'll an overall visualisation of the whole discussion.



PlayDecide

PlayDecide is an offline critical thinking tool for group discussion. Here instead of arguing anonymously online, real life conversations are conducted with a facilitator. PlayDecide provides case studies about issues where a group of participants have to discuss them and decide on a solution that they think is best. As the final intervention will take place in Dutch classrooms of secondary schools, this product has been analysed. Figure 10 shows an overview of elements that could be used for the final intervention.

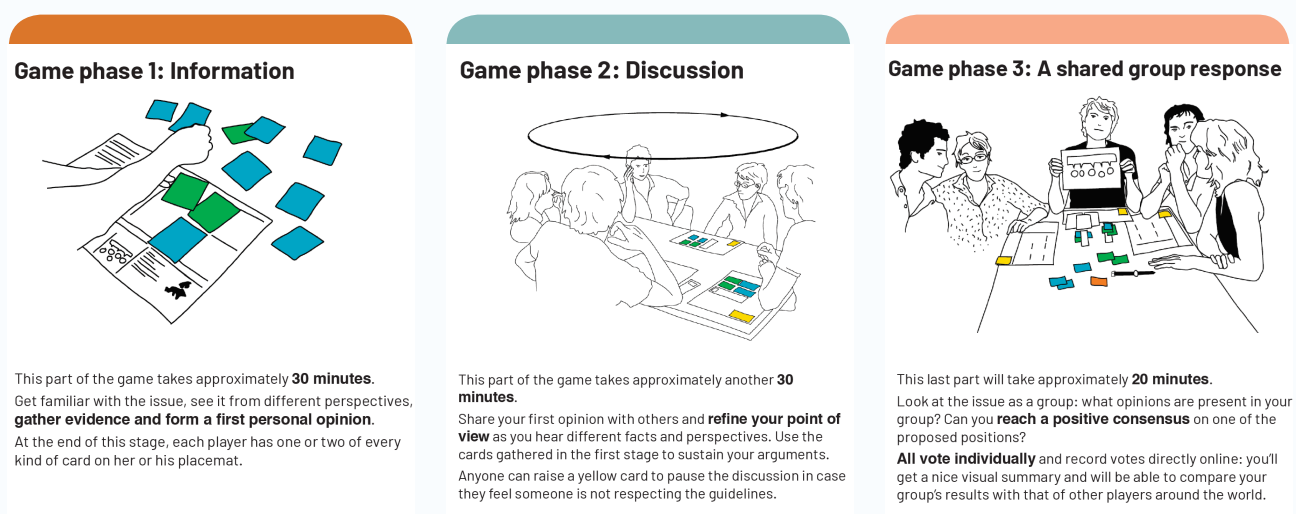


Figure 9: PlayDecide phases explained

Figure 9 shows screenshots taken from the manual of PlayDecide.

A session is described in three phases. First gathering evidence to form your personal opinion, then refining your opinion when discussing and getting exposed to different points of views. Lastly closing the session off by voting. As you can see some elements from the previous chapter about stimulating critical thinking can be recognised here. Elements such as creating a dialogue, forming your own opinions, and getting exposed to different points of views.

While the overall phases are clear and coincide with the strategies to support critical thinking, in order to put this in practice the materials provided to have these discussions and facilitate them were also important. These are shown in Figure 10.

These cards help structure the game and for players to puzzle with them and create an overview of what to consider when forming an opinion. Keeping the conversation going and keeping the conversation within guidelines are also considered in this game through cards.

Story cards are used to show the impact, while in Kialo they use votes.

This makes the product fairly interesting due to the personal approach and storytelling aspect of the game. Here experiences of personas are shared, which can communicate the "impact" of an argument more than the one you see in Kialo, where impact is measured in voting.

On the other hand, PlayDecide does require a lot of preparation as each game requires a case study with background information, possible policies, personal experiences and different issues. Due to this, the game can soon become outdated or too much work to develop.

Info Card 1

The History of Plastics (1)

The first synthetic plastic - plastic made entirely from man-made materials - was created over 100 years ago. It was called Bakelite and was invented by Belgian chemist Leo Baekeland in the early 1900s. Many think Bakelite was the start of plastics as we know them today. <https://www.bbc.co.uk/newsround/428101179>

Info Card 2

What are the most common types of plastics in use ?

Polyethylene Terephthalate (PET) - used in water bottles and plastic trays

High Density Polyethylene (HDPE) - used for milk cartons and shampoo bottles

Low Density Polyethylene (LDPE) - Plastic carrier bags and bin liners.

Polypropylene (PP) - margarine tubs and ready-meal trays

Issue Card 1

What is the problem with plastics? - Recycling issues (1)

... the problem with plastic is that most of it isn't biodegradable.

- It doesn't rot, like paper or food, so instead it can hang around in the environment for hundreds of years.
- Each year, 400 million tonnes of plastic is produced and 40% of that is single-use - plastic we'll only use once before it's binned.
- Examples of single-use plastic are carrier bags, drinks bottles and crisp packets.

<https://www.bbc.co.uk/newsround/428101179>

Issue Card 2

What is the problem with plastics? - Recycling issues (2)

.....not all plastic can be recycled.

- This might be because of the way it is made up or because it is too expensive or difficult to do.
- Some coffee cups, for example, have a waterproof plastic lining which can make them difficult to recycle.
- Every day seven million cardboard coffee cups are thrown away but only one in 400 are recycled.

<https://www.bbc.co.uk/newsround/428101179>

1

Info Card

These cards provide objective information on trends that happen around the issue. This also include the sources.


1

Issue Cards

These cards provide information on the multiple issues that one subject can have.

Story Card 1

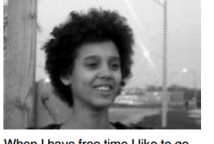
Sarah



I run a mail order business. We are really busy taking online orders and sending them out to customers. They really like our plastic moulds of famous people...can you guess who is most popular at the moment. Plastic is really great because we can make our product cheaply and easily...and they last a really long time.

Story Card 2

Beatrice



When I have free time I like to go down to the beach. It is so peaceful and calming to watch the sea coming onto the beach everyday...I wish my school lessons took place on the beach, even in the winter.

Over the last few years I have seen more plastic waste appearing on the beach. I did some reseach, and apparently some ships just throw their rubbish overboard...how disgusting.

Challenge Card

Pick a story card. As the character on your story card, present to the group your views on this topic.

Challenge Card

Does this have an impact on nature? Let the group know what you think.

1

Storycards

Personas are created with their personal stories. This helps the participants to connect to their point of views and experience pushing the participants to look at issues from different perspectives.

2

Challenge Cards

Challenge cards can be used during the discussion to keep the conversation going.

2

Guideline Cards

These cards are useful to stay in control of the conversation.

Guidelines Yellow Card!

Use the yellow card to help the group stick to the guidelines. Wave it if you feel a guideline is being broken or if you do not understand what is going on.

3

Policy Cards

In the last stage everyone gets to choose a policy cards they agree the most with.

Policy positions for Plastic Pollution	A		B	
	Support	Acceptable	Not acceptable	Oppose
1	←	→	←	→
2	←	→	←	→
3	←	→	←	→
4	←	→	←	→
5	←	→	←	→
6	←	→	←	→

Figure 10: Overview of Materials in PlayDecide



Chapter Five point Four

Conclusions: the key elements of critical thinking brought back in education

To conclude this chapter the main insights for the final design here listed here:

To stimulate critical thinking in education, the school has to:

- Let pupils discuss themes that they encounter in their own daily lives, as they connect better with them.
- Challenge them by letting pupils formulate their own point of views and opinions.
- Critical thinking should be implemented within existing courses rather than a stand-alone course.
- Subjects should relate to practical situations that students can relate to.
- Subjects = world+students' position and that of others and to students' opportunities to influence this position.
- Critical thinking involves the sharing of different perspectives.

The final design should:

- Be adaptable to current affairs, as Social Media keeps changing.
- Include key elements of critical thinking in this context are: Theses, Point of view, Arguments and Impact. These elements should return in the final design.
- Impact can come back as storytelling or through voting.
- Include elements to keep a conversation going.

Target Group and Stakeholders

To ensure the viability of the final design, the needs of stakeholders and the target group have to be kept in mind. This chapter describes possible stakeholders and target groups that are taken into account during the process of this project. Through literature research, interviews and a generative session the needs of the stakeholders and target groups are found and described. The main insights will be summarised in the concluding chapter.



Chapter Six point One

Stakeholders

Stakeholders are the parties that need to be kept in mind, but do not necessarily use the product themselves. Therefore literature research has been done to find what is needed for this intervention to be accepted by stakeholders.

Schoolboards

Kennisnet, a foundation which specializes in ICT education in The Netherlands, has published a manual named "Mediawijsheid voor Schoolbestuurders". This report contains a manual on how school boards can start implementing Media Literacy in their curriculums. Insights on the role of school boards in implementing curriculums were taken from this report. School boards often are in charge of multiple schools and oversee the visions of these schools. It has been described that while giving classes on media literacy on its own it can compromise other existing courses, but when integrating media literacy in existing courses, treating media literacy can become very fragmented (Kennisnet, 2013). Considering that "media literacy" is a very broad spectrum of competences and that this project is mainly focussing on one fragment of media literacy, namely the filter bubble, it would make more sense to integrate the final design in an existing course. Also considering that critical thinking is mostly stimulated when implementing in daily life, as mentioned in chapter 5.2.

The report also shows that schools can be very different from each other, each with its own vision. A school board first has to orientate their schools and find a protocol that fits the visions of this school. In order to make these decisions easier for school boards, who overlook multiple schools, the final design needs to not only communicate a clear vision, but also be adaptable for different schools to implement. The final design should also be cost effective, as each year classes change. This would mean that the final design ideally can be used multiple years and stay current. Also due to the fact that often the curriculum is quite full, the hours spent for this lesson plan should be kept in mind.

Stichting Leerplan Ontwikkeling (SLO)

Another important stakeholder is Stichting Leerplan Ontwikkeling, the national Dutch curriculum developer. They are the expertise centre when it comes to developing a curriculum, whether it is for primary schools, special and secondary schools. Among other tasks, SLO is involved in creating and evaluating exam programs, national educational goals, and even creating lesson materials with schools.

When looking into the learning objectives of several courses in the Dutch exam programs, social studies for the Dutch VMBO students, also known as "Maatschappijkunde" seems to be the most suitable for an educational program on filter bubbles. During an interview with the Social Studies curriculum developer at SLO (See appendix E), it was confirmed that the final intervention would be suitable for Social Studies in VMBO. He specifically mentioned that education on filter bubbles coincides with the key objective "Beeldvorming en Stereotypering" (Examenblad, 2021) which has to do with imaging and stereotyping. VMBO is a level in Dutch secondary schools. This will be further explained in chapter 7.

Essener (and other publishers)

Eventually the final intervention needs some kind of publisher. An example would be Essener, which is a Social Studies lesson material publisher. Essener was founded in 1986 and distinguishes themselves as being current. One way of doing this is that they provide blended learning, which would suit the theme of this project too.

As publishers of Social Studies lesson material, it is important to convey current information and staying up to date efficiently.

Chapter Six point Two

Target Group: Teachers and their Role of Facilitating the Design

Next to stakeholders, the final design will need to take the target group into account. As they will be the users of the final intervention, it is important to gain deeper insights of their needs. Therefore interviews were held additional to literature research. A target group for this project will be the one who will educate these teenagers. Secondary school teachers have been consulted, where most of them are Social Studies teachers. These teachers were consulted due to their years of experience and the fact that they are probably the only ones who know how to optimise the final product. See appendix F and G.

Adaptability

For teachers it is important to know what they are teaching their pupils and what the relevance is. Goals of steps need to be explained to the teacher, so they are able to decide whether they will implement them or not and whether they suit their class. As each class is different and each teacher has their own way of educating, it is quite important that the final product is adaptable and can be changed by the teacher to fit their class.

Specificity

The material also needs to be clear enough for the student, so the teacher does not have to explain each word to their pupils. Because this can take time in their curriculum. A teacher has a different class of pupils in front of them every hour of the day. This means that often they'll have to switch methods and lesson plans depending on which class they have in front of them. Therefore, it is important for teachers to have specific and to the point steps laid out in front of them to implement a lesson plan.

Control

Teachers need to maintain control over their class. With 25/30 pupils, it is their job to have an overview and create a fruitful learning environment. The final design should support the teacher in this, by communicating clear steps of each lesson, what is expected, and rules. Communicating these elements help pupils understand what is expected from them, and avoids confusion in pupils. As some interviewed teachers have expressed that pupils often give up the lesson when they get confused.



Chapter Six point Three

Target group: Teenagers between the age 14-16 and their use of Social Media

The main users of the final intervention will be teenagers between the ages 14-16. Specifically VMBO-TL students who use Social Media. Insights about these pupils were gathered through interviews with teachers, interviews with pupils, and a generative session with pupils. Insights from the interviews with the teachers will be described in chapter 7.2, as these are mainly based on how teachers experience that their pupils learn. This chapter describes the insights gathered from pupils themselves, as how they experience Social Media and its complications themselves

Contextual Interviews

During contextual interviews with three secondary school VMBO pupils of 15-16 years old, from Maastricht, insights were gathered about how they use Social Media. (See Appendix B) These interviews were transcribed and statement cards were made to create clusters. These are described in the following subchapters.

Ease and Fast Paced

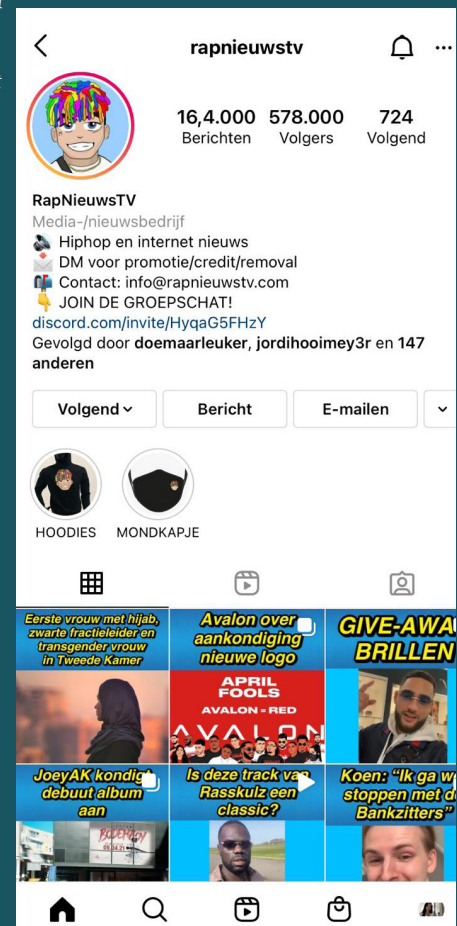
As mentioned before, teenagers who use Social Media in The Netherlands are quite techsavvy. Which means that they know their way around Social Media and use it to their likings. They appreciate ease of use and things being fast. For example rather than saving an Instagram picture, they's rather make a screenshot and send it on. As this is faster.

The same goes for using Snapchat, which is the main communication platform they use. As you can send pictures without them cluttering up your gallery.

Personalised News

The pupils interviewed watch the news through Social Media pages. For example an urban news page on instagram called @rapnieuwstv. The pupil interviews said that they prefer this page to for example NOS, a Dutch public news broadcaster, as NOS is for old people. This already shows how filter bubbles can cause for pupils to become more isolated in their information consumption.

Figure 11: A screenshot of an instagram news outlet sent in by a participant in the target group.



Learning Through Social Media

As mentioned before, more and more Dutch teenagers tend to learn through Social Media and use TikTok as references. For example in the quote in Figure 12 it shows how one pupils learned through TikTok that what women wear does not make men rape. Some pupils also said they learn through other people's stories on TikTok and Instagram.

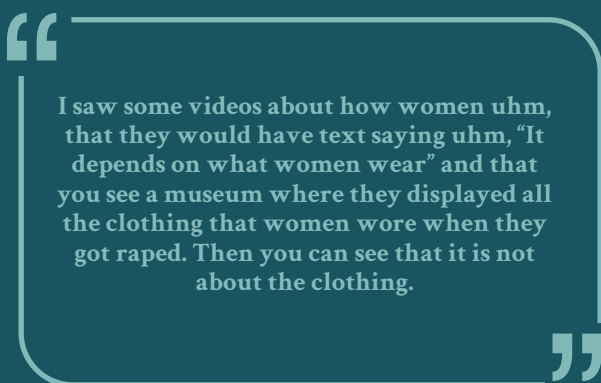


Figure 12: A quote of a participant about what she learned through Social Media.

Privacy and Trust

Another important issue for pupils is privacy. There is a reason why these pupils use SnapChat as their main communication platform, where sent messages and pictures will automatically be deleted within ten seconds. This is due to the fact that these teenagers gossip a lot about each other and do not want any prove of that. Privacy is a big issue for these teenagers, as bullying is common for them. The final design should keep in mind that the chances of bullying stays minimal and that the teenagers remain in control of what they want to share.



Generative Sessions

To gain insights on the implications of filter bubbles, a generative session was done. To gain a deeper understanding of their experiences and their current way of thinking, two generative sessions on “Tolerance” has been conducted through zoom with six teenagers, of 13-16 years old. These teenagers were al VMBO students from Hilversum or Maastricht . The theme “tolerance” (See appendix C)has been chosen to find out how teenagers communicate with each other about opposing views, misunderstanding other people, and how they would solve such situations. All critical thinking characteristics,

Statement cards were made and clustered three times to find insights on the research questions. (See Appendix C) The insights found were also combined with insights found through literature research to ensure the validity of the conclusions, due to the limited number of participants within the test. These insights eventually resulted in personas shown in Figure 15-18.

Normal

During the generative sessions the word “normal” was a recurring theme for these teenagers. They would end their stories about other people who did not act according to their morals and values with: I think they should just act normal.

When asked the question: “What would you have done when you see someone act racist?”

They would answer with: “I’d tell them to act normal and that nobody likes the way that they are acting”

But none of the participants actually defines what “normal” actually is. With everyone living in their own bubble, can you actually say that there is a normal?

Figure 13: A quote by a participant about tolerance.



These teenagers all seem to have a notion of “normal” but might not know how to actually describe what “normal” is.

The final design should show teenagers that their normal might not be the same as someone else’s normal, by letting them reflect on what they perceive as normal and compare it with others.

I am only a teenager

Teenagers often are aware that they are underaged and do not have a lot of responsibilities yet other than finishing school and their social lives. This mentality can have multiple outcomes. For example, they feel that they are not being taken seriously. They would far more easily let adults make decisions for them. With teenagers thinking that their role in society is quite small and that they are not being taken seriously, it is far easier for them not to critically think about their own assumptions and opinions. As mentioned before, they need to connect with subjects and the outside world to be encouraged to think critically and determine their place in it. Teenagers could already practice expressing and analysing their opinions.

Another example is how the need of a teacher as a facilitator in discussion is beneficial for teenagers. Teenagers trust their teachers, because they feel like they are the ones who are responsible about what they learn. This could also mean that pupils might need more guidance from their teachers during a group project for example.



Figure 14: A quote by a participant about tolerance.

Safe Space

When asked about speaking up when things happen that they do not really “tolerate”, one of the main fears is to be outnumbered.

One girl said that a group of classmates were making racist remarks, she was afraid of speaking up as she was the only “foreign” girl in class. She said she might have said something if her friend whom she trusted was there.

A safe space should be created for the target group to feel more comfortable to share their personal opinions and stories. This could be done through dividing the class in smaller groups, so the chances are smaller for pupils to become outnumbered.



Chapter Six point Four

Personas

The aim of building personas is to make the insights found in the previous chapter more tangible and concrete. The personas will be used as a guideline during the ideation phase and is useful for evaluating ideas. In this chapter you'll see four personas of pupils. These personas are based on chapter 6.3.

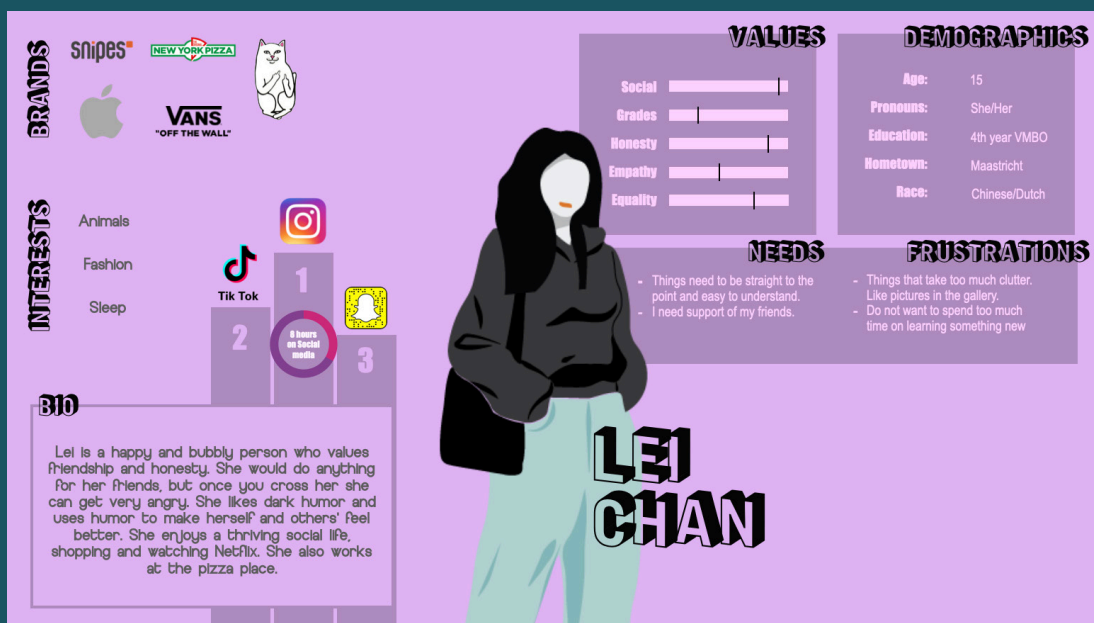


Figure 15: Persona Lei Chan

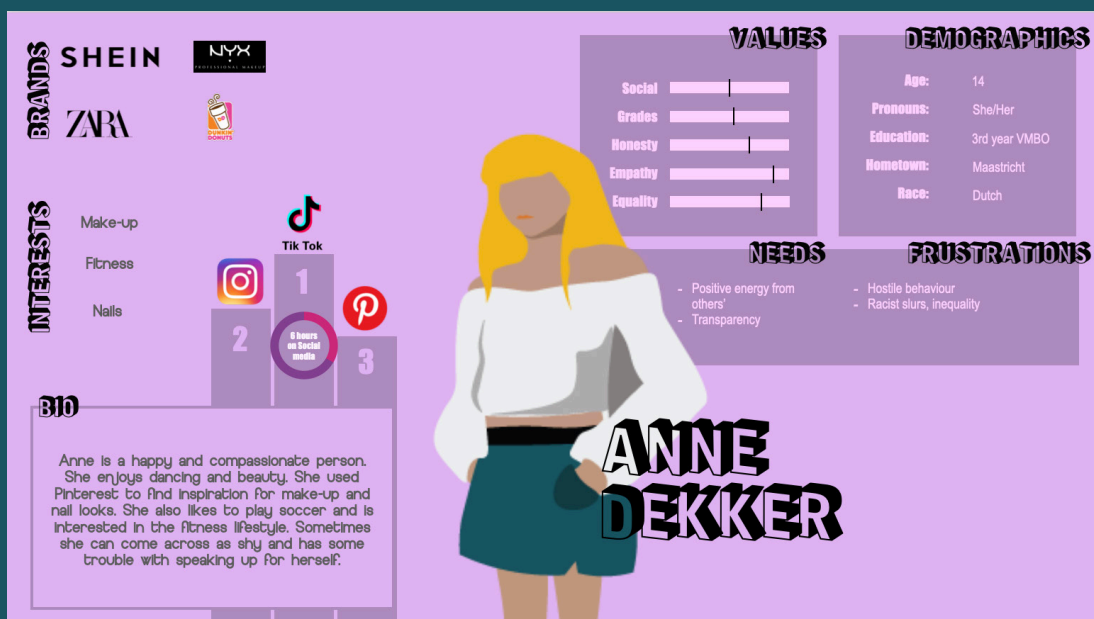


Figure 16: Persona Anne Dekker

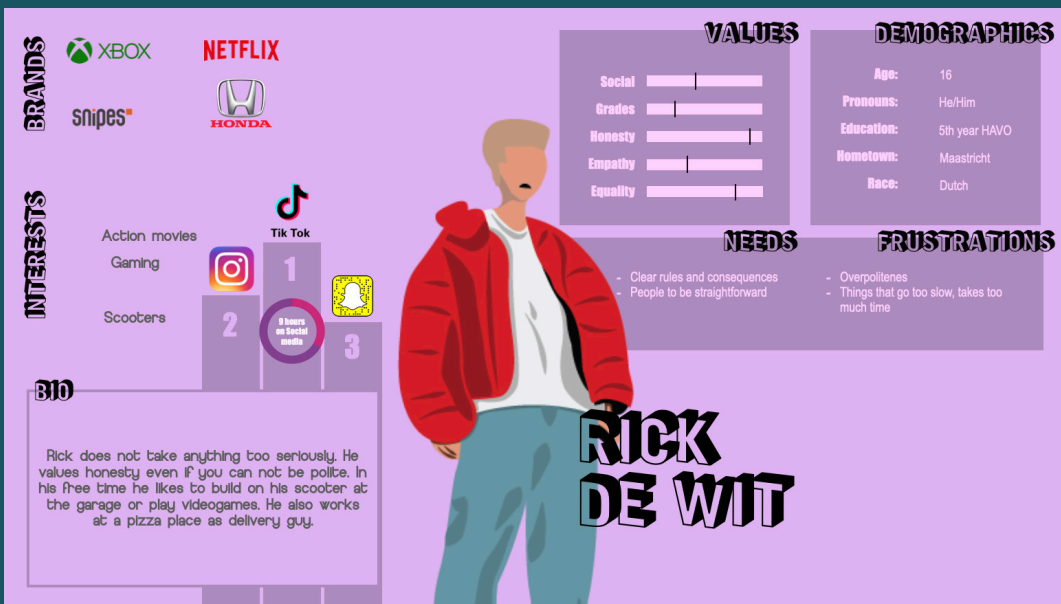


Figure 17: Persona Rick de Wit

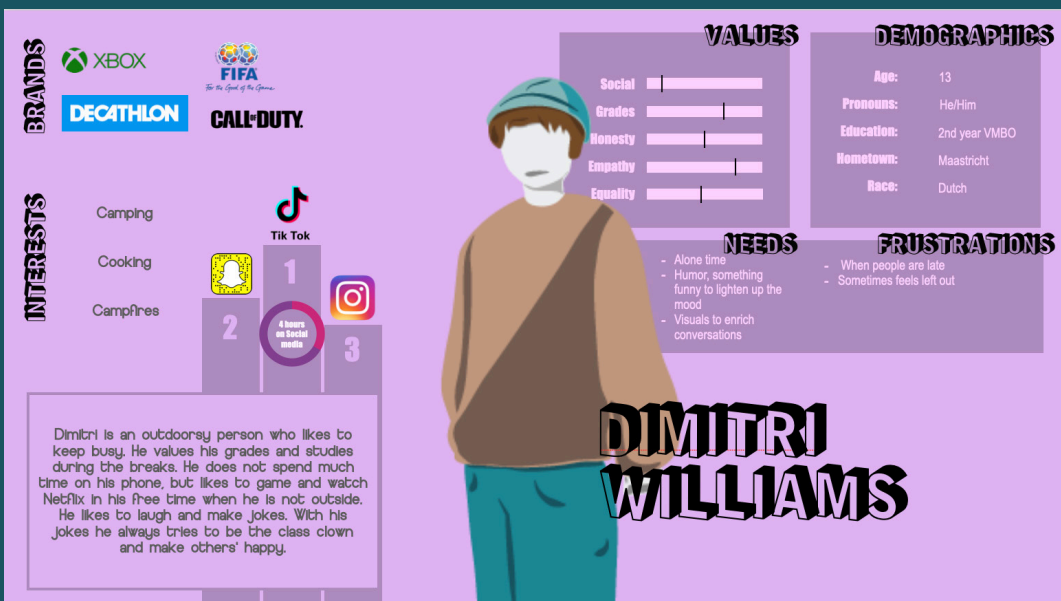


Figure 18: Persona Anne Dekker



Chapter Six point Five

Conclusions: The needs to meet the stakeholders and target group

To conclude this chapter the main insights for the final design hare listed here:

Stakeholders

- The final intervention should communicate a clear vision that coincides with visions of some schools in The Netherlands.
- As school boards choose curriculums based on wheither they fit their vision and this will make it easier for them.
- The intervention design should be implemented in an existing course, specifically Social Studies (Maatschappijkunde, VMBO).
- The final intervention should fit the Core Educational Goals developed by the Dutch curriculum developer.
- The final intervention should be easy to keep it up to date.

Target Group

- The final intervention should provide pupils the opportunity to reflect on their own opinions.
- Teachers should play a facilitating role in the final design.
- The final intervention should implement small group discussions to create a sense of safety for pupils to share with each other.
- The final intervention should be accessible and adaptable for teachers to be able to personalise it to their class.
- The final intervention should give pupils the control to keep their privacy.

Chapter Seven

About Social Studies and Creating a Course

Since it has been decided in the defining phase to create an additional education program for social studies, an additional Design Exploration has been conducted on specifically Social Studies and creating a course. This has been done through literature research and interviews with a curriculum developer, and two secondary school teachers from Maastricht and Vlaardingen (See Appendix F and G).

Chapter Seven point One

Social Studies in The Netherlands

In The Netherlands Social Studies is provided in secondary school. There are two forms, Maatschappijkunde which is given in VMBO and there is Maatschappijleer for Havo/VWO. After interviewing a Social Studies curriculum developer, it has been made clear that the final design can be interesting for either, but Maatschappijkunde (VMBO) does specifically mention

“beeldvorming en Stereotypering” as a key goal, which is not the case in Maatschappijleer (Havo/VWO). Thus it makes sense to start with designing specifically for Maatschappijkunde.

One of the most important things while designing the final design is also to make a distinct difference between material for the teacher and the pupil. Be aware of what is important for the teacher and what is important for the pupil.

In Figure 19 a visual is shown of the Dutch secondary school system. The focus will lie on VMBO. There Social Studies is provided in the third and fourth year (SLO, 2021), while the pupils are 14-16 years old. Each period is 45 minutes and the curriculum consists of 120-200 periods for the full two years that Social Studies is provided.

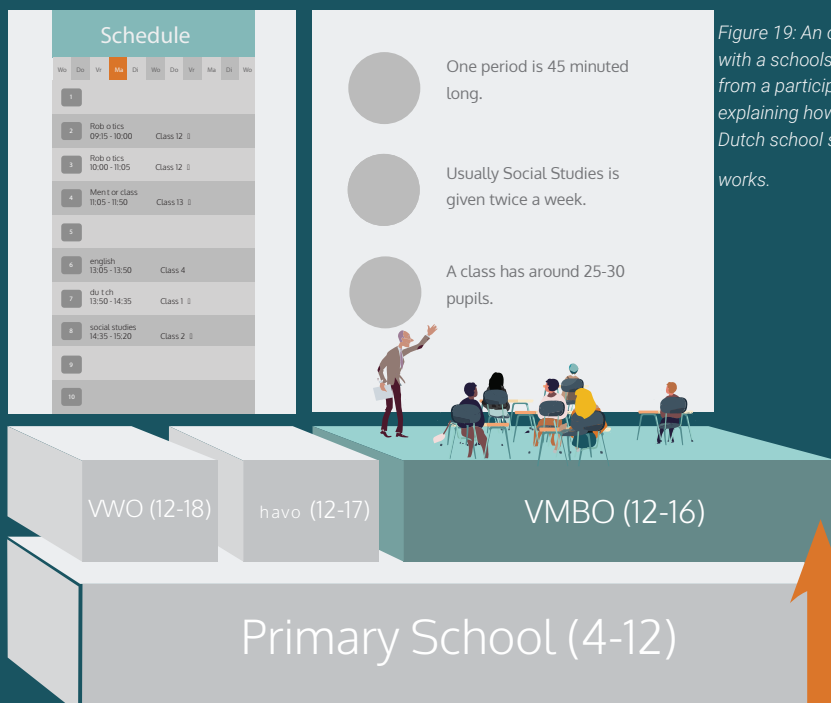


Figure 19: An overview with a schoolschedule from a participant and explaining how the Dutch school system works.

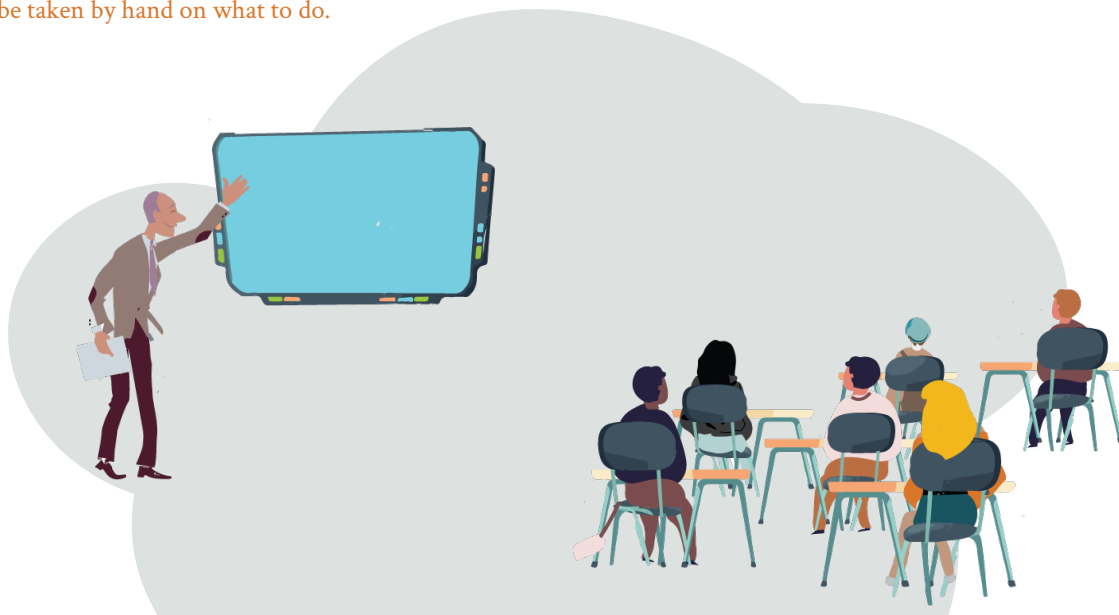


Chapter Seven point Two

Needs regarding lesson material for the target group

Figure 20 shows an overview of the needs of teachers and pupils. As explained in the previous subchapter, it is important to keep the reader in mind when making lesson material. Which material is intended for the teacher and which material is intended for the pupil? Two teachers were consulted for these insights. Both have said that for example that teachers need to know the goal of a course, while pupils need to be taken by hand on what to do.

Figure 20: Teacher and Pupils



Teacher

- Need to know which steps to take during the program
- Need to know what goal each step has, so they know why they should or should not implement it
- The program needs to be adjustable to their class
- Need to be able to be in control of the class, so clear rules need to be communicated
- Need to see the relevance of the program and a connection with their exam program

Pupil

- Need to know what they are going to do step by step
- The language need to fit their understanding level
- Recognisable content with their own life
- A short and small introduction of what the goal of the project is
- Clear rules and strict rules to avoid distractions
- Need examples

Chapter Seven point Three

Conclusions: Developing a Course

To conclude this chapter an article about creating lesson materials from curriculum developer Miranda Jansen has been consulted to make sure I have all I need to start designing. This article described four key questions to ask yourself in order to develop a course:



For who is this intended?

- 3rd & 4th year Dutch VMBO pupils, who use Social Media
- Social Studies teachers



What do you want to convey?

- That filter bubbles have unwanted effects.
- That you can take a second look at your own filter bubble.
- Looking into someone else's filter bubble can help you understand each other.



How do you want to convey it?

- Through assignments set in class where group conversations take place.
- Informational videos.
- Letting pupils analyse their own Social Media feeds.



What happens afterwards?

- To stay current, the framework is adaptable and is focussed on content that is happening in the current lives of pupils.
- Pupils are more aware of their own bubbles and ask more questions to others.



Chapter Eight

Design Brief

Following the Define phase a design goal and interaction vision have been formulated in the design brief. These will become the leading thread during the Develop phase. In order to reach the design goal and interaction vision, a set of criteria will also be described which the final design will be evaluated on.

Chapter Eight point One

Design Goal

Addition to existing course

It has been decided to design an intervention as an addition to an existing course due to two main reasons. The first being that filterbubbles currently is only one part of the problem that is mentioned in the need for “media literacy”. But even though the importance of media literacy is growing, pushing media literacy in the Dutch secondary school curriculum is only still at its beginning stages. An addition to an existing course that suits their existing core objectives would make the final design viable.

The second reason is that it has been decided to teach pupils about filterbubbles through the competence “critical thinking” rather than through the competence “finding information”. But critical thinking also is a competence that is better educated within existing courses rather than as a course on its own as explained in the exploration phase.

In order to design an intervention that can be added to existing Social Studies classes, it is important that the intervention is adaptable. As each teacher already has their own methods in class and each class is different from each other. The intervention should keep the 45 minute periods in mind and the fact that Social Studies often is only taught once or twice a week.

My design goal for this project is to be used as an **addition to the “social studies”** in schools in The Netherlands. This intervention is designed to help **teenagers to critically think** about their filter bubbles, through **meaningful discussions** with teenagers about the content.

Teach critical thinking

It has been decided to teach Dutch secondary school pupils about filterbubbles through critical thinking due to the fact that these pupils believe that they already know about filterbubbles. These pupils have a feeling that they know more about Social Media than their teachers and appreciate their recommended Social Media content. Critical thinking involves questioning what you believe and what others tell you, therefore pushing teenagers to look deeper at the filterbubbles.

Critical thinking is best thought when pupils can relate to the subject matter in a practical way. As filterbubbles often contain themes that pupils encounter in their daily lives, this creates an opportunity for pupils to develop their critical thinking skills. It should also be thought through group conversations and contain room for pupils to think of themes, categories, and meaning on their own.

