Welkom bij de Expertsessie Educatieve games & apps

Hoe zorgen we ervoor dat digitale leermiddelen echt impact maken?

15 JAAR

Lotte Vergouwen

Programmaleider Creative Transformation Platform bij de HKU - en host van vandaag

Wie ben ik?
... en wat heb ik met het onderwerp?

- Cinekid – Medialab, projectleider Cinekidstudio, start educatie afdeling
- NPO - Eerste mobiele websites en apps ontwikkeld
- IJsfontein - Playful learning centraal
- HKU - Studieleider Games & Interactie

Wie ben ik?
... en wat heb ik met het onderwerp?

Playful Learning, Teaching Games

An Exploration of the Role of Digital Media in School Education

Lotte Vergouwen
0116580
Master New Media and Digital Culture
Utrecht University
10-09-2006
Marianne van den Boomen

Gartners Hype cycle
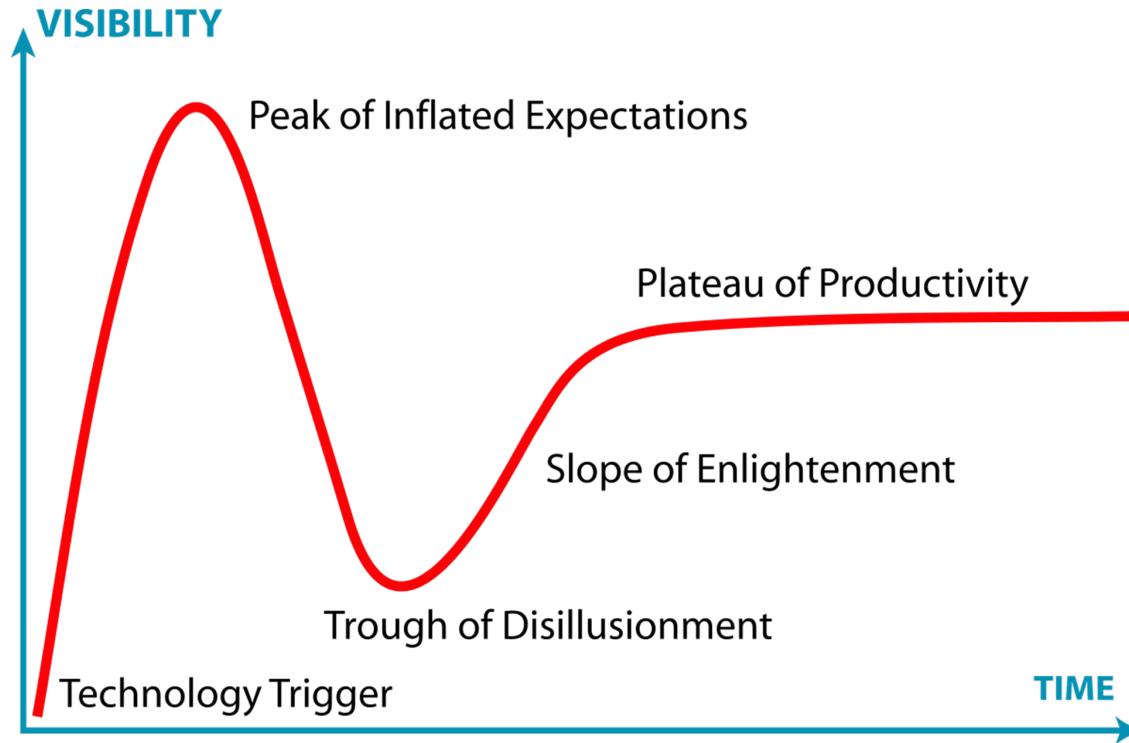
Gartners Hype cycle

Hype Cycle for Artificial Intelligence, 2023

Gartners Hype cycle - 2014

Gartner Hype Cycle for Emerging Technologies, 2014

Aanleiding

- Samenwerking Netwerk Mediawijsheid & Cinekid - Game en App Award
- Nieuw curriculum Digitale Geletterdheid
- Onderzoek gedaan naar Mediawijsheid games
- Vraag vanuit het netwerk van Netwerk Mediawijsheid

Programma

13.30 uur	Inleiding door Lotte Vergouwen
13.35 uur	Keynote door Rhea Flohr
13.50 uur	Keynote door René Glas, Teresa de la Hera en Julia Kneer
14.20 uur	Keynote door Evert Hoogendoorn
14.35 uur	Keynotes in gesprek met de zaal

14.50 - 15.05 uur   Pauze - Theaterzaal 2

15.05 uur	Aan de slag: Rondetafelsessies- uitleg
15.10 uur	Ronde 1
15.40 uur	Ronde 2
16.10 uur	Terugblikken, vooruitblikken en afronden

Vanaf 16.30 uur   Borrel - Theaterzaal 2

Netwerk Mediawijsheid
15 JAAR

Rhea Flohr

Zelfstandig trainer en adviseur digitale technologie, docent Aardrijkskunde + mediawijsheid

'Digitale geletterdheid is van iedereen'

Een integrale aanpak van digitale geletterdheid

- Docent aardrijkskunde

- Docent mediawijsheid/DiVa

- Zelfstandig trainer en adviseur op het gebied van digitale technologie VO

- Expert digitale geletterdheid VO

- Nieuwsgierig aagje/kritische vragensteller

Rhea Flohr

Move before you're ready!

Aanbeveling

Zorg dat je met alle betrokkenen aan tafel zit zodat je met elkaar een open en kwetsbaar gesprek kunt voeren.

Op basis van dit gesprek kom je tot een gezamenlijke doelstelling waar concrete acties uitvoorkomen die je in een realistisch tijdpad kunt bewerkstelligen.

Om te onthouden:

- Wat moeten onze leerlingen kennen en kunnen om onderwijs te kunnen volgen? En om een succesvolle overstap te maken naar het vervolg?

- Op welke manier controleren we af ze deze vaardigheden bezitten?

- Hoe helpen we hen om deze vaardigheden te vergroten?

