

Newsarcade_Classroom: Seriously Play the News in the Classroom!

D2.1. State of the Art report

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This report has been written by Lusófona University with contributions from all consortium partners.

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PART 1 – METHODOLOGICAL FRAMEWORK FOR DESKTOP RESEARCH AND LITERATURE REVIEW

1.1 Introduction

The NewsArcade@Classroom project aims to advance media literacy education through gamification, leveraging innovative approaches to enhance learning engagement. To support the development of an evidence-based framework, tasks 2.1 and 2.2 entail a systematic exploration of existing research and empirical data pertinent to media literacy education using gamification techniques, and field-based research with project target groups. Through a combination of quantitative and qualitative methodologies, the primary objectives of these tasks were:

- To establish a comprehensive understanding of existing media literacy education practices incorporating gamification.
- To identify key trends, challenges, best practices in the field.
- To collect data from target groups (educators and students).
- To synthesize findings that will inform the design and implementation of the NewsArcade tool.

The following sections outline the protocols for desk research, systematic literature review, and field-based research (surveys, interviews and focus groups) ensuring a structured and rigorous approach to data collection and analysis.

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Through a combination of quantitative and qualitative methodologies, the tasks synthesized insights and identified trends that informed subsequent research and development efforts within the project.

1.2 Desktop research and literature review

Desk Research (1.1) and Systematic Literature Review (1.2) are frequently used together to create a comprehensive knowledge base that blends practical insights with theoretical frameworks. While desk research focuses on real-world applications, providing concrete examples of gamification in media literacy education, the systematic literature review examines peer-reviewed academic research, offering theoretical models, empirical findings, and scholarly perspectives on gamification in educational contexts, and particularly on media education. Together, they can generate a holistic understanding of the subject. By covering different types of sources, the two approaches contribute to building a more robust and well-rounded evidence base for understanding gamification in (media) education.

Furthermore, combining the two approaches also allows to validate and cross-reference each other's findings, enhancing the reliability. As a final goal, the insights from both desk research and SLR were valuable to inform the design of fieldwork and further research tasks, ensuring that the research framework is comprehensive, grounded in theory, and aligned with real-world needs.

1.2.1 Purpose of the mapping activities

Both the desk research and the SLR aimed to map good practices in the field of gamification for educational and/or learning purposes - particularly in formal contexts -, through a twofold process: (a) systematising practices in the field [desk research]; and (b) summarising scientific evidence [systematic literature review].

In this way, we sought to promote the breadth of this mapping, not only in terms of the effectiveness of these pedagogical practices, but also feasibility in specific contexts, with a focus on the countries in which this project was being carried out.

1.2.2 Research objectives/ Questions

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The desk research and systematic literature review focused on the following research questions:

RQ1. What are the most effective gamification practices currently used in education – with a focus on media education in formal contexts – and how can they be integrated into gamification platforms?

RQ2. How does gamification enhance learning outcomes (including media and information literacy), engagement, and motivation, and what evidence supports these effects?

RQ3. What are the key challenges and success factors in implementing gamification across different educational contexts, and how can platforms address these?

RQ4. What features or improvements should gamified platforms and tools prioritize to better support educators and learners in diverse settings?

Although not completely unchangeable, we conducted qualitative analysis (thematic and content analysis) of the desk research data to pursue answers to RQ3. Conversely, RQ1 and RQ2 were approached through mixed methods analysis (statistical and content analysis) of the articles' sample of the systematic literature review. Both approaches were used to provide a holistic answer to RQ4.

1.2.3 Desk research protocol

The desk research phase was conducted to systematically explore existing initiatives, projects, and educational programs that integrate gamification into media literacy education. This process established a foundational understanding of best practices, challenges, and innovations in the field to contribute to the development of tools and materials within NewsArcade@Classroom.

This phase provided critical insights into the current landscape of gamified media literacy education, as well as a strong basis for the field-based research.

Scope

The research examined a diverse range of materials, including:

- Case studies of gamified media literacy education.

- National and EU-funded projects focused on news literacy, media literacy, and gamification.
- Educational programs and training courses incorporating gamified learning strategies.
- Relevant policy reports and industry publications.

Coverage

A minimum of 2 to 3 initiatives, projects, or activities per partner country will be analyzed to ensure a representative and comparative understanding of different approaches.

Time frame

The review focused on materials published and/or implemented between 2015 and 2025, ensuring that findings were based on recent and relevant developments in the field during the past decade.

Search strategy

The search strategy followed a structured approach, applying specific search terms in academic and non-academic databases, project repositories, and policy archives. The search queries included combinations of:

- Gamification + Education AND/OR Formal Education AND/OR School
- News Literacy AND/OR Media Literacy
- Initiative OR Project OR Training Course

Type of materials

Desk research considered project reports, case studies, training materials, educational program documentation, and grey literature (e.g., white papers, blog posts, institutional reports).

Inclusion and exclusion criteria

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Inclusion and exclusion criteria were established to define the scope, ensure quality and relevance standards and maintain consistency.

Inclusion criteria

Included material had to:

- Provide clear descriptions of gamification practices, methodologies and/ or implementation processes in educational contexts, particularly formal education (e.g., schools, universities) and training programs.
- Focus on real-world applications, such as case studies, projects, initiatives, training courses, or educational programs.
- Be published or implemented between 2015 and 2025.
- Address at least one of the following topics/ domains: news literacy, media literacy, or broader educational goals (STEM, language learning, or others).

Exclusion criteria

As to excluded material, these were:

- Materials that did not provide clear descriptions of gamification practices, methodologies, or implementation processes.
- Research outside the scope of education (e.g., gamification in marketing, business, or unrelated sectors).

Template for the desk research

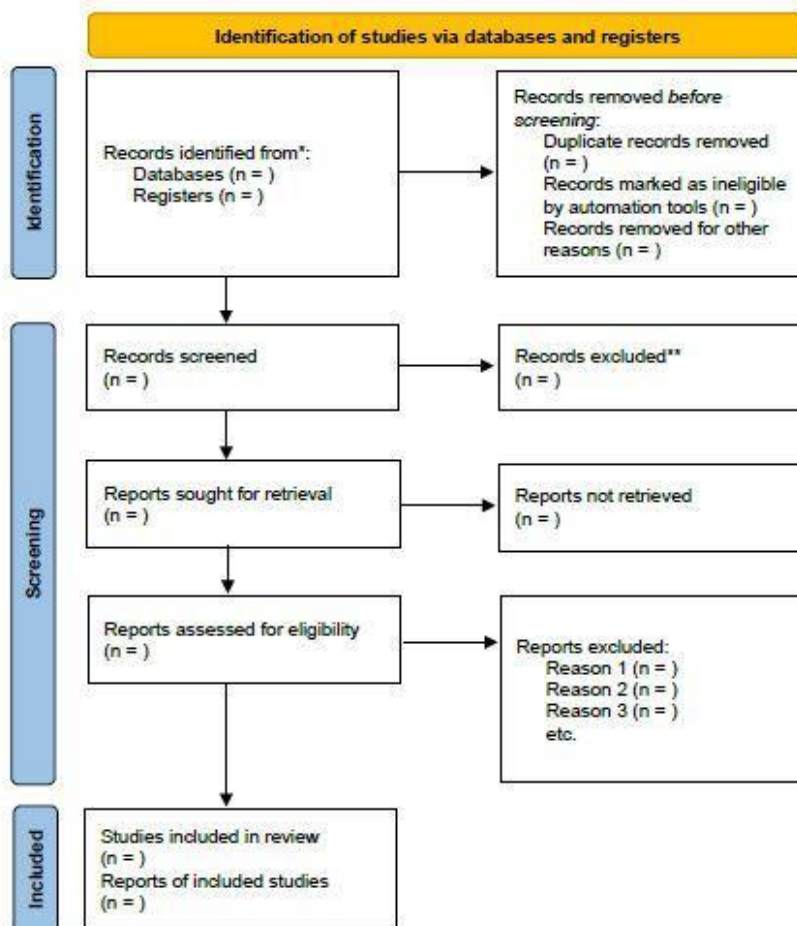
The template for the desk research is available on [annex 1](#).

1.2.4 Systematic literature review protocol

The systematic literature review (SLR) builds on the PRISMA 2020 Guidelines (Page et. al, 2021) to ensure the rigorous selection, analysis, and synthesis of relevant peer-reviewed academic research. It will focus on theoretical models, empirical findings and discussion on gamification in education. Together with 1.1 Desk research, the SLR will create a comprehensive knowledge base that combines practical insights and academic research (Figure 1).

Figure 1 - The PRISMA flow diagram for systematic literature reviews

PRISMA 2020 flow diagram for new systematic reviews which included searches of databases and registers only



*Consider, if feasible to do so, reporting the number of records identified from each database or register searched (rather than the total number across all databases/registers).

**If automation tools were used, indicate how many records were excluded by a human and how many were excluded by automation tools.

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. doi: 10.1136/bmj.n71

For more information, visit: <http://www.prisma-statement.org/>

Eligibility criteria

Studies were eligible for inclusion if they described the practical application of gamification in formal educational contexts, such as schools, universities, or structured training programmes. Eligible materials focused on peer-reviewed real-world implementations, including case studies, projects, initiatives, training courses, and educational programmes. The included studies should be published or implemented between 2015 and 2025, to ensure adequation to contemporary pedagogical and technological challenges.