Meaningful conversations

Meaningful conversations help improve the education of critical thinking. Especially when the subjects involve the pupils' positions in society. Having meaningful conversations would include creating a safe space for these pupils to talk. This means that smaller groups should be made to avoid teenagers feeling uncomfortable sharing in front of a whole class. The pupils should also learn to ask meaningful questions to each other in order to create these conversations.

design an intervention that can
"digital studies" course in secondary
intervention should teach
the content they consume within
meaningful conversations among other



Chapter Eight point Two

Interaction Vision: Salsa Mixers

As designing an educational intervention for secondary school pupils can become something arbitrary like something that only communicates theory in the form of audio, text, or video, an interaction vision (Pasman, 2011) has been used to force myself to think outside of the box of these traditional education methods.

The interaction with the design should feel like....

The moment during a salsa social dance when you switch partners. During that moment, when two new people meet they have a moment of adjustment. When two dancers are from different levels, they have to find the rhythm and style together.

A moment of **compromise**. But, the dance itself always has the same base. These basic rules, gives the person a sense of **safety**. During such a social event, everyone is open to another. A sense of **open-mindedness**. After a bit of an adjustment, eventually the dance should **flow**.



Figure 21: Picture to represent the Interaction Vision

Qualities that match with the concept

Matching affordances

Compromise → Having to adjust yourself.

Safety → Handles that help you with knowing what to do

Open-mindedness → Accepting that your point of view is one of many

Flow → You can be able to get the hang of it



Chapter Eight point Three

Criteria formulated from the conclusions in the exploration phase

To achieve the design goal with its interaction vision, concrete guidelines, a journey map and learning objectives have been made. The concrete guidelines are based on the exploration phase. The exploration phase combined with the interaction vision are translated into the journey map which create a framework to ideate in. The learning objectives have been added, as these are crucial when developing a course and makes the final intervention more viable within the Dutch educational system.

Concrete Guidelines

Context

- C1:** The final design is suitable for Maatschappijkunde which is a Social Studies class in the Netherlands.
- C2:** The teacher should be able to facilitate the final intervention.
- C3:** The intervention should make space for group work of 3-4 members.
- C4:** The intervention should be a minimum of three sessions.
- C5:** A session can not be longer than 45 minutes.
- C6:** The intervention should have a low threshold so pupils can implement it outside of class too.

Target Group

- T1:** The intervention should encourage equal participation of the target group.
- T2:** Pupils should be made aware of the long term complications of filter bubbles.
- T3:** The intervention should include elements that pupils can relate to. Such as their phones and Social Media platforms.
- T4:** A clear distinction should be made between inside and outside of your bubble.
- T5:** Pupils should have control over what they want to share, to adhere to their privacy wishes.
- T6:** Pupils need to receive concrete instructions for every step.
- T7:** For the teacher the final intervention should be adaptable to their classes.

Critical Thinking

- CR1:** The structure should include statements, background information, argumentations, and impact.
- CR2:** Impact should be shown through Storytelling.
- CR3:** Pupils should be encouraged to think of ideas and opinions themselves.
- CR4:** The final intervention is project based.
- CR5:** Differences between pupils should be made clear to them.
- CR6:** The intervention gives pupils the opportunity to share perspectives.
- CR7:** Subjects discussed need to correlate with subjects the pupils are exposed to in their daily lives.
- CR8:** The final intervention should spart meaningful conversations between the pupils.

Chapter Eight point Four

Learning Objectives

Learning objectives have been created to make the final design measurable for the teacher. This is done to show the relevance for the exam program for the teacher, and to make it clear for the teacher how to evaluate the pupils in this educational program. These objectives are formulated based in the insights of the exploration phase in combination with the existing exam program of Social Studies. These Learning Objective together with a Journey Map (in the next subchapter) also serve as a framework for the developing phase.

Learning Objectives

L01: The pupil is able to describe what a “filter bubble” is, and recognise them in daily life.

L02: The pupil is able to name examples of how “filter bubbles” could have a role in society and people’s perception.

L03: The pupil is able to recognise assumptions in online media.

L04: Pupils are able to ask critical questions on other peoples’ opinions on Social Media.

L05: Pupils are able to think of arguments that defend their opinions.

Journey Map: Steps Towards Critical Thinking

To reach the design goal of teaching young pupils to critically think a journey map has been created. This will serve as a framework on which the ideation will be based.

A Framework of the Desired Scenario

Before creating the journey map that is more concrete for classrooms, an framework has been created in Figure 22. Here it shows in steps how critical should be achieved through the final intervention. Here bubbles are shown as a representation of the filterbubbles of the pupils. To start the intervention, pupils need to learn what it is first. An overview of the problem is taught. Then pupils get the chance to dive deeper into their own filter bubble and explore. Then a moment of seeing other bubbles and comparison should be created to create an element of surprise. Then through conversations they'll have to compromise with each other and listen to each others' stories. At the end pupils will gain an understanding of filterbubbles and think more critically about them.

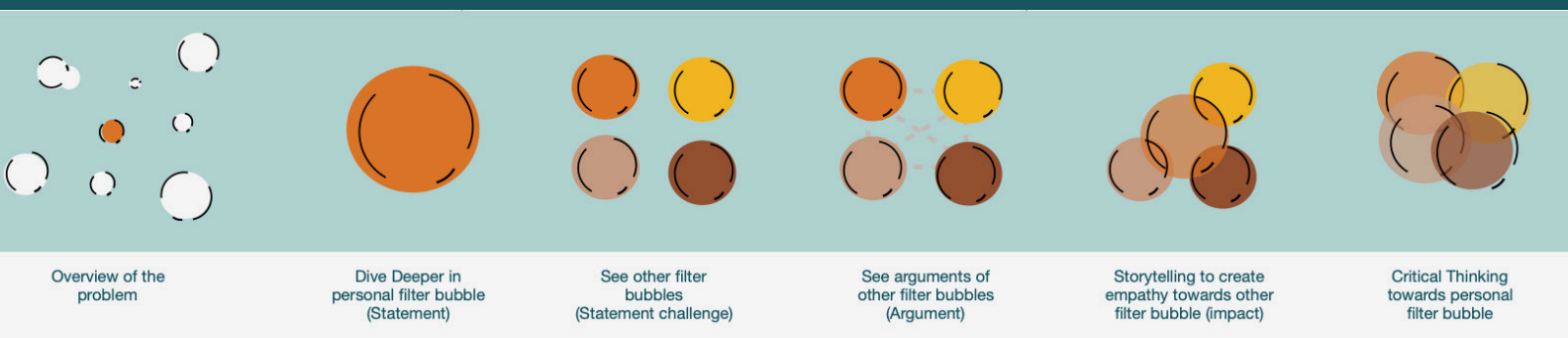
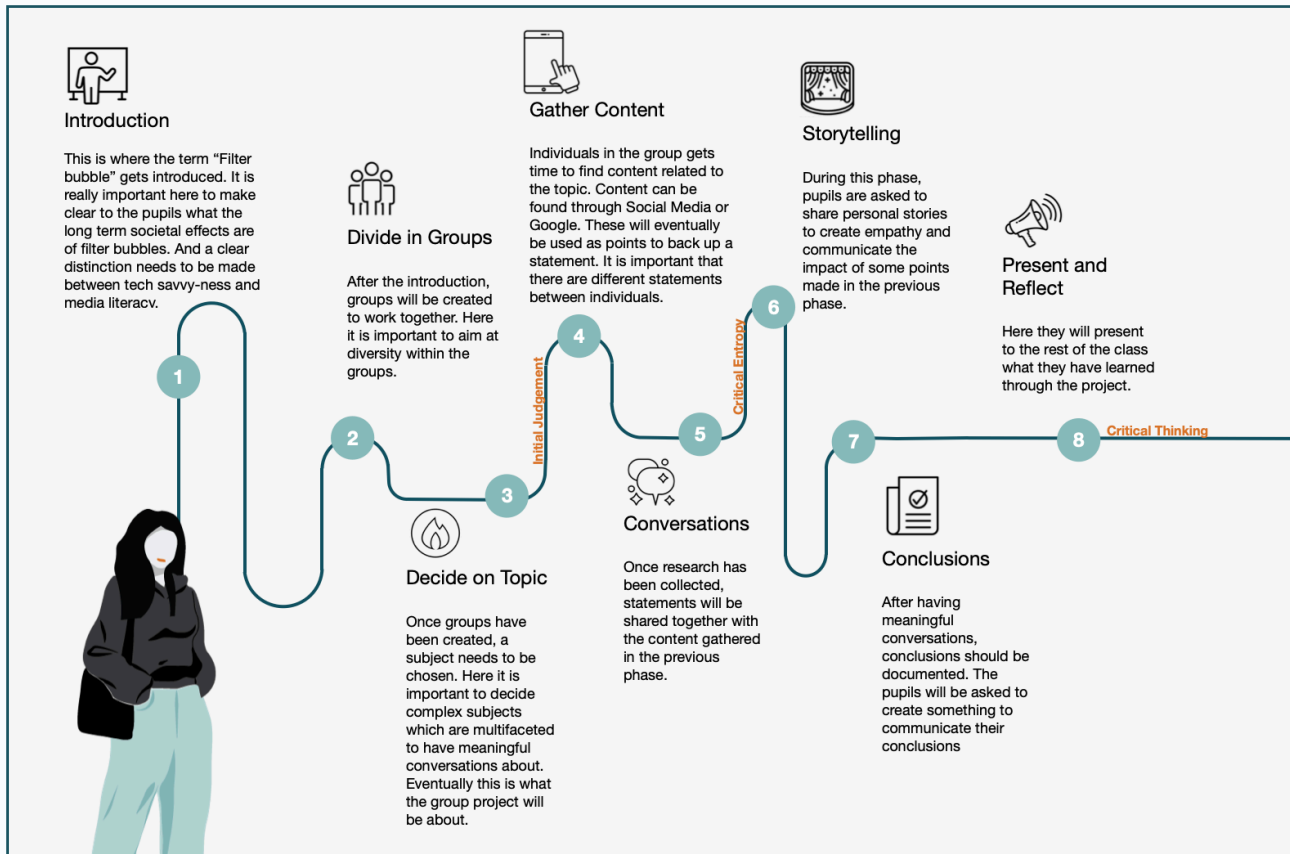


Figure 22: Framework of the Desired Scenario

Journey Map: In the Setting of a Classroom

Figure 23: Journey Map



- 1 **Introduction:** This is where the term "Filter bubble" gets introduced. It is really important here to make clear to the pupils what the long effects are of filter bubbles and how this could manifest in their own experiences.
- 2 **Decide on Topic:** When the pupils have gotten an idea of filter bubbles it is time to practice critical thinking about their content consumption through meaningful conversations. The class will be divided into groups of four/five. As smaller groups create a safe space for teenagers to share.
Because it is important for teenagers to be able to relate filter bubbles with their own lives, the pupils will choose a topic themselves to talk about. Here it is important for pupils to find an interesting topic that relates to something they might consume everyday and is complex enough for people to have different perspectives on.
- 3 **Gather Content:** Pupils start taking their time to research the topic through their Social Media. Save content that they consume and like, and with that formulate a statement or a thesis.
- 4 **Conversations:** This is when pupils will share their "statements". First they can explain their statements and explain them themselves. Then they can share the content they have gathered to make points that back their statements.
- 5 **Storytelling:** Now pupils will have to connect their points and statements to a personal story. It will be asked of all the pupils to ask questions. (Impact)
- 6 **Conclusions:** Together the pupils are asked to create something that concludes their conversations. New learned insights.



Chapter Ten

Concept Testing

The developing phase starts out with initial ideation sessions with fellow designers students to gain fresh ideas on each step of the Journey Map. After developing some concrete ideas, these were prototyped and tested during two test sessions with participants between the ages of 23 and 31. One last test was done with two people in the target group on Critical Thinking. After these tests, a concept plan has been sent to experts in the education field who provided feedback. This chapter described the design considerations that resulted from these tests and feedback. The chapter is divided in two parts. The contextual considerations of the final design, which concerns the environment of the final intervention. The second part is the content considerations, considers the actual content, interactions and form of the final design.

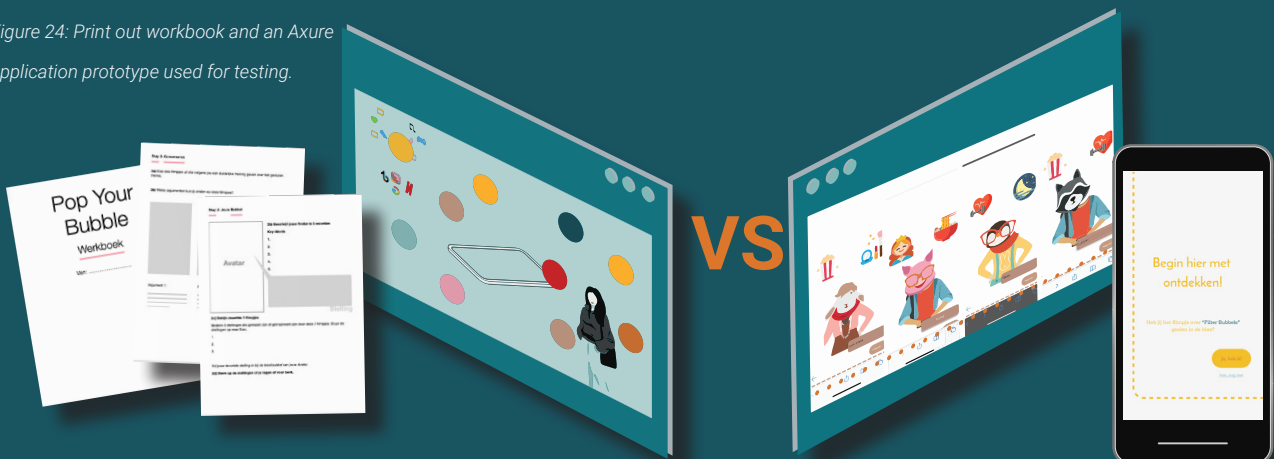
Chapter Ten point One

Context: Digital vs Physical

During the developing phase two different platform formats were tested. Namely (See Figure 24):

- A **physical** workbook with Slides
- An mobile **application** with Slides

Figure 24: Print out workbook and an Axure application prototype used for testing.



While off-screen learning stimulates learning better than on-screen learning (Ackerman, 2011) something else to consider is the costs for schools. Since this program is only a small part of the Social Studies curriculum and needs to be adaptable for different types of classrooms, the use of a workbook seems a bit outdated and cost inefficient. From testing (See appendix M), it has been established that using too many formats comes across as too scattered and confusing. With the criteria that actual Social Media content from pupils' filter bubbles need to be included in the final intervention, the use of a phone is inevitable. According to a secondary school teacher, an intervention like this needs to be as low fidelity as possible. Considering that this is an addition to a course and not a whole course, the use of a phone in class can still be manageable (See appendix F) especially with its connection to Social Media. When consulting the SLO curriculum developer, he has expressed that an app could work also considering the theme of Social Media. With an app the user friendliness can be optimised due to the inclusion of Social Media content of the pupils. Therefore it has been decided that the final design will stay limited to the use of a smart board and an app, while keeping the off-screen learning centred around real life conversations between pupils'. This decision is also made with the compromise that there should be a feature added in the lesson plan where clear boundaries and rules are communicated to the pupils about the use of the phone to avoid distractions.

Chapter Ten point Two

Context: Class Work vs Homework

During the tests it has been found that watching Social Media content on your phone disturbs the class. This is already very clear, when participants in a test group of three or four people are asked to analyse their own Social Media feed, let alone in a class of around 30 pupils. The sound of videos playing on each phone in the room is distracting and loud. During the test, participants tended to make remarks on sounds they heard from other phones, get distracted, and ask each other to share their videos. At first the solution for this was letting the pupils watch their content at home as homework, but after consulting a secondary school teacher (Appendix K), it has also become clear that the attention span of pupils is limited to the class themselves. These pupils might not do their homework and it would work better for them to reflect on what they have learned within the classroom. Treating the lesson only in the classroom also gives the teacher the opportunity to keep an eye on what their pupils are learning. Considering their short attention span too, it has been decided not to include homework for these sessions, but create clear rules and boundaries during class, as explained in the previous paragraph. This means that the teacher would have to explicitly ask their pupils to bring earphones to class prior to the lesson.

Chapter Ten point Three

Context: Collecting set of content vs a time frame to scroll

A criteria for the final design is for pupils to discuss themes that they connect to and recognise in their own lives. This will be done by letting the pupils take a better look at their own personalised Social Media feeds that they watch every day. But to do this, this needs to be done in a controlled manner. Therefore two methods has been tested (Appendix M):

- Letting the pupils scroll through TikTok within a time frame and choose which content they would like to use for the assignments.
- Letting the pupils save the first 10 TikTok videos they see on their feed and use this set for the rest of the assignment.

While the first option gives the pupil a sense of control in which content they would like to use, the second option gives the pupils some kind of a surprising effect. This is because, often the pupils do not watch the content before saving them and then get surprised when they look at the content with the view that this is in their “filter bubble”.

Another thing that stood out is that the person who was asked to scroll through their feed is that they were not able choose videos they would want to use. They got too distracted during scrolling and forgot about the time. The second option seems like the best option for this step.

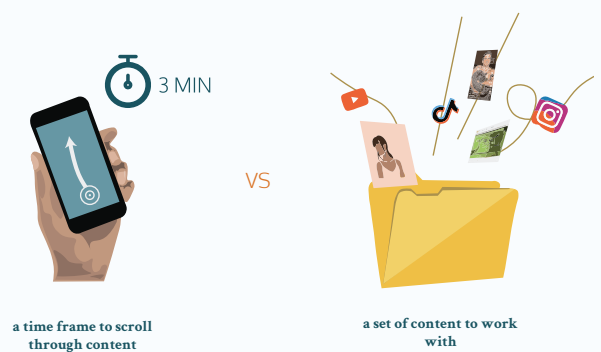


Figure 25: Visual Scrolling vs Set of content



During the next chapters you'll find the design considerations based on the content of the Journey Map. In Figure 26 you see the journey map being simplified to three main steps. Awareness, Critical Thinking, and Revisit. The following chapters will discuss the content considerations based on the three step plan.



Figure 26: Phases for the Concept

Chapter Ten point Three

Awareness: Examples, exploring and comparing your own bubbles.

To create awareness, first we defined awareness on what. During this phase the goal is to create awareness on the phenomenon of filter bubbles on its own, pupils realising they are in a filter bubble, defining what their own bubbles look like and that they might not be the same as other pupils' bubbles. From the ideation phase some ideas have been chosen to be tested with fellow students.

Video

The video has been tested and iterated upon in two sessions. Due to the fact that pupils from this generation learn more from videos and have more faith in learning from video content online, it has been decided to create infographic videos to educate these pupils. These videos will be shown during class by the teacher. The use of actual Social Media content from TikTok helps pupils recognise it from their own Social Media feeds and understand it.

Figure 27: A quote from a participant during the concept testing about the tutorial videos

(See Appendix I)



Figure 29 shows stills from the video tested. Key elements that were strong according to the users are the clear infographic overview of the problem, a concrete example and the addition of actual TikTok videos which make it recognisable. They even suggested to use another example video.

Live visualisation of topics

Another concept tested was the live visualisation of "filter bubble" topics or hashtags. This has been done through a mock-up animation where several topics were shown on the screen after participants were asked to send in their set of content. In context, pupils would send in their content set, and the topics connected to them would automatically be generated and visualised on the smart board in class.

This concept created mixed results, as some really were surprised to see which other topics and communities were out there.

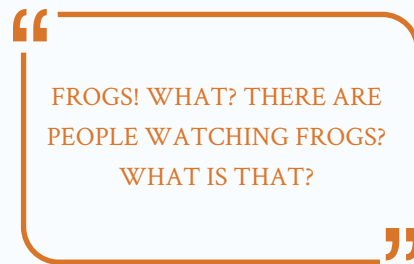
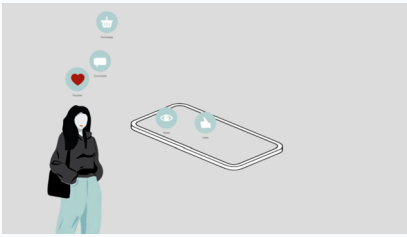


Figure 28: A quote from a participant during the concept testing about seeing other subjects in bubbles.

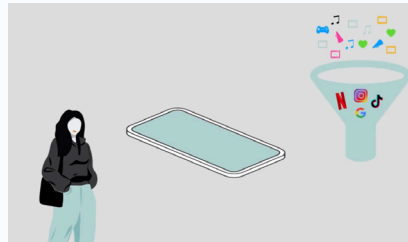
Some were more reluctant with this idea as this could expose some of your "filter bubbles" without you wanting to. Even though this feature is anonymous, in a classroom pupils are bound to find out and judge others' on some topics. For example the LGBTQIA+ community or Astrology could be more sensitive topics. Therefore it has been decided to create a step beforehand, where pupils should have control over what to send in.

Figure 29: Video Stills of Filter bubble

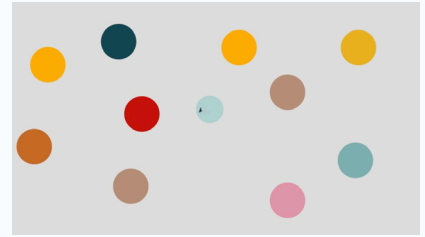
explanation



Introducing the definition of the filter bubble.



Explaining the filter that media content goes through.



Zooming out shows you the different bubbles.



A conversation between someone who is pro veganism and someone who is against it.



Voice-over explanation



Example videos from TikTok

Creating Theses

One way for creating the step beforehand to give pupils control over what to share, is letting pupils create a thesis inspired by their content set. Example thesis that came out of the tests are listed in figure 30. This has been tested three times with adults, but even though a very interesting thesis came out of the test, it was still fairly difficult for them to define the thesis. A video with guidelines helped. But after a conversation with a curriculum developer, it has been concluded that pupils at VMBO are not able to formulate a thesis. Therefore it has been decided to simplify the theses to “themes” in the form of “hashtags” to make them more recognisable for pupils. These themes can be sent in on the app and a word cloud will be shown in class for the pupils to see other bubbles.

Figure 30: A selection of theses that came out of the concept test.

“You can learn more through Social Media than school.”

“Modern fashion trends sexualizes women.”

“Black people are naturally funny.”



Voting Through Plickers vs Kahoot

This concept involves pupils anonymously sharing their opinion on theses that they have formulated themselves and were sent in. This has been tested with adults twice. One time through Plickers and one time through Kahoot!

Plickers has been used first to promote offline learning and to keep pupils off their phone as much as possible. But as proven in the test (appendix M) it was too scattered. Participants also still looked at the QR codes that was put up by their neighbours to find out what they voted for. Which does not create a safe space in class. Eventually Kahoot has been tested, which as all on the phone and more cohesive.

The intended effect of surprising each other with other people's opinion on certain thesis has worked (See Figure 31).

For the final design it has been decided to integrate an anonymous voting system within the app. This is because, while kahoot! does work, the pupils would have to switch apps on their phones which created a chance of distraction. Another reason is that during the interview the teacher also said their school does not have a premium Kahoot! plan (See Appendix F). A school should not have to buy other subscription plans in order for the final design to work.

“
At one of the thesis, I was the only one out of 4 who voted “against” which made me think that I was missing something.
”

Figure 31: A quote from a participant during the concept testing about seeing other subjects in bubbles.



An online voting system where pupils can vote on questions on a smartboard live through their phones.



An offline voting system where QR codes are used by pupils, and the teacher uses their phone to collect the answers in class. The answers are shown live on the screen.

Figure 32: Visuals and explanation of Kahoot and Plickers

Creating Keywords and Avatars

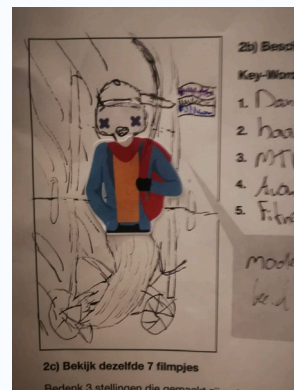
To let pupils explore their own filter bubble and help them define them, the creation of Avatars has been tested. This has been tested with an Axure application prototype and with a workbook. First the participants were asked to think of five keywords and then to create the avatars. Figure 33 shows some of the results. With a workbook, some images and drawing tools were provided. As this created a lot of creative freedom, it was noticeable that the participants were really using the keywords that they were asked to think up. While this was less the case with the application, as the application offered less creative freedom.

The app has no moving around the objects and no drawing tools. The participants were asked to describe their avatars to each other, and it turned out they really did recognise each others' filter bubbles with each other. But, one participant was sceptical at first and did not think ten videos would be representative. After he checked again, he was surprised that it was quite accurate. Especially when he started to look at the avatars of other participants. (See appendix H).

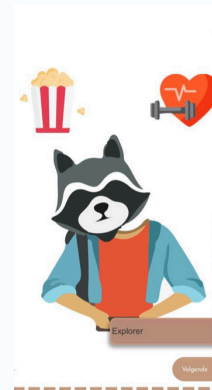
But the application has less creative freedom, which was more difficult for the participants to work with.

The pictures chosen to build avatars themselves were at first abstract, like animal heads, to give freedom of interpretation. But it turns out from the evaluation that they might be too random. Attributes to add to the avatars were way more useful, as they represent filter bubbles more.

For the final design it has been chosen to keep the avatar creation in the concept, but add more attributes and use humanised body parts to create more creative freedom.



Harry de Haai: This avatar is a shark, which likes outdoor activities like biking and mountain climbing.



Explorer: An avatar which likes to go outdoors, watch movies, and a healthy lifestyle.

Figure 33: Examples of avatars created during concept testing



Chapter Ten point Four

Critical Thinking: Remixing bubbles through dialogues, debates or interviews.

As explained in chapter 5.2, stimulating critical thinking in education mainly revolves around dialogue and discussion. In order to create a safe space for pupils' to communicate with each other about their bubbles' it has been decided to include group work with groups of 4-5 pupils. During concept testing, three forms of group conversations have been tested:

1. Dialogue
2. Debate
3. Interviews

Dialogue

During the testing of the dialogue format three participants were asked to start a conversation about #bodypositivity. They were asked to go on their Social Media feed and find content that involved the hashtag bodypositivity. When starting the conversation, they have to formulate their opinion on the matter and use found content as an example of what they meant. The participants were also given a set of question cards, to help them keep the conversation going.

Afterwards the participants were asked how they have experienced this conversation. Some have noticed that the question cards did help them keep the conversation going, while the others just felt like sharing their thoughts. During this test there was no clear format and no clear conclusion.

Using Social Media content did help the participants find inspiration on what to talk about when it comes to content that they are not aware of. One of the participants also mentioned that it was nice to talk about this subject matter, because normally you don't really stand still on these things. Using videos as an example to communicate their point of view, did help other participants to understand what they meant more.

Debate

When testing the debate structure, two teams of two participants were asked to formulate a point of view on a thesis. The thesis has been formulated by one of the participants earlier on in the test process (appendix I).

For this test a structure has been implemented of:

- Theses
- Position
- Arguments
- Debating

This has been done with position-, argument-, and question cards. While trying to keep a structure during a debate a few insights were evident during the test.

Participants found it very hard to find argumentation without real sources such as articles and papers. (noted these participants are university students with academic thinking skills)

Participants did not want to formulate arguments on argument cards, especially not during the conversation as it stops the conversation flow.

The participants just wanted to win the debate and did not feel the need or desire to change their position and learn from the other party.

Interview

Eventually it has been decided to use the format of interviewing your fellow pupils. This has been tested (Appendix O) with two participants from the target group, and it challenges the participant to ask questions. Which is the most preferred effect.

Chapter Ten point Five

Revisit: Long term interactions

As a final step of the Journey Map, a concept has been added which stimulated the pupils to look back at what they have learned after the classes are over. Three concepts were created for this last test (See appendix R). The concept of a class poster has been chosen, due to its connection with the previous step, adaptability, and accessibility.

Chapter Ten point Six

Materials: Teacher vs Pupil

The participants during this test were very confused, because they did not get an overview of what needed to be done. They wanted to know the process and what they could expect after each step. Which is why in the app a dashboard will be created with an overview of all the classes, the goal of each class and an indication of in which class you are.

Additional to testing, the concept plan (Appendix K) and a flowchart of the process was sent to the SLO expert to gain their feedback. From their feedback, the following insights were taken into account for the next iteration of the design.

- The language needs to suit the target group, which has to be much more simple than it already is.
- As this is lesson material for Dutch schools, everything has to be Dutch.
- Terms like “theses”, “arguments”, “point of view” are not used on this level of secondary school. Instead, use “Opinions” and “Themes”
- A more clear distinction needs to be made in what material is for the teacher, and what material is for the pupil.



Chapter Eleven

Final Concept Proposal

In this chapter the final design proposal is presented, which is the Pop your Bubble lesson plan. First the phases of the concept is described following with the lesson material. At the end of this chapter design decisions taken are explained.

Chapter Eleven point One

Concept in Phases

The final intervention is a lesson program designed for Dutch secondary VMBO Social Studies classes in the third or fourth year. This lesson program consists of three phases:

Figure 34: Visual of the three phases of the final concept



Awareness

Through the elements of surprise and comparison pupils are made aware of the filter bubbles surrounding them. During this phase pupils first are introduced to the term filter bubble. Often pupils are somewhat confident in their knowledge about this phenomenon. Then pupils are asked to give their filter bubble a form with hashtags and an avatar. Those will be compared with each other in class, this is where the element of surprise and comparison comes in.

Critical Thinking

The second phase is where critical thinking comes in. Through instructional videos pupils are taught to form an opinion. These opinions will be about some of the hashtags that were created in the first phase. They are also asked to connect Social Media content to the opinion as an example and to support them with their opinion. Then the class will be divided into couples. Roles will be divided amongst the couples. The interviewer and Interviewee. Through instructional videos pupils are taught how to conduct an interview. Eventually the couples are asked to interview each other about their opinions and audio record them.

Revisit

The last phase concludes the lesson program with a classposter. This class poster is automatically generated through the application and is supposed to be displayed in the classroom. On this poster the avatars and hashtags that are created in the first phase are shown. Not only does this poster serve as a conclusion of the program, but it also leaves the door open for future conversations. The poster comes with stickers that pupils can write on. Throughout the year their filter bubble will change. The stickers are there so pupils can add hashtags to their avatars when they see new themes coming up on their Social Media Page.



Chapter Eleven point Two

The Lesson Plan

The lesson plan is intended for the teacher. It is a black and white printable which includes the steps needed for each lesson and assignment. The main goal of the lesson plan is for the teacher to quickly understand why they would want to implement the lesson program, what they need in order to teach the classes, and what they need to do for each lesson. As teachers often have multiple different classes in front of them it is important for the lesson plan to be concrete and clear.

Figure 35 shows an overview of the lesson plan.

1 Eigenschappen = Characteristics

Here it is explained for which class the lesson plan is intended. Which is, as explained, Dutch VMBO secondary classes in their third or fourth year. Though the course is initially intended and designed for Maatschappijkunde (Social Studies), it could also be implemented in other similar courses like Maatschappijleer (similar to Social studies) and Literature. This is placed on the first page as these can be one of the first criteria that the teachers look at when choosing a lesson plan for their class.

2 Doelen = Goals

Here the main goal, the learning objectives, have been explained. The Learning Objectives are that by the end of the lesson series the pupils are able to:

- Explain the term "filter bubble"
- Recognise their own filter bubble
- Ask other people about their bubble

LESPLAN
pop your bubble!

EIGENSCHAPPEN 1

Geschikt voor:

School: VMBO
Leerjaar: 3 of 4

- Maatschappijleer
- Maatschappijkunde
- Nederlands

OVERZICHT

Tijdens dit project leren uw leerlingen om bewust om te gaan met hun eigen filter bubbel en die van anderen. Dit wordt gedaan door:

- Een bewustwording te creëren over de term "filterbubbel".
- Uw leerlingen hun eigen filter bubbel in kaart te laten brengen.
- Uw leerlingen hun eigen filter bubbel te laten vergelijken met uw medeleerlingen.
- Uw leerlingen vragen te laten stellen aan elkaar over elkaars filterbubbel. In de vorm van interviews.
- Een optionele terugkerende reflectie door het jaar heen.

DOELEN 2

Aan het eind van de lessenserie kan de leerling:

- De term "filterbubbel" uitleggen.
- Hun eigen filterbubbel herkennen.
- Vragen stellen aan anderen over hun filterbubbel.

MATERIAAL 3

- Interactief Whiteboard/Projectiescherm
- Pop your Bubble Account (Website)
- Mobiele telefoon
- Applicatie Pop your Bubble
- Oordoppen / Koptelefoon

HOOFDLIJNEN

- **INTRO:** Een uitleg wordt gegeven over wat dit project inhoudt. Orienteer wat de leerlingen al weten over het onderwerp.
- **ONTDEK:** Leerlingen gaan een kijkje nemen naar de filmpjes/plaatjes hun eigen sociale media pagina's.
- **CREËER:** Leerlingen maken een karakter gebaseerd op hun eigen filterbubbel.
- **INTERVIEW:** Leerlingen gaan elkaar interviewen om elkaars' filterbubbel te ontdekken en begrijpen.
- **BESCHRIJF:** Leerlingen beschrijven wat zij van de ander hebben geleerd.
- **REFLECTEER:** Klassikaal wordt er besproken wat iedereen heeft geleerd.

HERINNER: Profielen van de avatars worden opgehangen in de klas met de hashtags. Leerlingen kunnen met stickers hashtags toevoegen, naarmate door het jaar heen hun bubbel verandert. De docent mag zelf ervoor kiezen hoe vaak en wanneer er weer op gereflecteerd wordt.

Figure 35: Overview of introductory pages of the lesson plan

3 Materiaal = Supplies

Before starting the lesson series, teachers need to prepare for them. Materials are listed here for teachers to check. This also shows them whether they are able to teach the series. For example if their classroom does not have a smartboard, it would be more difficult. Also it is important to know that each pupil brings their earphones in order for them to watch their Social Media content without disturbing the class.

4 Woorden = Glossary

As “filter bubbles” is a theme that is still up and coming, many people still do not know some terminology that comes with this theme. Therefore a small glossary has been added to the preparatory pages of the lesson plan. This could serve for teachers to understand the terminology, but also for teachers to see whether their pupils would have the appropriate prior knowledge before implementing the lesson series. For example,

teachers could add an extra class to explain some terms to their pupils before starting the actual lesson series.

5 Examen = Standards

Here a copy of the core goals provided by the government of Social Studies has been added. This shows the connection between the lesson series and the Social Studies course. By adding this to the lesson plan, the teacher can easily see how relevant this series can be for their class.

BIJLAGEN

- Applicatie
- Les presentatie

WOORDEN

4

Hashtags: Dit zijn sleutelwoorden die gebruikt worden op het internet om sociale media content te categoriseren.

Persoonlijke social media pagina's: Hiermee wordt bedoeld, de pagina's waar de leerlingen filmpjes en filmpjes vinden die speciaal door het algoritme van de sociale media apps wordt aangeraden aan hen. Dus bijvoorbeeld:

- "Voor Jou" pagina op TikTok
- "Suggesties", "Recommended for You" op YouTube
- "Explore" op Instagram
- Facebook feed

Persoonlijke bubbel: Tijdens dit project limiteren we de bron aan sociale media content naar 10 filmpjes die in de eerste les verzameld wordt door elk kind. Dit wordt tijdens dit project de "persoonlijke bubbel" genoemd.

EXAMEN

5

Aansluiting examenprogramma

1. Preambule

De zes algemene onderwijsdoelen die voor alle vakken en sectoren in het vmbo gelden, zijn

1 Werken aan vakoverstijgende thema's

De leerling leert, in het kader van een brede en evenwichtige oriëntatie op mens en samenleving, enig zicht te krijgen op relaties met de persoonlijke en maatschappelijke omgeving.

Daarbij wordt expliciet aandacht besteed aan:

1.1 het kennen van en omgaan met eigen en andermans normen en waarden;

3 Leren leren

De leerling leert, mede met gebruikmaking van ICT, zoveel mogelijk eigen kennis en vaardigheden op te bouwen. Daartoe leert hij onder andere een aantal strategieën die het leer- en werkproces kunnen verbeteren.

Het gaat daarbij om:

3.6 persoonlijke ervaringen en opdrachten van anderen verwerken in woord, klank, beeld en beweging;

3.7 op basis van argumenten tot een eigen standpunt komen.

4 Leren communiceren

De leerling leert, mede via een proces van interactief leren, een aantal sociale en communicatieve vaardigheden verder te ontwikkelen.

Het gaat daarbij om:

4.2 overleggen en samenwerken in teamverband;

4.3 passende gesprekstechnieken hanteren;

4.4 verschillen in meningen en opvattingen benoemen en hanteren;

SET-UP

inlogcode maken voor leerlingen: Via het docentenportaal op de website, kunt u inlogcodes maken voor uw leerlingen. Een QR-code kan gescand worden, dat uw leerlingen leidt naar de app.

Elke leerling krijgt een eigen code om in te loggen.



Figure shows an overview of the second part of the lesson plan in which each lesson is laid out for the teacher. For the full pages check Appendix M.

1 Lesson indicator

This shows which lesson it is. On the left it shows which day to use this part of the lesson plan and on the right it shows in which phase the class is, which are explained in the preparatory pages. It also shows an indicator in how long the lesson would be.

2 Description

The description is an overall instruction in how the teacher can teach the class of that day. It tells what steps to take, why and how they can do it.

3 Steps

After the description, the phases of the class are described more detailed with a time indicator.

4 Tips

Here different suggestions are made to fill in the classes. First the main description shows the teacher what to do during the class, then the tips serve as ways for teachers to differentiate their classes to what they think suits their class best. For example suggestions to spark up some more controversial conversations.

5 At the end of the day..

As the lesson plan is adaptable, a checklist is made for the end of each lesson. These are there to support the teacher in knowing what has to be done by the end of the day in a concrete list. Then they can choose in which manner they would like to perform the assignments in order to check off the list.

6 Reflection

As this is still an educational program, at the end of the class an evaluation has been added. This is done through an informative evaluation as a class reflection. As the subject is quite specific and the series is short, no examination takes place. Rather some example questions for the teacher are listed here to start a reflection and discussion in class to see what their pupils have learned.