Wie geeft antwoord op deze vragen?
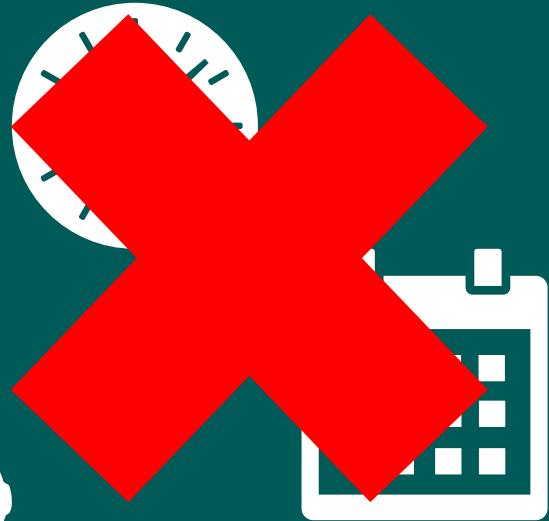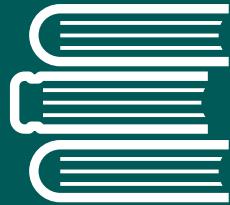
Om te onthouden:

- Docenten hebben tijd nodig

- Waar zit ruimte in het lesprogramma?

- Er is veel kennis over hun eigen vakgebied maar nog niet over DG

Waar hebben we het nu eigenlijk over?

Digitale informatievaardigheden
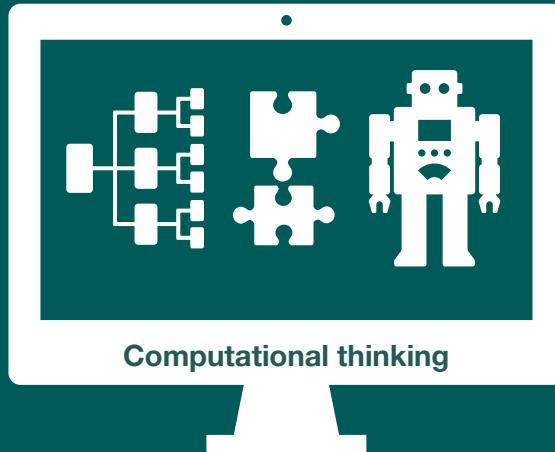
Computational thinking
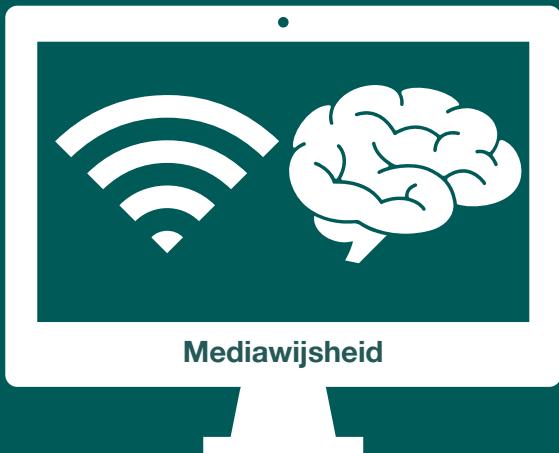
Mediawijsheid

Praktische ict-vaardigheden

- Digitale communicatie en samenwerking
- Veiligheid
- Creëren van digitale content
- Zoeken en vinden van informatie en data
- Gebruik van digitale technologie
- Oplossen van digitale problemen

"De **kans en vaardigheid** om digitale media te gebruiken

- Ellen Helsper (2018)

"De **kans en vaardigheid** om digitale media te gebruiken (*of te beslissen ze **niet** te gebruiken*)

- Ellen Helsper (2018)

"De **kans en vaardigheid** om digitale media te gebruiken (*of te beslissen ze niet te gebruiken*) op manieren die iemand toestaan om daar **voordelen** uit te halen in het dagelijks leven en **negatieve uitkomsten** te vermijden

- Ellen Helsper (2018)

"De **kans en vaardigheid** om digitale media te gebruiken (*of te beslissen ze **niet** te gebruiken*) op manieren die iemand toestaan om daar **voordelen** uit te halen in het dagelijks leven en **negatieve uitkomsten** te vermijden <u>nu</u> en in de <u>**toekomst**</u>".

- Ellen Helsper (2018)

Om te onthouden:

- Het leergebied digitale geletterdheid heeft nog geen kerndoelen.

- Verschillende ontwikkelingen en initiatieven zorgen voor nieuwe input.

Wie blijft er binnen je school op de hoogte?
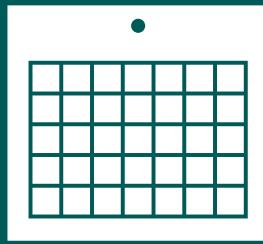
- Digitalisering

- Boek achter glas

- Big tech

- Afleiding

- Mobieltjes verbod

- AVG

- Digitale didactiek

Transformative teaching

Redefinition — **R**

Modification — **M**

Augmentation — **A**

Substitution — **S**

TPACK - model

SAMR - model
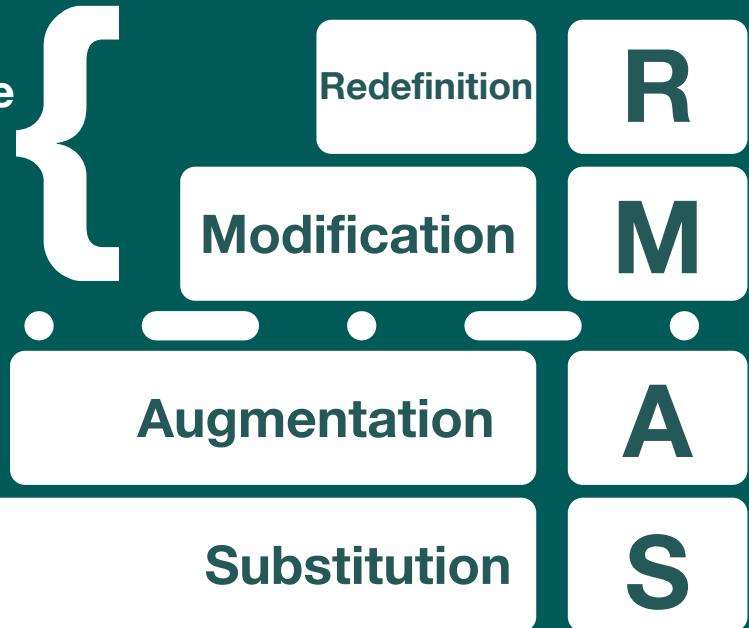
Om te onthouden:

- Hoe delen en borgen we deze kennis?