To be included, materials were also required to report on gamification practices that addressed at least one educational goal, such as news literacy, media literacy, STEM, language learning, or other curricular objectives. In addition, eligible records had to present a clear description of the gamification practices, methodologies, or implementation processes to allow for meaningful synthesis.

Studies were excluded if they did not provide sufficient detail on gamification practices, if they reported exclusively conceptual or theoretical contributions without evidence of implementation, or if they focused on interventions outside of formal education or training settings.

Information sources

The search strategy drew on a combination of bibliographic databases, registers, and grey literature sources to ensure comprehensive coverage. Four main sources were consulted: IEEE Xplore, the ACM Digital Library, Education Resources Information Center (ERIC), and ResearchGate.

Searches were carried out on the 4th of March 2025. IEEE Xplore was searched across all available metadata, while the ACM Digital Library and ERIC were searched at the full-text level, with ERIC restricted to peer-reviewed material. ResearchGate was consulted through an unstructured search of research projects and outputs to capture potentially relevant grey literature not indexed in formal databases.

In total, these searches yielded 954 records (IEEE Xplore = 26; ACM Digital Library = 672; ERIC = 256), with an additional set of potentially relevant studies identified via ResearchGate. No restrictions were placed on geography at this stage, though only materials available in English were considered for inclusion.

Search strategy

The search strategy will follow a structured approach, applying specific search terms in academic and non-academic databases, project repositories, and policy archives. The search queries will include combinations of:

- Gamification + Education AND/OR Formal Education AND/OR School
- News Literacy AND/OR Media Literacy

Inclusion and exclusion criteria

A comprehensive search strategy was designed to capture studies reporting on the practical application of gamification in formal educational contexts, with a particular focus on media and news literacy. Searches were conducted on 4 March 2025 across IEEE Xplore, the ACM Digital Library, ERIC, and ResearchGate. The time frame for all searches was limited to publications and implementations between 2015 and 2025.

Boolean operators were used to combine key concepts relating to gamification, education, and media literacy. The following core query was applied, with adaptations to suit the syntax of each database:

(gamification) AND (education OR "formal education" OR school)

AND ("media literacy" OR "news literacy" OR "information literacy")

AND (initiative OR project OR "training course" OR programme OR intervention)

Where available, database filters were applied to restrict results to English-language materials and the specified time period (2015-2025). In IEEE Xplore, searches were conducted across all metadata fields; in the ACM Digital Library and ERIC, the search was extended to the full text of records, with ERIC limited to peer-reviewed outputs. ResearchGate was searched in an unstructured manner,

using equivalent keywords, to identify grey literature and project documentation not captured by the other databases.

Selection process

The selection process was conducted in line with the inclusion and exclusion criteria established for this review, ensuring that retained studies addressed the overarching aim and research questions. Screening and eligibility decisions were applied in an increasingly detailed manner.

First, the initial searches were conducted by an experienced scholar with expertise in game-based learning, who was also responsible for the first stage of title and abstract screening. This process was carried out in constant iteration with a second experienced scholar specialising in media literacy, to ensure conceptual alignment with both domains of the review.

Following this stage, four junior scholars carried out the eligibility assessment of full-text reports. This was conducted under continuous discussion and supervision with the two experienced scholars, who provided guidance in cases of uncertainty and ensured consistency in the application of criteria. Discrepancies were resolved through discussion until consensus was reached.

No automation tools were used in the selection process.

Data collection process and data items

Data collection followed the same team structure and logic as the selection process. Four junior scholars extracted data from the included reports under the supervision of two experienced scholars with expertise in game-based learning and media literacy. Discrepancies were resolved through discussion and consensus, and no automation tools were used. All information was organised in a structured Excel file prepared for the review.

For each study, data items included bibliographic details, information on the educational context, descriptions of the gamification practices employed, and reported outcomes. Particular attention was given to effects on media literacy,

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news literacy, or broader educational goals, as well as to learner engagement and motivation. Additional information on implementation challenges, success factors, participant characteristics, and features or recommendations for gamification platforms was also extracted, where available.

Synthesis method

All extracted quantitative variables were analysed using descriptive statistics, which allowed for the summarisation of key patterns across studies. Qualitative information was examined through critical content analysis procedures, enabling the identification of recurrent themes, challenges, and recommendations [15]. Results were tabulated in a structured Excel file and organised in relation to the overarching categories of practices, learning outcomes, implementation factors, and platform features.

1.3 T2.2 - Field-based research/ Focus groups, interviews and questionnaires

The protocols for focus groups, interviews and questionnaires were developed based on the results of T2.1. T2.2 was conducted to collect experiences, expectations and good practices from learners, professionals from the educational field, researchers and project leaders, in order to compare and contrast the data collected through desk research and SLR.

The scripts were adapted to the languages of the partner countries.

1.3.1 Focus groups

Focus groups gathered key stakeholders in media and information literacy education, including educators, curriculum developers, school administrators, and media literacy experts across Cyprus, Denmark, France, Portugal, and other EU countries. Each partner country organized one focus group with six professionals, with sessions lasting approximately 90 minutes. The script was developed by Lusófona University's team and then translated to all national languages.

The primary objective was to gather data on participants' perspectives about gamified educational tools and gamification experiences in formal education. These focus groups intended to provide valuable insights into the practical requirements and potential barriers to implementing innovative media literacy solutions in diverse educational contexts across Europe.

The script is available in annex x.

1.3.2 Interviews

Semi-structured interviews aimed to engage high-ranking representatives from educational institutions, including educators, curriculum developers, school administrators, and media literacy experts across Cyprus, Denmark, France, Portugal, and other EU countries. Each partner country conducted two interviews with senior-level professionals from key educational institutions. The main goal was to gather in-depth primary data on stakeholders' perspectives, needs, and readiness to integrate gamified tools like NewsArcade into media and information literacy education. These interviews highlighted strategic insights from decision-makers who can influence the adoption and implementation of innovative educational approaches at institutional and policy levels.

The script is available in annex x.

1.3.3 Questionnaires

Questionnaires were distributed to students aged 12-25 across participating countries to collect quantitative data on their preferences, attitudes, and perceived effectiveness of gamified approaches to learning. As a final objective, these questionnaires intended to gather valuable insights directly from the target student population regarding their preferences and perceptions towards gamified tools and how such approaches can effectively support media and news literacy education in classroom settings.

The script is available in annex x.

PART 2 – STATE OF THE ART REPORT

2.1. Desk research Report

The Desk Research identified 12 practices across five European countries: two in France, five in Portugal, two in Cyprus, two in Germany, and one in Denmark. The sample reflects a strong presence of gaming platforms (six out of 12), complemented by initiatives in media literacy (two), internet safety (two), and journalism (two, including one focused on the press and one research project). This distribution highlights the prominence of gaming-related practices within the landscape, while also pointing to complementary efforts in education, safety, and media research.

2.1.1. Data collected

Before conducting the analysis, a common analytical framework was designed. This framework was applied across all partner countries to capture both similarities and differences among the identified practices and to facilitate comparison. The framework focused first on gathering general information: the initiative's title, years of activity, website, and the organization responsible for its implementation (Table 1.). Although contact details of the person in charge were also requested, these are not included in the table below in line with updated data protection guidelines.

Table 1. - Identified practices under study

Responsible partner	Case number	Title	Name of promoting entity	Years of activity	Webpage
APEM France	1	Invid - WeVerify	APEM	2016-present	https://www.invid-project.eu/
APEM France	2	The Week of the	CLEMI / French	2025 edition	https://www.ac-

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		Press and Media in School®	Ministry of Education		bordeaux.fr/semaine-de-la-presse-et-des-medias-dans-l-ecoler-122031
COFAC Portugal	3	Truth or Lies	Directorate -General for Education (DGE)	2020-present	https://verdadeoumentira.dge.mec.pt/
COFAC Portugal	4	COMEDIG Game	COMEDIG project/ University of Coimbra	2023	https://www.uc.pt/fpce/comedig/jogo
COFAC Portugal	5	Data Defenders	Aveiro Media Competence Center (AMCC)	2024	https://yomedia.amcc.eu/game/
COFAC Portugal	6	Fake It To Make It	The Portuguese Safer Internet Centre	2025	https://pt.fakeittomakeitgame.com/
COFAC Portugal	7	Ubbu	-	2019	https://ubbu.io/pt
DIAS Cyprus	8	Safe School for the Internet	Cyprus Pedagogical Institute – Ministry	2017-present	https://digitalpioneers.pi.ac.cy/

			of Education, Sport and Youth		
DIAS Cyprus	9	Youth Coaches for the Internet	Cyprus Pedagogic al Institute – Ministry of Education, Sport and Youth	2015- present	https://medialiteracy.piac.cy/en/programs/
IN2 Germany	10	Stärker mit Games (Stronger with Games)	Stiftung Digitale Spielekultu r (Foundatio n for Digital Games Culture)	2018-2022	https://www.stiftung-digitale-spielekultur.de/project/staerker-mit-games/
IN2 Germany	11	Lie Detectors	Lie Detectors	2018- present	https://lie-detectors.org/
PORTA PLAY Denmark	12	BadNews	TjekDet	2022- present	https://www.tjekdet.dk/badnews

Following this, more detailed information about each activity was collected (Table 2). This included a brief summary (Annexe A.), its purpose and objectives, and the main topics addressed (Annexe B.), the target audience (Table 3), as well as the social and geographical context and the needs it sought to meet (Table 4). Particular attention was given to the gamification strategies employed and the

approaches to news literacy (Table 5), as these represent the core focus of the NewsArcade@Classroom project.