Figure 36: Overview of pages of the lesson plan.

1


OPZET EN INTRO
25 MIN

DAG 1


beschrijving

2


Om het project te beginnen zullen de leerlingen eerst de "Pop Your Bubble" app moeten downloaden (QR-code via de slides) en inloggen. De docenten hebben via de website al een account voor de leerlingen gecreëerd en met een Leerlingen Code kunnen zij inloggen op hun account. Om het project op te zetten, kies uit de voorbeelden van filter bubbels of vind je eigen voorbeelden dat te maken heeft met filter bubbels om te laten zien aan leerlingen. Laat het **introductie** filmpje zien over de term "filter bubbels" en vervolgens wat voorbeelden. Eindig de les met leerlingen die alvast 10 filmpjes, of plaatjes, van maximaal 1 minuut uploaden naar hun "mijn filterbubbel". Leg uit dat zij hiermee verder gaan werken tijdens het project later. Laat uw leerlingen 5 hashtags verzinnen dat past bij hun persoonlijke database.



10 MIN



5 MIN
+ MIN
(eventuele optionele
filmpjes.)



10 MIN

tips:

- Het voordeel van buiten school om filmpjes te uploaden is dat er geen geluidsoverlast of afleiding is tijdens de les.
- Dit onderdeel kan eventueel gedaan worden aan het eind van uw normale les, afhankelijk van hoe u het verzamelen van content wilt aanpakken.
- Gebruik de timer tool in de app, als indicator voor wanneer de leerlingen op hun telefoon mogen scrollen.

eind van de les..

- Een geactiveerd account voor elke leerling
- Het introductie filmpje laten zien
- Leerlingen hebben hun persoonlijke database **geupload** (tenzij het huiswerk is)
- Leerlingen hebben vijf hashtags verzonden die passen bij hun database

3

REFLECTIE
20 MIN

DAG 5

beschrijving

3

Creër een karakter (10 min):

- Wanneer ieder leerling hun hashtags hebben gemaakt, kunnen zij beginnen met het creëren van een Avatar in de app, dat geïnspireerd is door hun filter bubbel en hashtags.
- Zij mogen die vervolgens uploaden, die komen dan tevoorschijn op het Smartboard.

Bespreken (15 min):

- Laat leerlingen van elkaar raden wie bij welk karakter hoort. Let op: Houdt vooroordelen in de gaten.
- Laat leerlingen elk hun eigen karakter uitleggen aan de klas.
- Of verdeel de klas alvast in groepen, en laat ze hun karakter binnen de groep bespreken. Dit zorgt ook voor een veiligere omgeving voor de leerlingen om in te praten. Dit bespaart ook tijd.

4

tips:

- Bij het verdelen van de klas is het interessant om leerlingen bij elkaar te zetten die verschillend van elkaar zijn.
- Controversiële hashtags zorgen voor interessant gesprekken.
- Als je ervoor zorgt dat een van de leerlingen in de groep ook daadwerkelijk de hashtag heeft ingevoerd die de groep wordt toegewezen, heb je altijd tenminste een expert over het onderwerp in de groep. Dit zou eventuele blokkade kunnen voorkomen wanneer leerlingen het onderwerp niet echt begrijpt.
- Vraag de leerlingen aan het eind van de les om eventueel de hashtag op te zoeken op sociale media

eind van de les..

- De wordcloud met uw leerlingen besproken
- Elke leerling een karakter laten maken en met elkaar besproken
- De klas in groepen onderverdeeld
- Een hashtag voor elke groep

5

INTERVIEW
45 MIN

DAG 3

beschrijving

Tijdens dit onderdeel zullen de taken verdeeld worden. Leerlingen zullen leren om elkaar te gaan interviewen. Filmpjes in de "kennisbank" leggen aan de leerlingen uit hoe ze een mening kunnen formuleren of een interview kunnen opzetten. U kunt de filmpjes zelf vinden op de website en die toevoegen aan de slides, of de leerlingen kunnen deze vinden in hun applicatie voor thuisgebruik. De bedoeling van dit onderdeel is voor leerlingen om meer te leren over elkaars perspectieven op verschillende onderwerpen, en ook om hun eigen perspectief beter te analyseren.

Theorie (15 min)
Wanneer de groepen verdeeld zijn met een aangewezen hashtag, is het tijd om meningen te vormen en te interviewen.

- Toon theorie filmpjes over mening vormen.
- Toon theorie filmpjes over interviewen.

Vragen (10 min)
Laat wat ruimte over voor vragen van leerlingen over de opdracht en theorie.

Vorbereiding Interviews (20 min)
Laat de leerlingen zelfstandig hun interviews voorbereiden.

eind van de les..

- Theorie besproken met leerlingen over meningen.
- Theorie besproken met leerlingen over interviewen.
- Leerlingen zelfstandig interviews laten voorbereiden.

6

REFLECTIE
20 MIN

DAG 5

beschrijving

Aan het eind van de lessen, is er een template in de app die de leerlingen kunnen invullen. Hier worden de karakter profielen met hashtags ingezet. Deze kunnen opgehangen worden in de klas. Door het jaar heen, kunnen leerlingen met post-its nieuwe hashtags toevoegen, naarmate hun filterbubbel verandert. U kunt optioneel door het leerjaar heen, de interview opdracht of het reflectiemoment herhalen met uw leerlingen naar aanleiding van nieuw hashtags.

Ter evaluatie:
Hieronder staan een aantal vragen die gesteld kunnen worden om te reflecteren op wat er geleerd is.

- Wat heeft iedereen geleerd?
- Wat is iets nieuws dat je van jezelf hebt geleerd?
- Is iemand hier van mening veranderd over iets door iemand anders?
- Wat heb je geleerd van iemand anders in de klas?
- Wie heeft een interessant verhaal te vertellen dat tijdens een van de interviews naar boven is gekomen?
- Wat weten jullie nu van filterbubbels?
- Heeft iemand hier iets geleerd dat zij niet hebben verwacht?
- Wat vonden jullie het meest uitdagend tijdens deze lessen?



Chapter Eleven point Three

The Application

The application is intended for the pupils to use. In order to make this application work, the teacher will have to set up pupil accounts for the pupils to log in. Therefore the information will stay within the class and no outsiders can get in the learning space. This is important, because the application is interactive with the class presentation which will be presented in the next chapter.

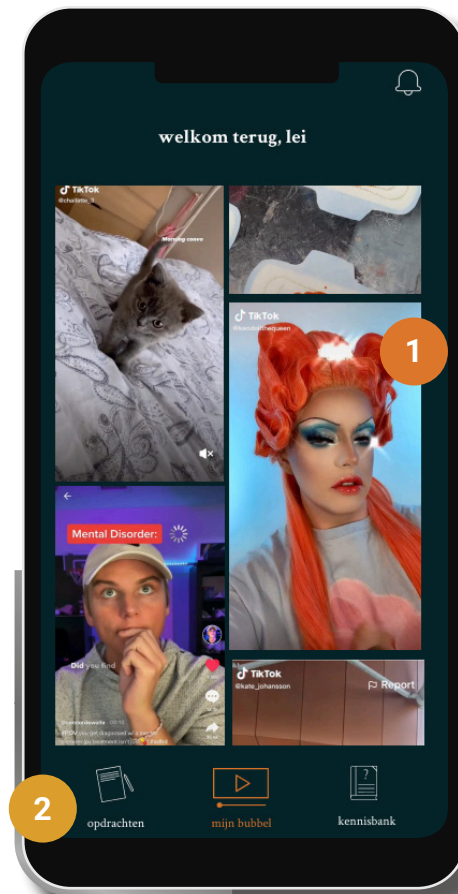
The application is made for pupils to perform their assignments and to collect their Social Media content which will be used during the class. It has been chosen to use an application due to its ease of use and the coherence with the subject of filter bubbles.

Figure 37 shows an overview of the application.

Minimal Design

The design of the app has stayed minimal, as this is an addition to the classroom. With using a phone in class, the risk is that pupils get distracted. Therefore the app only consists of three main pages, and the pupils will not have to spend too much time on the app other than necessary.

Figure 37: Application mijn bubbel



1 Main Page

The application will open on the "mijn bubbel" page. This has been done as this is the main subject pupils will learn. What is their bubble? So whenever pupils will open the app, they first are welcomed back again in their own bubble.

2 Main Menu

The main menu consists of three options. The Assignments (Opdrachten), Uploaded Social Media content (Mijn Bubbel), and Educational and Instructional videos (Kennisbank).

Figure 38: Application "Mijn opdrachten".



- 1** Divided in classes

The assignments are divided in classes to make it clear which one has to be done on which day.
- 2** Checkmark

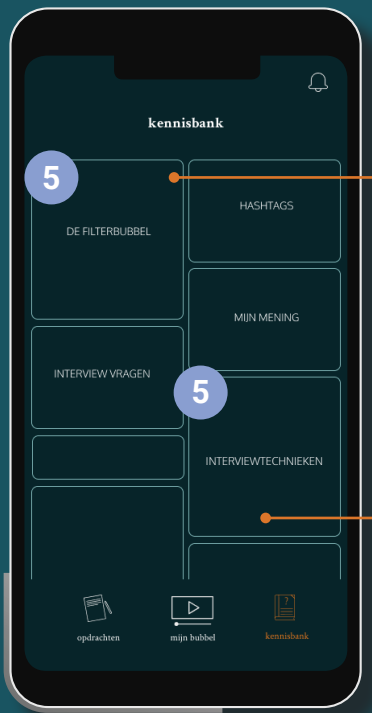
The checkmark shows if the assignment is finished.
- 3** Process Bar

The process bar shows which assignment is not finished.
- 4** Description

When the pupil clicks on an assignment, the module will show a description of the assignment.
- 5** Instructional Videos

In the "Kennisbank" a set of instructional videos can be found for the pupils.

Figure 39: Application "Kennisbank" with video stills.





Assignments

As seen in the previous chapter the application includes the assignments of the lesson program. A short description of these assignments are described in the following paragraphs.

Figure 40: Overview of Assignments



Mijn Bubbel

The first assignment is to collect the first 10 Social Media content in your bubble. This means that pupils should upload videos of maximum one minute or pictures to their bubble which are recommended to them. For example TikToks on the “For you” page, Reels on the “Explore” pages on Instagram. These pages are the recommendations from the platforms.

Hashtags

Then pupils are asked to look again at their bubble. The assignments will be limited to the 10 videos collected before, to avoid distraction and endless scrolling. The assignment here is to think of 5 hashtags that suit their set of content. The form hashtag is used because it relates to the pupils.

Wordcloud

After they think of the five hashtags, they can upload the hashtag to the screen. This will be displayed with all the hashtags that the pupils made up in a word cloud on the smart board. It has been decided to let the uploading of a hashtag be a separate assignment from the “hashtags” assignment so pupils still have control over what they want to share in class. Even though the cloud is anonymous. Figure 40 shows a representation of the assignment.

Mijn Avatar

This assignment lets the pupils create an Avatar. Here pupils can choose between different attributes, backgrounds, and body parts. Eventually the avatar should represent their bubble. The avatar serves as a representation of your bubble, when pupils discuss their avatars with each other they are asked what they recognised about their bubble and what they see in their Social Media recommended pages. The avatars can also be displayed on the smart screen and pupils can have conversations with each other about them.



Chapter Eleven point Four

Interactive Presentation

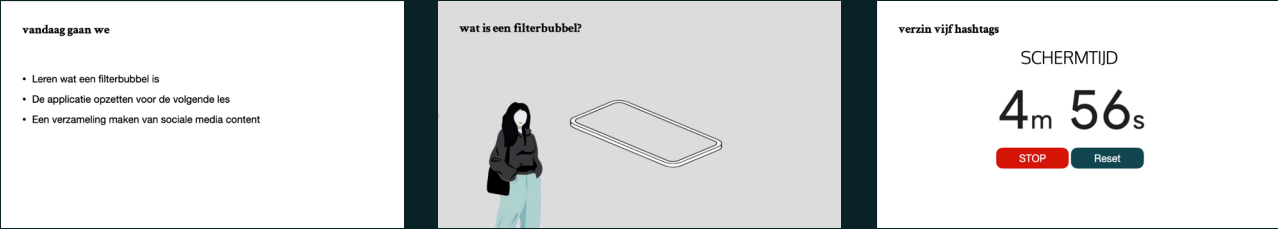
The third element of the concept is the presentation. It is an adaptable slide deck intended to be displayed in class. The goal for this presentation is to bring the whole lesson plan together. Create the bridge between the teacher and pupil. For the teacher this slide deck is important to create a clear view on how they can teach the class. Though the manual is elaborate, the slide deck helps the teacher to concretely know what to do. The same goes for the pupils. Each phase starts with showing the pupils what they can expect during the particular class.

The slide deck also shows the wordcloud and avatars as explained in the previous chapter. By showing these assignments in class, the attention of the pupils are brought back in class instead of their phones.

The presentation also includes a timer that limits the time for the pupils to be on their phone.

Figure 43: Samples of Slides

Sample of Slides



vandaag gaan we

- Leren wat een filterbubbel is
- De applicatie opzetten voor de volgende les
- Een verzameling maken van sociale media content

wat is een filterbubbel?

verzin vijf hashtags

SCHERMTIJD

4m 56s

STOP Reset

Bulletpoints with what is expected in the particular class.

Instructional video that explains" the filter bubble". All videos are included in the slides.

A timer to control screentime in class.

Chapter Eleven point Five

Revisit: Poster Template

Figure 44 shows an overview of how this phase workd. As this concept has not been tested, the concept will stay at its conceptual stage.

The final step in the lesson plan is "Revisit". The goal of this step is to make sure that the knowledge gathered during the lesson plan will have some long term effects on them. Therefore the Revisiting Poster can be used. This is a concluding template that the application will generate automatically after the assignments are finished. On this template the avatar and the hashtags of the pupil will be included as seen in figure 44. The posters can be printed on A4 and will be displayed in class. Throughout time, filter bubbles change. Therefore also the themes that pupils get exposed to online. To keep pupils aware of this, stickers are

placed next to the posters in class. Once pupils notice that their filter bubbles have changed and notice new interesting hashtags in their own filter bubble, they can use the stickers to write their new hashtags on and stick them on their poster. This tracks the changes of everyones filter bubble, showing that people can change. This also created an opportunity for pupils and teachers to revisit the assignments again. For example when a new hashtag is interesting or sparks up conversations in class.

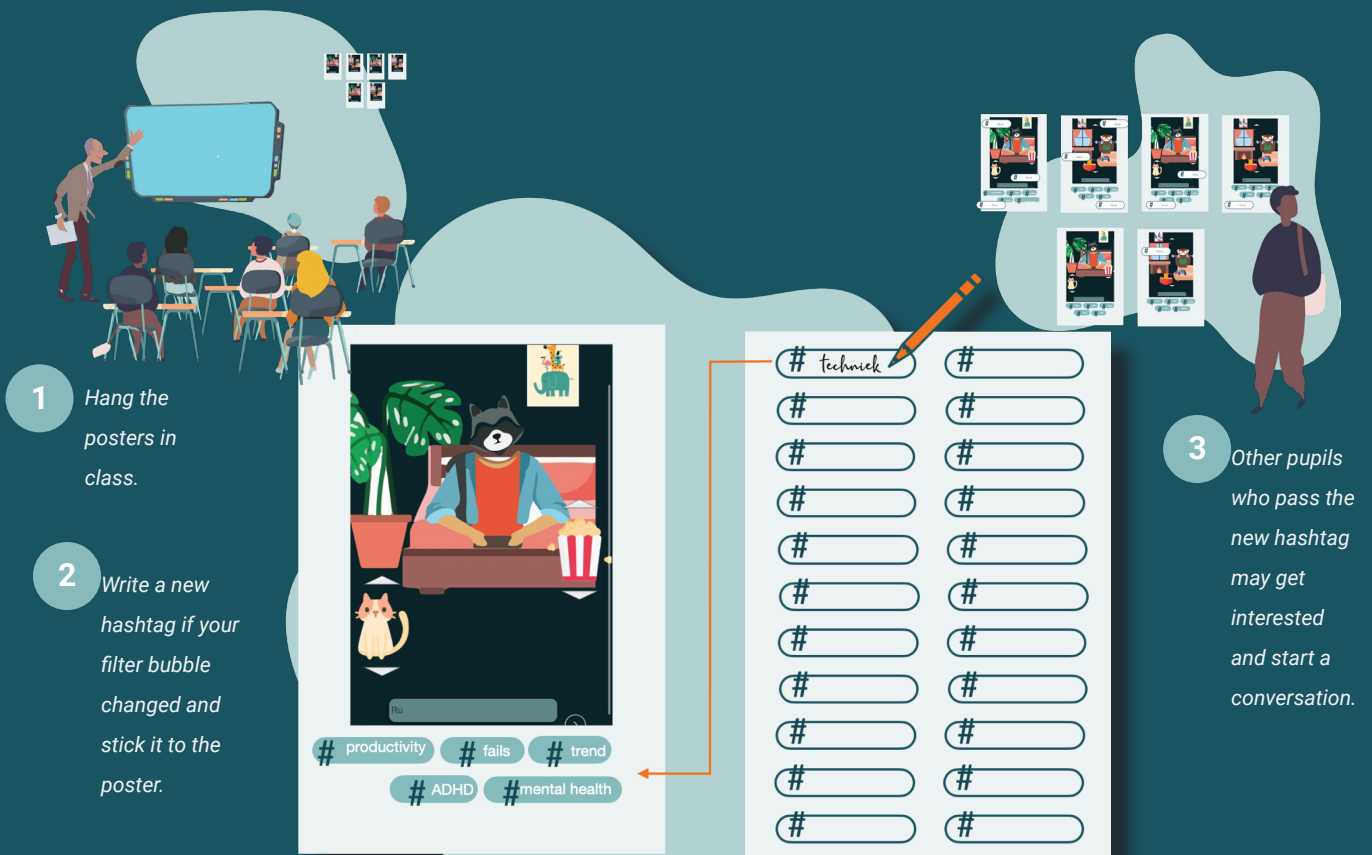


Figure 44: Overview of Revisit poster concept



Chapter Twelve

Concept Evaluation

This chapter describes the concept evaluation of the Pop your Bubble Lesson plan. Due to the timing of this graduation project, there was limited access to secondary schools. As secondary schools were on their summer break and the starting of the year was too busy for the teachers. Though three Social Studies teachers have shown interest in testing and implementing the program, it could not happen within the time frame. This chapter describes the evaluation done within the project (See appendix N and O)

Chapter Twelve point One

Method

The concept evaluation has been done through an expert evaluation with the three Dutch VMBO secondary school teachers and a concept test with two teenagers within the target group.

The expert evaluation was done in two steps. First a questionnaire was sent to the experts including the lesson plan, concept explanation, and an example instructional video. Afterwards a zoom interview has been conducted with the experts where the concept is explained more in detail and the slides were shown. The questionnaire was sent first in order to see whether the teachers would understand the concept and lesson plan on its own. Then the interview was conducted to gain deeper insights on what to improve.

The concept evaluation was done with two secondary school pupils in Maastricht who were 16 years old. With these teenagers the assignments were carried out on a small scale according to the lesson plan. Appendix N shows a detailed planning of this test. This test has been conducted to find out how the target group would experience the lesson plan. The evaluation has been done through a questionnaire with a semantic scale (See appendix N). The Axure application prototype was used for the wordcloud and creating an avatar (Figure 48) and the other assignments were done with pen and paper. The full prototype can be found in Appendix M

Research Questions

Experts Evaluation

- Do experts see the relevance in the lesson series?
- Do experts understand how to implement the lesson series?
- Do experts know how to differentiate the lesson series?
- How do the experts think their pupils will react?

Concept Evaluation by Target Group

- How do they experience the lesson plan?
- Did they learn something new during the class?
- Were they able to fulfill the assignments?

Concept Poster (Revisit)

- Would the target group use it?
- Is this feasible for schools?

Chapter Twelve point Two

Results & Discussion

The results are discussed in two parts, as two different evaluation methods have been used. The expert evaluation with Social Studies teachers (Figure O) and the experience evaluation with the target group.

Expert Evaluation

Relevance

Figure 45 shows the results of the questionnaire regarding the relevance of the elements in the lesson program. All three of the participants have expressed that this lesson plan is relevant for their class, as it got a 4/5 in the semantic scale (Figure 45). When asked about why the teachers would implement a lesson plan about filter bubbles, they expressed how this topic is growing at the moment and media literacy is still in its beginning stages.

One expert mentioned that the application is relevant for the lesson plan as this helps the pupils connect with the material and topic. He said that there is no way around the phone anymore, as it has become such a big part of the lives of pupils. But a different teacher has suggested adding a web version of the application as there are still schools that ban phones in class.

The instructional video was relevant for some teachers and less relevant for others. One teacher said that it is preferred to receive a complete package of lesson material, as it makes it easier for the teacher. Therefore the videos can be relevant, because they don't have to do it themselves. But one teacher thought the video was not that necessary.

When asked about the gaining insights on their pupils and their behaviour on Social Media, the experts also think it is relevant. Both questions about whether the lesson plan helps them gain insights on their pupils and the relevance on doing so scored a 4/5 in the questionnaire.

Though the slides were not presented to the teacher during the questionnaire, the relevance of the slides showed during the interviews afterwards. When the teachers saw the slides, they

Figure 45: Results Semantic Scale Experts 1



made the program come together. This was especially the case for the interviewing phase of the lesson plan. One of the teachers said:

“Ah the interviews teach critical thinking! Yes, that is very important for these pupils to learn.”



Understanding

Figure 46 shows the semantic scales filled in by the teachers. Though “knowing what to do with the lesson plan” scores high in the semantic scale with a mean of 4 out of 5 stars, the lesson plan scores lower when it comes to differentiating. This means that it is not too clear for the teachers how they can change the lesson around and make it fit their own class. One of the remarks was that they were not fully understanding what the pupils would be talking about, during the interview. But, when I used an example during the interview, it started to click. Therefore an example helps with comprehending the project. All the teachers have mentioned that the strongest part of the lesson plan is the awareness part, getting pupils to look into their own bubble. Though when provided with examples of the second phase, interviewing, they understood what that meant. One teacher was wondering how practical the design would be regarding the setting up of the application accounts. This was a part that was not fully designed yet.

Differentiate

As explained in the previous paragraph, this part scored lower in the semantic scale (Figure 46). It was not that clear to the teachers what different steps they could make in order to make the lesson fit their own classes. This could have to do with the structure of the lesson plan and the amount of text. Though, the different steps within the lesson plan may not be as clear, the teachers did think that the lesson plan is easy to implement. One teacher said that there was a “week of media” coming up in their school and would like to implement this lesson plan in that week.

Expectation

When asked about how they think that their classes would react to the lesson plan, one teacher believes they would really like it. Especially as they get the chance to use their phones in class. One teacher said that at first they would probably laugh a little. They would probably think that they know everything about it and say that they know more than the teacher would, but then during the class they will be surprised with what they learn.

Figure 46: Results Semantic Scale Experts 2



Experience Evaluation

Overall Experience

The participants both were asked to describe the lesson plan in a few words. The words that came up were: *Different, interesting, very interesting, and more fun*. The participants like that they could use their phone during class, but also talk about subjects that they are interested in. Another thing they liked was the use of pictures. As one participants said:

“Instead of just listening to your teacher about the Second World War and filling in assignments, we get to actually interact in class about things we care about.”

The other participant said:

“I think that many classes are not cohesive, taken randomly out of thin air. I actually hate those classes, but they are supposed to teach you something. This seems like a cohesive and concise class with a clear message. I think you can actually do something with it.”

During the hashtag and word cloud exercise the participants were excited to see what the other person had in their filter bubble. They were laughing and were trying to find the hashtags that they expected from the other person. Note that the test was only done with two people so they knew which hashtag was of the other, which is not the case in class.

Learn

Before the test they were asked whether they knew anything about the subject. The participants both knew what a filter bubble is and explained it as how their Social Media is based on their interests. But they did not think it affected them.



Figure 47: Results Semantic Scale Target Group 1

After the session the participants were asked if they learned anything new. Their answers:

- *What my bubble is.*
- *That my opinion can be influenced by my filter bubble.*

And when they were asked what they learned about themselves is:

- *That my air bubble has to do something with my bubble* (Meaning probably that their real life bubble is intertwined with their online bubble)
- *That my bubble is very different.*



When asked what they would take with them after the session:

- *I'd probably cut people some more slack, because they might have a different bubble. Or ask more questions.*
- *I'd be more aware of my own bubble.*

Exercises

The pupils were able to execute the exercises correctly. Though, they did get distracted easily when looking into their videos. After they were asked to wear earphones, they became more focussed. There was one question, whether forming an opinion would have to connect to Social Media. Which they did do.

The hashtags

The hashtags were written on paper. See Figure 48. When this was on the world cloud, the participants immediately started talking to each other about the hashtags. One was surprised about their own bubble and missed a hashtag that they were expecting from the other.

The Avatars

Figure 48 shows the Avatar created in the Axure prototype. They explained themselves. As they were aware of the subject of the class, they immediately started to describe what parts were part of their offline preferences and what part was that of their filter bubble. As one explained how he likes the calm environment of the living room and a fire, his filter bubble has more to do with gaming and sports.

Opinions

The opinions about the hashtag "girls" were formulated by the participants.

Ik vind dat meiden steeds schaarser gekleed zijn en daarmee aandacht zoeken van jongens.

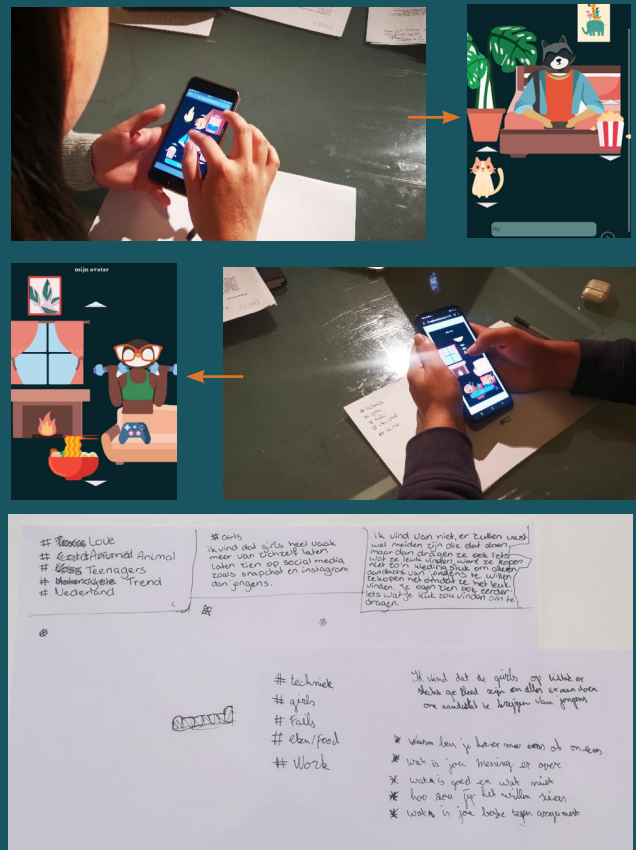
I think that girls are wearing less clothing and with that search for attention from boys.

Ik vind dat meisjes meer van zichzelf laten zien op Social Media zoals Instagram en Snapchat dan jongens

I think that girls show more of themselves on Social Media like Instagram and Snapchat than boys.

Eventually the first one was chosen to do an interview about, as they did not agree with each other. The participant who did the interview liked that he had to prepare the questions, because was surprised at all the responses of the interviewee. He thought the other person made good points, though he did not necessarily change his mind. He understood where the other person was coming from better.

Figure 48: Pictures of Evaluation test



Experience Evaluation

As the concept for revisit is a long term concept, this has been tested by presenting the concept to the teachers and teenagers. They were asked whether they think they would use it, why, and why not. The teenagers were asked to fill in a questionnaire with semantic scale, results shown in Figure 49. The teachers were asked for feedback on how to optimise this idea.

Pupils would like it and think it can be important to keep this hanging in class as a reminder. Though teachers have mentioned the idea makes sense, it needs to be kept in mind that schools often are not allowed to print in color and their biggest paper size is A3. Another remark would be that one teacher has nine different classes in their class room. So printing out the avatars individually is not feasible. A poster per class is more feasible.

Limitations

A limitation which is really important to mention is the fact that the experience evaluation was done with only two Dutch teenagers in the living room. Therefore the context is not right and the size of the group. This caused different dynamics where for example the sense of safety is harder to evaluate. For example, the tested teenagers may have felt safe enough to say more controversial things. The fact that I was familiar with the target group could have caused bias in the evaluation.

Another limitation is the prototype. Though the interaction of the word cloud worked quite well, part of the exercises was done through paper and the "mijn bubbel" feature was through WhatsApp, taking away the cohesion needed for this class.

The time frame of the final evaluation was only two hours, while the eventual intervention was supposed to be a lesson series over a few weeks. Though the group is much smaller, which meant that only the assignments of two people were discussed instead of 25 pupils, the test did not keep in mind that pupils in practice could have a whole week to process a class.



Figure 49: Results Semantic Scale Target Group 2



Chapter Twelve point Four

Conclusion and Recommendations

The goal of the concept evaluation was to find out whether the design goal was met and whether the final intervention was usable. The experience was evaluated to see whether the qualities were met. This chapter describes the conclusions derived from the discussion in the evaluation.

Conclusion

The main research question from the beginning of the project were:

- What is media literacy and how media literate is the current youth?
- What does the target group currently learn about 'filter bubbles' (the influence of Social Media) in class?
- How can a teacher at secondary school teach their class to ask critical questions?
- How can a teenager between 13-15, recognize your own confirmation bias?

During the first phase of the project information was gathered through generative sessions, literature research, and interviews to create a clear understanding on where to place the final intervention in the context. The insights from these activities resulted in the following design goal:

My design goal for this project is to design an intervention that can be used as an addition to the "social studies" course in secondary schools in The Netherlands. This intervention should teach teenagers to critically think about the content they consume within their filter bubbles, through meaningful conversations among other teenagers about the content.

Soon it was found that media literacy itself was barely practiced in Dutch secondary schools. Meaning that a step needed to be added before the part where teenagers are taught to critically think about their filter bubble. This would be creating an awareness of their own filter bubble, and then teaching them to critically think about them.

During the ideation phase several versions and structures of a lesson plan were tested and iterated on with adults. Social studies teachers and another secondary school teacher were consulted to make the concept more suitable for the target group.

During the evaluation the lesson plan was evaluated by social studies teachers and two people within the target group. Experts were able to understand the final intervention, and one of them is already planning on using the lesson plan. Though, the lesson plan could still use some improvements regarding the readability. The evaluation with the target group also suggests that the design goal was met, though the results might not be reliable due to its limitations discussed in the previous chapter.

Though the design goal was met, the experts and the target group have confirmed that the "awareness" part of the concept was the strongest part, as it really shows them their filter bubbles and that in itself is already new to them.

Recommendations

Lesson Material

As this project mainly focussed on the overall concept of the lesson plan, the material in itself might not be as elaborated as wished.

The options to build an avatar at first were mainly based on animals to keep it abstract and open to interpretation, the evaluation has shown that the target might prefer human options with different hair styles, skin color, and clothing.

Only two instructional videos were included in the lesson material to evaluate with, but more needs to be added.

The application also still needs to be developed.

The poster template for revisiting is not developed yet.

Lesson plan structure

The lesson plan for the teacher right now has too much text, and the ways to differentiate the lesson is not clear to the teacher yet. Rather than providing tips, it would be interesting to create different "routes" the teacher could take for their lessons. For example the "controversial" route where the instruction suggests to encourage their pupils to come up with more controversial themes, or the "independent" route where most of the lesson plan will be homework.

Distribution

In the lesson plan itself, it suggests that the lesson plan is a downloadable print from a website that would sell this product. A potential business plan for this product would be to sell “teacher packages” which include pupil accounts for the applications. Here the teacher can get the plan and create accounts for their pupils to join the assignment. It is important to create personal accounts for the pupils in class, to prevent information getting leaked and people outside the class disturbing the lessons by joining the application. This part of the concept still needs to be developed and tested.

Testing in Context

As explained it has not been possible to test this concept in context yet. The experience evaluation within the project was biased, as the participants were acquaintances and the group was too small. For a legitimate test, the concept should be tested in a classroom of secondary school pupils. It would also be best to implement the lesson plan long term, to also test out the effects of the revisiting stage of the concept.

Target Group

The lesson plan was intended for VMBO students. One of the teachers mentioned that the level was too high for their pupils. This is because VMBO in itself has different levels too. During the project I focussed on VMBO-TL, which is the highest level within VMBO. So according to the social studies teacher, text in the concept needs to be more simplified for lower level students. The concept in itself is suitable for the pupils, just the language needs to be changed. This also means that the concept is suitable for different classes, if the material is adapted to their comprehension level.



Chapter Thirteen

Reflection of the Process

At the beginning of the project I have set goals for myself as a designer to become more confident as a designer, and include stakeholders in the design journey. Another ambition was to use creative tools like role play and generative sessions. Though there were quite some moments in the process where I have followed these ambitions by approaching stakeholders, conducting multiple generative sessions, brainstorm sessions, and interviews, this project was still quite challenging for me. For example, at the start when I approached several stakeholders and they showed interest I failed to follow up on them. I did not feel like I could show stakeholders the process, as I was afraid they would not understand it and my research was not complete enough to show them. Near the ending of the project I did manage to show some social studies teachers the concept roughly, and it turned out really well. Moral of the story, don't be too insecure to show your work. Halfway through the process I started to isolate myself and my work, which meant I did not get much feedback on my process and got stuck. Also I got trapped in my own insecurity. After everything opened up again, the process went much better. I started to share my project with fellow students I haven't seen in years which helped out so much. At the end I wanted to become a more confident designer, and though the project has had many challenges I do think I grew from the experience. As at the end it did eventually all come together and I think I'll take that lesson with me.



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Project Brief



Procedural Checks - IDE Master Graduation

APPROVAL PROJECT BRIEF

To be filled in by the chair of the supervisory team.

Digitally signed by Annemiek Date: 2021.03.29 16:15:56 +02'00

chair Annemiek van Boeijen date 29 - 03 - 2021 signature _____

CHECK STUDY PROGRESS

To be filled in by the SSC E&SA (Shared Service Center, Education & Student Affairs), after approval of the project brief by the Chair. The study progress will be checked for a 2nd time just before the green light meeting.

Master electives no. of EC accumulated in total: 35 EC

Of which, taking the conditional requirements into account, can be part of the exam programme 30 EC

List of electives obtained before the third semester without approval of the BoE

[Empty text box for electives list]

YES all 1st year master courses passed

NO missing 1st year master courses are:

[Empty text box for missing courses]

name C. van der Bunt date 06 - 04 - 2021 signature _____

C. van der Bunt Digitally signed by C. van der Bunt Date: 2021.04.06 15:37:40 +02'00

FORMAL APPROVAL GRADUATION PROJECT

To be filled in by the Board of Examiners of IDE TU Delft. Please check the supervisory team and study the parts of the brief marked **. Next, please assess, (dis)approve and sign this Project Brief, by using the criteria below.

- Does the project fit within the (MSc)-programme of the student (taking into account, if described, the activities done next to the obligatory MSc specific courses)?
- Is the level of the project challenging enough for a MSc IDE graduating student?
- Is the project expected to be doable within 100 working days/20 weeks ?
- Does the composition of the supervisory team comply with the regulations and fit the assignment ?

Content: APPROVED NOT APPROVED

Procedure: APPROVED NOT APPROVED

[Empty text box for comments]

comments

name Monique von Morgen date 12 - 04 - 2021 signature _____





Personal Project Brief - IDE Master Graduation

Pop your bubble - A tool for teenagers to rethink their online sub-culture project title

Please state the title of your graduation project (above) and the start date and end date (below). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

start date **18 - 03 - 2021** **18 - 08 - 2021** end date

INTRODUCTION **

Please describe, the context of your project, and address the main stakeholders (interests) within this context in a concise yet complete manner. Who are involved, what do they value and how do they currently operate within the given context? What are the main opportunities and limitations you are currently aware of (cultural- and social norms, resources (time, money,...), technology, ...).

Social media has enabled people to connect with one another who share the same interests, backgrounds, or real-life friendships. Not only has social media helped people create networks, these platforms have made information more reachable than ever before. This results in effects such as taboo subjects being discussed and explored, and mobilising people for good causes. But all this information circulating around online platforms also has created some downsides, resulting in phenomena, such as polarisation and cancel culture.

Cancel culture (Dictionary, 2021) is a practice in which large groups of people withdraw their support from companies of public figures when their actions have been considered offensive to these people. The goal of cancel culture is to hold large companies or powerful people accountable for their action, but sometimes also this results in public shaming and people who losing their jobs.

One of the main causes of these phenomena is the applied algorithms used by social media platforms, such as Twitter, Facebook, Instagram, TikTok, and YouTube. Algorithms are built to improve the engagement of users of their platforms in order to get the user to stay on that platform as long as possible. This is done through profiling platform users by collecting their online and offline data to anticipate the interests of the user. These interests are applied to create personalised and unique social media environments curated for each user.

A risk of curated video content is that it can trap people into "filter bubbles" (D. J. Difranzo), without even realising it. Once people are presented with content that they initially like, the algorithm creates this bubble of content for its users without challenging them to look for other content anymore. Keeping people satisfied by presenting content that fit their initial interests makes them stay within a comfort zone that these algorithms have created. Thus, not stimulating their brain to critically assess the content that they receive on social media. "In the consumption of the feeds, users are presented with the illusion of a qualitative experience of information flows, thereby lacking the desire to critically examine or respond to the methods in which the media environment was produced." (Cohen, 2018)

An article of MediaWijzer about polarisation in classrooms (J. Pardoën, 2019) also describes that on social media people do not benefit from getting together. Social media often is built on profiling, while offline and in classrooms it is often more beneficial to come together. In addition, the article states that even though polarisation can be a good thing in society, because it often is what pushes change in the world, in classrooms it is more important to create a safe learning environment. Depolarisation is therefore needed. A technique described here for teachers to deal with polarised ideas between students, is to ask (critical) questions. This does not only prevent the teacher from taking sides, but it also helps students to critically assess their own ideas.