- Maken we gebruik van open leermiddelen?

- Wanneer vinden wij het goed?

Hoe werken we eigenlijk met elkaar samen?
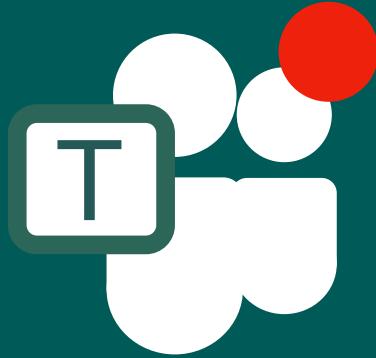
Om te onthouden:

- Hoe werken we eigenlijk met elkaar samen?

- Welke systemen gebruiken we daar eigenlijk voor?

- Zou het ook anders kunnen?

Hebben we het daar met elkaar eigenlijk over?
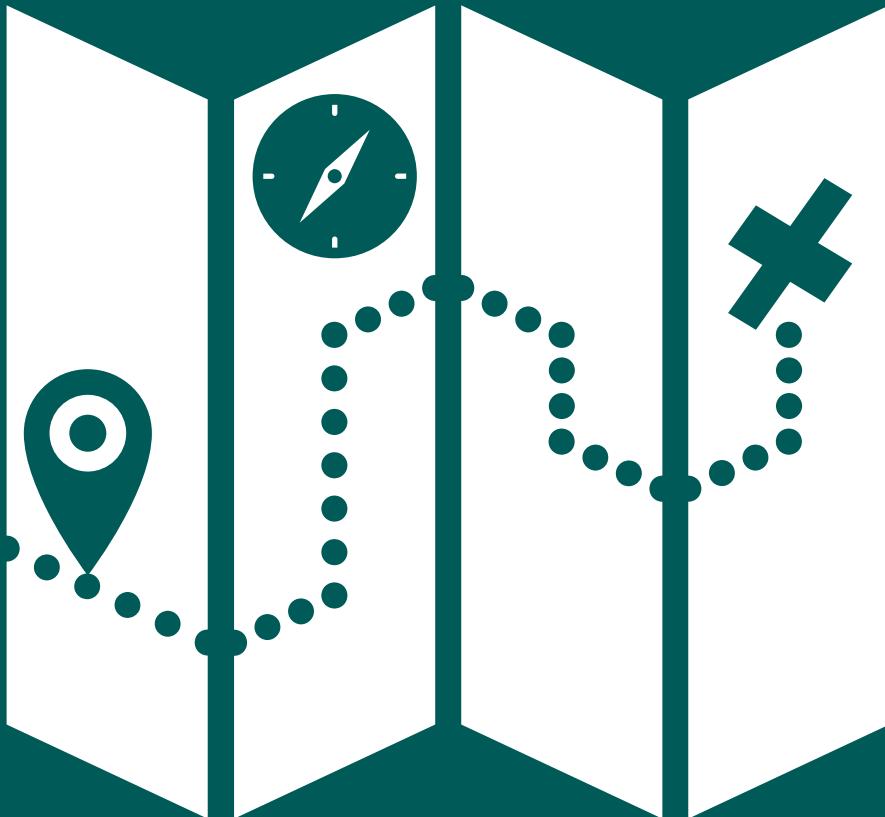
Aanbeveling

Zorg dat je met alle betrokkenen aan tafel zit zodat je met elkaar een open en kwetsbaar gesprek kunt voeren.

Op basis van dit gesprek kom je tot een gezamenlijke doelstelling waar concrete acties uit voorkomen die je in een realistisch tijdpad kunt bewerkstelligen.

Specifiek voor jullie: wees je bewust van deze realiteit een initiatief heeft ruimte nodig om te landen binnen een school, ruimte die er niet altijd is.

René Glas, Teresa de la Hera en Julia Kneer

Onderzoekers van de Universiteit Utrecht en Erasmus Universiteit Rotterdam

Digital literacy games:
Digital games designed to support digital literacy skills acquisition

Jeroen Jansz, Julia Kneer, Teresa de la Hera
Erasmus University Rotterdam, The Netherlands

René Glas, Jasper van Vught, Timo Fluitsma
Utrecht University, The Netherlands

Salvador Gómez-García
Complutense University of Madrid, Spain

Laura Cañete Sanz
University of Murcia, Spain

Nuria Navarro-Sierra
King Juan Carlos University, Spain

Erasmus Research Centre for Media, Communication and Culture

Utrecht University

Universidad Rey Juan Carlos

UNIVERSIDAD DE MURCIA

NWO Netherlands Organisation for Scientific Research

Regieorgaan SIA

Digital literacy games:
Digital games designed to support digital literacy skills acquisition

Game Analysis

Thematic analysis of **100 media literacy games** and formal analysis of 12 games. Findings discuss presence of certain topics themes and competencies in the dataset, as well as prevalent design choices.