A. Table 2. Initiative categorized by cluster

Case number	Initiative	Nature of the initiative	Main focus	Main aims and objectives	Cluster
1	InVID	International, EU Horizon 2020 collaboration (Greece, Austria, Spain, France, Germany)	Verification technologies for online video authenticity	Develop AI tools; empower newsrooms; speed verification; reduce misinformation spread	Verification and trustworthy journalism
2	Week of the Press and Media in School®	National, France – organised annually by CLEMI	News literacy, infotainment vs journalism, AI in news	Teach youth about journalism; critical infotainment analysis; AI in news; strengthen civic trust	Verification and trustworthy journalism
3	Truth or Lies	National, Portugal – promoted by government bodies	Pedagogical resources to detect disinformation	Raise awareness on disinformation; support teachers; foster critical thinking & safe internet use	Pedagogical/ classroom integration

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4	COMEDIG Game	National, Portugal – with international collaboration (Spain, Belgium)	Game-based media literacy and intergenerational dialogue	Teach media types & impacts; promote critical citizenship; encourage responsible media use	Pedagogical/ classroom integration
5	Data Defenders	International – universities from Portugal, Spain, Italy	Game-based critical thinking on misinformation in crises	Promote media literacy through games; raise awareness in crises; support educators with tools	Gamification and innovative learning
6	Fake It To Make It	National (Portugal) with international adaptation; launched in Azores	Simulation game to expose mechanisms of disinformation	Adapt game for PT context; simulate fake news creation; equip youth with critical thinking	Gamification and innovative learning
7	Ubbu	Initially national (Portugal), now international (20+ countries)	Coding education with SDGs to tackle digital exclusion	Early digital literacy; combat school dropout; teacher training; promote STEAM & inclusion	Gamification and innovative learning

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8	Safe School for the Internet	National, Cyprus – part of Ministry of Education digital literacy strategy	Whole-school approach to safe internet & digital citizenship	Foster safe online school culture; co-create policies; involve teachers, students, parents	Pedagogical/ classroom integration
9	Youth Coaches for the Internet	National, Cyprus – peer-to-peer education led by students	Peer-to-peer education on safe internet and media literacy	Train peer coaches; promote leadership & co-creation; align with EU digital literacy strategies	Pedagogical/ classroom integration
10	Stärker mit Games	National, Germany – led by Stiftung Digitale Spielkultur	Game-based learning for media literacy, creativity & inclusion	Use games for creativity, media literacy, inclusion; empower underserved youth	Gamification and innovative learning
11	Lie Detectors	Pan-European – based in Brussels, operating in several countries	Journalist-led classroom sessions on news literacy	Empower critical news literacy; connect journalists & schools; scale across Europe	Verification and trustworthy journalism
12	Bad News	International –	Game 'inoculation	Teach disinformation	Gamification and

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		developed by DROG & Cambridge University	' against misinformation techniques	on techniques; inoculate against fake news; raise awareness in schools	innovative learning
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B. Table 3. Identification of the target group for each initiative

Case number	Initiative	Target group	Key insights
1	InVID	Media professionals (journalists, fact-checkers, editors, moderators)	Not aimed at general public or youth, but outputs adapted for media literacy workshops and journalism training across Europe
2	Week of the Press and Media in School®	Students aged 5–18 (primary to secondary), teachers, education professionals	Special attention to rural schools and disadvantaged students; teachers receive dedicated training
3	Truth or Lies	Primary and secondary school children, educators	General approach without specific subgroup focus

4	COMEDIG Game	Primary school children and young people; teachers and parents	Encourages intergenerational dialogue and responsible media use
5	Data Defenders	Young people aged 11–17	Broad youth target; focuses on critical thinking and media literacy in crises
6	Fake It To Make It	Teenagers and young adults	Immersive game to develop skills to critically assess online information
7	Ubbu	Children aged 6–12 (public schools, 1st–2nd cycles); teachers; families	Emphasis on inclusion and gender balance; teacher training provided; international reach
8	Safe School for the Internet	Students aged 6–18; teachers; school leaders; parents	Whole-school approach to digital citizenship and safe internet culture
9	Youth Coaches for the Internet	Upper primary and secondary students (10–18); teachers; school staff	Peer-led model where older students coach younger ones

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10	Stärker mit Games	Participants aged 8–18 from socio-economically or educationally disadvantaged backgrounds	Focus on inclusion and empowerment through games
11	Lie Detectors	Schoolchildren aged 10–15; teachers; journalists	Combines student engagement with professional journalist involvement
12	Bad News	Students / school classes; teachers and youth organizers	Interactive game integrated into lessons and workshops; targets misinformation resilience

C. Table 4. Analysis of the needs and context of each initiative

Case number	Initiative	Needs and context	Key insights
1	InVID	Rising distrust in media, proliferation of deepfakes, lack of newsroom tools for verification	Addresses ethical/legal concerns, equips journalists to verify user-generated content

2	Week of the Press and Media in School®	Global challenge: information overload, AI-driven content, fake news, algorithmic bias	Activities include workshops, debates, teacher training; strengthens civic engagement and digital literacy
3	Truth or Lies	High exposure of children/youth to digital misinformation, lack of structured teaching resources	Focuses on developing critical thinking, digital citizenship, and resilience to manipulation
4	COMEDIG Game	Digital/media literacy gaps among students and educators, misinformation challenges, educational inequities	Provides structured tools and games; promotes ethical media use and civic participation
5	Data Defenders	Exposure to misinformation during political, military, and health crises; lack of critical media skills	Game-based approach; supports educators; responds to media ecosystem transformations

6	Fake It To Make It	Widespread youth exposure to disinformation; difficulty assessing credible information	Interactive game promotes critical thinking, media literacy, and responsible digital behavior
7	Ubbu	Digital exclusion, low literacy, school failure/dropout, youth unemployment; insufficient teacher training	Game-based coding education; inclusive approach; equips students and teachers for tech-driven future
8	Safe School for the Internet	Rising online risks (cyberbullying, misinformation, data privacy); lack of school internet policies	Whole-school approach; promotes digital citizenship; decentralized model fosters sustainability
9	Youth Coaches for the Internet	Peer-to-peer education need; empower students in digital safety	Older students train younger peers; teachers support implementation; promotes active engagement

10	Stärker mit Games	Socio-economically and educationally disadvantaged youth; need for inclusive learning	Uses games for empowerment, critical thinking, media literacy, and social inclusion
11	Lie Detectors	Spread of disinformation and fake news among youth; lack of trust in journalism	Engages students, teachers, and journalists; strengthens critical thinking, media literacy, and democratic awareness
12	Bad News	Youth exposure to online manipulation; limited awareness of disinformation mechanisms	Interactive “inoculation” game for students and educators; teaches recognition and resistance to misinformation

D. Table 5. Gamification strategies identified in each initiative

Case number	Initiative	Gamification strategy	Key insights
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1	InVID	Task-based, tool-driven engagement; simulating newsroom scenarios	No traditional gamification (badges/points); investigative, hands-on approach; used in workshops and training
2	Week of the Press and Media in School®	Experiential learning: simulation, role-play, collaborative inquiry, interactive challenges, live exchanges with professionals	Focus on real-life media practice; interactive quizzes, puzzles, and misinformation challenges; rewards = better-informed citizens
3	Truth or Lies	Quiz-based gamification; score rankings; individual or group play	Encourages interaction, collaboration, competition; reinforces knowledge retention
4	COMEDIG Game	Interactive scenarios, progress tracking, feedback, rewards, badges, challenges,	Combines multiple gamification mechanisms to enhance engagement

		competition/cooperation, narrative/storytelling	
5	Data Defenders	Role-playing as politicians, journalists, scientists; team dynamics; interactive mechanics (Data Analyzer, Crisis Impact)	Simulates real-world media scenarios; encourages critical thinking in engaging, risk-free environment
6	Fake It To Make It	Role-playing as fake news creator; cause-effect simulations; progression system; real-time feedback; storytelling	Players experience spread of misinformation; fosters critical thinking and media literacy
7	Ubbu	Interactive, game-based challenges; mission-based progression; UN SDG-linked lessons; visual	Motivates students through playful, meaningful learning; promotes teamwork

		coding exercises; feedback; collaborative features	and global awareness
8	Safe School for the Internet	Badging systems, role-play scenarios, student-led campaigns, competitions, digital storytelling	Encourages active participation, peer collaboration, playful learning; news literacy addressed indirectly
9	Youth Coaches for the Internet	Role-playing, student-led workshops, quizzes, recognition systems (badges, certificates)	Enhances engagement and motivation; peer-led fact-checking reinforces news literacy
10	Stärker mit Games	Game design workshops, adapting digital games, escape rooms, Minecraft, E- sports, tabletop RPGs, critical reflection	Integrates game creation into learning; fosters creativity, critical thinking, collaboration, self- expression

11	Lie Detectors	Interactive classroom sessions, discussions, role-play, critical analysis	Simulates real-world media challenges; participatory, problem-solving approach mimics gamification
12	BadNews	Scoring, choices, replayability, safe-space role-play as misinformant	Teaches mechanics of disinformation; encourages understanding and reflection on fake news impact

2.1.2. Data analyzed

Once the data provided by the partner organizations was collected, a content analysis was conducted to identify similarities, both common patterns and also major discrepancies in the set of activities listed. Ultimately, this process led to the creation of categories that made it possible to examine the data in a way that highlights the trends emerging across countries and types of initiatives or institutions in the field of gamification for media and news literacy. We describe the data collected and the results of the analysis in the following paragraphs.