An opportunity I see is that content on social media has had the power to influence people. Rather than using "confirmation bias", which is when people who stay within their comfort zone and see the content that confirm their existing ideas, this content can be shared as answers to questions asked in class. In a classroom where students have opposite ideas, content from different filter bubbles can help polarised students look more critically at the content that they receive and recognise their own "confirmation bias".

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Personal Project Brief - IDE Master Graduation

introduction (continued): space for images

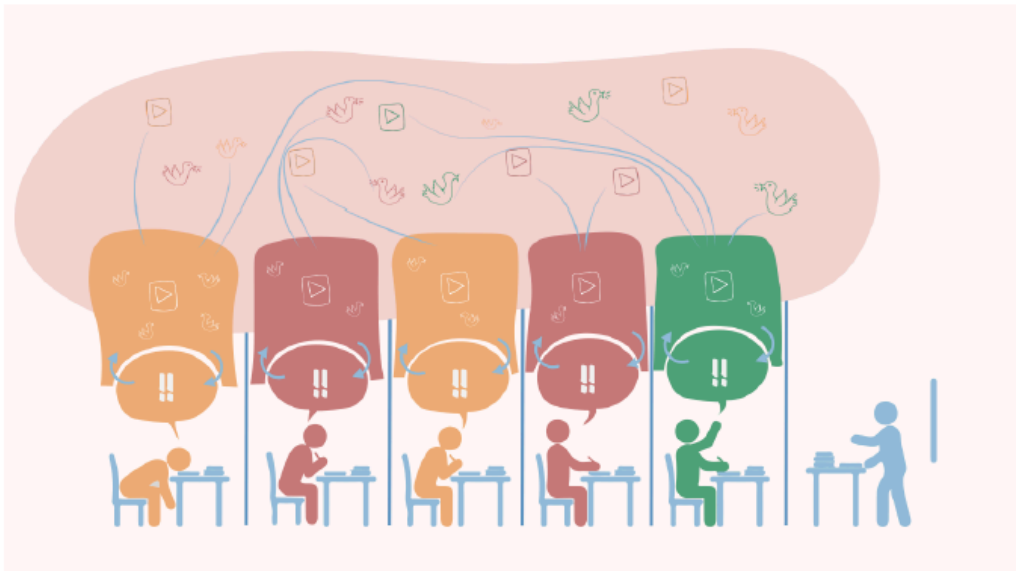


image / figure 1: How the algorithm creates barriers between pupils.

image / figure 2:

Personal Project Brief - IDE Master Graduation

PROBLEM DEFINITION **

Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

Currently, not only the use of social media is rapidly growing, it also increasingly influencing young people. Where older generations have experienced less segregation through social media platforms, younger people already are polarising without having enough experience in looking outside of their own filter bubble and asking critical questions.

ASSIGNMENT **

State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver, for instance: a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

The main goal is to design an intervention to encourage secondary school pupils between the age of 13-15 to ask more questions outside their "filter bubble". To do so the following research questions need to be answered:
To define the scope:

- What is media literacy and how media literate is the current youth?
- What does the target group currently learn about 'filter bubbles' (the influence of social media) in class?
- How can teachers at secondary schools teach their class to ask critical questions?
- How can teenagers, between 13-15, encourage each other to ask critical questions?
- How can teenagers, between 13-15, encourage each other to look at their own biases?
- How do can a teenager between 13-15, recognize your own confirmation bias?
- How can secondary school teachers educate their pupils to encourage each other to ask critical questions?

I want to create a playful way to educate the target group, to ask more questions outside of their "filter bubble" and be more critical about the content that influence their own beliefs. For this project I will use gamification theory . I want this game to encourage pupils to put their ideas together, critically assess them and come up with new solutions if possible. The end result could be a set of guidelines, toolkit, interaction, game or workshop.
The subjects can be about cats, intimacy, subcultures, music, etc. As long as the intervention encourages pupils to ask about other pupils' views rather than to dismiss each other.

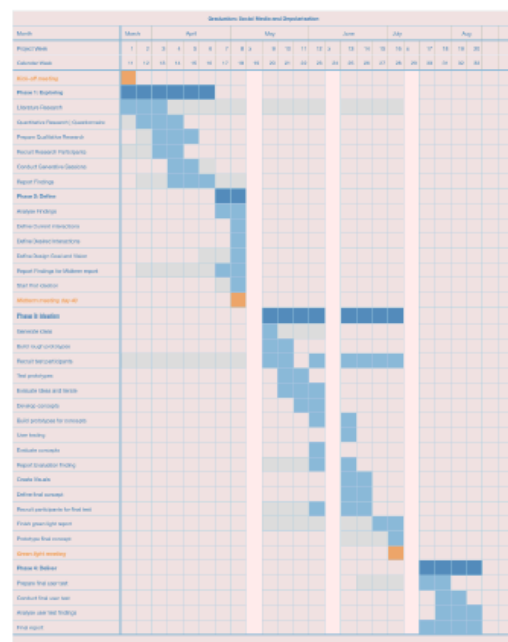


Personal Project Brief - IDE Master Graduation

PLANNING AND APPROACH **

Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.

start date 18 - 3 - 2021 18 - 8 - 2021 end date



The project will take 23 weeks, including three weeks break in total. To meet the requirement of 100 working days, I will work five days a week.

During the first phase of the project, I will do some desktop research on media literacy and the existing Dutch programs that teach children in secondary schools about social media and media literacy. In order to define the target group, decisions will be made on what types of schools the focus will lie on during this project. These decisions will be based on which whether schools are accessible during the project and literature research on different types of school regarding diversity and social media.

During the second phase I plan to generate creative sessions like role play, and test these out through rough prototypes. It might be difficult to recruit members of the target group, so I will probably test physical prototypes with other people that are easier to approach offline and that somehow represent the target group and/or can give valuable feedback. In addition, I will use Facebook groups and other platforms to recruit people for online testing.

During this phase the approach will be iterative. I plan to use several methods to generate ideas. I want to build rough prototypes to test ideas and iterate on them. Eventually creating a playful way to train members of the target group to become more comfortable outside of their filter bubble. These methods are useful to simulate interactions between secondary school students and effectively iterate on insights. Due to the objective, to change unconscious behaviour in a group of diverse people, it is important to simulate the interactions to generate and iterate.

Eventually, if restrictions due to COVID allows, I intend to do the final testing in context (in class). If the final testing should take place during the summer holidays, then I intend to find a similar alternative context to test out the final design.

Personal Project Brief - IDE Master Graduation

MOTIVATION AND PERSONAL AMBITIONS

Explain why you set up this project, what competences you want to prove and learn. For example: acquired competences from your MSc programme, the elective semester, extra-curricular activities (etc.) and point out the competences you have yet developed. Optionally, describe which personal learning ambitions you explicitly want to address in this project, on top of the learning objectives of the Graduation Project, such as: in depth knowledge a on specific subject, broadening your competences or experimenting with a specific tool and/or methodology, Stick to no more than five ambitions.

Especially during the past year, I have been spending more and more time on social media. Probably because I am one of the many people who find some escape from the COVID-19 situation through social media. But what I have noticed is, that I have never in my life been so politically involved in society as I have since I started spending more time on social media. In 2020 I have learned so much about #BlackLiveMatter that my beliefs have changed so radically, that my tolerance towards people who do not really associate themselves with this moment has lowered. Same goes for feminism. While sometimes I believe it is a good thing to know where you stand and to "fight the good fight", I do notice so much disagreement on social media that no solutions can be found. I notice that I think that I am strong for "knowing" where I stand, but get so discouraged to find out how many people there are that think differently. We disregard people with other views and with that, we do not find solutions. It's us against them with no nuance which seems problematic in the world.

My ambitions are for people to become more comfortable to critically assess themselves. Sometimes, it is okay to be wrong, learn something new and move forwards. To not only be comfortable with the confirmations that social media offers you. I think this project is also interesting for me, because I am also interested in the social media environments of other people. Where I live in my own confirmation biased social media feed, I wonder what other people see who have opposed views on the world.

During this project I want to use creative tools to generate ideas and get comfortable with methods like role play. I also want to become more confident as a designer. Meaning that I want to be able to approach several stakeholders with my ideas and ask them to co-create with me, do user testing and interview them. I have been able to do this in the past, but I do have to get over a threshold of insecurity and not wanting to bother people. I want to learn how to organise generative sessions and facilitate them efficiently. Efficiently, meaning that next to creating structural plans to conduct useful sessions, also to train myself to be assertive and unafraid to reach out to people. Not getting too lost into "everything has to be perfect before I start" which causes me to get overwhelmed and procrastinate.

FINAL COMMENTS

In case your project brief needs final comments, please add any information you think is relevant.



Appendix A

Analysis on Existing Products regarding Media Literacy

To gain inspiration and ideas on designing for critical thinking, existing products have been analysed. On the next page the Figure shows the miro board used to organise existing products and insights are described in the next paragraphs.

Filter bubbles are a complex phenomenon part of a complex system in both the online and offline world. To gain some understanding of qualities needed for the design vision, several existing products have been analysed. Because products regarding “filter bubbles” are still limited and no real solutions exist yet, a range of products within the scope has been chosen to analyse. This range of products come in the categories: Storytelling products, critical questioning products, games and educational tools regarding media literacy and one pilot application called the anti-filterbubble app.

Stand still and reflect

When looking into the three main Social Media platforms that the target group mainly use, one of the qualities is their fleeting character. All these apps provide content which can be assessed by its user within a minute if not less. Studies also show that Gen Z, which the target group is part of, only has an attention span of eight seconds. This fleeting character makes it harder to find out which information the person assumes and which they forget. Especially when the target group is endlessly scrolling through their Social Media feeds for approximately six hours a day. For the design vision, it is important for these teenagers to actually stand still and and take a look at the content that they are exposed to every

day and reflect on them. Since online behaviour has a fleeting character, it is interesting to look into what happens when online behaviour is reflected on offline.

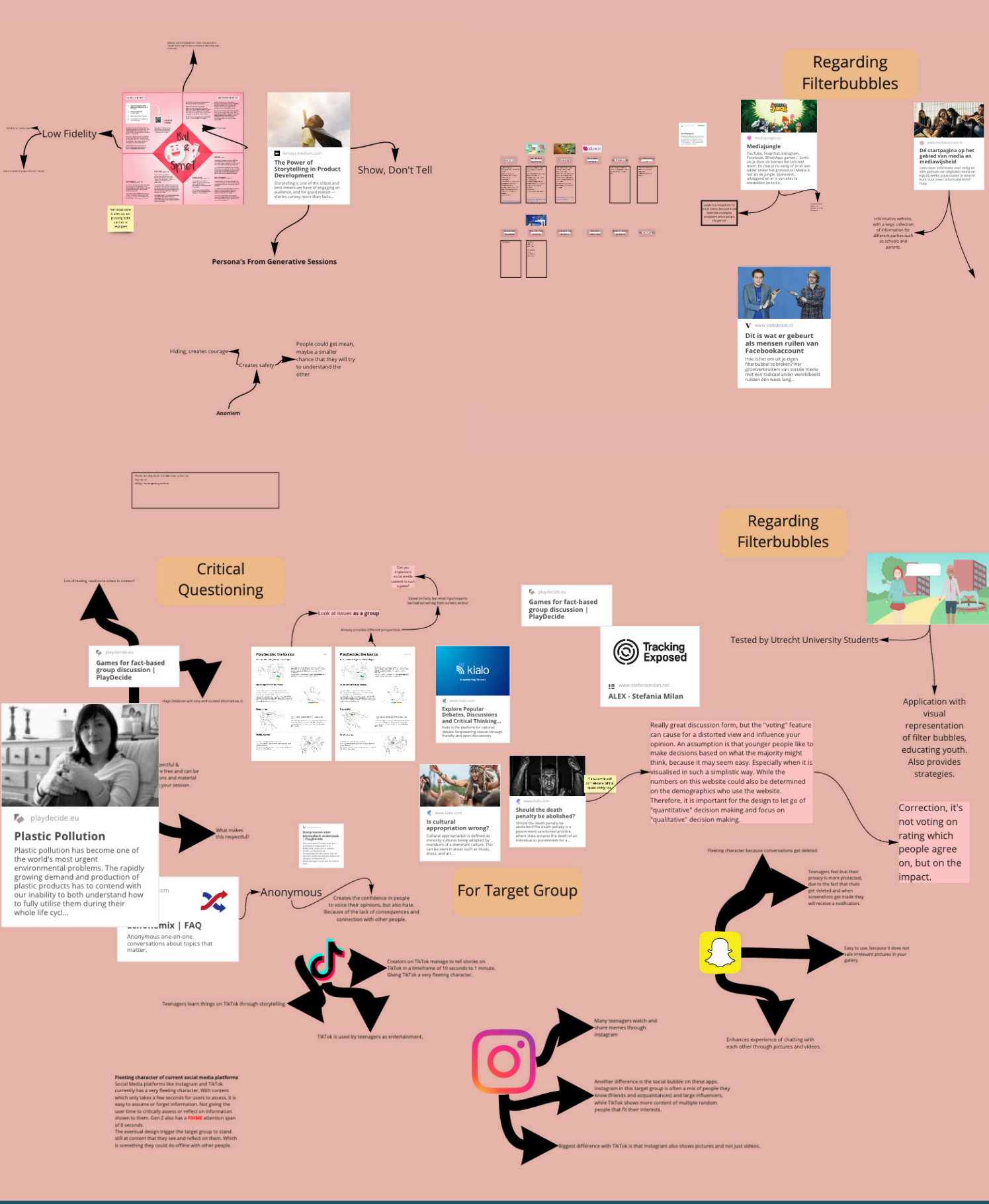
Encourage rather than raise awareness

Utrecht University has created an anti-filterbubble application with its goal to educate children between 12-14 years old about filter bubbles. This app raises awareness about filter bubbles and teaches strategies on how to avoid them. But during a research on the effects of this application, the study shows that these children are already quite aware of “filter bubbles’ , but they rather appreciate these bubbles. Children are aware of the complexity of Social Media and its endless content and know that otherwise it would be hard to navigate through the internet to find the content that they actually want to see. The study also suggests that even though these children are aware of filter bubbles, they might not be as aware of the complications on society that this could create. So rather than raising awareness, the eventual design should encourage children to critically assess their filter bubbles.

Metaphors

When looking into the several existing products, a balance between abstraction and reality should be kept. Many existing products regarding “media literacy” use metaphors such as a jungle, bubbles, and robots. These metaphors are probably used so children could get a better grasp on such a complex world. Making a world that is inside of your phone, more comprehensible. For example MediaJungle, shows how online media can be an adventure but also dangerous. It is up to the player to learn how to find your way in the jungle and to survive.

Figure A1: Overview of Clusters made in Miro





Appendix B point One

Interview Set-up: Contextual Exploration

To gain in depth knowledge about the context of pupils in secondary school and their Social Media usage, three individual interview sessions have been conducted with three secondary school pupils. These individuals are classmates of each other. These pupils were found through my younger sibling. The interview sessions were conducted through Zoom and Miro. On Miro, probes have been created for the interviewees to communicate and share their views on Social Media and what their feeds look like. Due to the age and demographics of these pupils, the interviews were conducted in Dutch and later translated to English in the conclusions.

Research Questions

Social Media use

- RQ1: Which Social Media platforms do teenagers between 13-15 years use? And why?
- RQ2: How often do teenagers between 13-15 use social media in a day?
- RQ3: What do teenagers use their Social Media platforms for?
- RQ4: What kind of Social Media filter bubble are the participants in?
- RQ5: Are the participants aware of their own filter bubble?
- RQ6: If so, how do the participants experience their filter bubble?

Sub-cultures in Class

- RQ7: Are there any sub-cultures in classes of the participants?
- RQ8: If so, what is the communication like between these sub-cultures?
- RQ9: Is there any polarisation in the classes of the participants?
- RQ10: Do the different sub-cultures follow each other on Social Media?
- RQ11: If so, what do they notice about other sub-cultures on Social Media?
- RQ12: What are the roles of teacher regarding the communication between their students?

Media literacy in Class

- RQ13: What do teenagers learn about media literacy in class?
- RQ14: When did teenagers start learning about media literacy?
- RQ15: Do they know about confirmation bias?

Interview Guide/Script

Hallo, ik wil je nogmaals bedanken voor het meedoen aan dit onderzoek. Ik heb geprobeerd om het wat leuker voor je te maken zodat we hopelijk ook een leuk gesprekje kunnen houden en wellicht wat leuke verhalen gedeeld kunnen worden. Ik wil het graag met je hebben over jouw Social Media gebruik en over jouw klasgenoten. Daarbij wil ik je duidelijk maken dat jij in ieder geval niks verkeerd kunt zeggen, je hoeft ook niet alles te beantwoorden en je bent vrij om weg te gaan wanneer jij het wilt. Als je opmerkingen hebt kun je dit ook aangeven. In de tussentijd maak ik ook wat aantekeningen, maar omdat ik natuurlijk graag het gesprek ook met je aan wil gaan zou ik je toch willen vragen of ik het gesprek zou mogen opnemen. Om ervoor te zorgen dat jij zeker bent van jouw privacy, heb ik ook een consent form meegenomen. Je kunt deze rustig doorlezen, tekenen en teruggeven.

Dit interview bestaat dus uit een paar opdrachten en een paar afsluitende vragen op het eind. Wees niet bang om vragen te blijven stellen en hardop te denken. Je kunt de opdrachten vinden op het Miro bord via deze link. Miro is een soort online whiteboard, waar wij met zijn tweeën kunnen werken. *Klik link*

Als het goed is, wordt er nu gevraagd om de inloggegevens die jou van tevoren zijn gestuurd:

Username: xiaomeih@hotmail.com

Password: Ditiseentest123

Als je inlogt, zie je meteen het eerste onderdeel van het onderzoek. Hier kan je jezelf voorstellen door middel van emoji's en kunnen wij meteen kijken hoe Miro werkt. Aan de linker zijde zie je een aantal emojis. Om te beginnen kun je 1 emoji uitkiezen dat jou een beetje beschrijft. Om een emoji uit te kiezen, kun je erop klikken en dan "control+C" en "control+V" drukken. Dan kun je jouw emoji in het cirkeltje zetten.

Zou je kunnen beschrijven, waarom deze emoji bij jou past?

Vervolgens zijn er nog een paar algemene vragen zoals je leeftijd, gender, school, jaarlaag, etc. Deze kun je invullen door jouw emoji weer te kopiëren en te plakken in de balkjes.

Dan zie je een vak met jouw vakken pakket. Zie je de groene post-it? Die kan je ook kopiëren en plakken. Zou jij met de post-it notities willen opschrijven welke vakken jij allemaal hebt?

Helemaal mooi, heb je al een beetje het idee hoe Miro werkt? Als je rechts boven op "X" klikt, dan volg je mij automatisch mee naar het tweede onderdeel.

Hier wil ik je vragen om een top drie aan te geven van Social Media platforms die jij gebruikt.

Hoeveel uur gebruik jij Social Media op een dag?

Als we door gaan naar het volgende blok, zie je drie velden staan. Ik kopieer hier jouw top drie Social Media platforms op.

Zou jij met behulp van de post-its kunnen aangeven, waarvoor jij elk Social Media platform gebruikt?

Welk karakter heeft elk platform voor jou?

Hoe gebruik jij Social Media? Post jij veel? Hoe vaak?



Nu komen we dan op jouw persoonlijke Social Media feed, graag zou ik een beetje een beeld willen vormen van wat jij allemaal op jouw pagina ziet.

Dus om te beginnen, zou jij vijf posts kunnen uitkiezen waarvan jij denkt, dit soort dingen zie ik altijd voorbij komen. En dat dan invullen op Miro?

Dit kunnen posts zijn van elke van de drie top Social Media platforms die jij gebruikt. Je kunt dit doen door de links naar mij door te sturen om het makkelijker te maken.

Zou je met behulp van de post-it kunnen beschrijven wat deze posts zijn? En waarom jij denkt dat jij deze te zien krijgt?

Dan zie links onder een "WILD CARD" staan. Kan jij je nog van de afgelopen tijd een Social Media post herinneren, waarvan jij verbaasd was dat jij dit te zien kreeg?

Wat was het? En waarom was jij verbaasd? Ben je er verder naar gaan kijken?

Aan de rechterkant zie je het "delen" logo, welke Social Media posts deel jij met mensen? Met wie deel jij ze en waarom?

Dan gaan we door naar jouw klas onderdeel. Je ziet de cirkels met jou in het midden. Aan de rechterkant zie je allemaal poppetjes, zou jij je klasgenoten willen aangeven in de cirkel en laten zien wie vrienden met elkaar zijn door groepjes te vormen met deze poppetjes?

En met wie in de klas deel jij Social Media posts?

Je ziet weer rechts de emojis, zou jij elke vriendengroepje een emoji willen aanwijzen. Waarom?

Met wie deel jij Social Media posts?

Kijk jij wel eens samen via 1 scherm op je Social Media feed? En wie kijkt er dan mee? Kan je de oogjes daar plaatsen?

En dan de laatste opdracht voordat wij doorgaan naar de laatste normale interview vragen.

Wat voor een Social Media posts worden met jou gedeeld?

Waarom worden deze met jou gedeeld denk jij?

Kan je ze met post-its beschrijven?

Oke dat waren de opdrachten, dan heb ik nog een paar laatste vragen voor je over "mediawijsheid" Weet je wat dat is?

Krijg jij in de klas lessen over media wijsheid?

Wat voor een lessen krijg jij over mediawijsheid?

Wat heb jij geleerd over mediawijsheid?

Is er iets dat je mist over mediawijsheid?

Wat vond je van dit onderzoek? zijn er nog laatste opmerkingen?

Afsluiten

The script of the interview has been conducted with the use of Miro. Figure B1 shows the template of assignments used during the interviews with the participants.

Results

Research Questions

Social Media use

RQ1: Which Social Media platforms do teenagers between 13-15 years use? And why?

The three main Social Media platforms used are TikTok, SnapChat and Instagram. According to the participants themselves it is because these apps are "easy" to use.

Easy to use means:

Does not automatically save unimportant photos to your gallery, thus saving memory.

Sharing videos and pictures while conversing, increases the engagement with the other.

All their friends use these platforms.

RQ2: How often do teenagers between 13-15 use Social Media in a day?

Between 6 and 9 hours a day.

RQ3: What do teenagers use their Social Media platforms for?

Watch stories from other people (Living through them) ->

Entertainment

Find inspiration -> Helps them create

Share memes with each other -> Creates stronger bonds between each other

RQ4: What kind of Social Media filter bubble are the participants in?

Body positivity, pranks, hip hop news for youth, sneakers, nails, animal memes.

RQ5: Are the participants aware of their own filter bubble?

It does not seem like these participants are aware of a "filter bubble" in the sense that it could be problematic. The participants experience the "filter bubble" as a personalised feed that shows them what they like. As a mirror to their personalities. As one participant says: "My friend has a lot of Harry Styles memes, because she likes him". So they are aware of the differences, but not the complications.

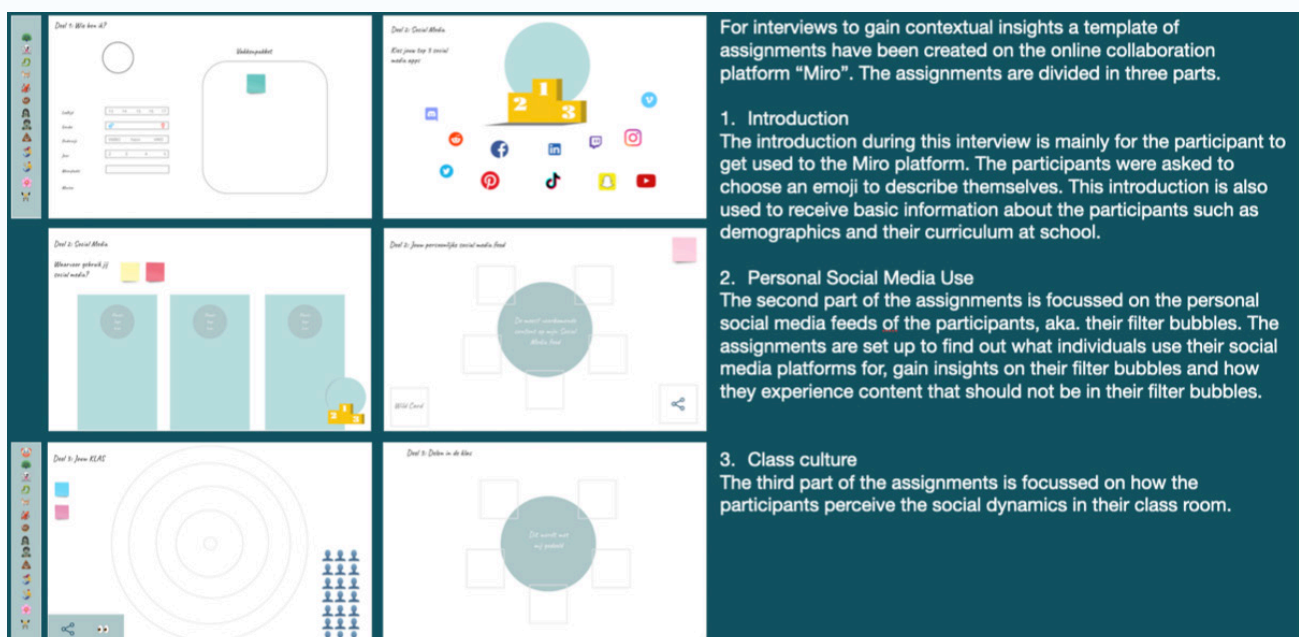
RQ6: If so, how do the participants experience their filter bubble?
See RQ5

Subcultures in Class

RQ7: Are there any subcultures in classes of the participants?

According to the participants themselves the subcultures are quite subtle if there even are any. One person mentions that there is one group who you would not want to get in a fight with and then some are nerdy who are only focused on their grades. One person is really into fitness and one person has a reputation of being the SnapChat queen. Meaning she meets a lot of people on SnapChat. But all participants mention that their class are all friends with each other.

Figure B1: Set-up of the Contextual interview in Miro



For interviews to gain contextual insights a template of assignments has been created on the online collaboration platform "Miro". The assignments are divided in three parts.

- 1. Introduction**
The introduction during this interview is mainly for the participant to get used to the Miro platform. The participants were asked to choose an emoji to describe themselves. This introduction is also used to receive basic information about the participants such as demographics and their curriculum at school.
- 2. Personal Social Media Use**
The second part of the assignments is focussed on the personal social media feeds of the participants, aka. their filter bubbles. The assignments are set up to find out what individuals use their social media platforms for, gain insights on their filter bubbles and how they experience content that should not be in their filter bubbles.
- 3. Class culture**
The third part of the assignments is focussed on how the participants perceive the social dynamics in their class room.



RQ8: If so, what is the communication like between these subcultures?

According to the participants the whole class is always really close with each other and everyone respects each other. There are different friend groups, but one person says that she switched between groups too. Sometimes when you get in a fight with one group, you'll just join another group for a while. Their behaviour seems very fleety when it comes to friend groups. It seems like the overall culture in class is stronger than the smaller subcultures in class, so groups change over time.

RQ9: Is there any polarisation in the classes of the participants?

No, it seems like everyone gets along with each other in class. But it could be that this study did not highlight this question enough for it to be reliable. It could also be that these participants rather not get into it or that this interview has not inspired them to get too deep into this subject.

RQ10: Do the different sub-cultures follow each other on Social Media?

In class everyone follows each other on Social Media, but class culture does not mean that they are aware of each others' online culture. For example, one boy mentions that he only recently found out that his girlfriend also likes memes about zodiac signs online. This only by sharing the content that they were exposed to. There is a clear difference between consuming content and spreading content. When all pupils in one class follow each other, it does not mean that they are exposed to the same content online.

RQ11: If so, what do they notice about other subcultures on Social Media?

They only notice different online subcultures once they look at each others' personal feeds. Meaning they'll have to look in each others' phones to find out what kind of content the other person is consuming.

RQ12: What are the roles of teachers regarding the communication between their students?

Teachers' barely have a role.

Media literacy in Class

RQ13: What do teenagers learn about media literacy in class?

The current teenagers have only had two workshops in class about spreading nudity online. These workshops were only realised after incidents happened at their school. This means that their school has a rather reactive character rather than a preventative character.

RQ14: When did teenagers start learning about media literacy?

They have necessarily learned much about the term media literacy themselves. But do have some understanding of what media literacy can be, since the dangers of Social Media is a widely discussed problem. The participants believe that they learn enough about media literacy online, but are unaware of the dangers of their filter bubbles.

RQ15: Do they know about confirmation bias?

No.

Main insights

The three main used Social Media platforms are TikTok, Snapchat and Instagram.

It is easy to block out content you do not want to see.

Teenagers are unaware of the complications of filter bubbles.

Teenagers see each others' online subcultures once they look at each others' phones.

There is a clear difference between posting and consuming.

Media literacy is not taught in class.

Teenagers have the false sense that they know enough about media literacy, due to the content that they see on Social Media.

Teenagers learn through storytelling on Social Media.

Subcultures are disappearing in school classes and now these are very subtle differences between friend groups.

There is fleety behaviour in friend groups in class.



Appendix B point Two

Contextual Information Interview Assignments filled in

Figure B2: Results of Miro assignments in contextual Interview part 1

Participant #1

The figure displays six screenshots of Miro assignments for Participant #1, organized into a 3x2 grid. Each screenshot shows a different part of the assignment with various diagrams and notes.

- Top Left:** Titled "Deel 1: Wie ben ik?". It features a central diagram labeled "Hakenpakket" with several boxes containing text like "ergo", "d&sp", "LO", and "dus". To the left, there are input fields for "Eenheid", "Duid", "Duiding", "Jahr", "Maand", and "dus docen".
- Top Right:** Titled "Deel 2: Social Media". It shows a central graphic of three yellow blocks numbered 1, 2, and 3, surrounded by various social media icons like Instagram, Snapchat, TikTok, Facebook, and YouTube.
- Middle Left:** Titled "Deel 2: Social Media". It asks "Waarvoor gebruik jij social media?". Below the question are three columns representing different platforms: Instagram, Snapchat, and TikTok, each with associated icons and notes.
- Middle Right:** Titled "Deel 2: Jouw persoonlijke social media feed". It shows a collage of social media posts, including photos of a dog and a person, with various notes and annotations.
- Bottom Left:** Titled "Deel 3: Jouw KLAS". It features a large circular diagram with concentric circles and several icons representing people and interactions, with a central note "Dit wordt met mij gedaan".
- Bottom Right:** Titled "Deel 3: Delen in de klas". It shows a collage of social media posts and images, with a central note "Dit wordt met mij gedaan".

Figure B3: Results of Miro assignments in contextual Interview part 2





Figure B4: Information about the participants

	Participant 1	Participant 2	Participant 3
Age	15	16	16
Gender	Girl	Girl	Boy
City	Maastricht	Maastricht	Maastricht
Education level	VMBO	VMBO	VMBO
Year	4	4	4

Figure B4: Results of Miro assignments in contextual Interview part 3

Participant #3

The figure displays six screenshots of Miro assignments for Participant #3, organized into three rows and two columns:

- Top Left (Deel 1: Wie ben ik?):** A form with fields for 'Leeftijd' (15), 'Geslacht' (Girl), 'Opleiding' (VMBO), 'Jaar' (4), and 'Woonplaats' (Maastricht). A central diagram titled 'Vakkenpakket' contains boxes for 'economie', 'biologie', and 'maatschappijkunde'.
- Top Right (Deel 2: Social Media):** A central graphic with the number '3' surrounded by social media icons (TikTok, Instagram, YouTube, etc.). Text below reads 'Kies jouw top 3 social media apps'.
- Middle Left (Deel 2: Social Media):** A diagram titled 'Waarvoor gebruik jij social media?' with three columns for WhatsApp, TikTok, and Instagram, each with a brief description of usage.
- Middle Right (Deel 2: Jouw persoonlijke social media feed):** A collage of social media posts and images. A central text bubble says 'De meest herkenbare content op mijn Social Media feed'.
- Bottom Left (Deel 3: Jouw KLAS):** A diagram showing a central group of people icons surrounded by concentric circles, representing a classroom or social network.
- Bottom Right (Deel 3: Delen in d...):** A collage of images and text. A central text bubble says 'Dit wordt met mij gedeeld'.

Conclusions

There are two types of Social Media platforms. One to consume content from friends and strangers and one to mainly use to keep in touch with close friends. Snapchat is mainly used for friends to keep in touch with each other, while the social circle grows with Instagram and TikTok. Instagram are mainly pictures, while TikTok are only videos that range between 15 - 60s. Figure B5 shows how the usage of the three most used Social Media platforms are used by teenagers.

The main activities on Social Media are, looking for inspirational memes, entertainment and communication.

Awareness of Filter Bubble

During the conversations with the participants it has been discovered that teenagers are aware of filter bubbles, but unaware of the possible complications of them. Because teenagers grew up with Social Media, they are tech savvy and know their way around Social Media. More so than adults, giving these teenagers the false sense that they are "media literate". Some have mentioned that they learn through stories they see on Social Media and therefore do not need to learn it at school. But they are unaware of the fact that what they learn through Social Media are from their own filtered bubble and may not align with reality or other people's moral values. It is important to keep in mind that being savvy and knowing your way around Social Media, means that teenagers are media literate.

Another insight is how easy it is for teenagers to delete some type of content from their "recommended" pages. One participant has actively pressed on the option "Not Interested" on TikTok when they saw a video that has offended their moral values. Which is a three step process as shown in Figure B6.

Culture in Class

Interesting to see is that it seems like clear subcultures are disappearing in class. Cultures in class now are often aligned with some cultures online. For example "fitness" culture and "foodie" culture. Then there are still some dynamics that relate to the classroom such as the "nerds" who are mainly focussed on grades, the class clown. Another interesting dynamic is that people switch friend groups really easily. The participants said that everyone is friends with each other and friend groups tend to change over time pretty fast.

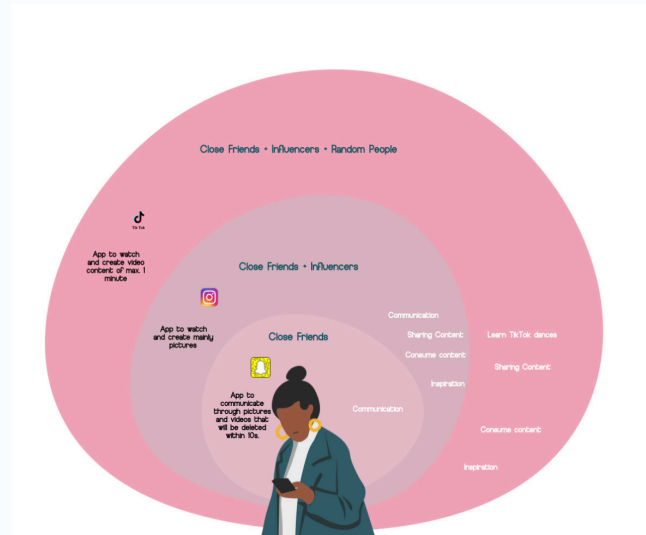


Figure B5: Teenagers' Social Media use in context.

Figure B6: Steps to Delete certain content from your "For you" page.