Glas et al. (2023). Literacy at play: An analysis of media literacy games used to foster media literacy competencies. *Frontiers in Communication, 8*

Literature Review

Systematic literature review of papers published on the topic of digital literacy games between the years 2005 and 2021 and stored in Scopus

31 papers published

de la Hera, T. et al (In Prep). Digital literacy games: A systematic literature review

Study on effects

Evaluation and validation of the effects of actual classroom use of the digital literacy game Interland on **secondary education Dutch students**

Kneer, J., Partous, M., Jansz, J., de la Hera, T. (In Prep). I know phishing – it is catfishing!? Playing video games for digital literacy and the role of enjoyment, achievement and competition

Game Analysis:

An analysis of media literacy games

"How are media literacy games designed to foster media literacy"

"media literacy games": "games which either explicitly present themselves as serious games focusing on media literacy (within the game, through its website, or on the platform where it is acquired), or serious games which through their design are explicitly geared toward one or more of the main topics, skills or competencies associated with media literacy"
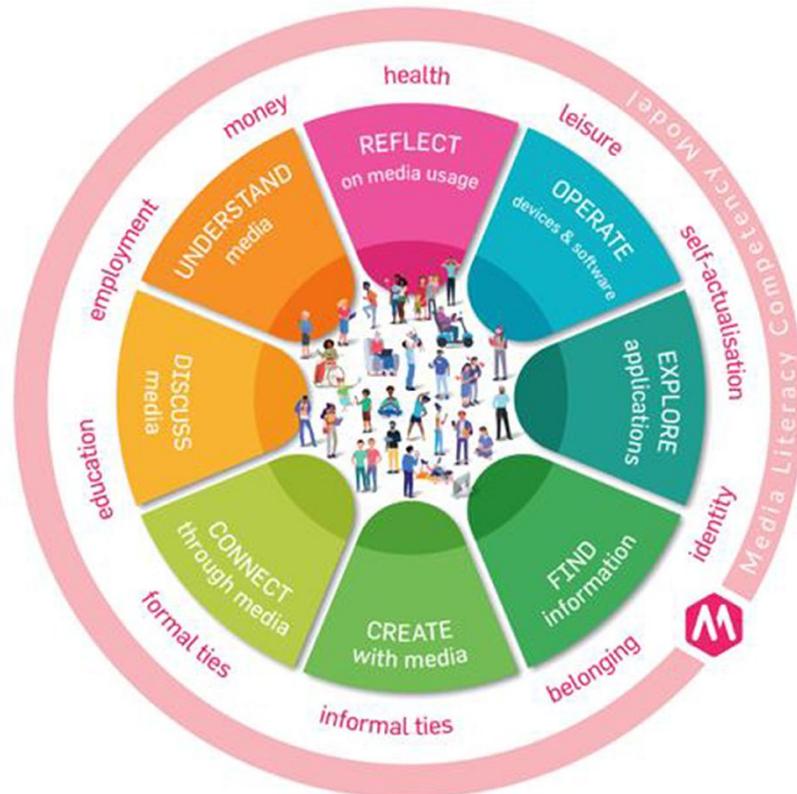
Game Analysis:
Selection criteria

Selection criteria:

- a title should fit our working definition of a media literacy game;
- a title should be published in English or Dutch or should be using no written or oral language;
- a title should be definable as a game rather than an example of gamification;
- a title should be (at least partially) digital.

Comprehensive sampling: **100 titles**

↓

Thematic analysis: **56 titles**

↓

Formal analysis: **12 titles**

#	TITLE	Media literacy topics	Operate devices & software	Explore applications	Find information	Create with media	Connect through media	Discuss media	Understand media	Reflect on media usage
1	Co-Co's AdverSmarts	Advertisement recognition, web literacy				V			V	V
2	Most Likely Machine	Algorithms				V			V	V
3	Bloxxgame	Blockchain	V	V						
4	Free Culture Game	Copyright							V	V
5	Media Literacy Escape Game	Digital vocabulary								
6	Galgje	Digital vocabulary								
7	Woordzoeker	Digital vocabulary								
8	Cyber Choices	Digital well-being							V	V
9	Eliza	Digital well-being							V	V
10	ACBC	Digital well-being							V	V
11	Digital Compass	Digital well-being						V		V
12	Media Matties	Digital well-being					V	V		
13	Gamer Girl	Digital well-being							V	V
14	Superbetter	Digital well-being								V
15	Mindlabs Energy Circuits	Energy circuits							V	
16	De Grootste Escaperoom	Environmentalism		V					V	
17	DigiKwis	Internet usage	V	V					V	
18	Cow Clicker	Microtransactions							V	V
19	Spot the Troll	Misinformation							V	V
20	ABC Fake News Game	Misinformation							V	V
21	Bad News	Misinformation							V	V
22	Bad News (Junior Edition)	Misinformation							V	V
23	Fake it to Make it	Misinformation							V	V
24	Fakey	Misinformation							V	V
25	Go Viral!	Misinformation							V	V
26	Harmony Square	Misinformation							V	V
27	Informable	Misinformation							V	V
28	Postfacto	Misinformation							V	V
29	The Fake News Game	Misinformation							V	V
30	The Republia Times	Misinformation							V	V
31	The Westport Independent	Misinformation							V	V
32	Troll Factory	Misinformation							V	V
33	BBC iReporter	Misinformation		V					V	V
34	Cranky Uncle	Misinformation				V			V	V
35	Facticious 2018	Misinformation				V			V	V
36	Facticious Pandemic	Misinformation				V			V	V
37	Newsfeed defenders	Misinformation				V			V	V
38	Escape Fake	Misinformation	V						V	V
39	Interland	Misinformation, Privacy, Digital well-being							V	V
40	MediaMasters	Misinformation, Privacy							V	
41	Mediamasters Themamissies	Misinformation, Privacy							V	
42	Datak	Privacy	V						V	V
43	Cyber X scape	Privacy							V	V
44	Beeld Kraken	Privacy		V	V				V	
45	Hack de Hacker	Privacy							V	V
46	Data Detox Game	Privacy							V	V
47	HackShield	Privacy							V	V
48	Help de FBI	Privacy							V	V
49	Click if You Agree	Privacy							V	V
50	Data Defenders	Privacy							V	V
51	Google Feud	Search engine		V	V				V	
52	A Google a day	Search engine		V	V				V	
53	Oculus Riftirement	Social acceptance		V						
54	Minecraft in later life	Technology acceptance		V						
55	ARe You Ready?	Virtual reality		V					V	V
56	The Wiki Game	Wikipedia		V	V					

Game Analysis:
Main Findings

Three main findings:

1. Misinformation the biggest "genre", with some topics remaining underrepresented.

2. "Understand media" and "Reflect on media usage" by far the most common competencies addressed, with several competencies underrepresented.