- **Aims, objectives, and main topics**

The analysis of aims and objectives across the 12 initiatives shows a strong convergence around media literacy, critical thinking, and resilience to misinformation, with gamification and experiential learning as recurring strategies.

Data presented in graphic 1 provide further detail.

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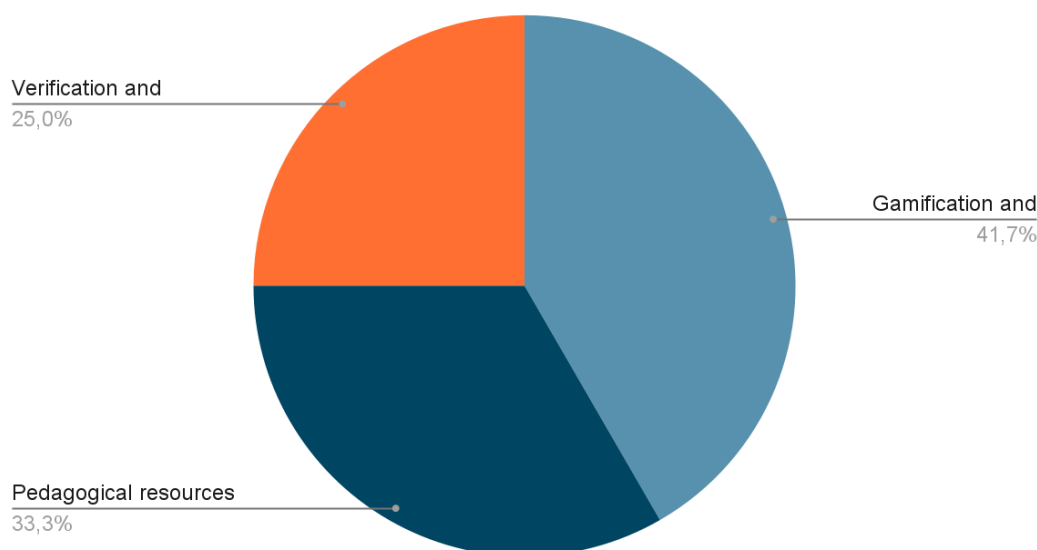
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A first cluster of initiatives emphasizes **gamification and innovative learning formats** (41,7%). Data Defenders (Case 5), Fake It To Make It (Case 6), Stärker mit Games (Case 10), and BadNews (Case 12) use interactive games to simulate misinformation dynamics, engage youth in playful yet critical reflection, and promote resilience to manipulation. Ubbu (Case 7), while broader in scope, uses coding and game-based lessons to address digital exclusion and prepare students with essential STEAM skills for a technology-driven future.

A second cluster focuses on **pedagogical resources and classroom integration** (33,3%). Truth or Lies (Case 3), COMEDIG (Case 4), and Safe School for the Internet (Case 8) provide structured tools and frameworks for schools to embed media literacy into curricula, foster safe internet use, and stimulate dialogue between children, teachers, and families. Youth Coaches for the Internet (Case 9) introduces a peer-to-peer model, empowering students themselves to become trainers and ambassadors of digital literacy.

A third cluster stands out for **verification and trustworthy journalism** (25%). InVID (Case 1) develops technological tools to detect and prevent the spread of manipulated content, while Lie Detectors (Case 11) and the Week of the Press and Media in School (Case 2) bring professional journalists directly into educational spaces, aiming to reinforce trust in news and civic engagement.

Graphic 1. Initiatives by cluster (n=12)



Across all cases, the initiatives generally aim to:

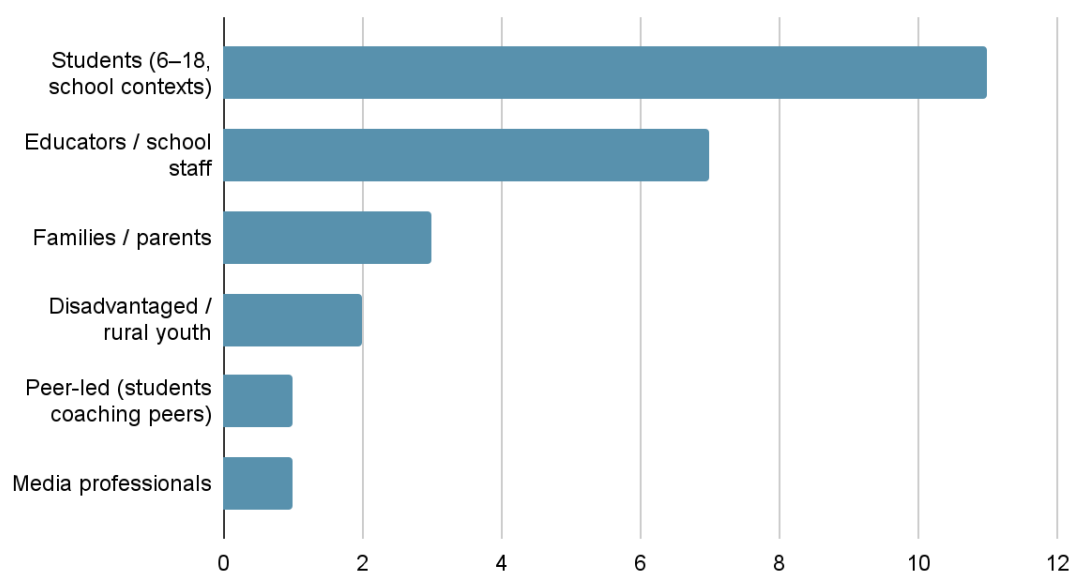
- Raise awareness about disinformation and its risks (Cases 1, 3, 5, 6, 11, 12);
- Help people develop critical thinking skills and become responsible digital citizens (Cases 2, 4, 7, 8, 9, 10);
- Give teachers training and easy-to-use tools (Cases 2, 3, 4, 7, 8, 11);
- Encourage active participation and democratic engagement through discussions, civic education, and media creation (Cases 2, 4, 9, 10).

Analysing the activities as a whole, , these initiatives show a mix of approaches: using tech in smart ways (such as AI-based fact-checking in Case 1), adapting learning materials for classrooms (like curriculum-based resources in Cases 3, 4, 8), and making learning fun through games and interactive activities (Cases 5, 6, 10, 12). This variety shows that tackling misinformation and promoting media literacy needs both professional, structural solutions and engaging, hands-on experiences for students and teachers alike.

- **Target group**

According to the analysis of the initiatives, and as graphic 2 portrays, there is a clear emphasis on children and young people in school contexts as the primary target group. Most cases focus on students between the ages of 6 and 18, covering primary, lower secondary, and upper secondary levels (Cases 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12). Within this broad range, several projects specifically address younger children (Cases 4 and 7), while others highlight teenagers and young adults as particularly vulnerable to misinformation (Cases 5, 6, 11, 12).

Graphic 2. Initiatives' target group (n=12)



Teachers, educators, and school staff also emerge consistently as secondary or complementary target groups, either as beneficiaries of training (Cases 2, 3, 4, 7, 8, 11, 12) or as facilitators of student-centered interventions. In some cases, families and parents are also explicitly involved to extend the impact of media literacy into the home environment (Cases 4, 7, 8).

Some initiatives are tailored to specific groups within youth populations, such as rural or socio-economically disadvantaged students (Cases 2 and 10), or aim for

inclusivity by promoting gender balance in technology access (Case 7). Peer-led approaches, where older students coach younger ones, also stand out as innovative engagement strategies (Case 9).

One initiative (Case 1, InVID) differs from the remaining cases by targeting media professionals (journalists, fact-checkers, editors, and moderators) rather than students. Nonetheless, its outputs have been adapted for educational and training contexts, bridging the professional and pedagogical fields.

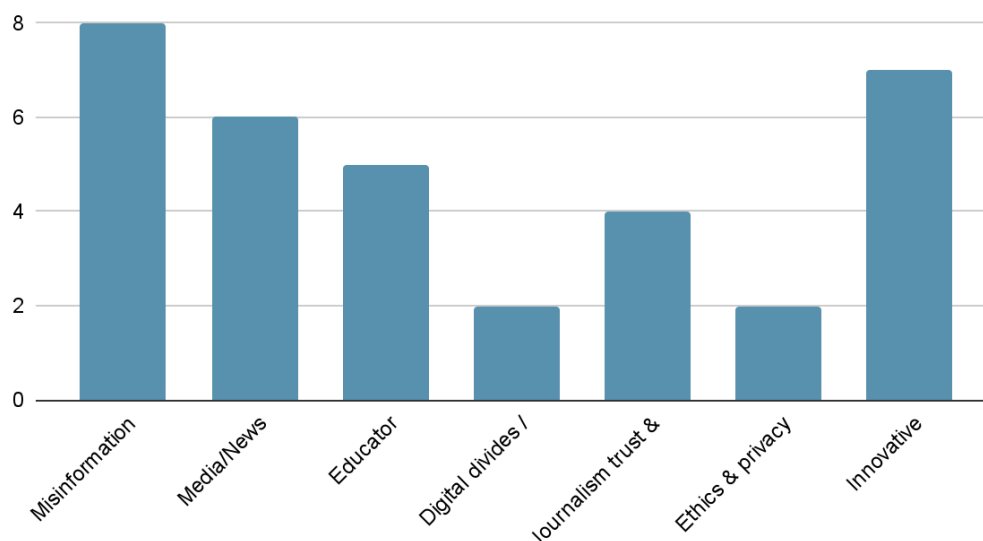
These cases reveal two main target groups: young people and educators. Most programs integrate media literacy directly into schools, though some also reach families, underserved communities, and professional journalists. This dual approach reflects an important insight-fighting disinformation means both empowering young people and training the adults who teach them.