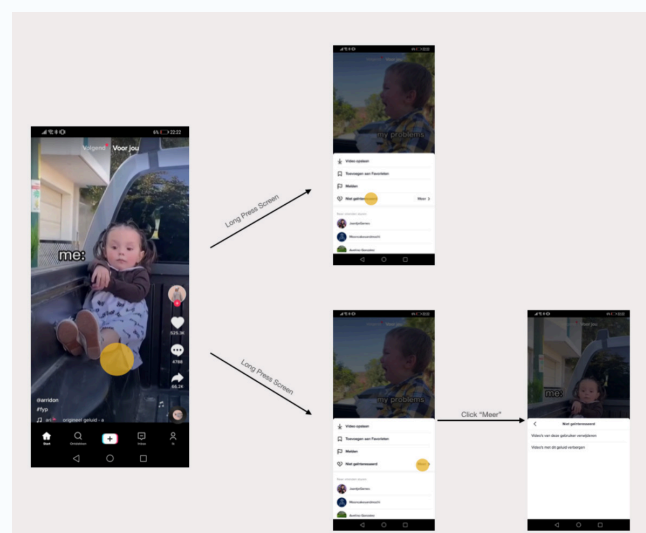
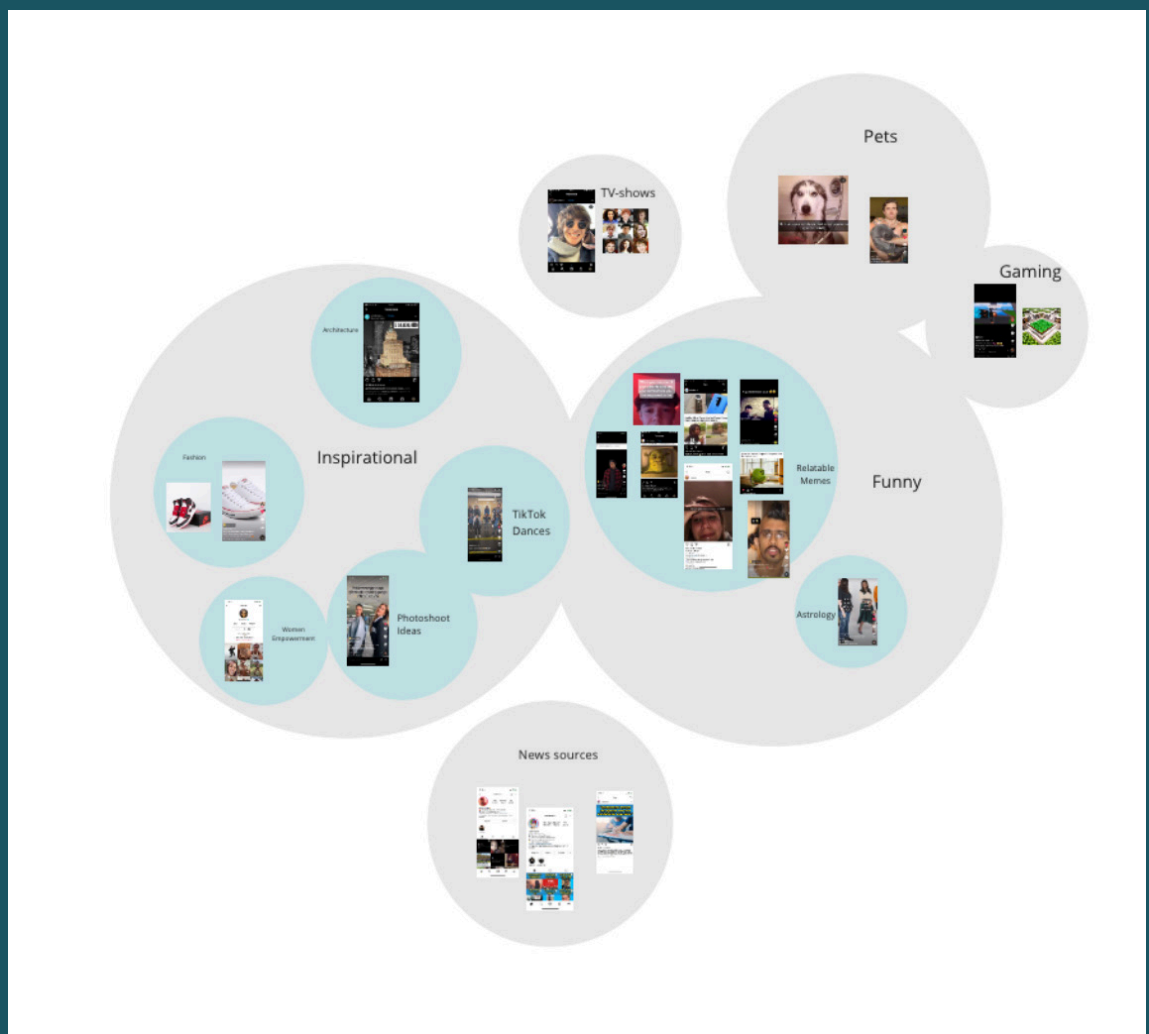




Figure B7: Online Subcultures by participants

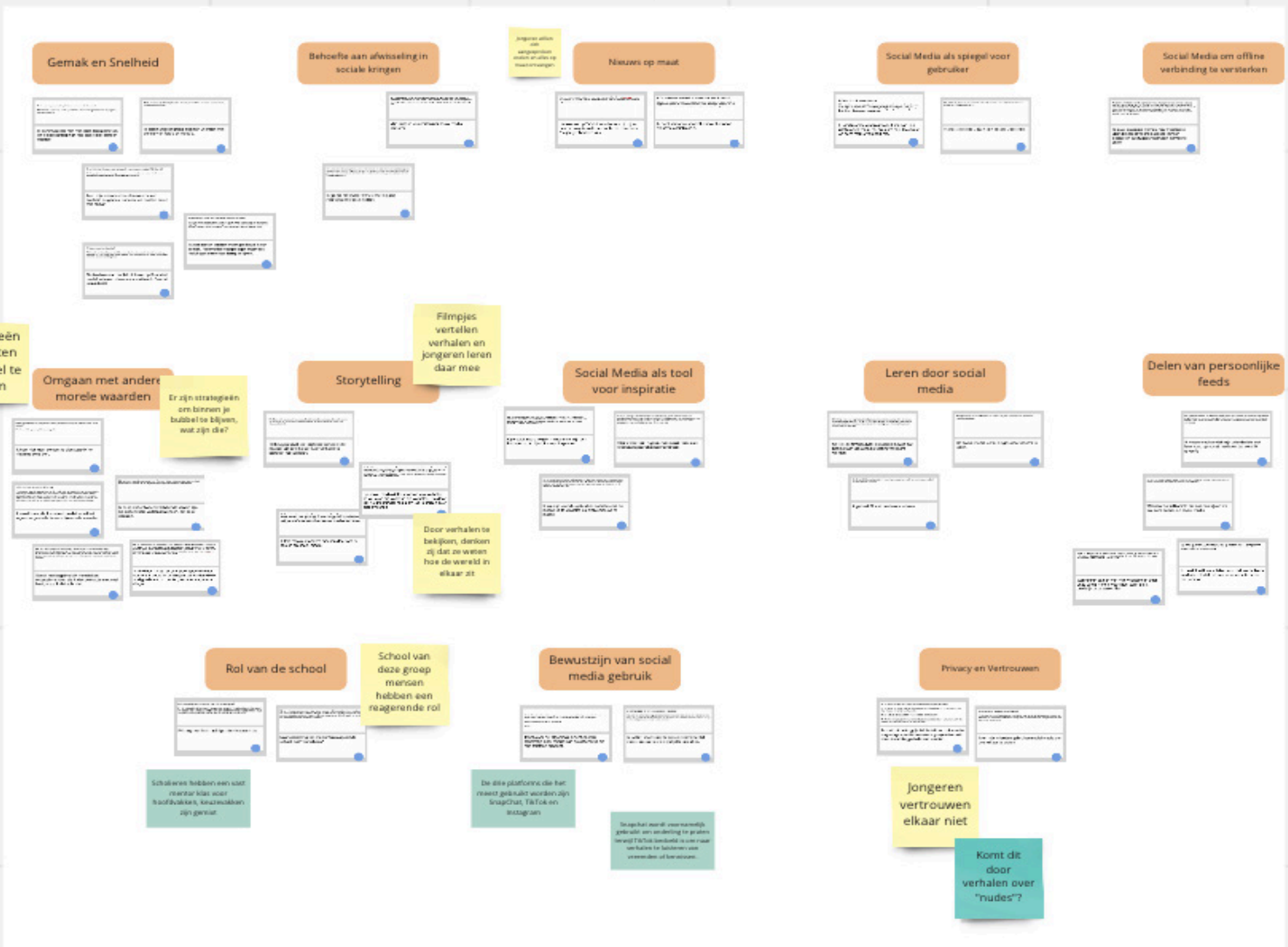


Appendix B point Three

Contextual Information Statement Cards Clusters Session

Figure B8: Overview of Clusters made with statement cards based on the Contextual Interviews

Week #3: Statement cards Interviews "Contextual Information"





Cluster Explanation

Gemak en Snelheid

Teenagers, being the generation that grew up alongside Social Media, are tech savvy. This means that they appreciate ease of use with the maximum experience. For example, wanting to share videos and photos to increase the engagement of a conversation, but also not wanting these to take up memory in your phone gallery. They are used to apps doing the work for them.

Behoeftte aan Afwisseling in Sociale Kringen

Teenagers of this generation switch social circles often. This also connects to fleety behaviour of this generation.

Nieuws op Maat

Teenagers are used to everything online being curated to their interests. This also means that they do receive their news through Social Media pages that suit their interests more. One participant says she follows an instagram account who shares news from the point of view of hip hop culture. She says this suits her more and general news sources like "nos" are more for Dutch adults.

Social Media als spiegel voor de gebruiker

Teenagers are aware of the recommended content that they receive. On TikTok the main page is of course called the "For You" page for a reason. Often they receive memes, videos that relate to the way that they think. One person liked a meme that describes the stress you get once you realise you are the only one in control of your future. Apparently this is also something that the participant is worrying about in their own life.

Delen van Persoonlijke Feeds

Teenagers only share their personal feed on their phones with the people that they are closest to. Then they'll see subtle differences on their phones which represent their interests. For example, one participant told me he watched TikTok on one screen with his friend in class and she always has Harry Styles videos because she is a fan. While he mainly had Minecraft videos. He also tells me he does the same thing with another friend, but he would not know what she watched because they mainly do it on his phone.

Social Media om Offline verbindingen te Versterken

Content on Social Media often is used to make offline bonds stronger. Once teenagers find out they have something in common, they use the content to create inside jokes. Online memes that relate to their lives, mindset, hobbies etcetera get shared between friends.

Rol van de School

The school does not cover media literacy in their standard curriculum. When asked about media literacy, the participants had some idea of what it was but all just related it to sharing nudes and safety online. Nothing about global citizenship. They also said that

Leren door Social Media

Teenagers use Social Media to learn anything. They can differ from recipes, dances, make-up, moral values, to interior design. They mention they learn about other peoples' lives through stories on TikTok. One also mentions that there is no need for "media literacy" as a course in class, because they can learn it through stories online. (But, with filter bubbles these stories can be biased)

Social Media as tool for Inspiration

Not only do teenagers learn through Social Media, but they also use Social Media as a tool for inspiration. Whether it's for their fashion style, room decorations, friendship bracelets. Social Media is the place to be for them. This could also be part of the causes for traditional subcultures to disappear. Nowadays, it has been suggested that clear subcultures like emo's, punk, hipsters are disappearing and teenagers are taking parts of different cultures that are trending.

Storytelling

Teenagers learn most through storytelling, especially when they are short.

Omgaan met andere morele waarden

The tolerance for other moral values is quite low, Social Media made it so easy to block out unwanted content. One participant said she just presses "Not interested" to avoid point of views they do not agree with. They understand that there are differences in moral values and more perspectives, but they would not want to understand them nor want to be exposed to them.

Bewustzijn van Social Media Gebruik

Clear tools like "screen time" make their own behaviour clear to them. Teenagers know their screen time.

Privacy en Vertrouwen

Teenagers have some trust issues when it comes to Social Media. Privacy is one of the main reasons why teenagers use SnapChat for example. This is also the main subject that teenagers are thought when it comes to "media literacy".

Conclusions/Insights

Teenagers need to be made aware of the consequences of filter bubbles

The solution needs to be implemented throughout a longer period of time in small bites

A sense of safety needs to be created, because teenagers care a lot about their privacy

Tools need to be straight to the point for teenagers to apply them

Teenagers learn through storytelling

Behaviour of teenagers is very fleeting



Appendix C point One

Generative session Set-Up (+Iteration)

Objectives

What could improve tolerance in teenagers regarding different moral values?

Research Questions

What do teenagers do, when they come across something they do not tolerate?

What could trigger teenagers to become more tolerant?

What do teenagers say when they do not agree with someone?

How does that express itself on Social Media?

Are there any techniques teenagers use to tolerate others?

- How did they learn them and do they work?
- Do they feel a need to become more tolerant?
- How do teenagers perceive tolerance? What does this mean to them?

Interview Questions and Script

Hoi iedereen, welkom! Ten eerste wil ik jullie heel graag bedanken voor het meedoen aan deze creatieve sessie, ik hoop dat jullie het uiteindelijk leuk gaan vinden en zelf ook interessante dingen leert. Ik zal mezelf ook even voorstellen, voor de mensen die mij nog niet kennen. Mijn naam is Xiao-Mei Huang, ik ben 25 jaar oud, ik kom uit Maastricht en woon nu in Rotterdam. Mijn hobbies zijn longboorden, foto's maken, schilderen etc. Ik studeer aan de TUDelft en nu ben ik aan het afstuderen waar jullie onderdeel van zijn nu haha. Dit project gaat over jongeren van jullie leeftijd en over hoe jullie de wereld zien door Social Media. Dit specifieke onderzoek wil ik graag uitzoeken hoe jullie tolerantie zien, hoe jullie ermee omgaan en hoe jullie je eigen tolerantie verhogen. Ik wil jullie ook vragen om de consent form te tekenen. Hierin staat vermeld dat jullie gegevens veilig blijven en ik jullie identiteit niet publiceer en puur gebruik voor dit onderzoek samen met mijn

ok wil ik vragen of ik deze sessie mag opnemen.

Voordat ik jullie je aan elkaar laat voorstellen, wil ik eerst een klein spelletje met jullie doen om erin te komen. Om jullie hersenen even wakker te maken.

Leg spel uit

Timer 1 min

Part 2

Oke, nu jullie een beetje wakker geschud zijn, kunnen we met de eerste "opdracht beginnen" Hier zien jullie cirkels, met random plaatjes omheen. Graag wil ik van jullie vragen om jullie zelf te beschrijven in de bubbel zodat jullie je aan elkaar kunt introduceren. Hier krijgen jullie 3 minuten voor

Part 3: bespreek sensitising

Oke de afgelopen dagen hebben jullie via instagram een paar filmpjes gezien via instagram, wilt iemand van jullie misschien iets zeggen erover? Was er een filmpje dat er op viel voor jullie?

Wilt iemand van jullie ook delen wat jullie gezegd hebben toen?

Part 4: Past

Voor jullie zien jullie voor elk een set met foto's. Ze zijn random, maar ik wil graag dat jullie er iets leuks van maken. De vraag is: of jullie iets in het verleden kunnen bedenken waar jullie moesten dealen met tolerantie. Misschien iets waarbij jullie zelf moesten leren om toleranter te moeten zijn tegenover

anderen. Hebben geleerd om in andersmans schoenen te staan. Of juist andersom, wanneer iemand zich wat toleranter tegenover jou heeft kunnen gedragen. Is er iets in het verleden, dat jullie kunnen bedenken?

Zouden jullie een collage kunnen maken, dat dat verhaal representeert. Jullie kunnen zo creatief en vrij mogelijk met de afbeeldingen spelen.

Bespreken

Part 5: Future

End

ITERATION

Part 4: Past

Voor jullie zien jullie voor elk een set met foto's. Ze zijn random, maar ik wil graag dat jullie er iets leuks van maken. De vraag is: of jullie iets in het verleden kunnen bedenken waar jullie moesten dealen met tolerantie. Misschien iets waarbij jullie zelf moesten leren om toleranter te moeten zijn tegenover anderen. Hebben geleerd om in andermans schoenen te staan. Of juist andersom, wanneer iemand zich wat toleranter tegenover jou heeft kunnen gedragen. Is er iets in het verleden, dat jullie kunnen bedenken?

Zouden jullie een collage kunnen maken, dat dat verhaal representeert. Jullie kunnen zo creatief en vrij mogelijk met de afbeeldingen spelen.

Beschrijf voornamelijk wat jullie hebben gedaan in zo een situatie

Bespreken

Part 5: Future

Stel jij kan een perfecte manier uitvinden om tolerantie te verhogen bij mensen. Hoe zou jij dit aanpakken in de toekomst.

End

Appendix C point Two

Generative Session Assignments (Filled in) Pilot

This appendix shows screenshots of the Miro board of the generative pilot session filled in by the participants in Figure C2.

Figure C1 shows information of the participants who joined the session.

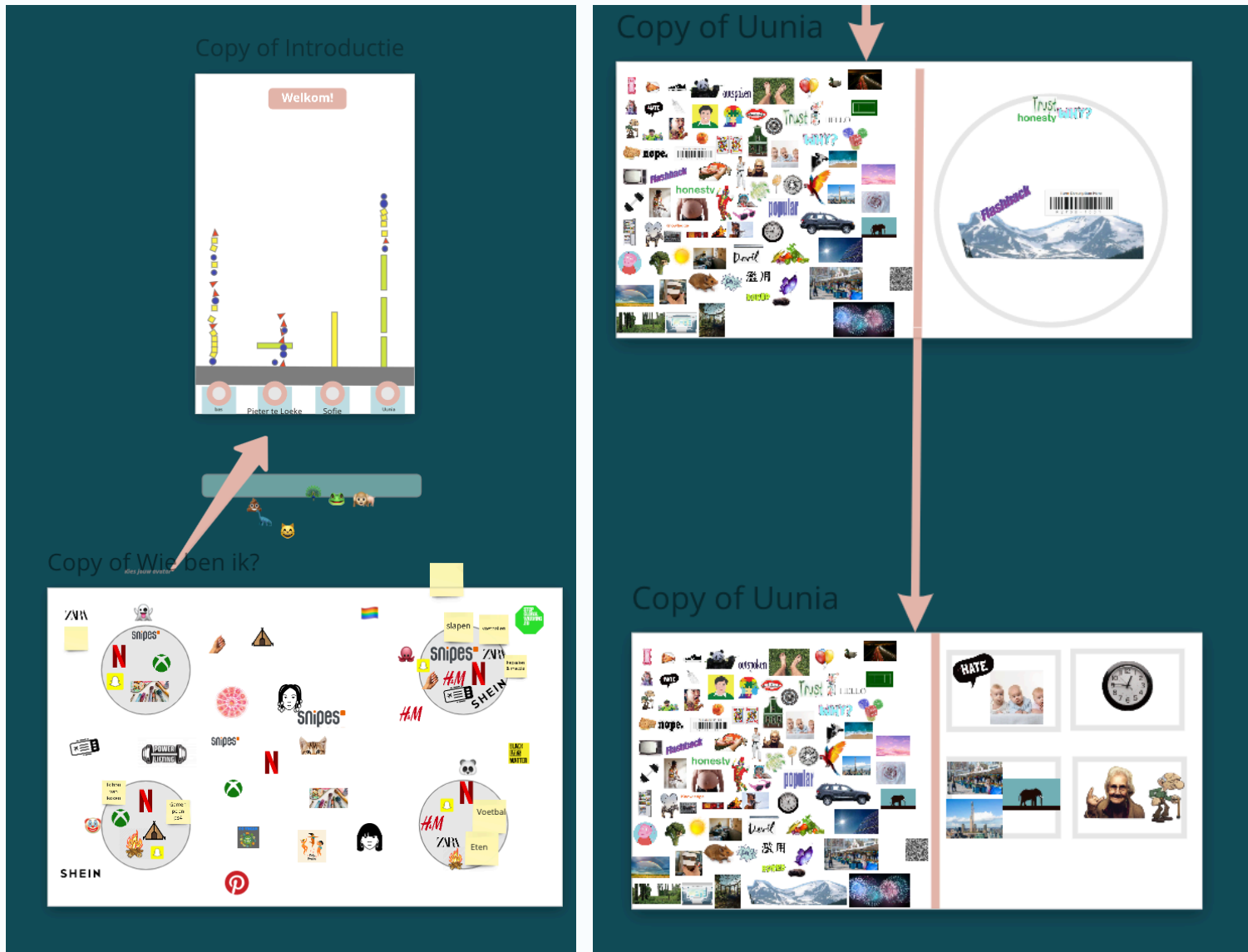
Figure C3: Screenshot of Pilot Group



Figure C1: Information of participants in Generative Session Pilot

	Participant 1	Participant 2	Participant 3	Participant 4
Age	17	14	13	16
Gender	Boy	Boy	Girl	Girl
City	Maastricht	Hilversum	Hilversum	Maastricht
Education level	havo	VMBO	VMBO	VMBO
Year	5	3	2	4 <input type="checkbox"/>

Figure C2: Generative Session results Pilot Group

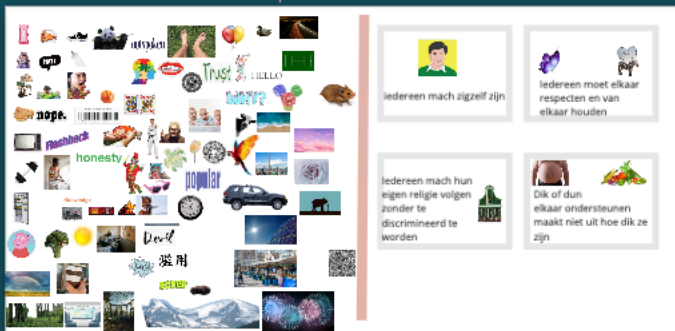




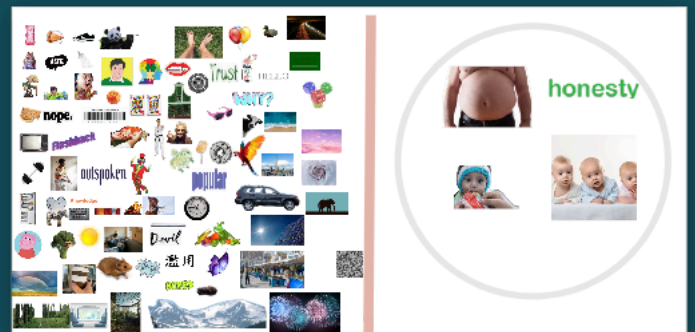
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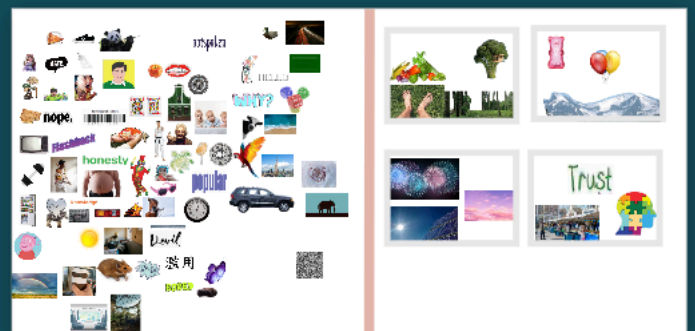
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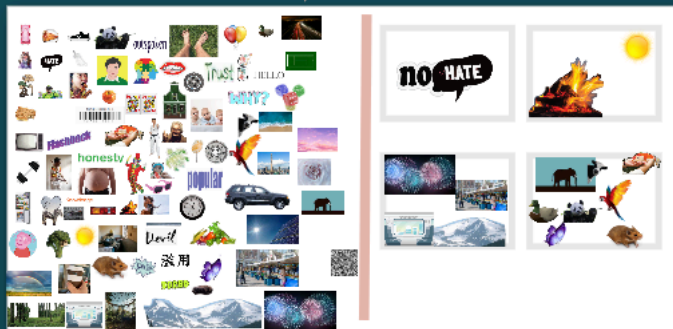
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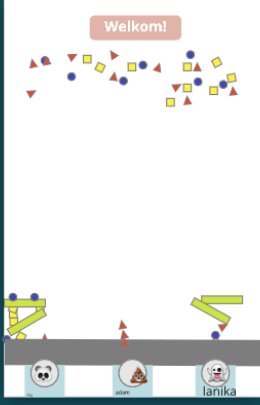
Appendix C point Three

Generative Session Assignments (Filled in) Real

This appendix shows screenshots of the Miro board generative session filled in by the participants in Figure C3

	Participant 1	Participant 2	Participant
Age	16	16	16
Gender	Girl	Boy	Girl
City	Maastricht	Maastricht	Maastricht
Education level	VMBO	VMBO	VMBO
Year	4	4	4

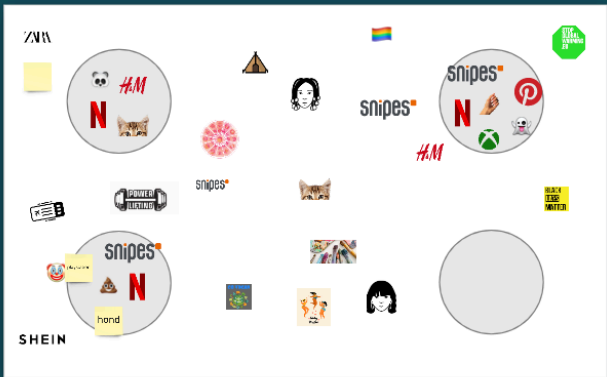
Copy of Introductie



Welkom!

alan lanika

Copy of Wie ben ik?



Frame 9

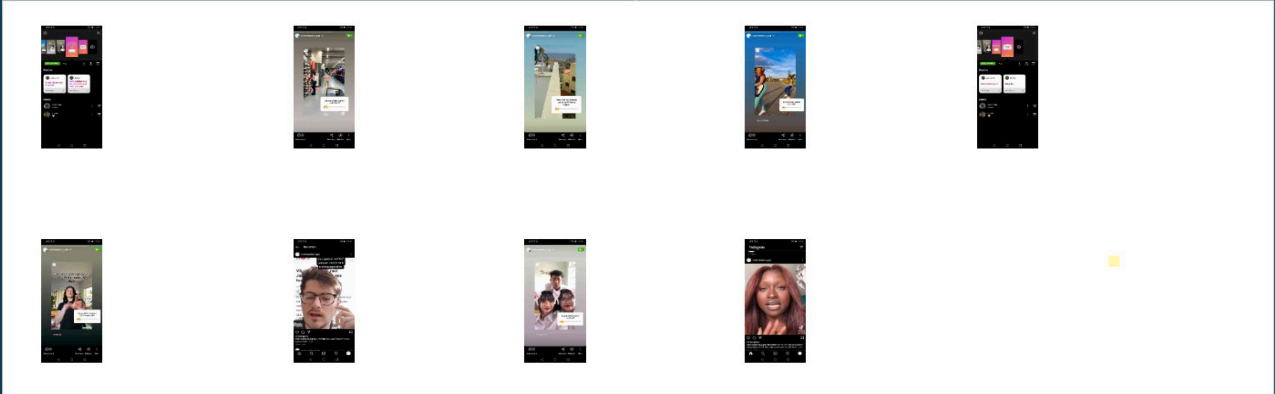
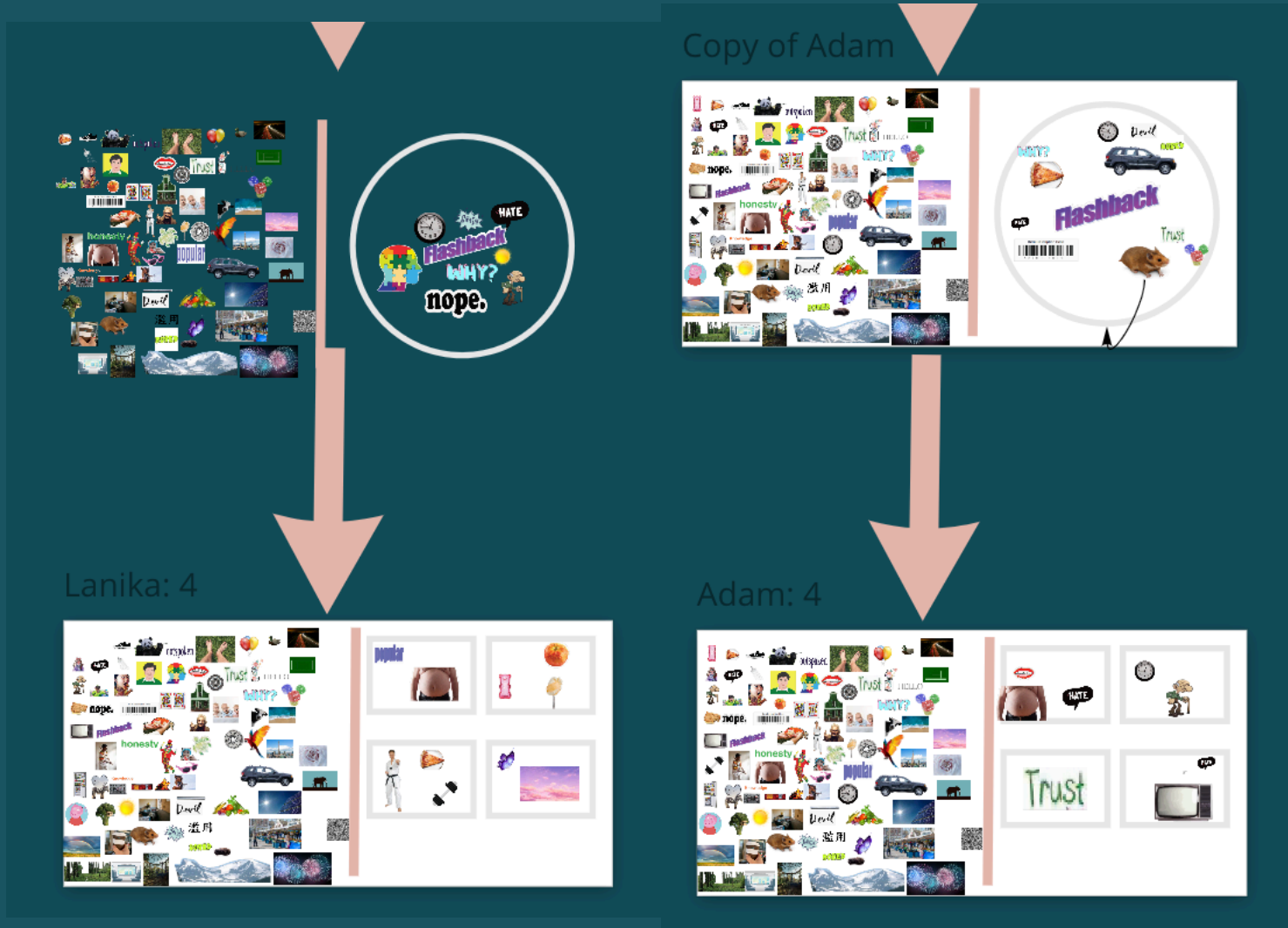
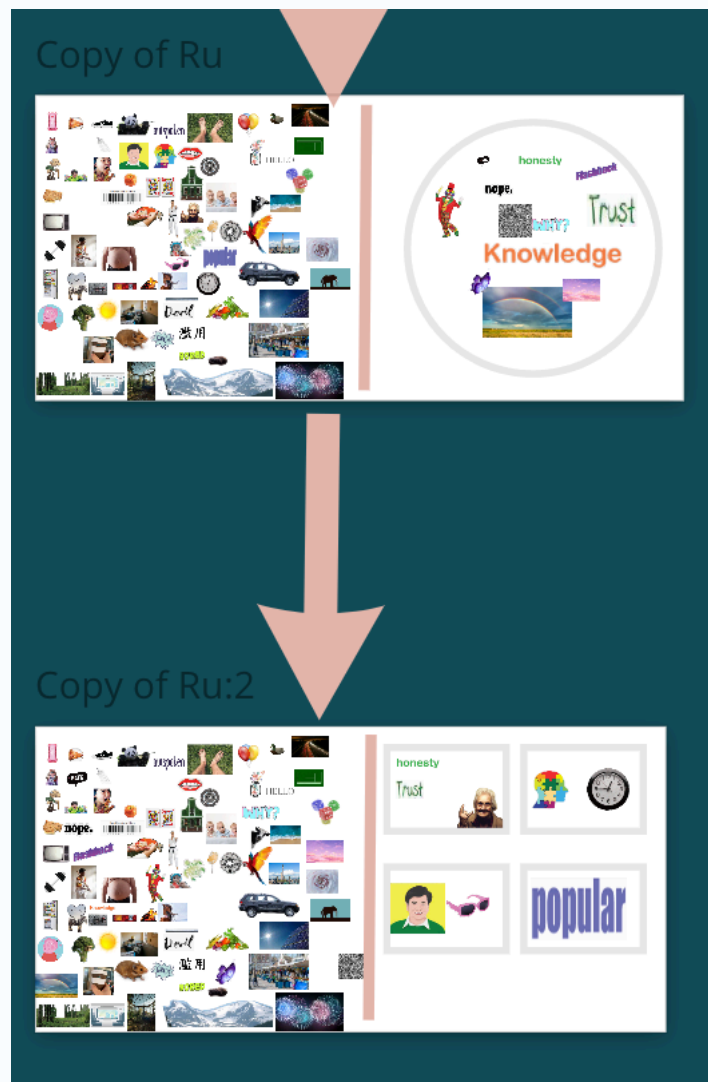




Figure C3: Generative Session results Second Group





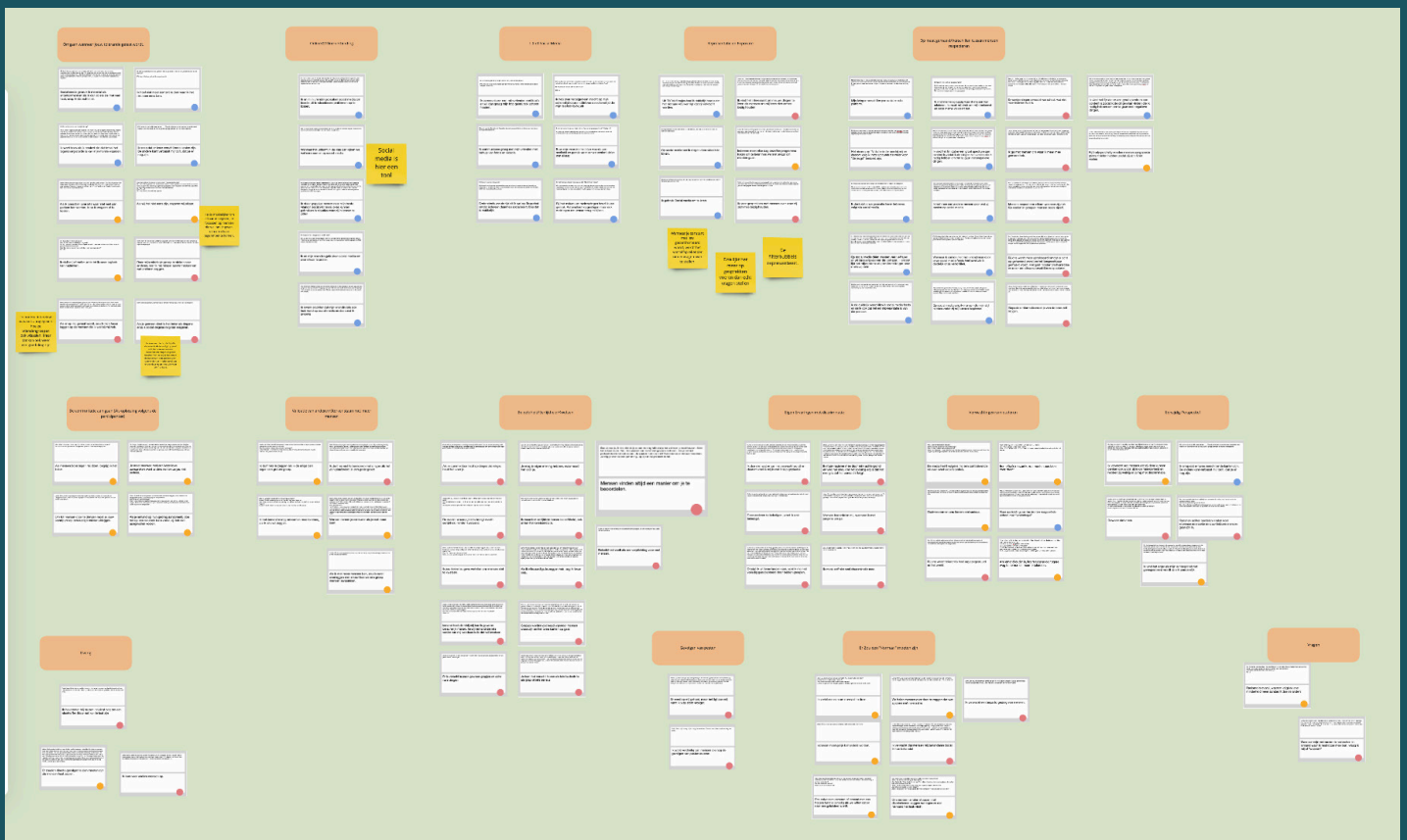


Appendix C point Four

Clusters of Generative Sessions and Contextual Information Interviews

The generative session has been analysed through statement cards and clustering. To gain holistic insights, the statement cards of the generative sessions have been combined with the statement cards of the contextual interviews. Figure C4 shows an overview of the clusters made through Miro

Figure C4: Generative Session Clusters based on Statement cards from Contextual Interview sessions and the Generative sessions



Techniques which teenagers use when their tolerance has been tested

Teenagers have the understanding that people have different opinions and also feel like they have the right to their opinions. But, when they do not have the same opinion, they will not understand. Several times the participants mentioned that they wonder "Why?" but do not bother to make further action to find that out. When on Social Media, where the people on the other side of the screen are hard to grasp, it therefore is easy for the target group to dismiss what they see and block their content. Whenever they are facing "tolerance pushing" in a situation where you can not block someone or something, their two main techniques used are confronting someone with their behaviour or to walk away, cool down and pretend it didn't happen.

Confronting someone has been mentioned, in sensitising and during the generative session, as the best solution when someones behaviour is not tolerated. Someone also mentioned that when people are being mean, it would be worse if it is behind someones back. Not giving someone the chance to react. An example would be that when during soccer, a friend who was fasting for the Ramadan went home early, teammates were complaining that she should have just eaten. One of the participants overheard it and confronted those people, sticking up for the person who was not there. This displays the importance of open communication and honesty for the target group.

Digital VS Physical connection

Social Media often is used by the participants to strengthen their bond with their friends. In example using online memes to create inside jokes together.

User Experience of the three most used Social Media platforms

The three most used Social Media platforms by the target groups are TikTok, Snapchat and Instagram.

Representation and Exposure

One participant mentioned that she learned more about why her soccer teammate is fasting for the Ramadan. She feels like due to that conversation, she understood the reasoning more. That is why she stood up for her friend when other people were judging her friend for not eating. When I asked the participant what

made her ask her friend about the Ramadan, she just said that it came up in conversation. When more people around her are doing something, you naturally get interested in what keeps them busy. The effect of exposure to some new things, broadens your "normal", your "bubble". During the generative sessions, I have noticed that the participants do not necessarily ask questions to others. Which is why exposure can be a very important factor in order to pop your bubble.

Social Media is something the target group exposes themselves to every day for around 6 hours.

Better together

While the number one solution, according to the participants of the generative sessions, is to confront people who's behaviour you do not tolerate, one of the most important needs is to have someone by your side. Especially in situations

Politeness VS Honesty

While some people appreciate honesty to the core, the other feel like you should also be polite.

Personal Experiences with Discrimination

Expectations towards adults

Teenagers are very aware of the fact that they are teenagers. They know that age matters, which means that often they feel like they do not have the "power" to make a change. They feel that when you are older, you should be the one who takes the high road or take responsibility. They also feel like people to not necessarily take them seriously, which could be why they do not ask that many questions.

One sided perspective

Consequences of bullying

The notion that there is a "normal"

Critical Questions



Appendix D point One

Brainstorm How To sessions; Clustering and Ideas

To kick-start the ideation phase, brainstorm sessions have been conducted with fellow IDE master students through Zoom. This method has been chosen, to get a fresh view on the problem and to gain fresh ideas from others. The first ideation session was conducted with two fellow students through How-Tos. How-Tos have been created with the journey map as a framework. I have decided to keep the how-to's as basic as possible, to step away from the design brief, in order to gain new perspectives on the matter and gain a broad collection of ideas. But during this session, I found that this may have caused too obvious and straight forward ideas instead of insightful ideas.

Therefore, the ideation session has been iterated on for the second session where the design brief is more connected to the how-to's.

Session 1

Participants: Two designers

Duration: 1 hour

Platform: Zoom

Method: How-To

In Figure D1 you'll see the filled in How-Tos of the first session. First the participants are introduced to the scope, problem and the design goal. Afterwards, the journey map is explained to the participants so they can get a sense of the framework that will be worked with. To get them to engage with the Journey Map, first they are asked to create their own How-Tos. Then they are asked to fill in the How-Tos created by me, and at last fill in the How-Tos they have created by themselves.