3. A common focus of media literacy games is one one main topic and related specific competencies rather than a broader view on media literacy.

Game Analysis:
Discussion

#	TITLE	Media literacy topics	Operate devices & software	Explore applications	Find information	Create with media	Connect through media	Discuss media	Understand media	Reflect on media usage
1	Co-Co's AdverSmarts	Advertisement recognition, web literacy				V			V	V
2	Most Likely Machine	Algorithms				V			V	V
3	Bloxxgame	Blockchain	V	V						
4	Free Culture Game	Copyright							V	V
5	Media Literacy Escape Game	Digital vocabulary								
6	Galgje	Digital vocabulary								
7	Woordzoeker	Digital vocabulary								
8	Cyber Choices	Digital well-being							V	V
9	Eliza	Digital well-being							V	V
10	ACBC	Digital well-being							V	V
11	Digital Compass	Digital well-being					V			V
12	Media Matties	Digital well-being					V	V		
13	Gamer Girl	Digital well-being							V	V
14	Superbetter	Digital well-being								V
15	Mindlabs Energy Circuits	Energy circuits							V	
16	De Grootste Escaperoom	Environmentalism		V					V	
17	DigiKwis	Internet usage	V	V					V	
18	Cow Clicker	Microtransactions							V	V
19	Spot the Troll	Misinformation							V	V
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38	Escape Fake	Misinformation	V						V	V
39	Interland	Misinformation, Privacy, Digital well-being							V	V
40	MediaMasters	Misinformation, Privacy							V	
41	Mediamasters Themamissies	Misinformation, Privacy							V	
42	Datak	Privacy	V						V	V
43	Cyber X scape	Privacy							V	V
44	Beeld Kraken	Privacy		V	V				V	
45	Hack de Hacker	Privacy							V	V
46	Data Detox Game	Privacy							V	V
47	HackShield	Privacy							V	V
48	Help de FBI	Privacy							V	V
49	Click if You Agree	Privacy							V	V
50	Data Defenders	Privacy							V	V
51	Google Feud	Search engine		V	V				V	
52	A Google a day	Search engine		V	V				V	
53	Oculus Riftirement	Social acceptance		V						
54	Minecraft in later life	Technology acceptance		V						
55	ARe You Ready?	Virtual reality		V					V	V
56	The Wiki Game	Wikipedia		V	V					

1. Do we need more variety of topics addressed by literacy games and/or more games with a more unifying look at media literacy.

2. Are (digital) games able to present the whole range of competencies well and/or are there societal/cultural/financial reasons why the focus remains on a few.

3. Which design strategies actually work for what type of competencies (-> project 2!).

Literature review:
## Academic insights on digital literacy games

Systematic literature review of academic papers published on the topic of **digital literacy games** between the years **2005 and 2021** and stored in **Scopus**.

We have analyzed a total of **31 papers** published (starting from 1746)

Inclusion criteria:

- Qualitative or quantitative studies that report on the use of digital literacy games
- Written in English, Spanish, Portuguese or Dutch
- Academic journals, book chapters, conference papers

Literature review:

Topics
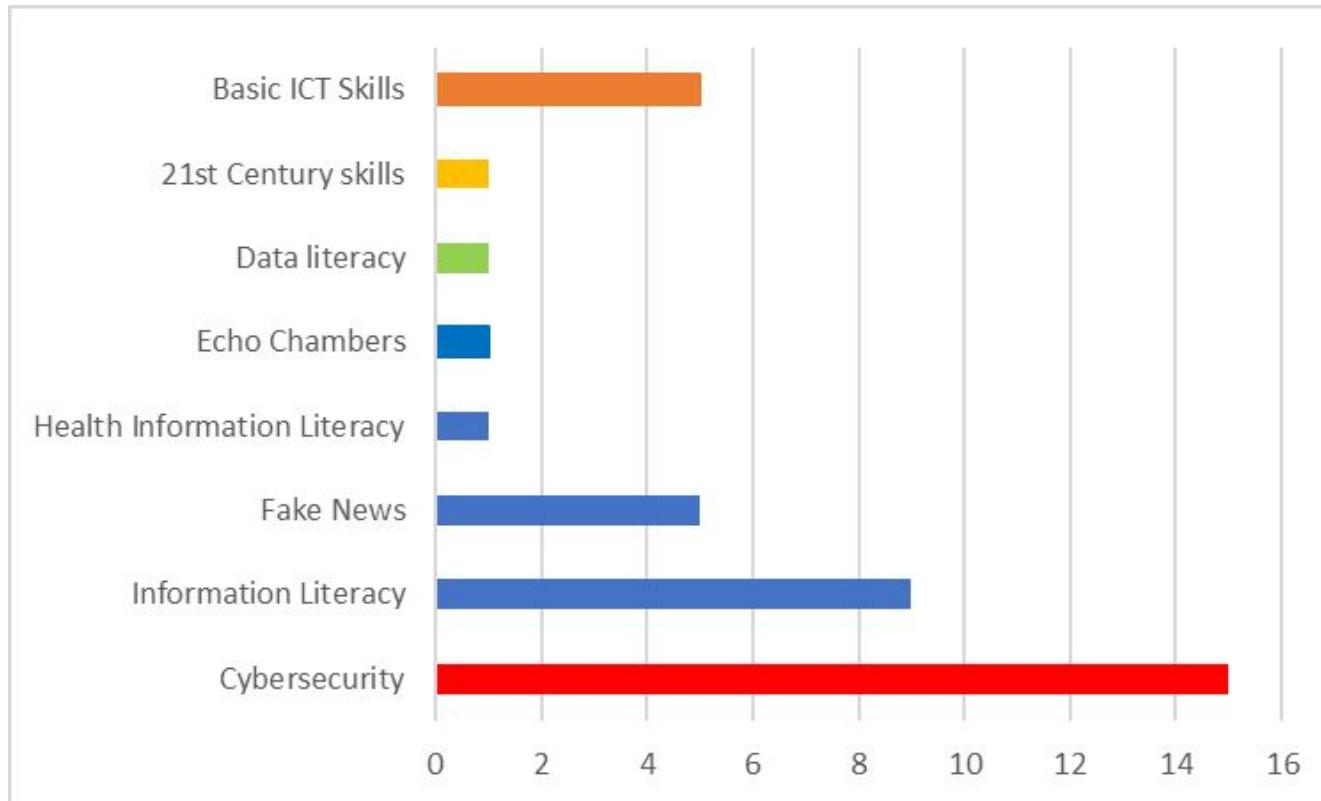
Literature review:
Target Groups
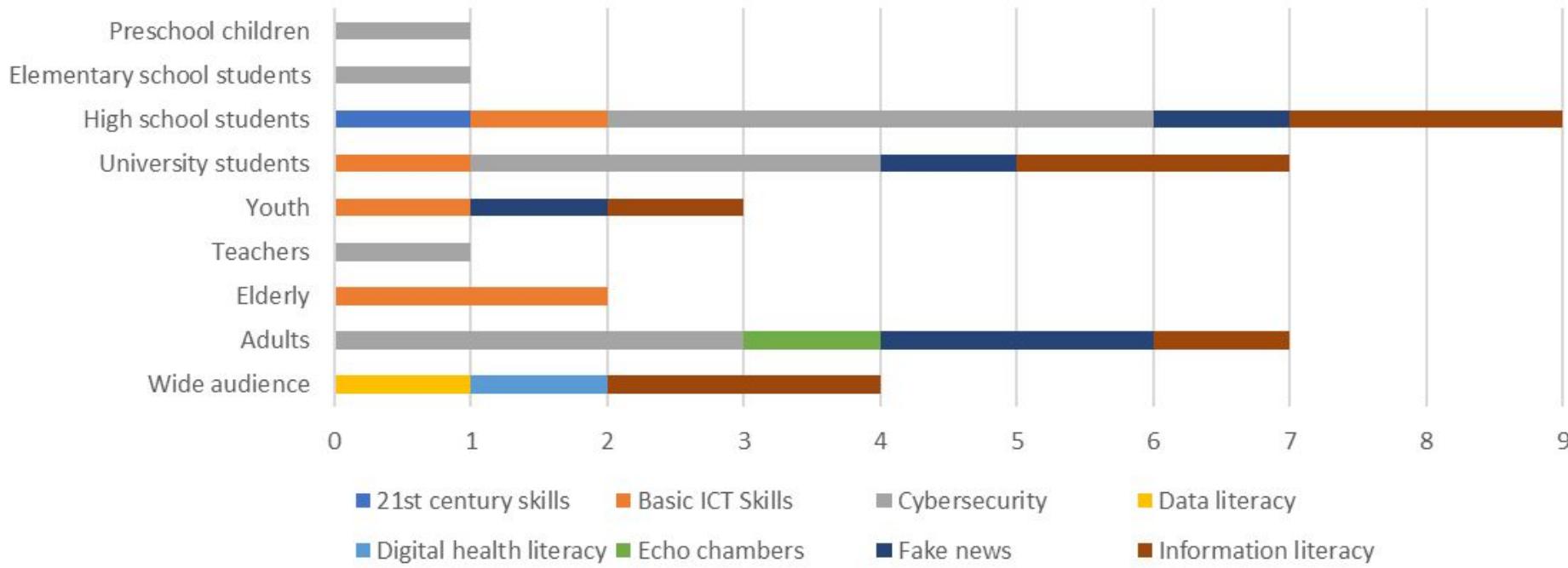
Literature review:
Academic insights on digital literacy games

- **Visualization**: visualization is a powerful design resource to facilitate the understanding of abstract concepts in digital literacy games. For example, in the game Cookie Mania, the visual representation of cookies has been used to help players understand the meaning of this abstract concept. This is an effective design approach to support assimilation of knowledge.

- **Realism**: Realistic simulations have a significant role in identification of the player with the game character. Familiarity with situations in the game and available resources to be used for assimilation of knowledge and critical thinking

- **Scalability**: Digital literacy is intrinsically connected to technological developments. For this reason digital literacy games may become easily outdated. For this reason designing games that use a flexible game design that allows scalability is important to ensure they can be adapted to new developments.

Literature review:
Academic insights on digital literacy games

- **Ethical decision-making:** It has been proven that implementing moments in the game in which players need to take decisions that involve ethical considerations foster further investment and care of players towards the game narrative

- **Scenario injects:** Scenario injects (including time pressure, escalation, reputation and resource allocation) trigger critical thinking when players are expected to make decisions within the game. This can be used in combination with ethical decision-making as discussed in the previous point.

- **Diverse play or personalization**: the effectiveness of digital literacy games seems to be mediated by players' previous knowledge. Games that allow personalization and facilitate diverse play better adapt to different player profiles.

Literature review:
Academic insights on digital literacy games

- **Agency:** taking a constructionist learning approach where users create and not just select plays a role in **transferability of knowledge**

- **Facilitate review and debriefing:** games that promote discussion among players and facilitate a debriefing moment are successful in promoting **critical thinking**. Furthermore, the social aspect of the debriefing moment has a significant role in the effectiveness of digital literacy games.

- **Testing knowledge:** to move from knowledge acquisition to **transferability of knowledge** it is important to foster self-reliability. Allowing players to test their acquired knowledge within the game has an important role in fostering self-reliability.

- **Quick and poignant feedback**: feedback, although relevant, is less important in the effectiveness of digital literacy games than other factors such as clear goals and challenge-skill balance. Providing quicker and more poignant feedback makes it more relevant for players.