- **Context and needs**

The analysis of the 12 cases reveals both converging and context-specific needs (graphic 3).

Across countries, a recurrent concern is the growing exposure of young people and citizens to misinformation and disinformation, particularly in digital environments shaped by viral content, AI, and algorithmic bias (Cases 1, 2, 3, 5, 6, 8, 11, 12). This challenge is closely linked to the lack of critical media and news literacy skills, especially among school-aged children and adolescents, who are identified as particularly vulnerable (Cases 3, 6, 7, 8, 10, 11).

Graphic 3. Initiative mention by needs



Several initiatives highlight the limitation of available resources to teachers and educators to address these challenges, whether due to gaps in training, insufficient tools, or regional inequalities (Cases 3, 4, 7, 8, 9). Projects such as COMEDIG and Ubbu also point to digital divides and educational inequities, stressing the importance of inclusive approaches that equip all students and teachers with both technical and critical competencies.

In addition, multiple practices respond to structural transformations in journalism and media ecosystems, from the pressures of verifying user-generated content (Case 1) to the need to restore public trust in journalism and strengthen democratic engagement (Cases 2, 5, 11). Ethical and legal concerns, such as copyright, data privacy, and responsible digital citizenship, also emerge as cross-cutting issues (Cases 1, 8).

Finally, other initiatives adopt innovative pedagogical models—including peer-to-peer learning (Case 9), gamification and interactive formats (Cases 5, 6, 10, 12), and partnerships with journalists and cultural institutions (Cases 2, 11)—to ensure engagement and sustainability. Together, these cases illustrate a diverse but interconnected landscape, where gamification and media literacy intersect to address urgent social, educational, and democratic needs across Europe.

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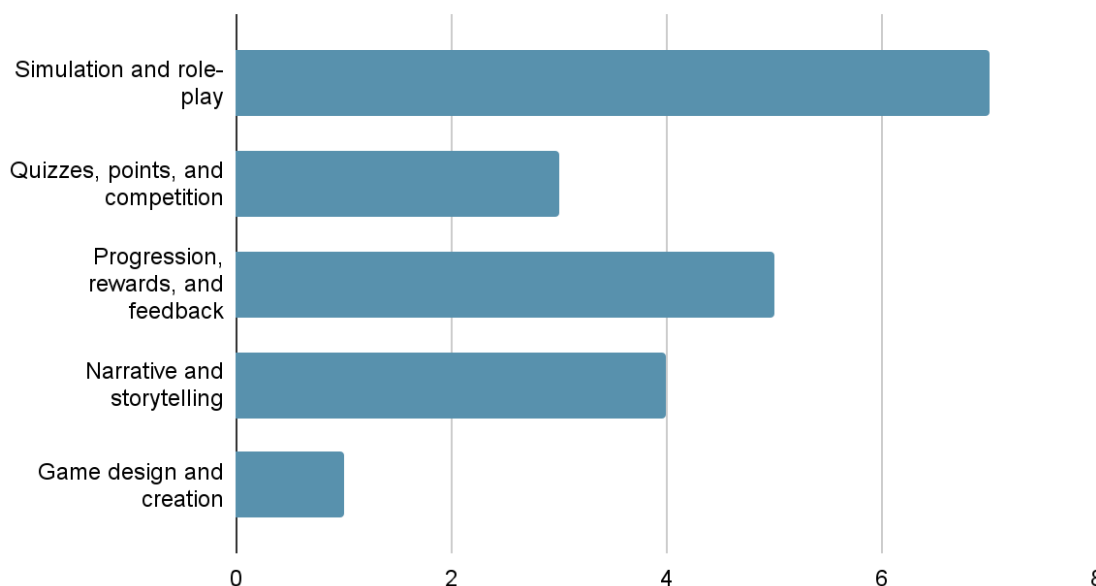


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- **Gamification strategies**

Across the 12 initiatives analyzed, a variety of gamification strategies were identified, which can be grouped into five main clusters, as depicted by graphic 4.

Graphic 4. Initiatives per gamification strategies



1. Simulation and role-play (7 cases)

The most frequently used approach involves simulating real-world scenarios where participants take on specific roles — such as journalists, fact-checkers, politicians, or cyber investigators. This strategy fosters active, experiential learning by placing students in situations that mirror authentic media and news challenges (Cases 1, 2, 5, 6, 8, 9, 11).

2. Quizzes, points, and competition (3 cases)

Several initiatives incorporated more traditional gamified elements, such as quizzes, score rankings, badges, and competitive group play. These mechanisms encourage participation through playful challenge and peer comparison, helping reinforce knowledge retention (Cases 3, 4, 12).

3. Progression, rewards, and feedback (5 cases)

Progress-tracking systems, reward mechanisms (badges, certificates, achievements), and real-time feedback were also present. These elements sustain motivation and allow participants to monitor their own learning process (Cases 4, 6, 7, 8, 9).

4. Narrative and storytelling (4 cases)

Story-driven approaches were used to engage learners and provide meaningful contexts for interaction. By embedding news literacy into narratives, these initiatives made learning more immersive and relatable (Cases 4, 6, 8, 10).

5. Game design and creation (1 case)

One initiative stood out for integrating game design as a learning process itself. Instead of simply applying gamified elements, it guided young people in creating their own games, fostering creativity, critical reflection, and self-expression (Case 10).

Overall, the analysis shows that while some initiatives rely on lighter gamification elements such as quizzes and badges, the strongest trend is toward simulation and role-play, which allows learners to engage more deeply with media literacy challenges.

Conclusions

The comparative analysis of these initiatives shows that gamification is being widely explored as a promising approach to media and news literacy, though with diverse degrees of depth and innovation. While some projects adopt light-touch gamification elements (such as quizzes, badges, or score rankings), others move towards immersive, experiential models that simulate real-world media environments or even empower learners to design their own games.

A recurring pattern across countries and identified initiatives is the strong reliance on simulation and role-play, which allows students to experience the complexity of media ecosystems from within, whether as journalists, fact-checkers, or digital citizens. This hands-on approach not only enhances critical thinking but also bridges the gap between theory and practice. Meanwhile, reward systems, progression tracking, and narrative frameworks are implemented to contribute to maintaining engagement and providing structure to the learning process.

Furthermore, the initiatives that integrate gamification into broader pedagogical or institutional strategies (e.g., national school programs, EU-funded projects, or NGO-led campaigns) tend to show greater potential for long-term impact. By combining playful learning with civic education, they foster both individual skills and collective responsibility in democratic participation.

The results of the analysis emphasise that gamification in news literacy education proves to be most effective when it goes beyond superficial mechanics and embraces experiential, collaborative, and reflective learning. The diversity of practices examined throughout this desk research highlight a growing European and international effort to harness play as a powerful tool for resilience against misinformation, and as a catalyst for active, critical, and informed citizenship.

2.2. Systematic Literature Review

2.2.1. Study selection

The systematic search identified a total of 965 records, comprising 954 records retrieved from electronic databases and 11 from registers. Following the removal of 227 duplicates, 738 records remained for screening. At the title and abstract screening stage, 684 records were excluded for not meeting the inclusion criteria.

Fifty-five reports were sought for full-text retrieval; one could not be retrieved, leaving 54 reports to be assessed for eligibility. Of these, 22 were excluded for the following reasons: secondary or conceptual studies that did not provide empirical evidence ($n = 10$), non-gamified applications or approaches ($n = 4$), studies not related to media or information literacy ($n = 7$), and studies unavailable in English ($n = 1$).

Ultimately, 32 studies met the inclusion criteria and were retained for the final review. The full selection process is summarised in Figure 2 - PRISMA flow diagram.

Several studies initially appeared to meet the inclusion criteria but were excluded upon closer examination. For example, some publications presented innovative gamification-related frameworks but did not report empirical results, meaning they were secondary or conceptual studies, while others examined digital learning applications without the use of gamified mechanics. Studies focusing on broader educational themes that did not address media or information literacy outcomes were also excluded. These decisions ensured that the final dataset reflected empirical, gamification-based interventions directly relevant to the research questions.