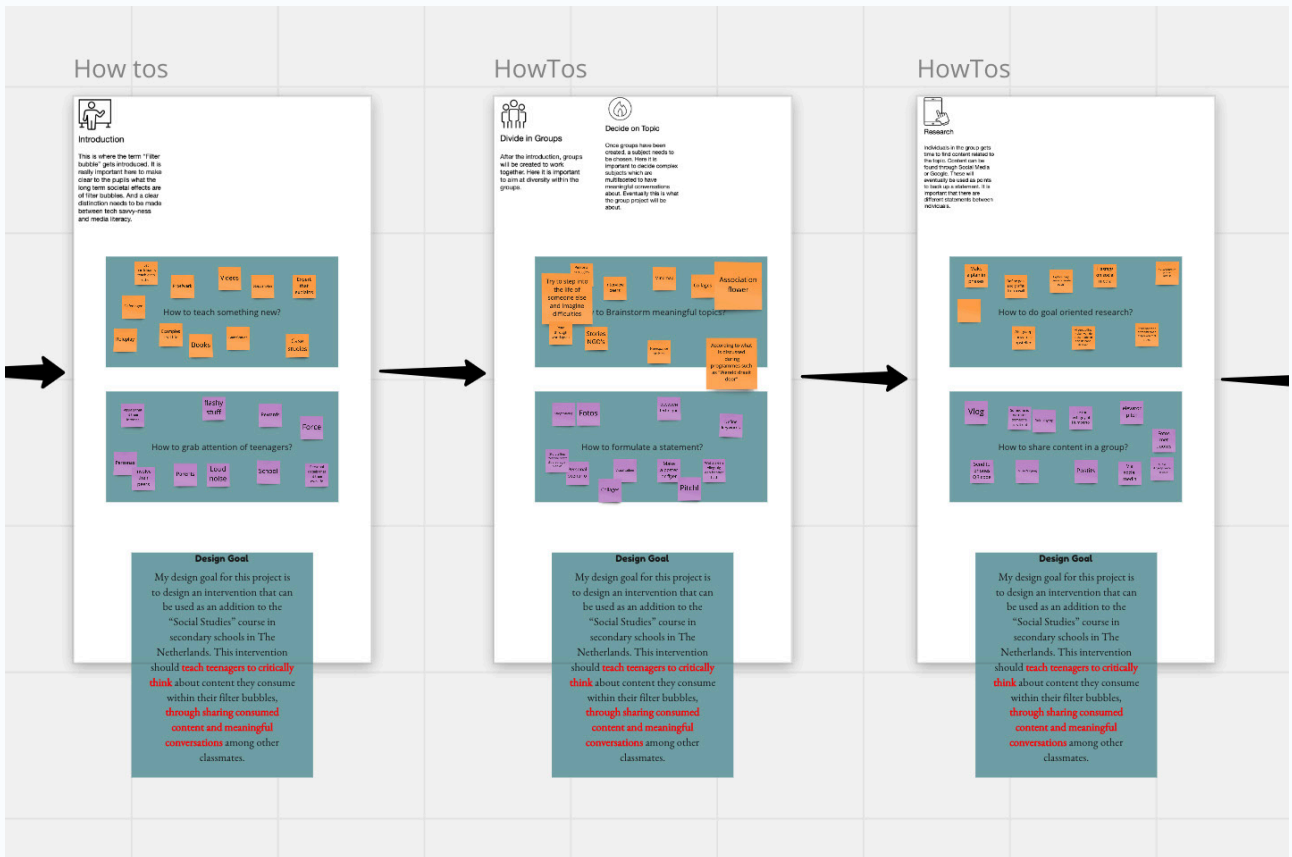
Feedback from first session

- Was a bit too much How-tos
- The How Tos seem general and the results might not be very valuable

Explain better that you are focussing on "critical thinking" and why critical thinking is important to get outside of your filter bubble.

Figure D1: Zoom Brainstorming session set-up and results





Session 2:

Participants: Two designers

Duration: 1 hour

Method: How-Tos

What did I want to get out of each phase?

The overall goal during this project for pupils, is for them to learn the basics of critical thinking and to hold meaningful conversations. They will learn to practice this through the key-terms: Statement, Argument and Impact.

- Introduction: First spark, here an eye-opener should be created of what filter bubbles are. Difference in long term complications and tech-savviness.
- How to show someone long term societal complications of filter bubbles?
- Decide on Topic: Find a topic. Create a statement, based on "initial judgement".
- Gather Content: Here the pupils will stay within their own filter bubble and gather content that align with their statements based on their initial judgement.
- Meaningful conversations: Here the different content (arguments) gathered will be shared with each other. Here it is important for pupils to ask genuine questions to each other to try to understand the other person better. Create empathy. Share content.
- Storytelling: Impact through storytelling. Here pupils should connect their conversations with their personal experiences.

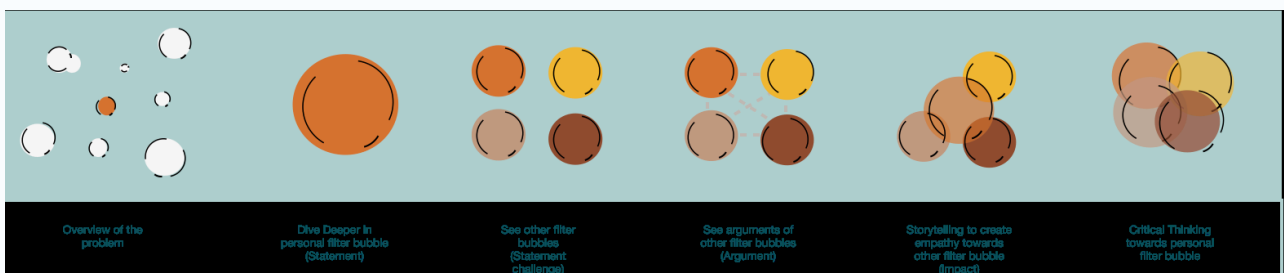
How to create a knowledge exchange between a group of four pupils that flows like a dance?

For the second session some small iterations were made. First, the problem statement has been added and explained extensively. This has been done to obtain more insightful ideas connected to the problem statement. Also some How-Tos have been iterated upon.

To the Journey Map another visual has been added, with an abstract view on the goal of each.

step of the Journey Map.

Figure D2: Framework of Desired Scenario

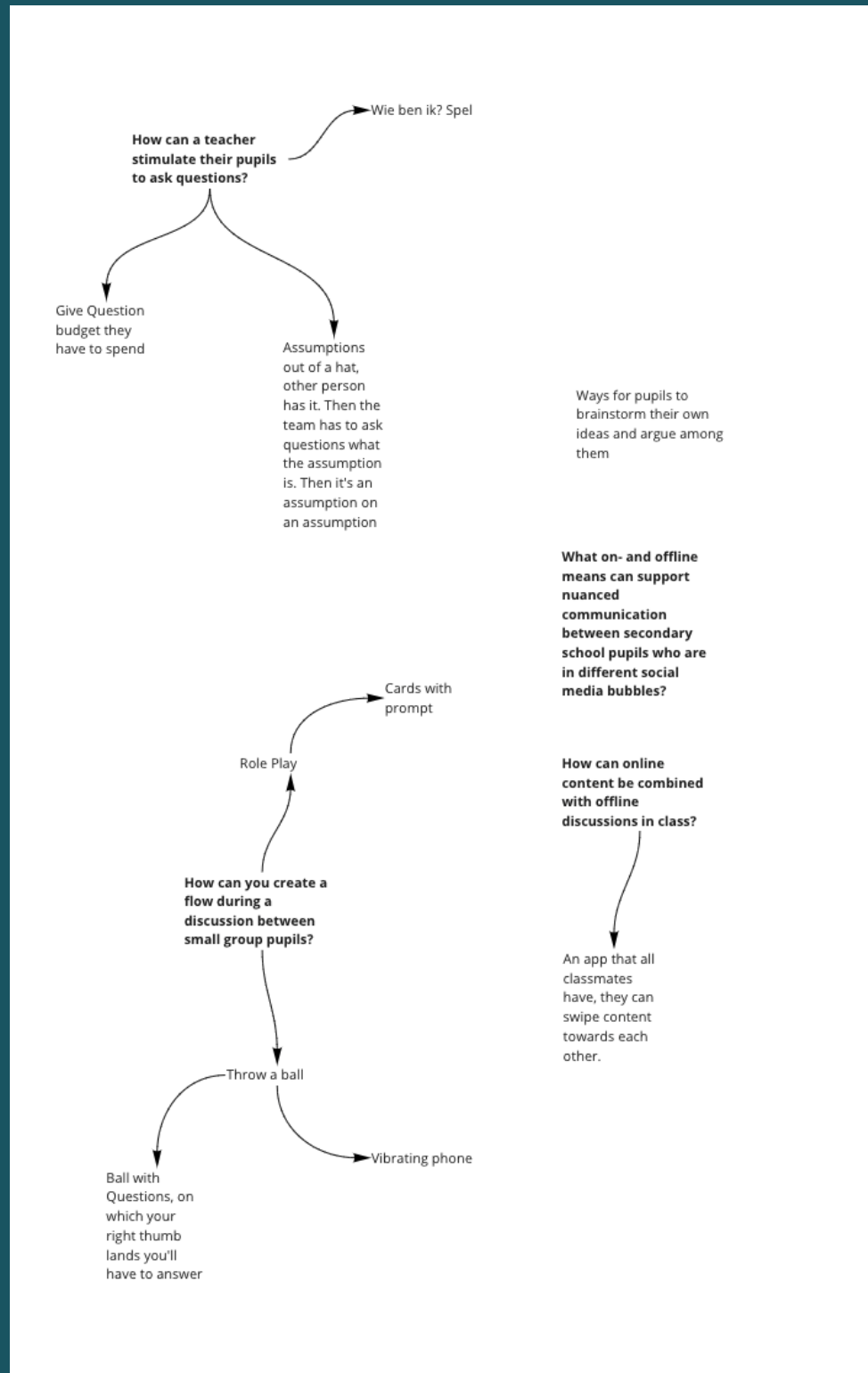




Results

After the brainstorm sessions, the results are used as inspiration for my own ideation session. Some ideas are described in Figure D3.

Figure D3: personal ideation



Appendix E

Interview with Curriculum Developer Han Noordink

An interview through Zoom has been conducted to gain feedback on the concept plan that has been created after the second test. This interview was done with a Social Studies curriculum developer of SLO. The results are written in this appendix, not that a lot of the notes are in Dutch, due to the fact that the lesson plan should be in Dutch and a lot of language advice has been given during this interview to suit the target group that this design is intended for.

Interviewee: Han Noordink

Occupation: Leerplanontwikkelaar mens en maatschappijvakken bij SLO

Platform: Zoom interview

Goal of the interview: Evaluation of current development of the program, gain insights on what to improve

A document was sent to Han Noordink beforehand and he looked over it.

- He advises to at least speak to Social Studies teachers, he would advise to speak to two of them.
- The level should fit the target group, otherwise it could become a lost cause even though the idea is good. Level could quite often be too high.
- Use of too difficult language, which could be a waste because it's a nice subject.
- Make a DISTINCT difference between the teacher and pupil. Do not mix them!

Material for teacher

- Goal of the class
- This will be done in different steps
- "in de kader van dat en dat is dit ontwikkeld"
- You serve the teacher who has different

questions like:

- What does the material look like?
- What will I reach with each step?
- Does this fit with the learning objective of social studies?
- Connect it with the goals of social studies
- eachers will often change the content a bit, so

make it a bit malleable. Ruimte geven voor interpretatie

- Evaluation proposals:
- Heb je zelf wat geleerd?
- Wat vond je leuk aan deze lessen?
- Wat vond je lastig?
- Wat vond je interessant?
- Cijfer is lastig, rubric kost veel werk.
- Laat het een leuke interessant les/lessen zijn

en niet al je energie steken in rubriek

- Maar zorg wel een evaluerende zin iets doen op het eind en samen kijken van: goh hebben we iets nieuws ontdekt met elkaar?
- Vragen ter afsluiting toevoegen, maar alleen voor de docent
- Bij afronding van de lessenserie, kunnen de volgende evaluatievragen aan de orde komen. KUNNEN (docent kan zelf wel een selectie maken)
- Maak dus dingen optioneel, zodat de docent dingen naar eigen hand kunnen maken.



• Interessant is ook de bewustwording van gender.

- Niet alleen jongens vinden voetbal leuk.
- Niet alleen meisjes mogen nagellak.
- Waar worden de jongens naartoe geleidt?
- Waar worden meisjes naartoe geleidt?
- Mooie extra stap

• Drieslag kan in docenten ding, maar doe nederlands

- Awareness: Let op, opgelet!
- Critical thinking: Denk na!
- Implementation: Aan de slag!

Material for pupil

- For the pupil the goal of whether it fits the course does not matter
- For the pupil, they would just need to know what they have to do. Such as: Today we will talk about "filter bubbles" So what are "filter bubbles"?
- Really speak to the pupil: What are filter bubbles? Maybe you can recognise it in your daily life. Such as.....
- You do not really talk about the goals or difficult terms. Easy terms and give them steps through the assignments.
- You can tell them the goal really short at the start.

• With this lesson we want you to become more aware of this. (no more needed)

- And later you'll look at it more critical.
- Met deze lessen word je bewust van.. dat en dat... en daarna ga je er wat kritischer mee om.

• The three step plan is not useful for the pupils to see

- Make it simple.
- You are on Social Media, but do you know this and this happens?
- Trigger them
- They do not know the terms of "argument". They do not use these words. VMBO is more... reden, waarom.
- Let goed op.
- Denk goed na voordat je iets doet.
- Denkstappen

• Een goede reden voor waarom je iets doet

• It can be suitable voor VMBO, but can also be suitable for havo/VWO. Can develop it for VMBO, and then change the language suitable for havo/VWO.

• Analysing your own 10 types of content: is very nice

• Wat zegt dat nou over jou zelf? En klopt dat wel?

• "Okay ja... ik word alleen maar daar en daar naartoe geleidt."

• Ook leuk de oefening met als je dat profiel hebt met die kernwoorden, om dan ook van andere leerlingen te horen van..pas dat nou bij mij? Of had jij nou bij mij iets anders verwacht?

• Geen het een tijdslimiet, voordat ze opeens een speelfilm uploaden

• Class poster:

• Han likes the idea

That's hard to say, it really depends on the usability of the app

• App maken lijkt moeilijk. (lanus vragen naar de viability)

• Niet te complex, eenvoudig

• En doen wat je ermee wilt

• Verzamelen van de stukken content, zodat ze het in een mapje hebben

• of Kahoot?

Language improvements

• No English

• Exploreer -> onderzoek, verken, open je ogen

• Op maatschappelijk level en persoonlijk

level -> Voorbeelden die je in de maatschappij tegenkomt en voorbeelden die persoonlijk zijn.

• 10 individuele content te uploaden -> Doe maximale tijdsomvang aan

• Sleutelwoorden -> Hashtags (Geef ook voorbeelden!!!! Zoals voetbal, mode, kleding, lipstick)

• Begin met een voorbeeld, dat typerend is en wat iedereen gezien heeft!

• Representeert -> Wat zeggen deze hashtags over jou? Zie je wat je intesses zijn? Heb je ook andere interesses? Of wil je juist meer interesse?

- eerlingen kunnen niet formuleren, maar wel losse woorden die ze typeren. WORDCLOUD
- Leerlingen gaan van: Waar staat mijn woord?
- Misschien iets doen met deelgroepen: Jongens en meisjes, culturen
- implementeren zelfs voor docenten lastig, wat moeten zij zich erbij voorstellen?
- Impementeren wat hebben wij nu gezien en geleerd en waar kunnen wij later rekening mee houden?

Interviewing

- In itself a good idea to do this is smaller groups
- Sometimes it can be complicated, you'll really need to take the pupils by hand.
- You should use example questions for interviewing, otherwise pupils will give up quite easily and tell their teachers that they don't know what to do.

A method that is used by many Social Studies teachers

<https://www.essener.nl/vmbo/>



Appendix F

Interview with Design Student/Secondary school teacher

Feedback from a secondary school teacher and designer

A conversation with a secondary school teacher has been conducted who is also an IPD master student. His experience with teaching third and fourth year secondary school pupils of VMBO fits the target group of teachers. From this conversation insights were derived to improve the usability of the concept.

During this conversation, the concept has been explained to the teacher and designer feedback has been granted.

These insights are listed here.

- Teachers do not like cell phones in their class, because they distract their pupils. But, due to the fact that this educational program is temporary and its connection with Social Media, a phone is inevitable. Therefore to optimise the final design, clear structure and rules need to be implemented to help the teacher gain control over their class. This would mean adding a timer for when pupils are allowed to use their phones and a reminder for pupils to bring their earphones in class.
- Pupils in secondary school have a very short attention span, these pupils barely remember what they learned at the start of the class, let alone a previous class. Homework would not be ideal, especially when it comes to short term projects like this. So at the end of each lesson a short summary of key takeaways need to be repeated and homework should be avoided.
 - The final design will be as accessible as possible.
 - A teacher learns how to create a lesson plan and then they formulate it towards their pupils through long and short term goals.
 - At VMBO you'll need to surprise your pupils, the hashtags can really work with that.
 - Keep the attention span of ten minutes, pupils get distracted easily especially by social elements. So no explanations that take longer than 10 minutes.
- Stereotyping is important to keep in mind, especially in diverse classes like his in Vlaardingen. Pupils can be very sensitive about them. Therefore, teachers need to control the themes that pupils will discuss with each other during the interviews. But it is also very important to gain insights into how these pupils react to certain types of stereotyping, but the teacher needs to facilitate this.
 - This theme is very relevant in his school at the moment.
 - Every pupil now has a laptop at the school, but they are often very slow.
 - Kahoot! could be the best option at the moment, but their school does not have a subscription. But this mechanism could be implemented in the app. Currently Kahoot! is used for prototyping purposes.
 - Something like Miro you'll need to create an account, it costs time and people can get distracted.
 - Pupils like to make fun of things, get distracted. So the teacher needs to have control.
 - Create assignments.
 - Really use their language. Short and to the point, today we will do this and this with structure. This takes this long, every step is explained.
 - Use images that pupils can recognise!

*Appendix G*

Email from a Social Studies teacher

Lang geleden voor het internet kenden wij in Nederland de Schooltelevisie. Die organisatie heeft een aantal uitstekende uitzendingen verzorgd over wat wij tegenwoordig filterbubbel noemen.

Er werden verschillende filmpjes vertoond over dezelfde gebeurtenis. Maar... Ieder filmpje liet de gebeurtenis zien vanuit een ander perspectief, met een ander begeleidende tekst en/of muziek. Als je de filmpjes los van elkaar zou bekijken, leek het of naar verschillende gebeurtenissen zat te kijken. Waarin verschilden de filmpjes? Waarom was dezelfde gebeurtenis vanuit een ander perspectief opgenomen, waarom was er een andere begeleidende tekst en waarom was er andere ondersteunende muziek?

De basis van alle onderwijs is feitelijke kennis. Als er beelden worden getoond van de Markt in Maastricht, waar duidelijk het stadhuis, het Mooswief en de omringende huizen zijn te herkennen en iemand ontkent dat het over de Markt in Maastricht gaat, dan is zo iemand rijp voor een psychiatrische behandeling. Wat heel anders is het wanneer er op de Markt in Maastricht een bijeenkomst plaats heeft. Maar ook dan is kennis van groot belang. Zo moet men zich vragen stellen als welke mensen zijn aanwezig, wat staat er op de spandoeken, welke vlaggen dragen zij met zich mee, zijn er sprekers en wat verkondigen zij? Vindt men de mensen sympathiek? Zijn er ook mensen die het met de deelnemers aan de manifestatie niet eens zijn?

Pas als men een antwoord op dergelijke vragen heeft gesteld, kunnen standpunten worden ingenomen. Is het erg dat in onze samenleving die standpunten verschillend zijn? Helemaal niet. Het is juist goed dat je op school leert dat niet iedereen hetzelfde denkt. Via zulke filmpjes kunnen mensen tot het inzicht worden gebracht dat een samenleving heel divers kan zijn, maar ook dat zij alleen maar kan functioneren als er een paar basiswaarden worden gedeeld. Mensen die helemaal niets met elkaar gemeenschappelijk hebben, kunnen niet samenleven.

Ik heb het jammer gevonden dat het toen bij een aantal uitzendingen is gebeven. Met behulp van de videorecorder konden die filmpjes nog een paar keer worden gebruikt, maar toen verloren zij hun actualiteit. Alleen fans van U2 wisten op een gegeven moment nog wat Bloody Sunday inhield.

Het mooie van de huidige tijd is dat de thematiek van filterbubbel steeds aan de actualiteit kan worden aangepast.

Appendix H

Test 1: Workbook, Characters, Dialogue

Concept overview

The aim for this first test, is to find out what the dynamic could be of a group of people who'll have to talk about their Social Media feeds. This test has been conducted in an informal setting with friends, role playing as teenagers in class. During this session a few ideas were tested in the categories: Awareness and critical thinking. The eventual design should be implemented over multiple sessions, but due to time limitations the key elements were tested during one session.

- Instructional Video: Awareness
- Sending the first 10 TikTok/Reels videos to

Xiao-Mei // Scroll for three minutes through your feed

- Live demonstration of hashtags that is shown in class
- Setting up a character
 - Create key-words
 - Create a character
 - Explain to each other

- Formulate Theses
- Vote on the Theses through Plickers
- Dialogue about a theme,
 - Use Social Media content as example
 - Provide critical question cards

Research Questions

- What does the subject learn from the infographic video?
- Can the subject explain the term "Filterbubbel"?
- What is not clear about the infographic video?

- Is the subject able to create a thesis around the example videos?
- What does sending in your own videos do?
- Does creating avatars help subject define their own filter bubble?
- How much guidance does the subject need in creating own avatars? Monsters? Animals?
- Are theses around the subjects enough to decide on a topic?



Figure H1: Materials used in test 1

Materials

- Introduction Video
- Workbook
- Slide Deck
- Imaging set
- Plickers card set

Set-up:

- Participants

VISUAL insert PARTICIPANTS

P1: Ennio
P2: Dimitri
P3: Nadhira

- Script
- Documentation



Results:

- What does the subject learn from the infographic video?

The subject explained how they learned the term “filter bubble” and how in this video they mainly learn how everyone on Social Media has their own views on the world and receives different kinds of information.

P3 would say that a filter bubble mainly is based on your interests and you’ll see it back on Social Media.

Dim also explained that some content gets filtered out, even though you might like it but you just interact less with them. He expressed how this can be a shame, because it stops you from exploring new things.

Ennio also explains how your point of view gets confirmed through the content you receive on filter bubbles. Which causes confirmation bias, because you don’t see other people’s point of view.

Practical improvements

They prefer the voice-overs. Makes it more smooth. They liked the animations, the infographic. The videos of the points of view, might be too less. They might have liked more than one video.

Two per side. Because they did get curious about the other videos above and underneath the animations.

Ennio believes that people of this generation might rather only watch videos. Nadhira: Short videos!

Examples are great, making it more concrete. Gives you a better view on the different sides. Ennio says that beforehand he could not really imagine what kind of content there could be out there that promoted eating meat, but this video makes it more clear. It’s very concrete, but also nuanced.

- Add voice-over to all the parts of the video
- Add more example videos
- Can the subject explain the term “Filterbubbel”?

Yes as explained in the previous Research Question

- What is not clear about the infographic video? Maybe, the long term complications. Add examples from societal problems that have occurred? The text needs to be larger and added voice over.
- Is the subject able to create a thesis around the example videos?
- What does sending in your own videos do?

P2 does not know what a Reel is. Instructions on how to use Reels/TikTok or other Platform is needed in order for this to work. It also turns out, that you there is no search bar in Reels. This meant that during the discussion phase,

- Does creating avatars help the subjects define their own filter bubble?

Yes it does, but they only found that out at the end of the test. That’s when they were asked to reflect. At first they did not really see the connection, until participants started comparing each other with their created avatar. Then they do see the resemblance. So, a moment of reflection needs to be included in this part. A suggestion could also be for classmates to guess each others’ avatars before they present their own.

- How much guidance does the subject need in creating own avatars? Monsters? Animals?

During the test it shows that the videos that they have saved at the start of the test already gives them enough guidance to create a character. The stickers provided did not add too much, but gave them a base. Around the base the participants drew a lot of attributes that represented the content in their videos.

- Are these around the subjects enough to decide on a topic?

- Does showing different topics on the screen, based on the content of the class, create interest in the students?

2 out of 3 Would not necessarily like to see the filter bubbles on the screen, due to the fact you might get exposed to what you like to watch. It could be interesting, but people could be judged. Other people would love it, and would see interesting filter bubbles. P2 got really excited about Frogs. (This also stimulates youth to use more Social Media, is this something I would want?)

P1 thinks #bodypositivity and P3 thinks astrology could be very judged upon subjects.

Pranks can also be touchy, because they can go too far.

So even though it could create a negative effect, the intended effect was there.

Figure H2: Participants creatinv Avatars





Figure H3: Paper Workbook used in Test 1

Pop Your Bubble

Werkboek

Van:

Stap 1: Introductie

1a) Bekijk het filmpje gezamenlijk in de klas. Leg in jouw eigen woorden uit wat een filter bubble is. Kan jij uitleggen waarom een filterbubble problematisch kan zijn?

1b) Stuur 7 TikTok/Reels filmpjes naar mij op.

1c) Welke onderwerpen op het smart board is nieuw voor jou?

Wat valt jou op?

Stap 2: Jouw Bubble

Avatar

2b) Beschrijf jouw Avatar is 5 woorden

Key-Words

- 1.
- 2.
- 3.
- 4.
- 5.

Stelling

2c) Bekijk dezelfde 7 filmpjes

Bedenk 3 stellingen die gemaakt zijn of geïnspireerd zijn door deze 7 filmpjes. Stuur de stellingen op naar Xiao.

- 1.
- 2.
- 3.

Vul jouw favoriete stelling in bij de tekstbubbel van jouw Avatar.

2d) Stem op de stellingen of je tegen of voor bent.

Stap 3: Converseren

3a) Kies drie filmpjes uit die volgens jou een duidelijke mening geven over het gekozen thema.


3b) Welke argumenten kun jij vinden op deze filmpjes?

Argument 1: _____

Argument 2: _____

Argument 3: _____

Stap 2: Jouw Bubbel



2b) Beschrijf jouw Avatar is 5 woorden

Key-Words

1. animals
2. funny humor
3. books
4. education
5. babies baby's

2c) Bekijk dezelfde 7 filmpjes

Bedenk 3 stellingen die gemaakt zijn of geïnspireerd zijn door deze 7 filmpjes. Stuur de stellingen op naar Xiao.

1. Kinderen moeten van jongstal leren over hun lichaam
2. Katten willen altijd naar buiten
3. opposities attract

Vul jouw favoriete stelling in bij de tekstbubbel van jouw Avatar.

2d) Stem op de stellingen of je tegen of voor bent.

Stap 3: Converseren

3a) Kies drie filmpjes uit die volgens jou een duidelijke mening geven over het gekozen thema.

3b) Welke argumenten kun jij vinden op deze filmpjes?

Argument 1: _____


Argument 2: _____

Argument 3: _____

body positivity = belangrijk ongeacht je geslacht
 - lichaamsvormen (2e haargras, pearshaped) ~~aanbrengen~~ ^{veranderen} continue en welke van belang dat je ~~aanbrengen~~ ^{aanbrengen}
 - Als de manier hoe je eruit ziet heeft niets te maken als je gezond bent
 - te mediaal speelt een te grote rol in de bodypositieve wereld
 - sociale mediaal influencers

Figure H4: Results of Paper workbook participant 1

Stap 2: Jouw Bubbel



2b) Beschrijf jouw Avatar is 5 woorden

Key-Words

1. LBTHQ+
2. body positivity nature/cats
3. pranks
4. fotografie muziek / zang
5. fotografie

2c) Bekijk dezelfde 7 filmpjes

Bedenk 3 stellingen die gemaakt zijn of geïnspireerd zijn door deze 7 filmpjes. Stuur de stellingen op naar Xiao.

1. Tik tokken is tjäverspilling
2. Mensen overschrijden grenzen met pranks omdat ze zo graag 'viral' willen gaan
- 3.

Vul jouw favoriete stelling in bij de tekstbubbel van jouw Avatar.

2d) Stem op de stellingen of je tegen of voor bent.

Stap 3: Converseren

3a) Kies drie filmpjes uit die volgens jou een duidelijke mening geven over het gekozen thema.

Mensen moeten ^{beter reageren} ~~reageren~~ over kritische opmerkingen ^{over uiterlijk}.

3b) Welke argumenten kun jij vinden op deze filmpjes?

Argument 1: _____

Argument 2: _____

Argument 3: _____

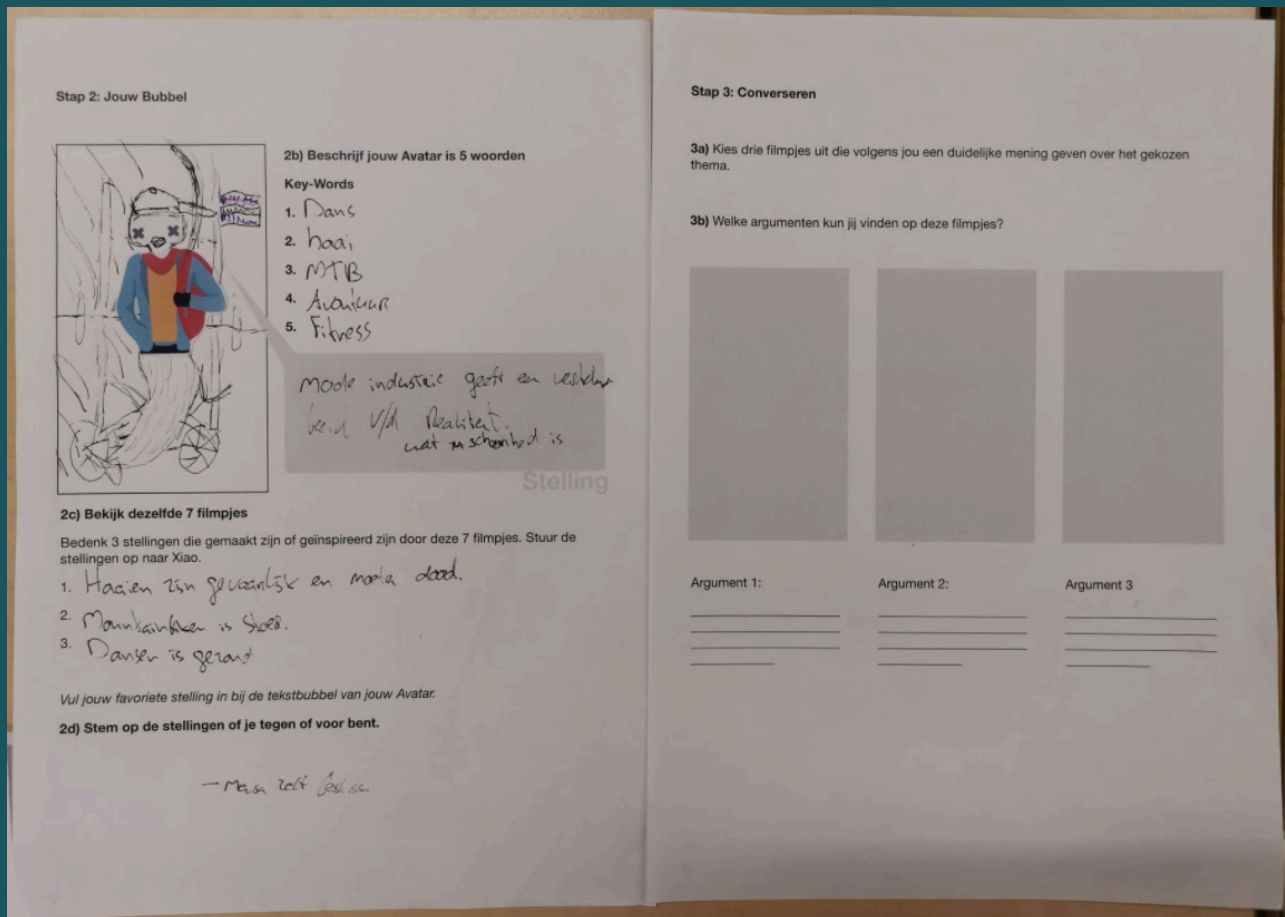
Mensen hebben over op val uiterlijk ~~kenmerken~~ ^{kenmerken} een controle welke is bijvoor beeld een gegeven.

Met kan een onzekerheid zijn van degene die je spreekt. Je kan iemand dus kwetsen met je opmerking. Meer mensen hebben onzekerheden dan je je realiseert

Met is niet van jou om te oordelen. Niemand heeft best bij jouw kritiek. Dus als je niks leuks te zeggen hebt dan kun je het beter voor je laten

Figure H5: Results of Paper workbook participant 2

Figure H6: Results of Paper workbook participant 3



Key insights

- Participants liked the video, would have liked more voice-overs and more example videos.
- One participant liked the live data visualisations of the subjects in filter bubbles, because he got curious about "Frogs". He also realised after the "introduction" video that there might be a lot of interesting content out there that he can not see, due to the algorithm.
- Two participants were reluctant about the live data visualisation, due to the fact personal preferences might get exposed and judged upon. Even though they are anonymous, people could still find out. For the next steps let each other introduce their filter bubbles through their characters, so they have a sense of control of what they want to share.
- The created characters were correct representations of the filter bubbles of the participants, but they did not realise it until they reflected on them. For the next test, let participants describe each others' characters
- The participants chose some parts of the creation set as a base for their drawing, but the most telling parts about their filter bubbles are what they drew with them. They drew a lot of attributes that represented videos they saw. For the next test, add attributes that are inspired by previous research with teenagers.
- The participant who got to scroll through their TikTok page, got sucked in so fast he kept forgetting about the assignment. While the other participants thought, 7 videos might be too little. They suggested 10. -> For the next assignment try 10 videos and include YouTube Shorts, as some people might not have Reels or TikTok.
- Creating a Thesis can be difficult, if not explained well -> For next test add elaborate explanation of how to formulate theses, position, and argument. Add examples with actual Social Media videos.
- The voting worked, people were curious about others' point of view. Had the tendency to immediately discuss about them. But they would rather use Kahoot, because you could still see what the other person is voting.

Appendix I

Test 2: App, Digital Characters, Debate

Changes made after test 1

- An app has been chosen, so schools do not have to keep investing in workbooks.
- Videos explaining theses, position, and arguments have been added
- Argument cards have been added
- Digital character maker
- Tutorials on how to share YouTube Shorts, Reels and TikTok have been added

Following the insights derived from the first test and literature research on critical thinking a second test has been conducted with a new prototype.

- During this test, instead of the dialogue format a debate format has been tested, to find out how argumentation can be educated in a structural manner.
- Also the workbook format has been replaced by an application for the participants.

Just like the previous test, the participants were role playing as pupils, while I was acting as the teacher/facilitator.

Participants:

P1: SPD master student

P2: DFI Master student

P3: IPD Master student/concept designer

P4: Law student

Duration 90 minutes

Again the same steps were taken as the previous test:

1. Introduction of the Filter Bubble
2. Explore your personal Filter Bubble (Create an Avatar)
3. Define your Filter Bubble (Thesis/Statements)

For the last step, the application will be replaced with cards. This has been done due to the limitations that Axure has regarding the interaction between phones of the participants.

2. Argument cards will be used by the participants to prepare their debate

3. Weerlegging cards are used when new arguments during the conversations are found

Research Questions

Main questions: Experience

- Do the participants have a clear view on the term Filter Bubbles?
- Have you discovered a difference between your own filter bubble and the one of your group mates?
- Have you found interesting insights from other filter bubbles?

Main questions: Usability

- Does the interaction of the app work in combination with the smartboard?
- Is the application clear enough for the participants with its linear way of working navigating?



Figure 11: Selection of Wireframes in Axure used during Test 2



Figure 12: Screenshot of Instructional video about forming arguments

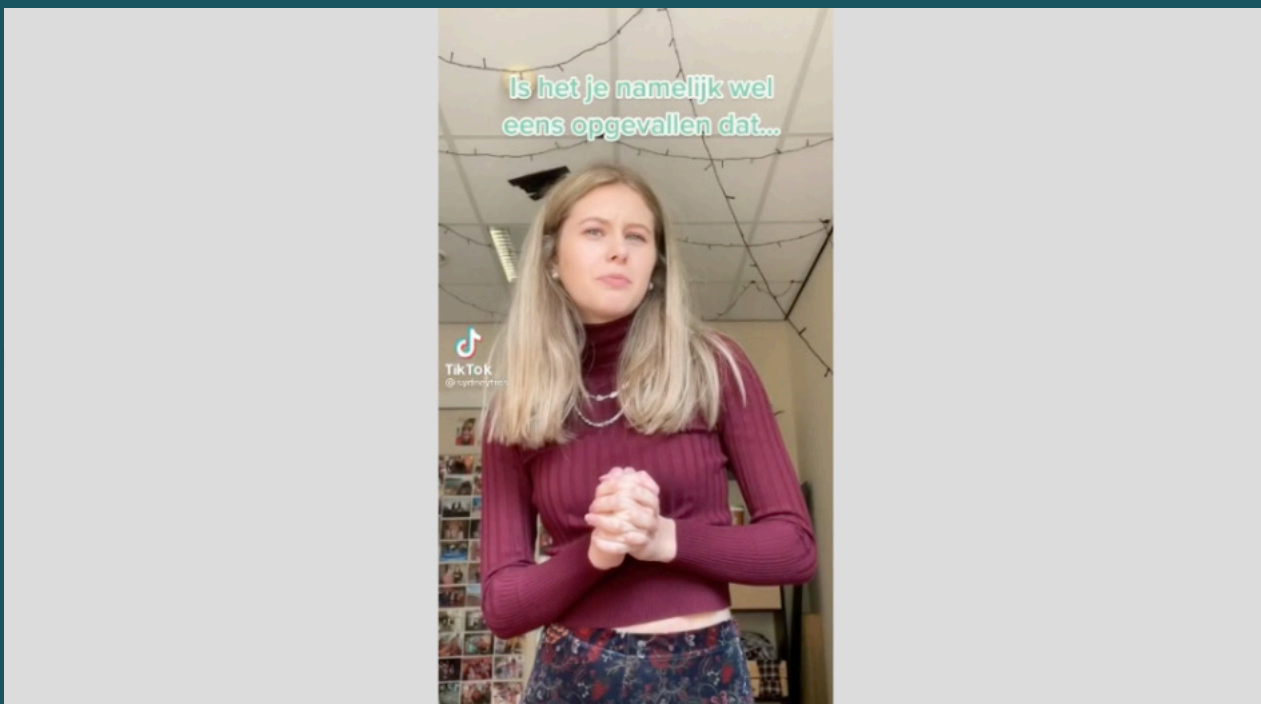


Figure I3: Screenshot of Instructional video about forming arguments

Een argument wordt gebruikt om jouw standpunt te **verdedigen**. Vaak heb je **meerdere argumenten** nodig om jouw standpunt sterker te maken.