Experimental Study:
Sample and Procedure

- *N* = 317, 46.2% identified as male and 53.8% as female
- Average age was 13.39 (*SD* = 0.86) varying from 12 to 15 years old
- 42.7% of the sample did pre-vocational secondary education (VMBO), 32.9% studied senior general secondary education (HAVO), and 24.1% followed pre-university education (VWO)
- 19 classes, assigned to Game or Control Group

- Free online game Interland (available in English, French or Flemish/Dutch), four in-game sessions
- For this study Reality River has been chosen for the media intervention
- Played in a single-player mode R
- Requires players to answer questions in order to complete the game
- Focus is on phishing and scamming
- Playtime approx. 15 minutes

	Game	Control
VMBO basis/ kader	59	75
VMBO GTL/TL/HAVO	70	39
HAVO/ VWO	29	44

Experimental Study:
Knowledge Questions between Gaming and Control Group
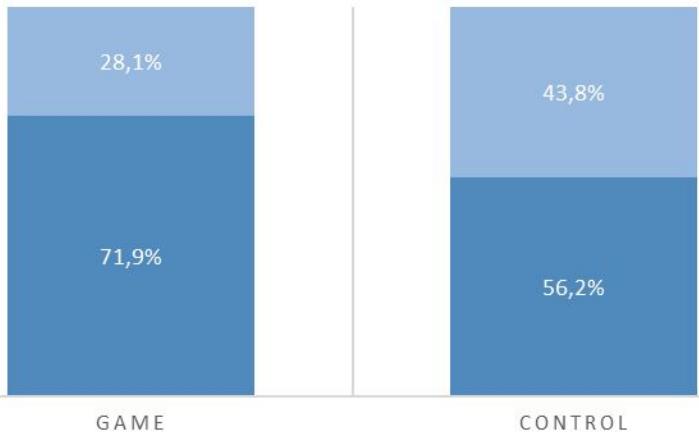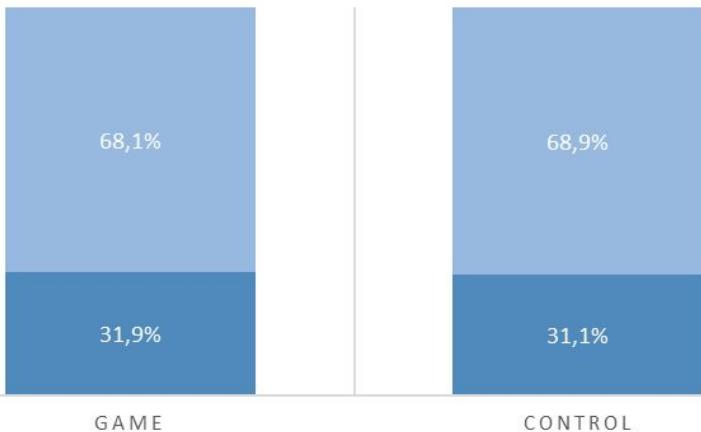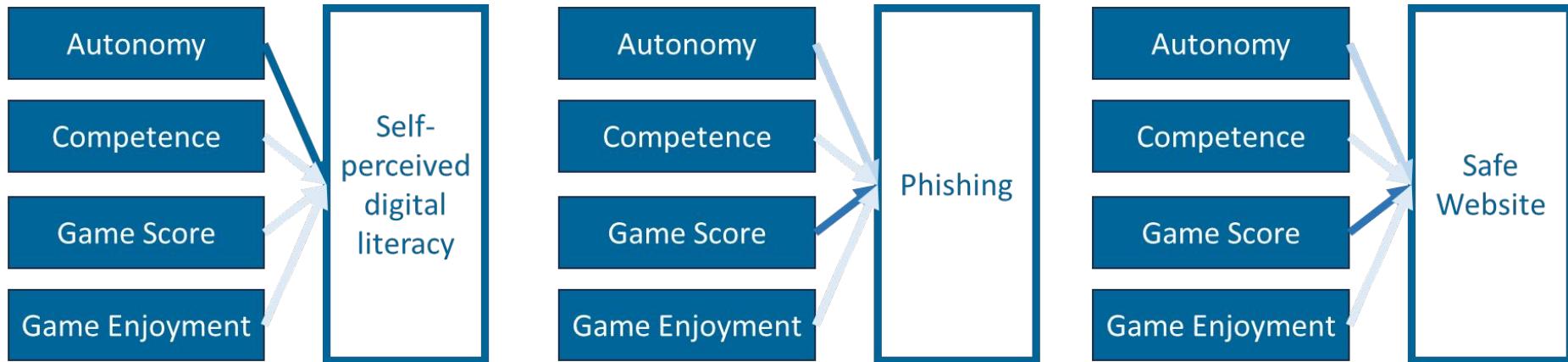
Experimental Study:
Discussion and Conclusion

- Existing knowledge is quite diverse and needs to be taken into account to design and use a game to teach
- Game experience is not linked to real gained knowledge but to experienced knowledge
- Knowledge test needs to be conducted twice, before and after game
- Perceived knowledge does NOT match real knowledge

Limitations and Future Ideas
- Comparison to real classical teaching necessary
- Educational goals need to be implemented and based on pupils knowledge
- Longer knowledge test, different knowledge areas

Proposed Questions for the Debate

● Do we need more variety of topics addressed by literacy games and/or more games with a more unifying look at media literacy?

● Are (digital) games able to present the whole range of competencies well and/or are there societal/cultural/financial reasons why the focus remains on a few?

● What are the skills and competencies that educators would like to be supported through games?

● What are the needs of educators that would facilitate the use of digital literacy games in the classroom?

● Which type of academic insights would be valuable from a design and educational perspective to support the use of digital literacy games in the classroom?