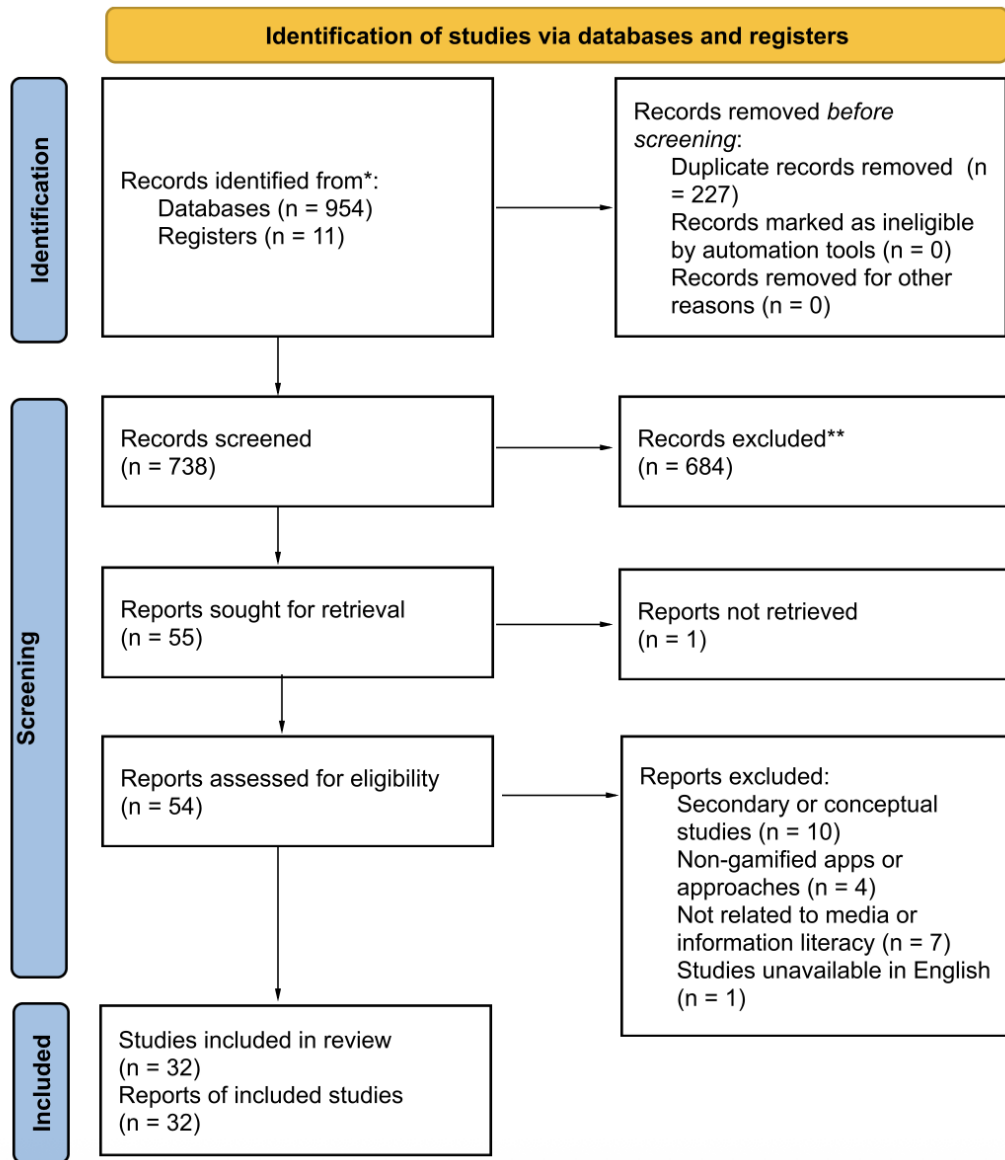


Figure 2. PRISMA flow diagram summarising the search and selection process for studies included in the review (N = 32).

2.2.2. Study characteristics

The full set of studies included in this SLR (N = 32) has a total composed sample of 4164 participants (M = 143.6; SD = 178.3), ranging from 10 in the approach of Toledo

et al. [17] and 882 in the study developed by Jeon et al. [18]. The main characteristics of each study are systematised in Table 6.

Table 6. Overview of studies' main characteristics (N = 32)

Study	Year	Sample size (N)	Methodological Approach	Gamification Assessment
Ahmad et al. [19]	2021	229	Quantitative	Pre and post with control group (experimental)
Alam et al. [20]	2023	223	Mixed methods	Pre and Post Intervention
Alnuaim [21]	2024	168	Quantitative	Pre and post with control group (experimental)
Arifin and Setiawan [22]	2022	40	Qualitative	Post intervention
Ashley [23]	2019	40	Mixed methods	Pre and Post Intervention
Baha'i et al. [10]	2016	76	Quantitative	Performance and Post intervention
Bai et al. [24]	2022	49	Mixed methods	Pre and Post Intervention with Performance Assessment
Bioglio et al. [25]	2019	472	Mixed methods	Pre and post with control group (experimental)
Capecchi et al. [26]	2024	217	Quantitative	Post intervention
Fahlevi et al. [27]	2024	23	Mixed methods	Post intervention
Gramß [28]	2019	216	Quantitative	Post intervention
Hinterreiter et al. [29]	2024	121	Mixed methods	Pre and post with control group (experimental)
Isanoa-Sinche and Llerena-Izquierdo [30]	2023	40	Quantitative	Pre and Post Intervention
Jeon et al. [18]	2021	882	Quantitative	Pre and post with control group (experimental)
Kilhoffer et al. [31]	2023	27	Qualitative	not specified
Molnár et al. [32]	2022	not specified	Quantitative	Performance (during intervention)

Morais et al. [33]	2022	95	Quantitative	Post intervention
Ng et al. [34]	2024	68	Mixed methods	Pre and post with control group (experimental)
Palalas and Wark [35]	2017	39	Qualitative	Performance and Post intervention
Pek and Koh [36]	2021	51	Qualitative	Pre and Post Intervention with Performance Assessment
Roslan et al. [37]	2023	269	Quantitative	Post intervention
Ruiz [38]	2024	107	Quantitative	Pre and Post Intervention
Rzabayeva et al. [39]	2024	60	Quantitative	Pre and post with control group (experimental)
Saenboonsong and Poonsawad [40]	2024	63	Mixed methods	Performance and Post intervention
Seaborn et al. [41]	2017	76	Mixed methods	Performance and Post intervention
Sime et al. [42]	2020	329	Mixed methods	Pre and Post Intervention with Performance Assessment
Suartama et al. [43]	2023	78	Mixed methods	Pre and Post Intervention with Performance Assessment
Sukmana et al. [44]	2022	not specified	Mixed methods	Media/platform analysis
Tang and Singha [45]	2024	not specified	Qualitative	Post intervention
Tiede et al. [46]	2022	28	Quantitative	Pre and Post Intervention with Performance Assessment
Toledo et al. [17]	2022	10	Mixed methods	Pre and Post Intervention
Zainuddin [47]	2023	68	Mixed methods	Pre and post with control group (experimental)

The 32 studies in the review used a wide range of methods, including quantitative, qualitative, and mixed-methods approaches. Quantitative designs predominated, frequently utilising pre- and post-test measures, with or without control groups, to evaluate the impact of gamification interventions (e.g., Ahmad et al. [19]; Jeon et al. [18]; Rzabayeva et al. [39]). Mixed-methods studies were also significant, integrating performance data with surveys or qualitative feedback to assess both quantifiable results and experiential aspects of gamified learning (e.g., Alam et al. [20]; Bai et al. [24]; Sime et al. [42]). A limited number of studies employed exclusively qualitative methodologies, primarily concentrating on post-intervention reflections, performance observations, or platform analysis (e.g., Arifin and Setiawan [22]; Sukmana et al. [44]; Tang and Singha [45]). The primary assessment methods employed were pre/post-intervention measures and performance evaluations; however, certain studies incorporated control groups to enhance causal assertions (e.g., Bioglio et al. [25]; Hinterreiter et al. [29]). Others depended on post-intervention surveys or qualitative feedback to gain insights into motivation, engagement, and learner perceptions (e.g., Gramß [28]; Palalas and Wark [35]).

2.2.3. Gamification strategies in the sample

A common thread in the studies was the usage of points, scores, and leaderboards as basic mechanics. These components were consistently utilized to promote competition and monitor learner advancement, manifesting in contexts from digital learning environments [30], [38] to more intricate platforms incorporating dashboards and real-time feedback [21]. Points and rankings were frequently integrated with badges and rewards, forming multifaceted motivational frameworks designed to maintain learner engagement over time [19], [20], [22]. Although these mechanics are well-established in gamification, their prevalence in various educational contexts indicates that they continue to serve as a standard approach

for reinforcing achievement and promoting perseverance. In addition to these quantitative reward structures, numerous studies integrated narrative and scenario-based components to facilitate contextualized and immersive learning experiences. Role-playing mechanics, narratives, and the incorporation of avatars or characters were utilized to enhance identification and emotional engagement with the content [36], [37], [44]. Interventions aimed at enhancing media and information literacy frequently employed real-world scenarios and problem-based tasks, providing learners with opportunities to engage in critical thinking in authentic contexts [26], [27]. These strategies show a move away from models that are only competitive and toward designs that include experiential and situated learning. This makes gamification fit better with educational goals.

A third strand of practice includes feedback and collaborative tools, which were seen as important learning aids in all the different implementations. Quizzes, challenges, and progress-tracking systems all had feedback loops built in so that learners could keep track of how they were doing and change their strategies [35], [39], [46]. Team-based activities, forums, and cooperative modules made it easier for people to work together, which is similar to the social aspect of gamification [21], [28], [43]. These designs strengthened both autonomy and social engagement by combining personalized performance indicators with peer interaction. This shows a balanced approach to skill development and motivation. In a more quantitative and data-driven approach, the different strategies were categorised. Firstly, in a non mutually exclusive manner, the frequency of each strategy was coded, as represented in Table 7.

Table 7. Total of categorised gamification strategies (N articles = 32; N categorised strategies = 124)

Categorised strategies	n	%
Points and scoring	2	74.
	3	2

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Immersive and visual tools	1 6	51. 6
Leaderboards and competition	1 1	35. 5
Narrative and story	1 0	32. 3
Quizzes and tests	9	29. 0
Challenges and missions	9	29. 0
Feedback and progress tracking	9	29. 0
Badges and achievements	8	25. 8
Simulation and real-world scenarios	6	19. 4
Collaboration and social learning	6	19. 4
Gamified environment and platform	2	6.5
Dashboards and tools	1	3.2
Other strategies	1 4	45. 2

As systematised, the grouped analysis of gamification strategies reveals that the most frequently used category is "Points and scoring", appearing in 74.2% of the studies. This includes mentions of points, scores, ranking, and variations such as score systems or points systems, highlighting their central role as motivational tools across educational gamification designs. Following this, "Immersive and visual tools" were used in 51.6% of the studies. This group includes strategies like Augmented Reality (AR), Virtual Reality (VR), engaging visuals and sounds, avatars, and interactive lessons, indicating a strong presence of technology-enhanced and sensorially rich learning environments.