Figure I4: Screenshot of Instructional video about forming a thesis

Wanneer een "**stelling**" is gekozen door jouw groepje, kun je jouw per



Figure 15: Results of Avatars created in test 2

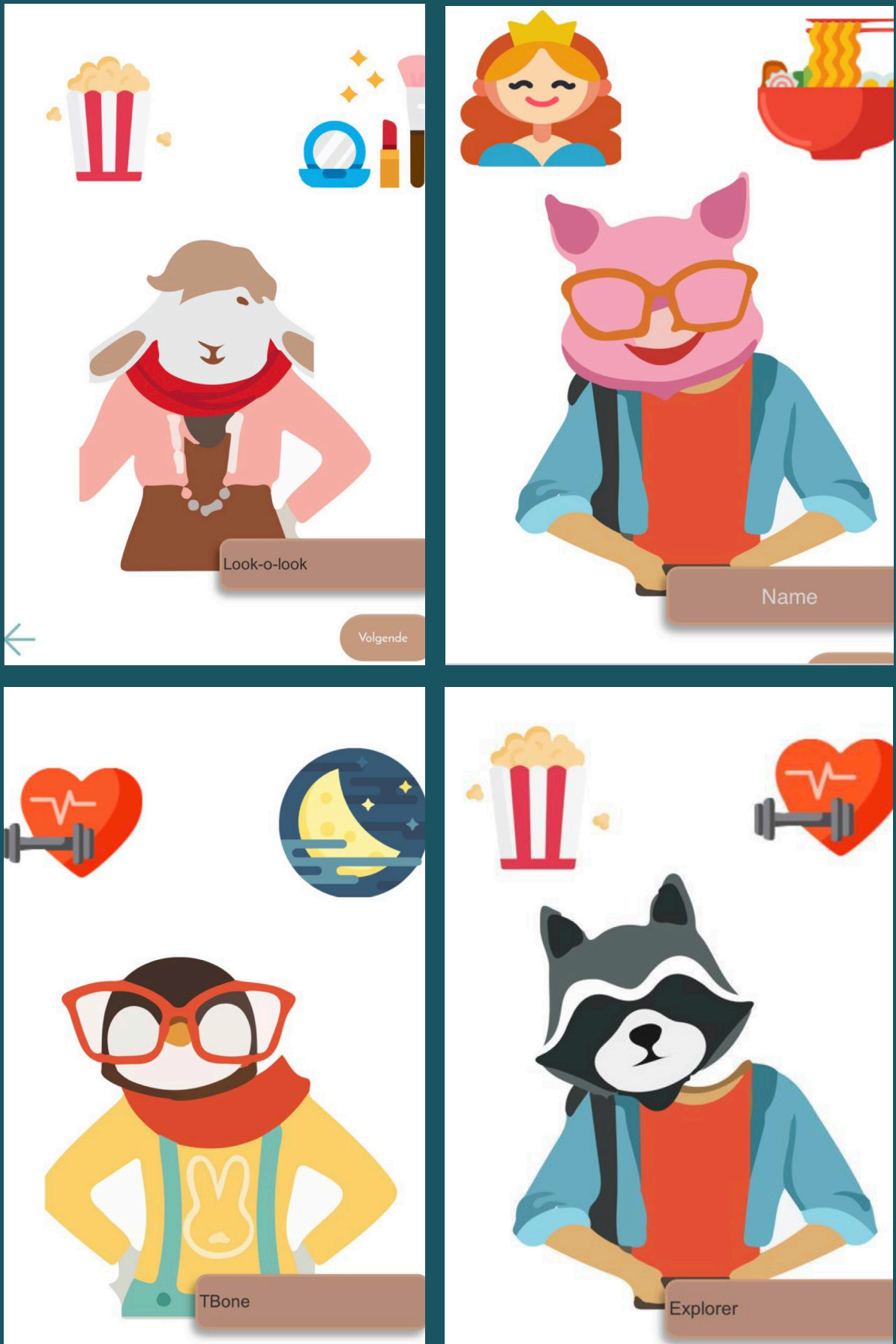


Figure 16: Planning of Test 2

Introductie + Explorer je bubbel

Log in app	-	0:01	0:01
Filmpje	Is het filmpje duidelijk?	0:06	0:07
Stuur 10 filmpjes naar mij	Zijn de eerste 10 filmpjes representatief? Waarop is dit gebaseerd?	0:02	0:09
Verzin 5 key words gebaseerd op deze filmpjes	Zijn vijf keywords genoeg? Helpen de keywords bij de volgende stap?	0:05	0:14
Maak een Avatar	Attributen van tevoren, geeft dit genoeg creatieve vrijheid?	0:03	0:17
Stuur Screenshot naar mij	Samen bespreken van Avatar, hoe reageren de participanten hierop? Reflectiemoment, wat zien jullie?	0:05	0:22

Definieer je bubbel

Filmpje Stellingen	Is het filmpje duidelijk?	0:02	0:24
Stellingen formuleren	Was het filmpje duidelijke genoeg voor mensen om stellingen te creëren? Helpen de criteria om stellingen te creëren die discussie opwekken?	0:05	0:29
Stellingen opsturen via Whatsapp	-	0:01	0:30
Stemmen via Kahoot	Wat vinden mensen van het zien van andermans meningen? Anonimiteit?	10:00	0:40
Reflectiemoment		0:05	0:45



Groepjes vormen			
Kies gezamenlijk een stelling	Wat voor stelling wordt er gekozen??	0:05	0:50
Filmpje Standpunt	Is dit te begrijpen?	0:01	0:51
Formuleer jouw Standpunt (Van team)	Is dit duidelijk voor iedereen? Kunnen de participanten een standpunt formuleren? Zijn de standpunten verschillend? Helpt het knopje voor of tegen?	0:05	0:56
Filmpje Argumenten	Wat vinden zij van de argumenten? Triggert het iets in ze? Heeft het ze gestimuleerd om zelf controversiële argumenten te bedenken? Komt er iets van "impact" terug? Is hier behoefte aan?	0:02	0:58
Argumenten verzinnen	Nu mogen de teams samen 5 argumenten verzinnen gebaseerd op filmpjes op TikTok	0:15	1:13

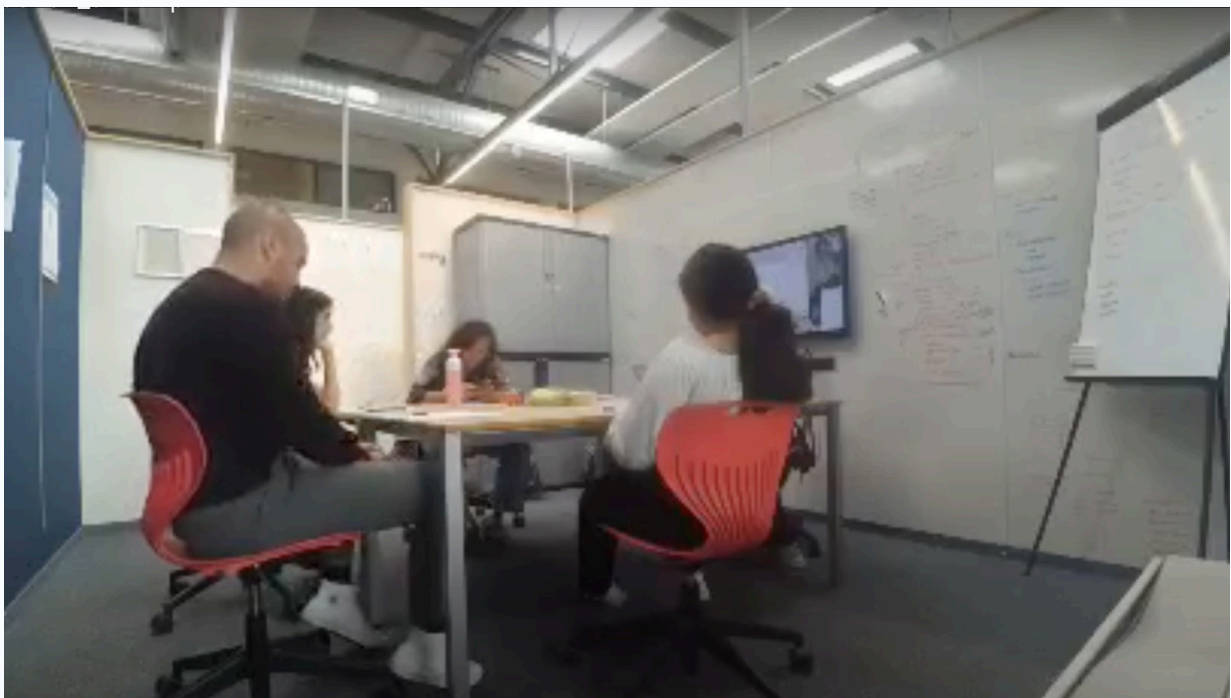
Debat 0:15

Tijd voor debat intro - Plak alles op scherm - Stelling op Scherm	Eerste team begint met het eerste argument. Vervolgens mogen de verder zelf beargumenteerd worden met een "weerleggings" kaart of met een een "Kritische Kaart vraag. - Als het stil loopt, mag een nieuw argument gebruikt worden. - Scherm heeft de beurt aan	13:00	1:26
Na kwartier	- Elk team moet argumenten set (Set is argument incl. weerleggingen en kritische vragen) meenemen van de ander meenemen	0:04	1:30
Reflectie			

Results

- A clear course manual needed, that communicated what everyone has to do.
Show users' the process
- It should support more Social Media platforms
- Searching for videos as arguments take too long
- Creating characters work, but should give the user more creative freedom. Pre curated sets should be more broad or give them the option of drawing.
Interesting was, that people has some pre-conceptions about someone's character and then were surprised/interested when the person described their characters.
But the person who was described, did feel judged.
- Kahoot does create the effect of: Huh? Why does the other person think that?
- Each class, should discuss thoroughly how to formulate theses and arguments.
- Searching through videos, should be homework. This causes no interaction in class and a lot of sounds of the videos.

Figure 17: Picture of the test





Appendix J

Test 3: Interview

During the Interview test participants were asked to prepare and interview as a journalist and a interviewee. Instructions were sent to them. The transcript of the interview is seen on the next page with key insights. Figure J1 shows a screenshot from one participant who prepared the questions.

Figure J1: Screenshot of questions prepared by participant



Transcript

P1: De stelling is: kinderen moeten van jongs af aan leren over hun eigen lichaam. Wat is jouw mening over deze stelling?

P2: Ik vind dat het niet waar is, bijvoorbeeld als je 6/7/8 bent vind ik niet dat je al uh moet leren over je eigen lichaam. Want dan ben je gewoon een kind en dan speel je gewoon buiten en denk je daar niet over na. En ik denk dat sommige kinderen het echt wel interessant zouden vinden, maar ik denk dat de meeste kinderen gewoon buiten willen spelen en gewoon hun lol willen hebben en niet denken van, "ow dit is mijn lichaam nu op dit moment aan het doen".

P1: Oke uhm, denk je dat er toch voordelen aan deze stelling kunnen zijn?

P2: Ja bijvoorbeeld meisjes enzo die van heel jongs af aan hun ongesteldheid krijgen dat is best wel handig om dat gewoon te weten. Zonder dat het meisje denkt van: Ik ga me dood bloeden. Uhm maar aan de ene kant denk ik ook zo van uhm, je krijgt het heel op de basisschool en ook op middelbare scholen ook gewoon les over het lichaam. Ook gewoon met Biologie enzo. Op die manier leer je het dan ook gewoon gelijk.

P1: Kunnen er ook nadelen aan deze kant zitten?

P2: Ik denk eerlijk gezegd niet, het is altijd goed om dingen te leren en ook over je eigen lichaam. Bijvoorbeeld de leeftijden die ik net opnoemde, 6/7/8 ik denk gewoon niet dat het je heel veel scheelt wat er eigenlijk aan de hand is met je lichaam

P1: Maar stel je voor, ze zouden toch kinderen van jongere leeftijd les over laten geven op de basisschool. Jonger dan normaal

P2: Ik denk dat het een beetje nutteloos is, want... ja aan de ene kant denk ik van kinderen gaan dit wel interessant vinden en denken ze zo van wow dit gebeurt er allemaal zo met mijn lichaam. Maar ik denk dat het niet super belangrijk is om te weten wat je darmen bijvoorbeeld doen als ze net hebben gegeten ofzo. Kinderen vinden het sowieso wel interessant, ligt eraan wat voor kinderen het zijn, maar ik denk niet dat het ze heel veel uitmaakt.

P1: ohh oke, stel je voor ze gaan er toch voor op school voor kinderen op jongere leeftijd doen, zou je iets doen om het te veranderen?

P2: Nee, dit is de keuze van de school. HET is ook altijd goed om kinderen wat bij te leren, dus ik heb daar niet echt problemen mee als ze dat gaan doen. Kinderen.

P1: Hahaha oke dankje hoi.

Insights:

- Duidelijk aangeven dat zij van tevoren hun "mening" moeten formuleren
- Gaf wel anecdote
- Geen persoonlijk verhaal
- Geen conclusie

*Appendix K*

Concept plan for Feedback

The following pages show the concept plan that has been sent to Han Noordink, the Social Studies curriculum developer at SLO and a Social Studies teacher in Maastricht, John Laugs.

concept “kritisch denken bij filter bubbels”

Dit bestand bevat een algemeen overzicht van het concept van een lesplan waarbij jongeren tussen de 15-16 jaar oud (3e/4e jaar VMBO) getraind worden om kritisch na te denken bij hun eigen filter bubbels. Dit wordt gedaan in de volgende drie stappen: Awareness, Critical Thinking en Implementation. Deze drie stappen worden nader verder uitgelegd.

Praktisch

Dit lesplan zal een traject zijn verdeeld over enkele lessen (nog te bepalen hoeveel) waarbij er gebruik gemaakt zal worden van een **app voor de leerlingen** en een **website voor docenten**. De website bevat naast een **dashboard** voor docenten waarbij vooruitgang getoond wordt, ook inhoud voor de leerlingen die op het smartboard in de klas getoond kunnen worden. Er zal ook **interactie tussen de app en het smartboard** zijn tijdens de les.

Tijdens dit project zal er een individueel onderdeel zijn en een groepsonderdeel.

leerdoelen

LO1: De scholier kan de **betekenis** van “filterbubbel” beschrijven, en herkennen in hun eigen leven.

LO2: De scholier kan **in voorbeelden** uitleggen hoe “filterbubbels” een rol hebben bij **beeldvorming**. (waaronder vooroordelen en stereotiepen)

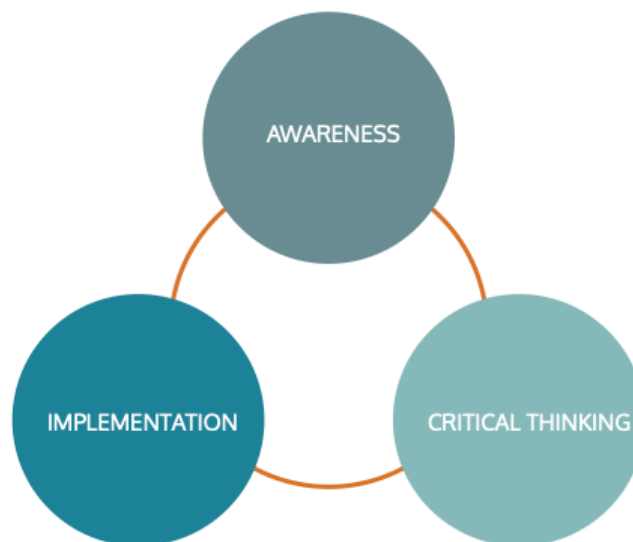
LO3: De scholier kan eigen en andermans **assumpties** herkennen in online media, door **stellingen en standpunten** te herkennen.

LO4: De scholier kan **kritische vragen stellen** bij de standpunten op online media.

LO5: De scholier kan **argumenten bedenken** en gebruiken tijdens een gesprek over verschillende standpunten.

LO6: De scholier kan **storytelling** gebruiken om de impact van argumenten te onderbouwen.

LO5: De scholier kan kritisch en opbouwende gesprekken voeren met anderen over de assumpties, argumenten en impact over belangrijke culturele onderwerpen. vakinvulling



awareness

De eerste stap tijdens dit traject is het creëren van bewustzijn van filter bubbels in het eigen leven van deze leerlingen. Dit wordt gedaan door middel van informatieve videos, voorbeelden en opdrachten waarbij de leerlingen hun eigen filter bubbels in kaart brengen.

Sleutelwoorden:

- Filter bubbel



- Stellingen
- Standpunten

Exploreer je eigen bubbel

1. Als introductie voor het vak zal de term "filter bubbel" uitgelegd door middel van een **informatieve video**. Daarbij worden er ook voorbeelden genoemd op maatschappelijk level en op persoonlijk level.
2. Nadat de theorie is uitgelegd, zullen leerlingen zelf kijken op hun eigen social media. Dit kan Instagram, TikTok, Facebook, of YouTube zijn. Hier wordt er van de leerlingen gevraagd om 10 individuele content te uploaden in de app. Dit kunnen filmpjes of plaatjes zijn, en de leerlingen hoeven hier nog niet van tevoren naar te kijken en individueel te kiezen. De enige voorwaarden is dat het content is dat op de "**aangeraden**" pagina staat.
3. Wanneer zij dit gedaan hebben, kunnen ze kijken naar deze 10 filmpjes/videos. Hiermee gaan zij verder werken tijdens het project. Om te beginnen wordt hun aangeraden om **5 sleutelwoorden** te bedenken die past bij de set aan content. (Informatieve video wordt getoond over hashtags)
4. Wanneer de 5 sleutelwoorden zijn bedacht, wordt aan hun gevraagd om een **karakter te creëren**. Dit karakter moet gebaseerd zijn op hun set aan content. In de app wordt een template gegeven met een "avatar creator" en "sleutel eigenschappen" die zij kunnen invullen.
5. Reflectie -> Representeert hun karakter hun filter bubbel?

Definieer je eigen bubbel

1. Een informatieve video wordt getoond over hoe je **stellingen** moet formuleren. Een lijst met criteria wordt ook behandeld tijdens de les.
2. De leerlingen worden gevraagd om 1 stelling te bedenken dat past bij hun filter bubbel. (Gebaseerd op hun set aan sociale media content)
3. Wanneer dit ingevuld is, worden de stellingen anoniem op het smartboard getoond. De leerlingen kunnen dan anoniem stemmen of ze het eens zijn of niet eens zijn, waarbij er live de resultaten te zien zal zijn.

critical thinking

Nu er een bewustzijn gecreëerd is onder de leerlingen over "filter bubbels", wordt kritisch nadenken de volgende stap. Tijdens dit onderdeel wordt er voortgeborduurd op de stellingen die gecreëerd zijn in de laatste stap. De klas wordt onderverdeeld in groepen van vier. De docent zal dan stellingen verdelen over de groepen. Elke groep krijgt 1 stelling.

1. Een informatieve video over standpunten formuleren wordt getoond in de klas
2. Leerlingen formuleren hun standpunt over de toegewezen stelling in op de app
3. Dan worden de groepen onderverdeeld in twee. Twee "journalisten" en de twee "interviewees"
4. Journalisten krijgen een video te zien over "kritische vragen stellen" en bereiden vragen voor
5. Interviewees krijgen een video te zien over "argumenten" en bereiden argumenten voor voor hun standpunt.
6. De interviewees kiezen ook een sociale media content als voorbeeld voor hun standpunt. Deze moet geanalyseerd worden en besproken worden tijdens het interview.
7. Een interview wordt uitgevoerd door deze leerlingen onder elkaar met als doel om elkaars' standpunten beter te begrijpen en een artikel te schrijven over de ander.
8. Rollen worden omgedraaid
9. Reflectie

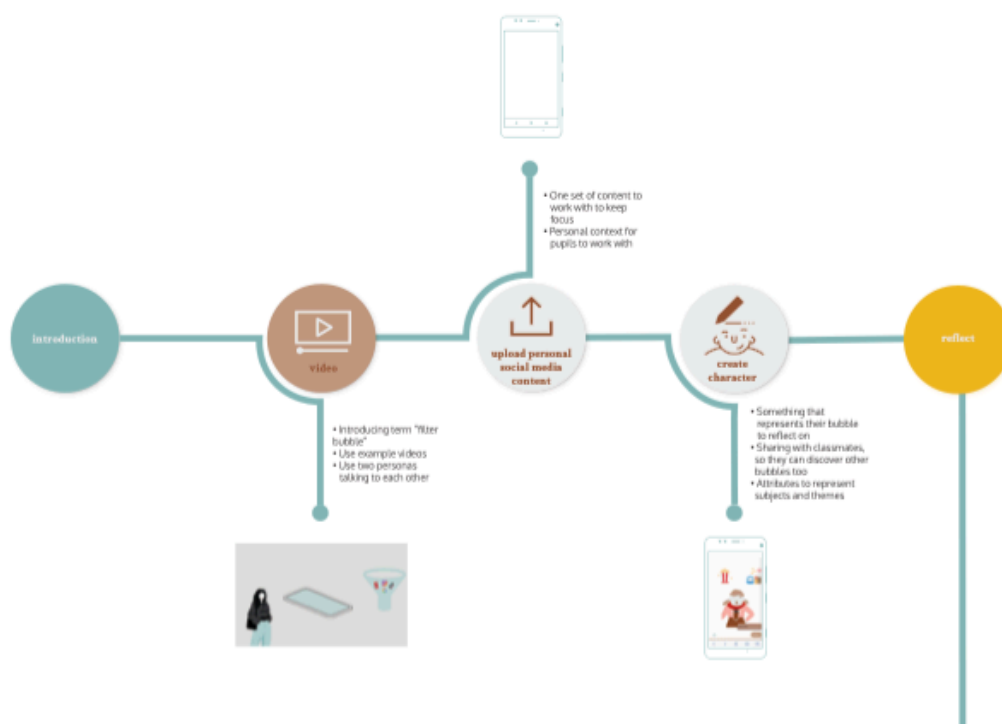
implementation

Nadat het project is afgerond, worden er een aantal dingen meegegeven aan de leerlingen om hun kennis te implementeren.

Ideeen hiervoor:

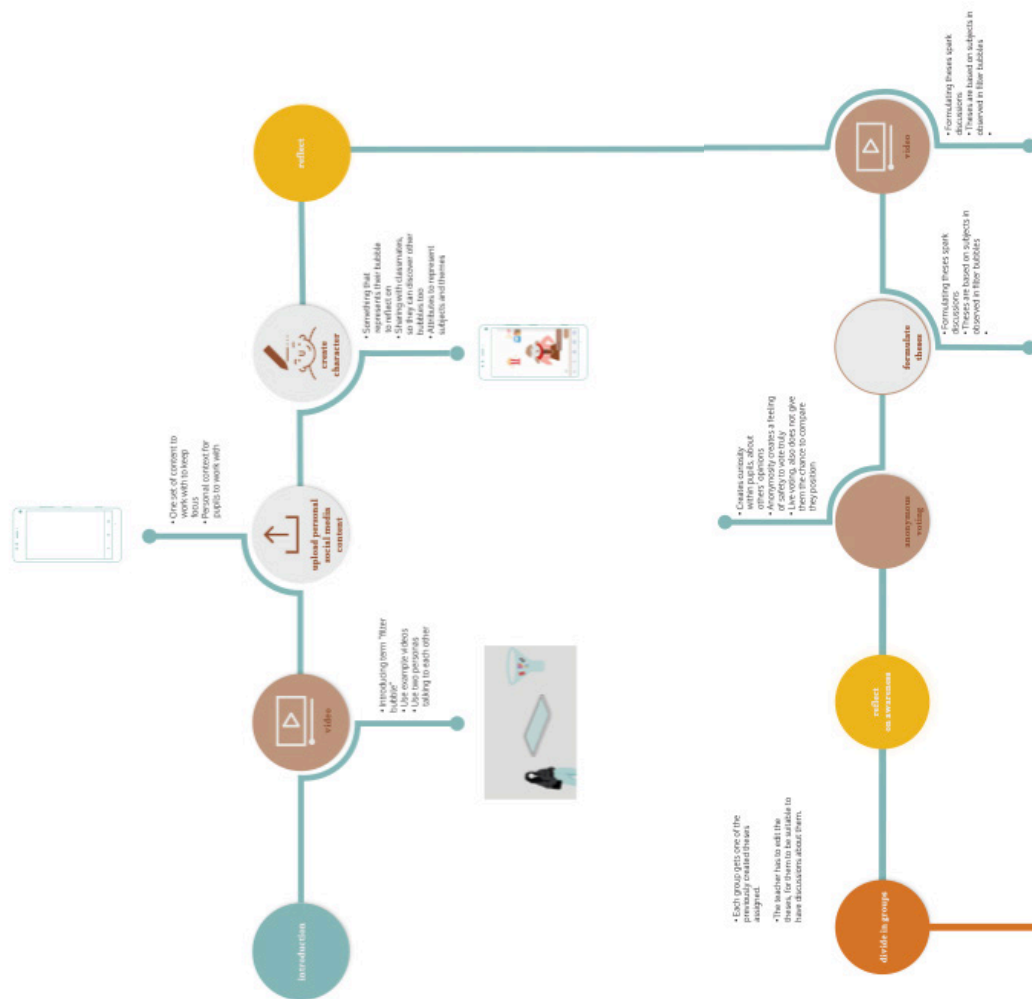
- Een pop-up app dat op social media alternatieve #hashtags genereert wanneer iemand te diep in hun filter bubbel terecht komt.
- Een knopje op je mobiel, wanneer je het inhoudt wordt er uitgezoomd en zie je filter bubbels om je heen
- Een klassenposter met een overzicht van de profielen (artikelen die geschreven zijn in de vorige opdracht) van de leerlingen. Door het jaar heen kunnen er stickers toegevoegd worden wanneer filter bubbels van de leerlingen veranderen.

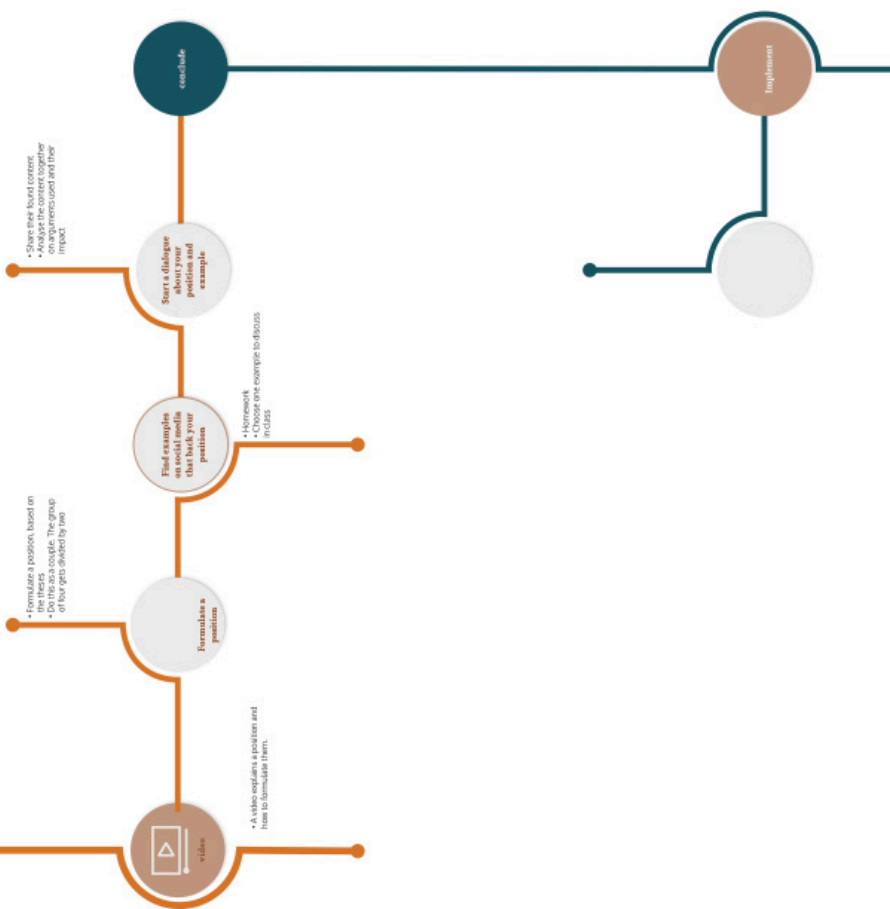
concept flowchart





concept flowchart







Appendix L

Ideation Concept Wireframes

This appendix shows the previous phases of the application made with Axure and Figma. The reason why this has been iterated upon was because this application is too complete, as it provides a whole journey. The lesson plan is executed at school in a classroom for the teacher. The application has to stay minimal, in order for teachers to still have a relevant role in class.

Figure L1: Previous iteration of application

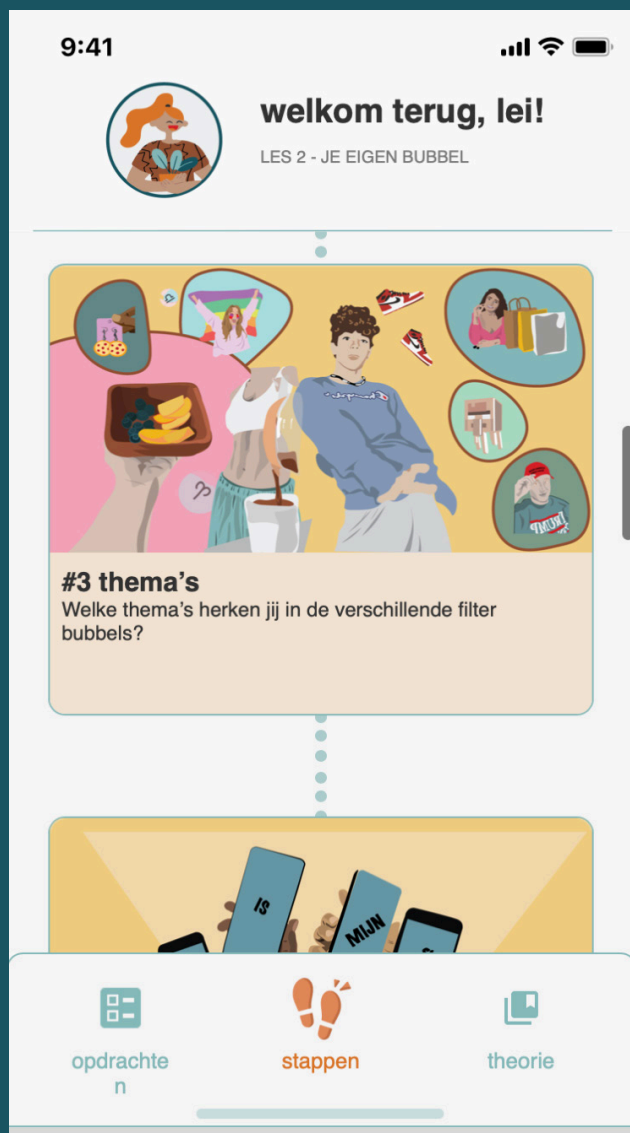
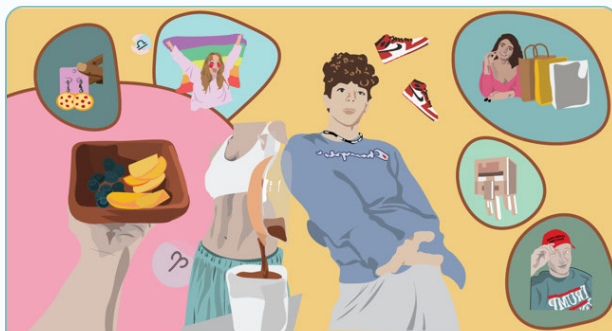


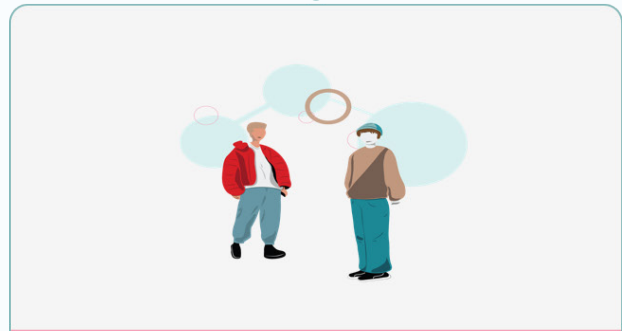
Figure L2: Previous iteration of application the assignments part 1



Figure L3: Previous iteration of application the assignments part 2

**#3 thema's**

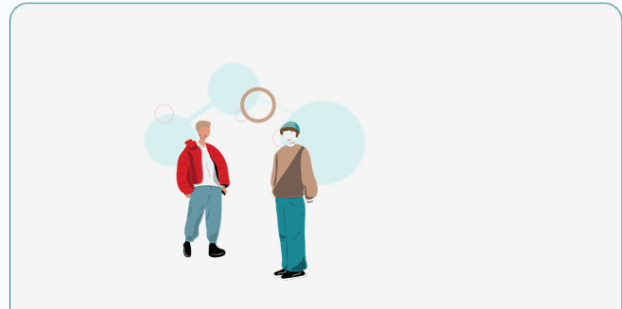
Welke thema's herken jij in de verschillende filter bubbels?

**#5 en wat denk jij?**

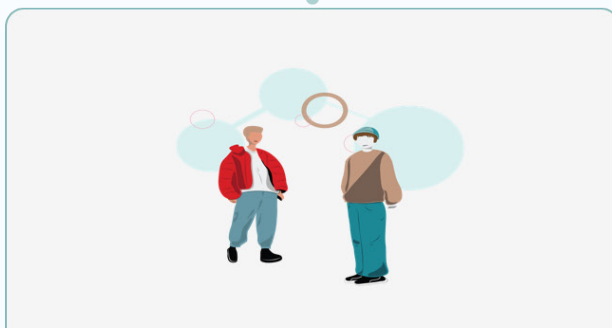
Wat zijn de meningen van jouw klasgenoten? En waarom hebben zij die mening? Kan jij ze echt leren begrijpen?

**#4 mijn mening**

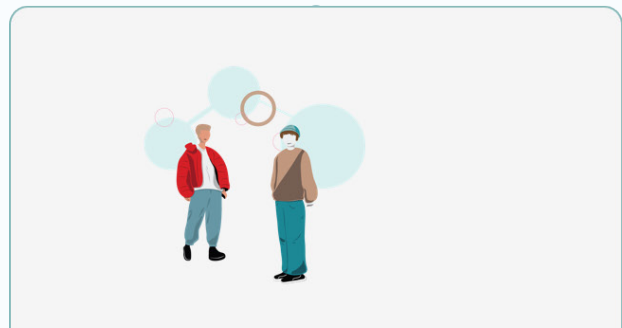
Heb jij een mening over bepaalde thema's? En waarom heb jij deze mening? Kan jij voorbeelden van social media content vinden die bij jouw mening past?

**#6 schrijven**

Wat heb jij nu geleerd van de ander en hun filter bubbel?

**#5 en wat denk jij?**

Wat zijn de meningen van jouw klasgenoten? En waarom hebben zij die mening? Kan jij ze echt leren begrijpen?

**#7 wat hebben we geleerd?**

Wat hebben wij nu allemaal geleerd?



Appendix M

Final Concept Wireframes

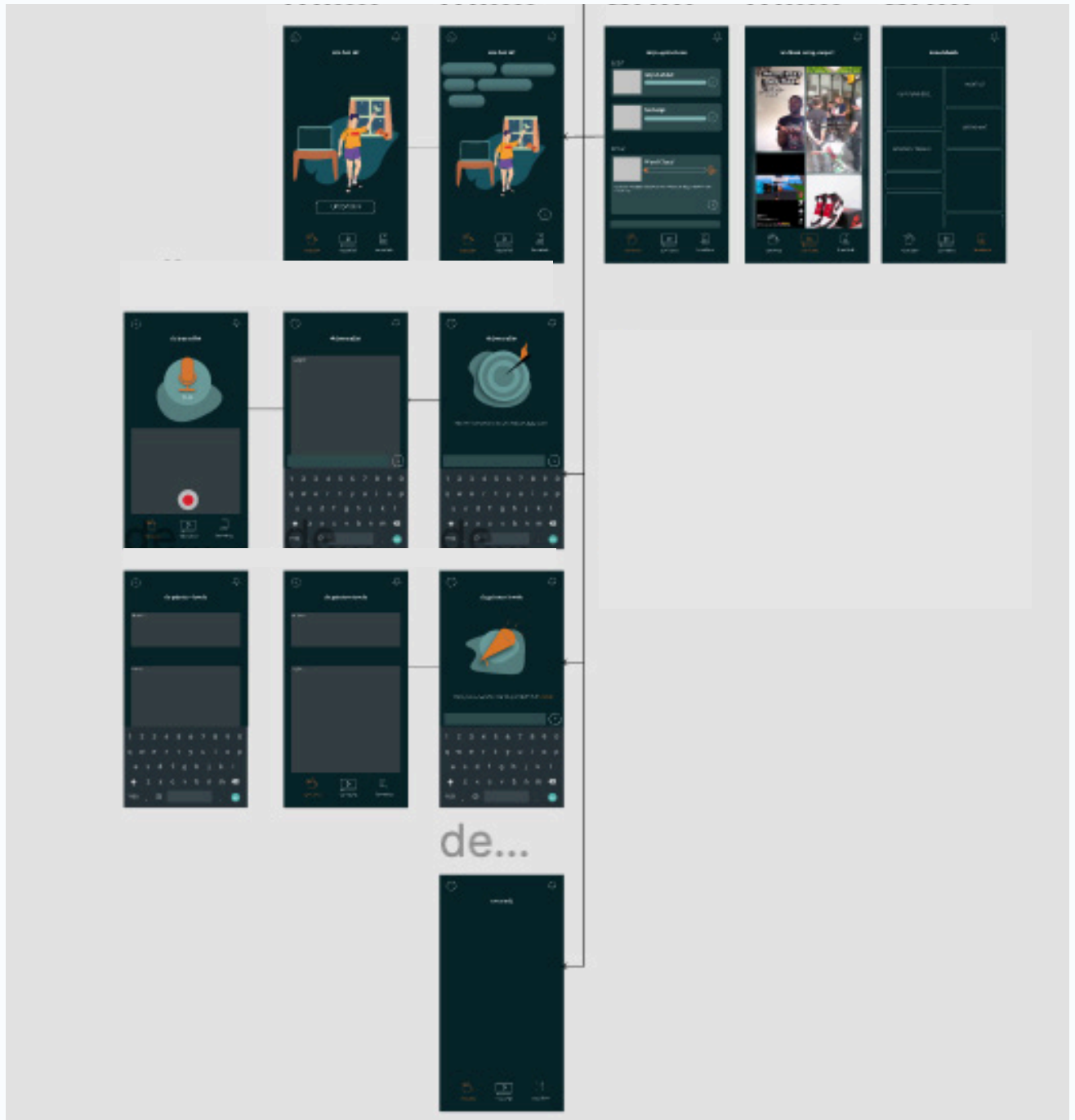
The following figures show the flowchart and wireframes of the final concept. The following link leads you to the axure prototype.