Thank you

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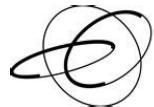
Erasmus Research Centre for Media, Communication and Culture

Utrecht University

Universidad Rey Juan Carlos

UNIVERSIDAD DE MURCIA

Evert Hoogendoorn

Onderwijs- en gameontwerper / programmaleider Ludodidactiek
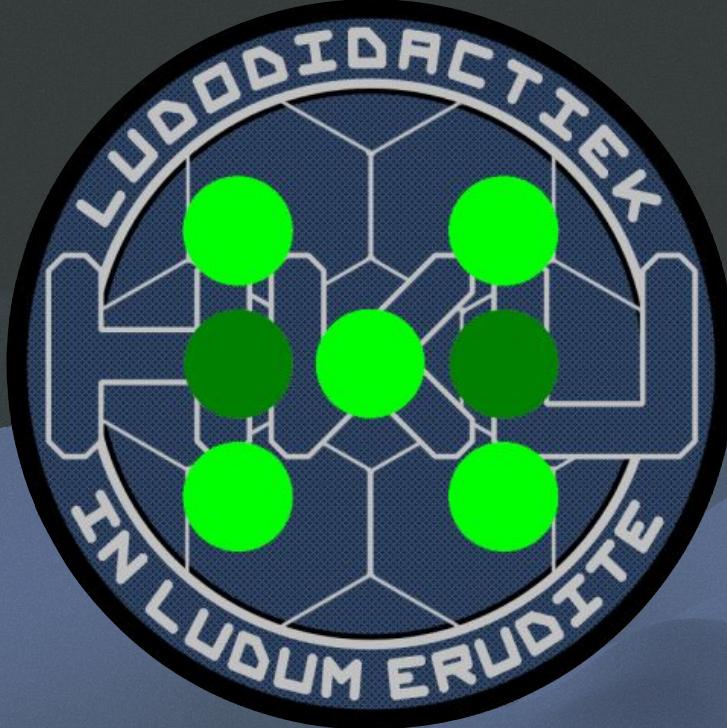
LUDODIDACTIEK

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https://www.linkedin.com/in/everthoogendoorn/

ERVARINGEN

Mechanics ▶ Dynamics ▶ Aesthetics
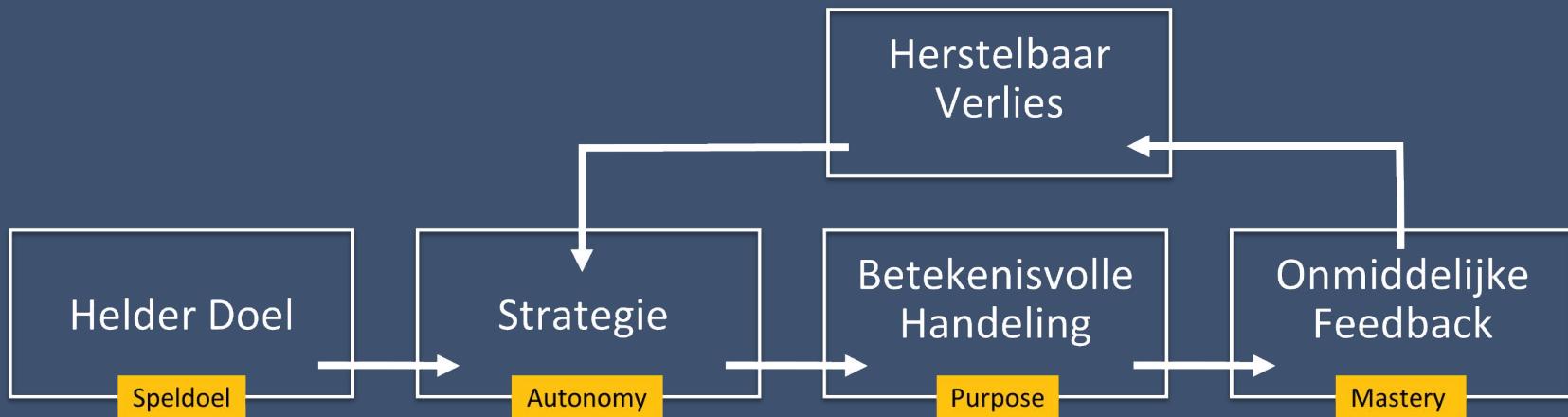
Vragen en discussie

hier komen de vragen voor de keynotes

Pauze, tot 15.05 uur

15 JAAR

Programma

Welkom terug!

15.05 - 15.10 uur	Aan de slag: Rondetafelsessies- uitleg
15.10 - 15.40 uur	Ronde 1
15.40 - 16.10 uur	Ronde 2
16.10 - 16.30 uur	Terugblikken, vooruitblikken en afronden

Vanaf 16.30 uur   Borrel - Theaterzaal 2

Netwerk
Mediawijsheid
15 JAAR

Indeling van de tafels

Tafel 1:
Niels Bloembergen, Mediajungle: Wat is er nodig om meer impact te maken op kwetsbare doelgroepen?

Tafel 2:
Harriet Leget, Kennisnet: Hoe kunnen we in het curriculum meer ruimte maken voor spelenderwijs leren?

Tafel 3:
Sarah Hijmans, Netwerk Mediawijsheid: Hoe kan het netwerk worden versterkt om samen meer impact te maken?

Tafel 4:
Eva Vesseur, Waag: Hoe kunnen we de waarden en rechten van de gebruikers (kinderen en leraren) beter meenemen?

Tafel 5:
Evert Hoogendoorn, HKU: Hoe gaan we van kennis en bewustzijn naar mediawijze gedragsverandering?

Rondetafelvraag: Wat is er nodig om meer impact te maken bij specifieke doelgroepen?

Do's
Wat gaat er (al) goed?
Wat moet je vooral doen?

Don'ts
Wat gaat er (nog) niet goed, wat mist er?
Wat moet je vooral niet doen?

3 Takeaways
Welke belangrijkste punten nemen we mee?
Aanbevelingen, ideeën, vervolgstappen...

Afzender: ○ Onderwijs ○ Onderzoek ○ Ontwikkelaars ○ .... ○ ....

Netwerk Mediawijsheid
15 JAAR

Ronde 1, tot 15.40 uur

15 JAAR

Ronde 2, tot 16.10 uur

15 JAAR

Terugblikken & afronden

Veel dank voor je bijdrage,

nu tijd voor de borrel!

15 JAAR