The "Leaderboards and competition" category appears in 35.5% of studies, often accompanying points and badges to promote competitiveness through ranking, leaderboards, or performance comparisons. "Narrative and story" elements were employed in 32.3% of the sample. This includes strategies like storylines, narrative, characters, fantasy elements, and RPG frameworks, reflecting efforts to foster deeper engagement and contextual learning through storytelling.

A notable "Other" category (45.16%) includes strategies that were either too specific or less recurrent to fit into broader groups. These include unique terms like news assessment, instructional content, interactive collaboration tools, digital learning modules with key media competence, and sending/receiving virtual gifts. While individually infrequent, these strategies reflect a long-tail of creative adaptations and may point to emergent or niche trends in gamification design.

A methodological relevant note is that the percentages were calculated considering the total sample ($N = 32$), to represent the significance of each strategy in the overall SLR.

As a second lens, each paper was categorised considering its main gamification approach, resulting in the distribution presented in Table 8.

Table 8. Main categorised gamification strategies of each article ($N = 32$)

Category	<i>n</i>	%
Points and scoring	9	29.0
Immersive and visual tools	8	25.8
Quizzes and tests	4	12.9
Narrative and story	2	6.5
Feedback and progress tracking	2	6.5
Badges and achievement markers	2	6.5
Collaboration and social learning	1	3.2
Challenges and missions	1	3.2

Gamified environment and platform	1	3.2
Leaderboards and competition	1	3.2

The most prevalent strategy is Points and scoring, featured in nine articles (29.0%) highlighting the enduring popularity of simple motivational mechanics such as points, scores, and performance indicators. Close behind is Immersive and visual tools, found in eight studies (25.8%), which includes the use of augmented and virtual reality, avatars, engaging graphics, and interactive interfaces designed to enhance learner engagement and multisensory experience.

Quizzes and tests are the main strategy in four articles (12.9%), showing their role in reinforcing knowledge through formative assessment embedded within gamified learning environments. Three categories – narrative and story, feedback and progress tracking, and badges and achievement markers – each appear in two articles (6.5%), suggesting a more moderate but still relevant use of strategies that support learner engagement through storytelling, monitoring of progress, or symbolic recognition of accomplishments.

Finally, the remaining categories are each identified as the main strategy in just one article (3.2%). Although less common, these strategies point to more specialised or context-specific applications of gamification that must also be considered.

2.2.4. Learning outcomes from the studied approaches

According to the content reviewed, all the learning outcomes were afterwards categorized and quantified, with most papers presenting more than one potential result of the adopted gamification practices, as expressed in Table 9.

Table 9. Total of categorised learning outcomes (N articles = 32; N categorised strategies = 82)

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Learning Outcome	<i>n</i>	%
Digital Literacy	9	11.0
Online Learning	8	9.8
Motivation	6	7.3
Media Literacy	5	6.1
Learning Behaviour	3	3.7
Pedagogical Approaches	3	3.7
Critical Literacy	3	3.7
News Literacy	2	2.4
Digital Citizenship	2	2.4
Engagement	2	2.4
Student Engagement	2	2.4
Information Literacy	2	2.4
Effort	1	1.2
Competence	1	1.2
Tension	1	1.2
Comparison	1	1.2
Performance	1	1.2
Discouragement	1	1.2
Innovation	1	1.2
Online Teaching	1	1.2
Teaching And Pedagogical Approaches	1	1.2
Learning Experiences	1	1.2
Information Literacy Skills	1	1.2
Engagement In Online Discussion	1	1.2
Learning Experience	1	1.2

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Learning Performance	1	1.2
Learning Effectiveness	1	1.2
Education Innovation	1	1.2
Ai Literacy Development	1	1.2
Thinking Skills	1	1.2
Creative Problem-Solving Skills	1	1.2
Media Competence	1	1.2
Digital Learning	1	1.2
Curriculum Development	1	1.2
Digital Citizenship And Literacy	1	1.2
Ai Literacy	1	1.2
Ai Ethics	1	1.2
Media And Information Literacy	1	1.2
Digital And Media Literacy	1	1.2
Digital And Teaching Literacy	1	1.2
Big Data Literacy	1	1.2
Foundational Literacy	1	1.2
Critical And Creative Thinking	1	1.2
Learning Processes	1	1.2
Critical Thinking	1	1.2
Affective And Cognitive Engagement	1	1.2
Cybersecurity	1	1.2

Aligned with these results, a visualisation based on the frequencies was also developed, as presented in the word cloud depicted in [Figure 3](#).



Figure 3. Word cloud of the total categorised learning outcomes, according to their frequency (N articles = 32; N categorised strategies = 82)

Moreover, each study was classified considering its main learning outcome(s), following three labels: (1) media and information literacy-driven; (2) other emergent literacies (e.g., AI, big data, cybersecurity); and (3) affective and motivation-driven. The categorisation of learning outcomes (Figure 4) reveals that the vast majority of gamified educational interventions ($n = 22$; 68.75%) are primarily geared toward promoting media and information literacy, including digital citizenship, critical literacy, and related competencies. Affective and motivational outcomes, such as engagement, interest, and learner confidence, were central in seven studies (21.88%), reflecting the importance of emotional and behavioural factors in sustaining learning. A smaller but emerging subset ($n = 3$; 9.38%) addressed emergent literacies, including AI, data literacy, and cybersecurity, highlighting the evolving relevance of these topics in formal education.

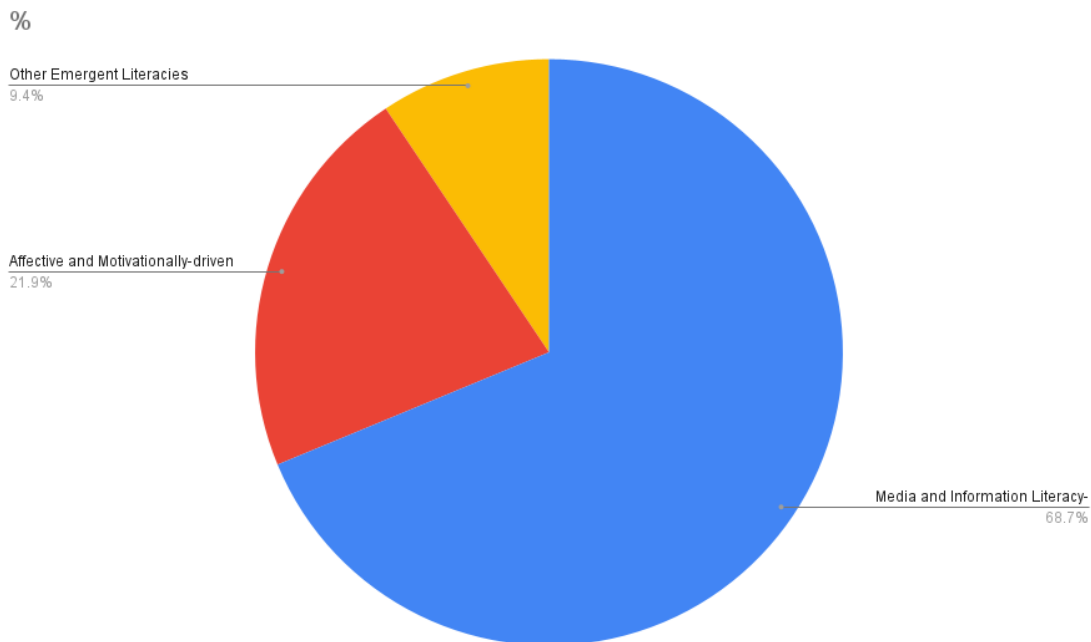


Figure 4. Main categorised learning outcomes of each article ($N = 32$)

Nevertheless, it is important to note that these categories are not always mutually exclusive. For instance, AI and algorithmic literacies are often intertwined with broader media and information literacy frameworks. However, for analytical clarity, and to map the mentioned emerging trends, each study was assigned a single dominant category based on its primary learning focus.

As a way to explore the intersection between gamification strategies and the learning outcomes achieved within the scope of the studies, Table 10 was developed, systematising a crosstabulation between the two variables.