<https://tnghoe.axshare.com>

Figure M1: Part 1 of wireframes of the final concept



Figure M2: Part 2 of wireframes of the final concept





Appendix M point One

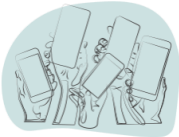
Final Lesson Plan

The final lesson plan as intended for Social Studies teachers to use.

Figure M2 up to M11: All pages of the final lesson plan.


LESPLAN


pop your bubble!



EIGENSCHAPPEN

Geschikt voor:

 School: VMBO
Leerjaar: 3 of 4




- Maatschappijleer
- Maatschappijkunde
- Nederlands

OVERZICHT

Tijdens dit project leren uw leerlingen om bewust om te gaan met hun eigen filterbubbel en die van anderen. Dit wordt gedaan door:

- Een bewustwording te creëren over de term "filterbubbel".
- Uw leerlingen hun eigen filterbubbel in kaart te laten brengen.
- Uw leerlingen hun eigen filterbubbel te laten vergelijken met uw medeleerlingen.
- Uw leerlingen vragen te laten stellen aan elkaar over elkaars filterbubbel. In de vorm van interviews.
- Een optionele terugkerende reflectie door het jaar heen.



DOELEN

Aan het eind van de lessenserie kan de leerling:

- De term "filterbubbel" uitleggen.
- Hun eigen filterbubbel herkennen.
- Vragen stellen aan anderen over hun filterbubbel.

MATERIAAL

- Interactief Whiteboard/Projectiescherm
- Pop your Bubble Account (Website)
- Mobiele telefoon
- Applicatie Pop your Bubble
- Oordoppen / Koptelefoon

HOOFDLIJNEN

- **INTRO:** Een uitleg wordt gegeven over wat dit project inhoudt. Orienteer wat de leerlingen al weten over het onderwerp.
- **ONTDEK:** Leerlingen gaan een kijkje nemen naar de filmpjes/plaatjes hun eigen sociale media pagina's.
- **CREËER:** Leerlingen maken een karakter gebaseerd op hun eigen filterbubbel.
- **INTERVIEW:** Leerlingen gaan elkaar interviewen om elkaars' filterbubbel te ontdekken en begrijpen.
- **BESCHRIJF:** Leerlingen beschrijven wat zij van de ander hebben geleerd.
- **REFLECTEER:** Klassikaal wordt er besproken wat iedereen heeft geleerd.

HERINNER: Profielen van de avatars worden opgehangen in de klas met de hashtags. Leerlingen kunnen met stickers hashtags toevoegen, naarmate door het jaar heen hun bubbel verandert. De docent mag zelf ervoor kiezen hoe vaak en wanneer er weer op gereflecteerd wordt.

BIJLAGEN

- Applicatie
- Les presentatie

WOORDEN

Hashtags: Dit zijn sleutelwoorden die gebruikt worden op het internet om sociale media content te categoriseren.

Persoonlijke social media pagina's: Hiermee wordt bedoeld, de pagina's waar de leerlingen filmpjes en filmpjes vinden die speciaal door het algoritme van de sociale media apps wordt aangeraden aan hen. Dus bijvoorbeeld:

- "Voor Jou" pagina op TikTok
- "Suggesties", "Recommended for You" op YouTube
- "Explore" op Instagram
- Facebook feed

Persoonlijke bubbel: Tijdens dit project limiteren we de bron aan sociale media content naar 10 filmpjes die in de eerste les verzameld wordt door elk kind. Dit wordt tijdens dit project de "persoonlijke bubbel" genoemd.

EXAMEN

Aansluiting examenprogramma

1. Preambule

De zes algemene onderwijsdoelen die voor alle vakken en sectoren in het vmbo gelden, zijn

1 Werken aan vakoverstijgende thema's

De leerling leert, in het kader van een brede en evenwichtige oriëntatie op mens en samenleving, enig zicht te krijgen op relaties met de persoonlijke en maatschappelijke omgeving.

Daarbij wordt expliciet aandacht besteed aan:

1.1 het kennen van en omgaan met eigen en andermans normen en waarden;

3 Leren leren

De leerling leert, mede met gebruikmaking van ICT, zoveel mogelijk eigen kennis en vaardigheden op te bouwen. Daartoe leert hij onder andere een aantal strategieën die het leer- en werkproces kunnen verbeteren.

Het gaat daarbij om:

3.6 persoonlijke ervaringen en opdrachten van anderen verwerken in woord, klank, beeld en beweging;

3.7 op basis van argumenten tot een eigen standpunt komen.

4 Leren communiceren

De leerling leert, mede via een proces van interactief leren, een aantal sociale en communicatieve vaardigheden verder te ontwikkelen.

Het gaat daarbij om:

4.2 overleggen en samenwerken in teamverband;

4.3 passende gesprekstechnieken hanteren;

4.4 verschillen in meningen en opvattingen benoemen en hanteren;

SET-UP

inlogcode maken voor leerlingen: Via het docentenportaal op de website, kunt u inlogcodes maken voor uw leerlingen. Een QR-code kan gescand worden, dat uw leerlingen leidt naar de app.

Elke leerling krijgt een eigen code om in te loggen.

LES 1

OPZET EN INTRO
25 MIN

beschrijving

Om het project te beginnen zullen de leerlingen eerst de "Pop Your Bubble" app moeten downloaden (QR-code via de slides) en inloggen. De docenten hebben via de website al een account voor de leerlingen gecreëerd en met een Leerlingen Code kunnen zij inloggen op hun account. Om het project op te zetten, kies uit de voorbeelden van filter bubbels of vind je eigen voorbeelden dat te maken heeft met filter bubbels om te laten zien aan leerlingen.

Laat het **introductie** filmpje zien over de term "filter bubbels" en vervolgens wat voorbeelden.

Eindig de les met leerlingen die alvast 10 filmpjes, of plaatjes, van maximaal 1 minuut uploaden naar hun "mijn filterbubbel". Leg uit dat zij hiermee verder gaan werken tijdens het project later. **Laat uw leerlingen 5 hashtags** verzinnen dat past bij hun persoonlijke database.



10 MIN



5 MIN

+ MIN
(eventuele optionele
filmpjes.)



10 MIN

tips:

- Het voordeel van buiten school om filmpjes te uploaden is dat er geen geluidsoverlast of afleiding is tijdens de les.
- Dit onderdeel kan eventueel gedaan worden aan het eind van uw normale les, afhankelijk van hoe u het verzamelen van content wilt aanpakken.
- Gebruik de timer tool in de app, als indicator voor wanneer de leerlingen op hun telefoon mogen scrollen.

eind van de les..

- Een geactiveerd account voor elke leerling
- Het introductie filmpje laten zien
- Leerlingen hebben hun persoonlijke database **geupload** (tenzij het huiswerk is)
- Leerlingen hebben vijf hashtags verzinnen die passen bij hun database

LES 2

ONTDEK & CREËER
30 MIN

beschrijving

Vandaag zullen de leerlingen hun eigen filterbubbel anoniem vergelijken met die van hun klasgenoten. Dit wordt gedaan door middel van een "WordCloud" en het maken en bespreken van een "karakter". De bedoeling van deze les is dat leerlingen de verschillen vinden tussen elkaar en nieuwsgierig raken naar andermans bubbel.

Intro (5 min): Login.

WordCloud (10 min):

- Als het goed is, zijn er in de afgelopen les vijf hashtags verzonden door de leerlingen. Als zij die invullen in hun app wordt er een WordCloud gecreëerd op het SmartBoard.
- Laat de WordCloud zien op het SmartBoard

Vragen die eventueel gesteld kunnen worden:

- Wat valt jullie op?
- Ziet iemand van jullie iets wat jullie niet hadden verwacht?
- En waar zie je jezelf terug?
- Zie je ook iets herkenbaars?
- Wilt iemand misschien delen wat zij veel zien?

Groepen:

- Terwijl de leerlingen hun karakter maken, kan jij als docent de klas in groepen verdelen. Daarbij kun je elke groep een hashtag geven die volgens u naar interessante gesprekken kunnen leiden. Geef elke groep een hashtag.
- Maak de groepen klaar in het docentenportaal.
- Verdeel de klas en geef ze hun hashtag



LES 3

INTERVIEW
45 MIN**beschrijving**

Tijdens dit onderdeel zullen de taken verdeeld worden. Leerlingen zullen leren om elkaar te gaan interviewen. Filmpjes in de "kennisbank" leggen aan de leerlingen uit hoe ze een mening kunnen formuleren of een interview kunnen opzetten. U kunt de filmpjes zelf vinden op de website en die toevoegen aan de slides, of de leerlingen kunnen deze vinden in hun applicatie voor thuisgebruik. De bedoeling van dit onderdeel is voor leerlingen om meer te leren over elkaars perspectieven op verschillende onderwerpen, en ook om hun eigen perspectief beter te analyseren.

Theorie (15 min)

Wanneer de groepen verdeeld zijn met een aangewezen hashtag, is het tijd om meningen te vormen en te interviewen.

- Toon theorie filmpjes over mening vormen.
- Toon theorie filmpjes over interviewen.

Vragen (10 min)

Laat wat ruimte over voor vragen van leerlingen over de opdracht en theorie.

Vorbereitung Interviews (20 min)

Laat de leerlingen zelfstandig hun interviews voorbereiden.

Creër een karakter (10 min):

- Wanneer ieder leerling hun hashtags hebben gemaakt, kunnen zij beginnen met het creëren van een Avatar in de app, dat geïnspireerd is door hun filter bubbel en hashtags.
- Zij mogen die vervolgens uploaden, die komen dan tevoorschijn op het Smartboard.

Bespreken (15 min):

- Laat leerlingen van elkaar raden wie bij welk karakter hoort. Let op: Houdt vooroordelen in de gaten.
- Laat leerlingen elk hun eigen karakter uitleggen aan de klas.
- Of verdeel de klas alvast in groepen, en laat ze hun karakter binnen de groep bespreken. Dit zorgt ook voor een veiligere omgeving voor de leerlingen om in te praten. Dit bespaart ook tijd.

tips:

- Bij het verdelen van de klas is het interessant om leerlingen bij elkaar te zetten die verschillend van elkaar zijn.
- Controversiële hashtags zorgen voor interessant gesprekken.
- Als je ervoor zorgt dat een van de leerlingen in de groep ook daadwerkelijk de hashtag heeft ingevoerd die de groep wordt toegewezen, heb je altijd tenminste een expert over het onderwerp in de groep. Dit zou eventuele blokkade kunnen voorkomen wanneer leerlingen het onderwerp niet echt begrijpt.
- Vraag de leerlingen aan het eind van de les om eventueel de hashtag op te zoeken op sociale media

eind van de les..

- De wordcloud met uw leerlingen besproken
- Elke leerling een karakter laten maken en met elkaar besproken
- De klas in groepen onderverdeeld
- Een hashtag voor elke groep

eind van de les..

- Theorie besproken met leerlingen over meningen.
- Theorie besproken met leerlingen over interviewen.
- Leerlingen zelfstandig interviews laten voorbereiden.

LES 4

INTERVIEW
45 MIN**beschrijving**

Dit is een vervolg op de afgelopen les. Hier worden de leerlingen gevraagd om de interviews uit te voeren. Bij dit onderdeel kunt u zelf bepalen hoe u het wilt invullen, let op de leerlingen zullen ook van rol moeten wisselen en interviews moeten voorbereiden.

Interviewen (45 min)**tips:**

- De interviews worden opgenomen met een audiorecorder in de applicatie van de leerlingen, let op dat er een kans is dat er geluidsoverlast kan zijn en leerlingen elkaar minder kunnen verstaan.
- Eventueel kan dit onderdeel huiswerk zijn.

eind van de les..

- Leerlingen laten interview

LES 5

REFLECTIE
20 MIN**beschrijving**

Aan het eind van de lessen, is er een template in de app die de leerlingen kunnen invullen. Hier worden de karakter profielen met hashtags ingezet. Deze kunnen opgehangen worden in de klas. Door het jaar heen, kunnen leerlingen met post-its nieuwe hashtags toevoegen, naarmate hun filterbubbel verandert. U kunt optioneel door het leerjaar heen, de interview opdracht of het reflectiemoment herhalen met uw leerlingen naar aanleiding van nieuw hashtags.

Ter evaluatie:

Hieronder staan een aantal vragen die gesteld kunnen worden om te reflecteren op wat er geleerd is.

- Wat heeft iedereen geleerd?
- Wat is iets nieuws dat je van jezelf hebt geleerd?
- Is iemand hier van mening veranderd over iets door iemand anders?
- Wat heb je geleerd van iemand anders in de klas?
- Wie heeft een interessant verhaal te vertellen dat tijdens een van de interviews naar boven is gekomen?
- Wat weten jullie nu van filterbubbels?
- Heeft iemand hier iets geleerd dat zij niet hebben verwacht?
- Wat vonden jullie het meest uitdagend tijdens deze lessen?



Appendix N point One

Expert Evaluation: set-up

The expert evaluation was done through an online questionnaire and an interview.

Script

Hoi welkom!

U heeft dus al een kijkje kunnen nemen naar het concept Pop Your Bubble. Hierbij heb ik een lesplan gegeven en daarbij wat vragen gesteld.

Deze zoom meeting is bedoeld om iets dieper erop in te gaan en wat kwalitatieve opmerkingen eruit te krijgen, dingen die ik kan aanpassen. En vooral uw mening krijgen over het concept zelf.

Ik wil u hierbij eerst vragen of ik dit gesprek zou mogen opnemen, zou ik ook eventueel beeldmateriaal mogen gebruiken voor de showcase en of mijn verslag? Dit hoeft helemaal niet.

Feedback

Ik heb gezien dat u al aardig wat vragen hebt, dat is heel fijn. Ik heb hier bulletpoints van gemaakt.

Waarover gaan leerlingen echt in gesprek?

Het ding bij dit lesplan is, dat dit volledig ligt aan de "filterbubbels" van de leerlingen en de docenten. Hierbij kan de docent ook een beetje sturen. Wil je het meer richting de controversiële kant sturen en onderwerpen aankaarten dat tot veel discussie kan leiden, of puur luchtig houden en leerlingen elkaars hobbies of interesses laten verkennen.

Ik heb dit getest met twee tieners in een andere context. En dit kan ik ook doorlopen met u.

De rol van de docent is om eerst zelf te bepalen hoe ze willen dat de les eruit ziet. Maar ook om de discussies te faciliteren en veel vragen te krijgen van leerlingen.

De huiswerkopdrachten zijn optioneel, maar wel moet er in de klas streng in de gaten gehouden worden dat er rekening gehouden wordt met leerlingen die hun telefoon gebruiken in de klas en oortje meenemen,

De QR-code wordt automatisch gegenereerd. Het idee is dat de docent via een docentenportaal op de website hun leerlingen

Figure N1: Experts, due to privacy reasons no picture of the third expert is included.



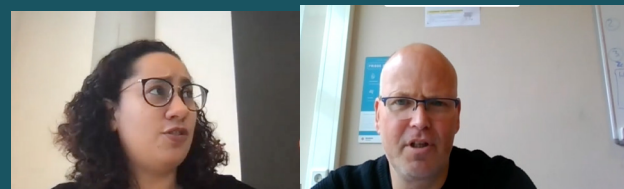
City
Vlaardingen, NL
Classes
VMBO, year 4
Experience
12 years



City
Hengelo, NL
Classes
VMBO, year 3 and 4
Experience
21 years



City
Hengelo, NL
Classes
VMBO - BBL and KGT, year 3 and havo, year 4, VWO year 4
Experience
2 years



opgeeft zodat de leerlingen makkelijk kunnen inloggen op de applicatie.

Drie verschillende trajecten?

Kwalitatieve Vragen

Hoe zou u dit lesplan omschrijven?

Hoe denkt u dat leerlingen zullen reageren op dit lesprogramma?

Kunt u een ding verzinnen dat er mist in het lesplan?

Wat is er sterk aan het lesplan?

Wat mist er in de applicatie?

Wat is er sterk aan de applicatie?

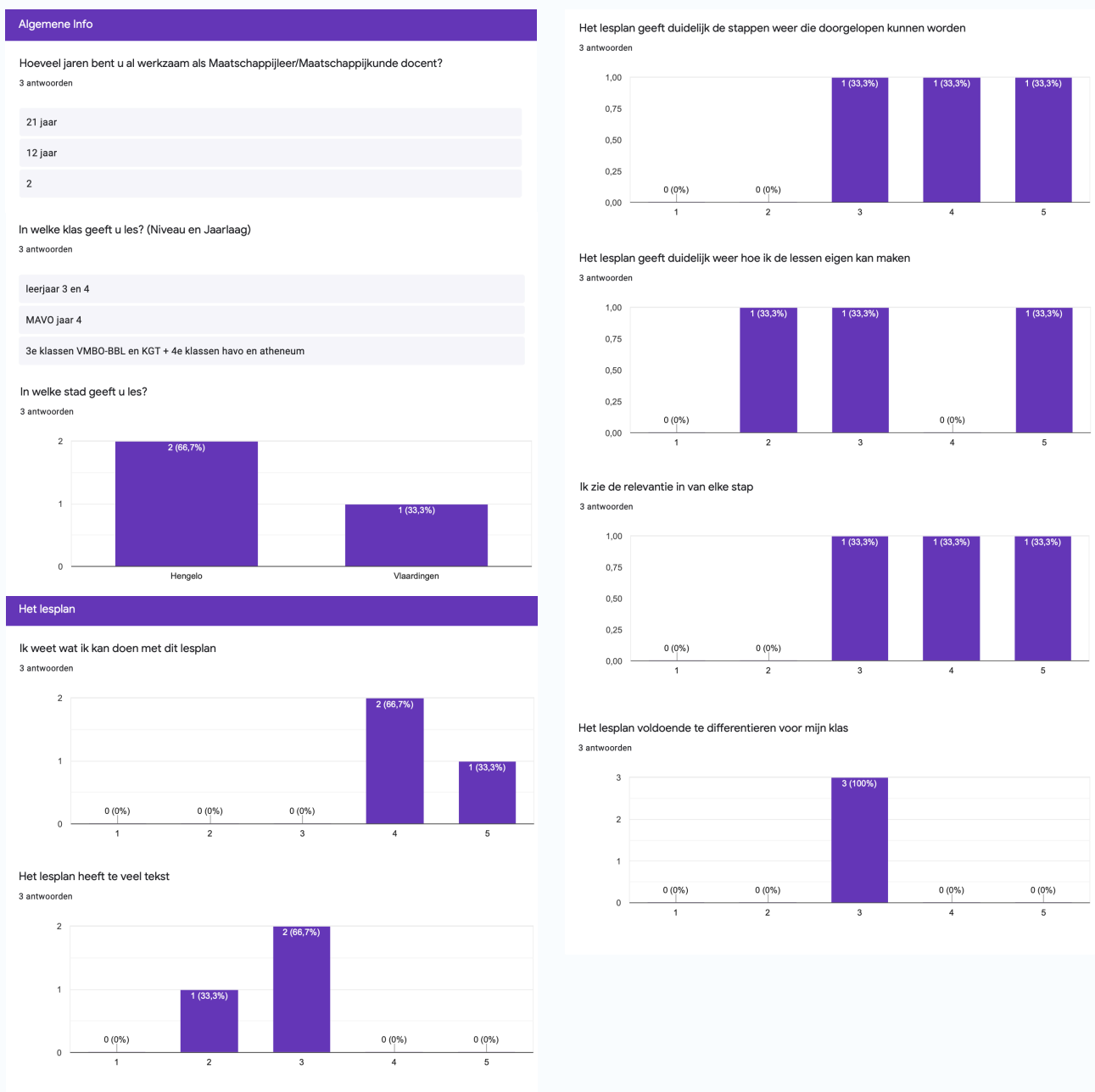
Is er iets dat u mist qua uitleg?

Zou u het lesplan gebruiken in uw lessen?

Appendix N point Two

Expert Evaluation: Questionnaire

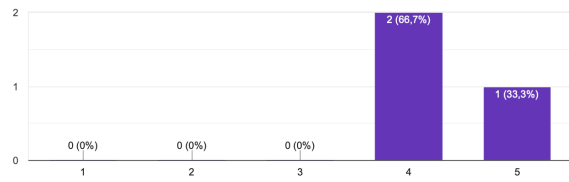
Figure N2: Results of Questionnaire filled in by Experts





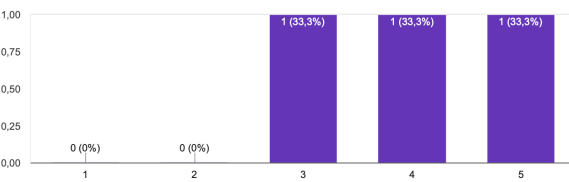
Ik vind het belangrijk dat ik het lesplan kan uitprinten

3 antwoorden



Ik zou de app laten gebruiken in de klas.

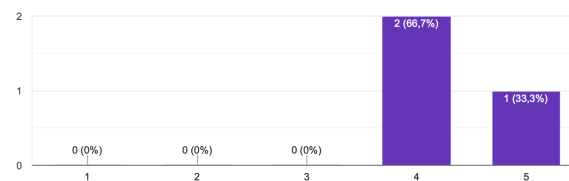
3 antwoorden



Applicatie

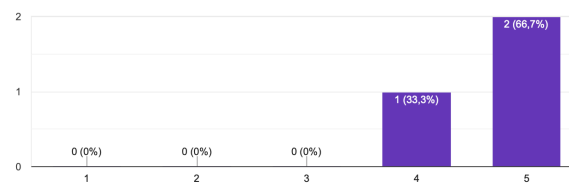
Ik zie de toegevoegde waarde in van deze app

3 antwoorden



Het is handig om de video's ook toe te voegen in de applicatie

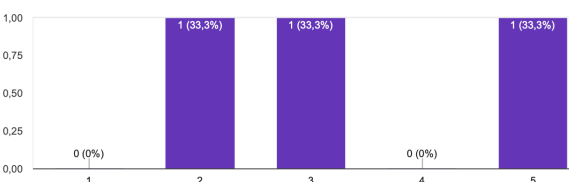
3 antwoorden



Videos

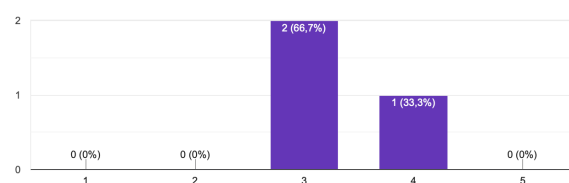
De video uitleg voegt toe aan de lessen

3 antwoorden



Ik zou zelf bestaande video's opzoeken die relevant zijn voor de les

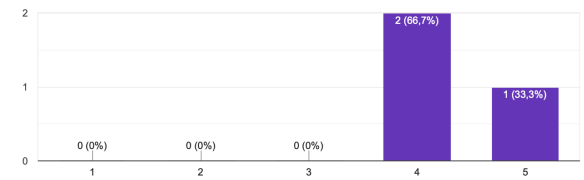
3 antwoorden



Concept

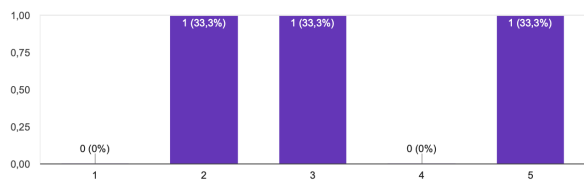
Dit lesprogramma kan jongeren hun eigen filterbubbel leren herkennen

3 antwoorden



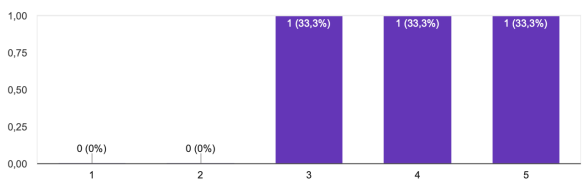
Dit lesprogramma sluit aan met de voorkennis van de leerlingen

3 antwoorden



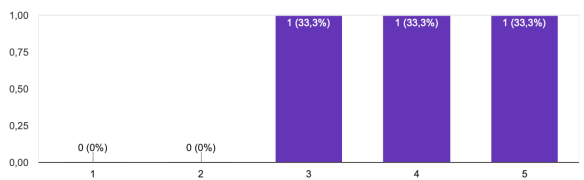
Dit lesprogramma is relevant voor mijn lessen

3 antwoorden



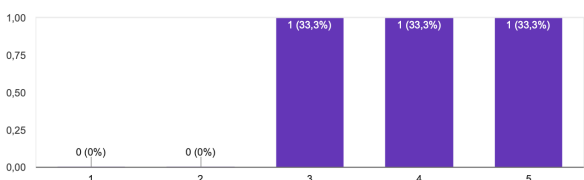
Dit lesprogramma kan mij meer inzichten bieden in waar de leerlingen zich mee bezig houden.

3 antwoorden



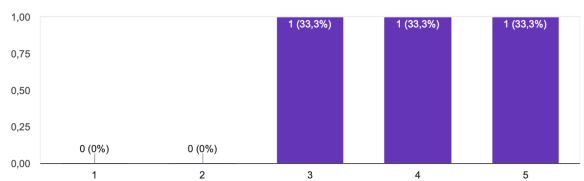
Het is relevant voor mij om meer inzicht te krijgen in waar de leerlingen zich mee bezig houden.

3 antwoorden



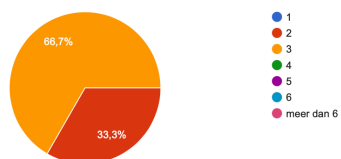
Dit lesprogramma zou waardevolle gesprekken kunnen stimuleren tussen leerlingen

3 antwoorden



Ik zou dit lesprogramma in dit aantal lessen verdelen

3 antwoorden



Heeft u nog verdere opmerkingen?

Opmerkingen

3 antwoorden

Ik zie het eerste deel wel voor me (eigen filterbubbel ontdekken/hashtags/avatarz enz), maar nog niet zo waarover vmbo leerlingen nou echt over in gesprek kunnen gaan met elkaar. Ook ben ik benieuwd naar wat je als docent concreet doet (haal ik nog niet helemaal uit de docentenhandleiding). Verder kan ik nog niet goed inschatten in hoeverre de stappen uitvoerbaar zijn binnen de lessen/in het klaslokaal (dat zou mijn voorkeur wel hebben). Ik bedoel daarmee: enkele keren lees ik dat het wellicht wat rumoerig kan worden, geluid kan geven (filmpjes, interviews) en dat wellicht gekozen kan worden voor een huiswerkopdracht. Maar de waarde ligt voor mijn gevoel toch vooral in het binnen school/binnen de lessen bespreken van dit thema. In hoeverre is dit mogelijk. En tot slot: hoe praktisch uitvoerbaar is het voor docenten (codes genereren, activiteit van leerlingen op de app monitoren, allerlei andere voorbereidingen die ik nog niet helemaal kan inschatten).

Ziet er hartstikke goed uit! Het is zodanig ontwikkeld dat het de leerlingen aanspreekt!

Over het algemeen een hartstikke mooi concept! Heb een aantal kleine punten opgeschreven waar we het zo over kunnen hebben.



Appendix O point One

Experience Evaluation: set-up

Participant 1

Age: 16

Gender: Girl

School level: VMBO

School city: Maastricht

Social Studies experience: Maatschappijkunde

Participant 2

Age: 16

Gender: Boy

School level: havo

School city: Maastricht

Social Studies experience: Maatschappijleer

Goal

The goal of this evaluation is to find out how the target group would experience the Pop Your Bubble lesson plan. During this lesson plan the target group will be asked to play pretend and imagine that they are in class. The key insights to find during this session are:

What did the participants learn during this session?

Does the content speak to the target group?

How did the participants experience the concept?

Set-up

The session was done in a home environment at the dinner table with:

a computer screen + Slides

Axure application prototype

Paper and pen

Roleplay

To start the session they were asked to describe three of their classmates, so they could imagine them sitting in class.

Figure O1 shows the playthrough of the test. Axure application

Slides

2 videos

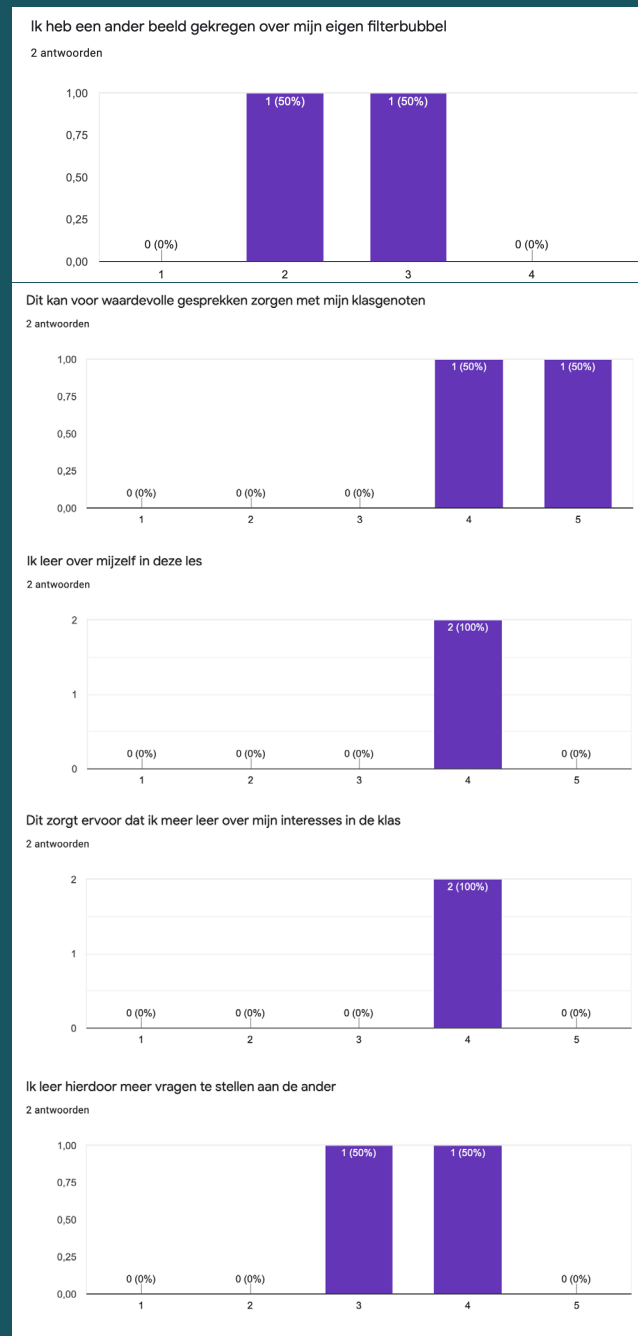
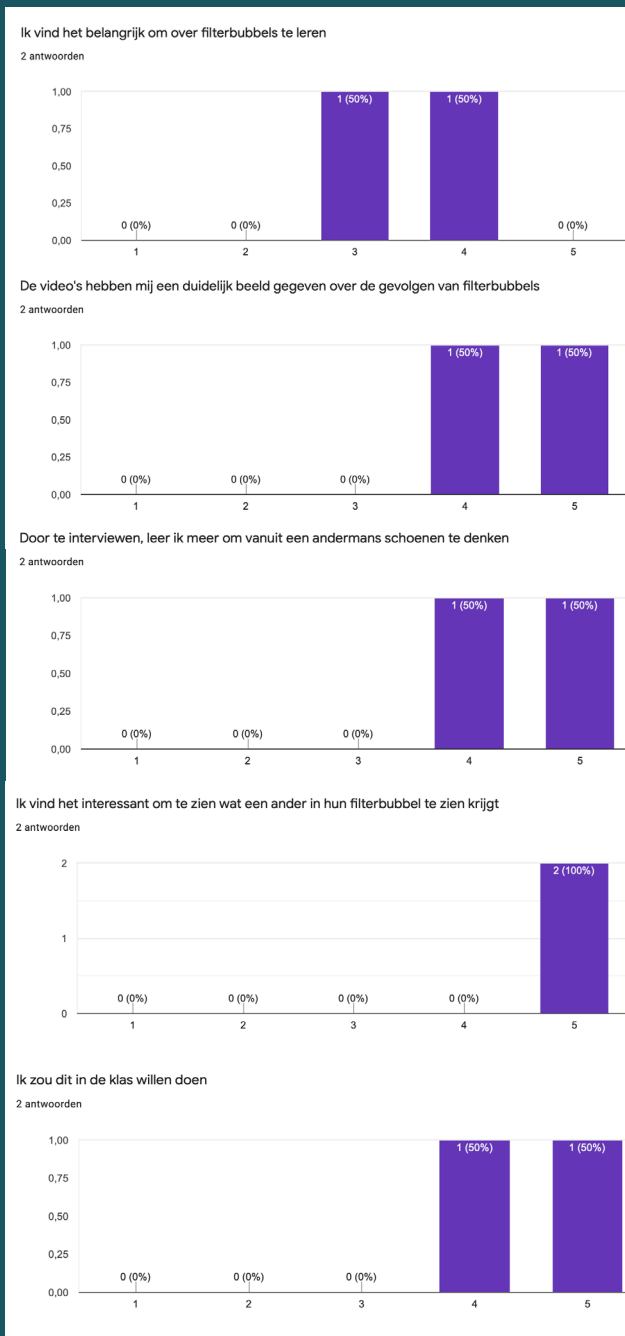
Figure 01: Overview of playthrough during the test.

Activity	Prototype	Description	Time
Introduction		Explanation of the project, introduction exercise	10 min
Introduction video + Discussion	video	Discuss what they have learned in this video and ask if it is something new to them.	5 min
Ask the participants to share 10 videos with me.	Via WhatsApp		10 min
Let the participants think of hashtags	On a piece of paper		5 min
Let the participants use the application to send in the hashtags for the <u>wordcloud</u>	mentimeter via Axure	What effect did this have?	5 min
Creating an Avatar	in the app	Discuss	10 min
formulating an opinion	voting		15 min
Show video on interviewing	video		
Interviewen	video		10 min
preparing the interview			10 min
Interviewen			10 min
			10 min
explain concept 3			



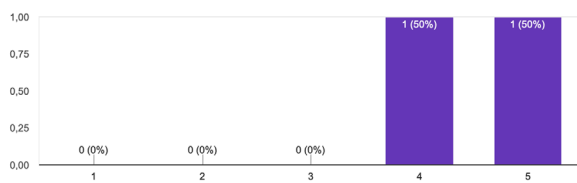
Appendix O point Two

Experience Evaluation: Results



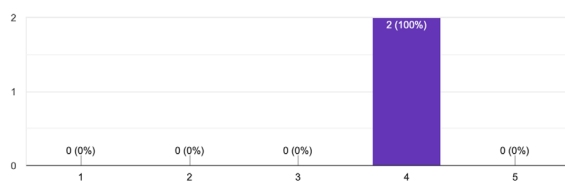
Mijn avatar dat in de klas hangt zorgt ervoor dat ik me soms kan herinneren wat een filterbubbel is

2 antwoorden



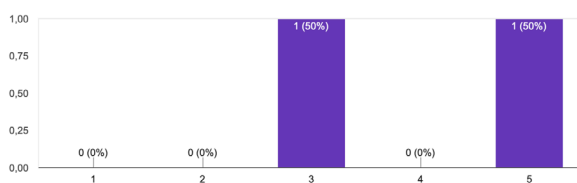
Ik zou bewuster zijn over de verschillende dingen die ik in mijn bubbel zie

2 antwoorden



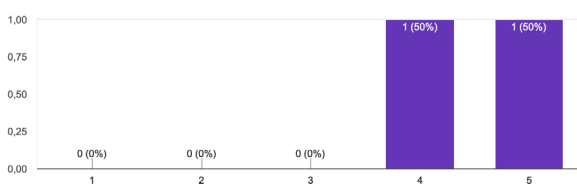
Ik zou door het jaar heen af en toe wel een leuke hashtag toevoegen aan mijn bubbel

2 antwoorden



Ik zou wel vaker door het jaar heen zo een oefening willen doen

2 antwoorden



Kan jij deze les beschrijven in drie woorden?

2 antwoorden

interessant, anders en leuker

zeer interessant

Kan je je vorige antwoord verder uitleggen? Waarom?

2 antwoorden

meestal vinden leerlingen de normale lessen saai, omdat je alleen naar een docent luistert en dan opdrachten maakt. Dit is iets anders waar leerlingen het stuk interessanter vinden om de les te volgen

door dat er veel plaatjes en een app gebruikt werd was het interessant

Wat is een ding dat je hebt geleerd?

2 antwoorden

Dat door de filterbubbel andere meningen gevormd worden

wat mijn bubbel is

Wat heb je over jezelf geleerd?

2 antwoorden

dat mijn luchtbubbel iets te maken heeft met mijn bubbel

dat mijn bubbel heel verschillend is

Assigned

2020

2021

**Pop your
Bubble**