Table 10. Total of categorised learning outcomes (N articles = 32; N categorised strategies = 82)

Gamification Strategies	Learning Outcomes	<i>n</i> (%)
Badges and achievements*	Media and information literacy-driven	1 (50.0%)
	Other emergent literacies	1 (50.0%)
	<i>Total</i>	2 (100.0%)

Challenges and missions*	Other emergent literacies	1 (100.0%)
	<i>Total</i>	1 (100.0%)
Collaboration and social learning*	Media and information literacy-driven	1 (100.0%)
	<i>Total</i>	1 (100.0%)
Feedback and progress tracking*	Affective and motivationally-driven	1 (50.0%)
	Media and information literacy-driven	1 (50.0%)
	<i>Total</i>	2 (100.0%)
Gamified environment and platform*	Affective and motivationally-driven	1 (100.0%)
	<i>Total</i>	1 (100.0%)
Immersive and visual tools*	Affective and motivationally-driven	2 (25.0%)
	Media and information literacy-driven	6 (75.0%)
	<i>Total</i>	8 (100.0%)
Leaderboards and Competition*	Affective and motivationally-driven	1 (100.0%)
	<i>Total</i>	1 (100.0%)
Narrative and Story*	Media and information literacy-driven	2 (100.0%)
	<i>Total</i>	2 (100.0%)
Points and scoring*	Media and information literacy-driven	9 (100.0%)
	<i>Total</i>	9 (100.0%)
Quizzes and tests*	Affective and motivationally-driven	2 (50.0%)
	Media and information literacy-driven	2 (50.0%)
	<i>Total</i>	4 (100.0%)
Uncategorised	Other emergent literacies	1 (100.0%)
	<i>Total</i>	1 (100.0%)
<i>Total learning outcomes in the sample of studies</i>		32 (100.0%)

* Learning outcomes with a frequency of zero on those gamification strategies were suppressed

The analysis of categorised learning outcomes indicated that the most commonly linked strategies to media and information literacy were points and scoring ($n = 9$; 100.0%) and immersive and visual tools ($n = 6$; 75.0%). Narrative and story ($n =$

2; 100.0%) and quizzes and tests ($n = 2$; 50.0%) were also consistently linked to media and information literacy outcomes. In contrast, strategies such as leaderboards and competition, gamified environments and platforms, and collaboration and social learning were more closely linked to emotional and motivational outcomes. There were badges and achievements for both media/information literacy and emergent literacies, but challenges and missions only showed up with emergent literacies. The results indicate that certain strategies might be primarily utilized to enhance literacy skills, while others can focus mainly on the motivational and emotional aspects of learning.

2.2.5. Gamification Effectiveness

Regarding the effectiveness of the gamified interventions in the sample, most studies' conclusions pointed towards positive impacts on the targeted learning outcomes ($n = 24$; 75.0%). Nevertheless, in three studies (9.4%) the authors mentioned that the results of gamification highly varied between learners, while in two studies (6.3%) the results did not support gamification's effectiveness. It is also important to mention that in three studies (9.4%) effectiveness was not specifically discussed.

Furthermore, the articles were assessed based on the reported effectiveness of the study in question. Table 11 illustrates the identification of five efficacy groups.

Table 11. Effectiveness categories in the sample ($N = 32$)

Category*	n	Articles
Student engagement and motivation	17	[18], [19], [23], [24], [25], [26], [27], [29], [32], [34], [36], [37], [42], [45], [46], [47], [48]
Knowledge acquisition and competencies development	13	[17], [18], [20], [21], [22], [23], [24], [28], [30], [34], [39], [40], [41]
Pedagogical and methodological improvements	11	[20], [21], [22], [24], [29], [32], [33], [34], [35], [40], [41]

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Awareness and behaviour	5	[25], [31], [34], [35], [41]
Adaptation and personalisation	5	[19], [33], [37], [39], [46]

*Categories were not mutually exclusive and each study could be in more than one. Therefore, percentages were not calculated.

As shown in Table 6, the largest proportion of studies reported gamification to be effective in enhancing student engagement and motivation ($n = 17$), followed by improvements in knowledge acquisition and competencies development ($n = 13$). A considerable number of studies also identified benefits in terms of pedagogical and methodological improvements ($n = 11$), indicating that gamified interventions were often valued not only for learner outcomes but also for their contribution to teaching practices. Smaller subsets of studies highlighted effects on awareness and behaviour ($n = 5$) and on adaptation and personalisation ($n = 5$), suggesting that these areas, while less frequently emphasised, represent emerging dimensions of gamification's impact.

2.2.6. Inclusion and diversity within Gamification approaches

Most studies ($n = 27$; 84.4%) did not explicitly explore how diversity and inclusivity aspects were considered when developing and implementing the gamified approaches to media education. Nevertheless, this was a concern expressed, even through different lenses, in five studies (15.6%) in the sample.

In this subsample, attention was directed towards addressing socio-economic, linguistic, and ability-related barriers in gamified education. For instance, gamification was applied to promote digital competences among educationally disadvantaged employees in low-skilled occupations, illustrating its potential to support workforce inclusion [28]. Similarly, the use of text-to-speech and interactive eBooks demonstrated measurable benefits for young children with

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language impairments and limited digital experience, highlighting the relevance of accessibility technologies in reducing literacy gaps [31]. Other interventions focused on structurally excluded populations, such as adult literacy learners, where gamification was integrated into mobile and cross-platform solutions to meet the specific needs of this group [35]. Inclusivity was also framed through the lens of demographic and contextual adaptability, with evidence suggesting that gamification can be effectively employed across diverse student populations regardless of age or academic background [21]. Furthermore, the potential of immersive technologies, such as VR and AR, to enhance learning opportunities for learners with disabilities was explicitly recognised [33].

2.2.7. Discussion

This review synthesised 32 empirical studies on gamification in formal education with an emphasis on media education, media literacy, and news literacy. Overall, the findings reinforce previous evidence suggesting that gamification can be an effective pedagogical approach to foster engagement, motivation, and knowledge acquisition [4], [7], [8], [10], [11]. At the same time, the results extend the current state of knowledge by mapping how specific gamification strategies intersect with literacy outcomes, showing that while points and scoring remain the most dominant approach, immersive and visual tools, narrative elements, and feedback loops are increasingly being adopted to support critical literacies.

Although gamification is increasingly promoted in educational contexts, its implementation in media education is still comparatively overlooked. Relative to wider educational settings. The majority of research in the sample emphasised literacy-related outcomes, especially media and information literacy, while also recognising motivational and affective advantages. This dual focus suggests that gamification has the capacity not only to stimulate student interest but also to scaffold critical thinking skills in relation to complex information environments, a

dimension of increasing societal urgency in light of disinformation and polarisation [13], [14], [49]. Importantly, Hh However, the results also revealed that inclusivity and diversity are seldom addressed in systematic ways, with only a small subset of studies explicitly considering disadvantaged groups or accessibility needs.

Most specifically, regarding effective practices and integration into platforms (RQ1), the findings highlight that points and scoring systems, although prevalent, are often combined with complementary strategies such as feedback loops, storylines, or immersive technologies to enhance depth of learning. Studies that connected gamification to real-world scenarios, such as fact-checking exercises or news assessments, proved particularly effective in advancing media literacy skills, aligning with earlier research that stresses the importance of contextualised learning [50], [51]. For platform design, this indicates that effective gamification should move beyond simplistic competition-based models and embed authentic problem-solving and narrative features.

In terms of effects on learning outcomes, engagement, and motivation, the synthesis revealed robust evidence that gamification enhances engagement and motivation, echoing trends found in previous meta-analyses [10], [11]. More importantly, positive outcomes were also documented for knowledge acquisition and competency development, particularly in areas of media and digital literacy. However, effectiveness varied between learners, suggesting that gamification does not work uniformly across populations. These variations highlight the need for adaptive systems that personalise challenges, feedback, and pacing to sustain learner engagement while accommodating diverse abilities and backgrounds [12]. Regarding challenges and success factors (RQ3), the review indicates that most studies did not explicitly address diversity or inclusivity in the design and implementation of gamified approaches to media education, with only 15.6% of the sample doing so. This represents a key challenge in the field, as the lack of systematic attention to inclusivity limits the potential of gamification to reach disadvantaged or underrepresented learners. Where inclusivity was considered, success factors were evident. For example, gamification was employed to build

digital competences among low-skilled workers [28] or to adapt mobile learning tools for adult literacy learners [35]. In these cases, gamification was not only motivational but also responsive to specific socio-economic and linguistic barriers. Further, evidence from some interventions suggested that gamified learning experiences were effective across demographic groups, independent of variables such as age or degree major [21], highlighting their adaptability in diverse educational settings. Another success factor emerging from the evidence was the use of immersive technologies such as VR and AR, which were explicitly identified as promising for learners with disabilities [33]. Taken together, the results suggest that while challenges remain in mainstreaming inclusivity, successful implementation is facilitated when gamification is adapted to learner diversity, integrated with accessibility tools, and designed in alignment with the socio-cultural and technological realities of target populations.

In terms of platforms' characteristics (RQ4), the review suggests that platforms and tools should prioritise flexibility, allowing educators to combine points and leaderboards with narrative, immersive, and collaborative tools. Personalisation features, accessibility functions (like text-to-speech or multimodal interfaces), and integration with real-world problem-solving tasks emerged as critical enhancements. Future platforms and tools should also embed analytics to provide real-time feedback, enabling adaptive learning while supporting educators in tracking literacy development.

2.2.8. Limitations and Future directions

Several limitations were identified in the evidence base. First, most studies were small-scale, often with fewer than 100 participants, which limits generalisability. Only a minority used rigorous experimental designs with control groups, while many relied on post-intervention surveys or qualitative accounts, raising concerns about bias and causality that can impact some in-depth conclusions in terms of effectiveness. Second, inclusivity and accessibility were rarely considered

explicitly, leaving open questions about gamification's effectiveness for learners with disabilities, including formal, non-formal, and informal learning environments minorities, or socio-economically disadvantaged groups.

The review process itself also has limitations. Although a comprehensive search strategy was employed, only materials available in English and published between 2015 and 2025 were included, which may have excluded relevant studies in other languages. In addition, while multiple reviewers participated in screening and data extraction, risk of bias was not formally quantified across studies, which reduces transparency in quality appraisal.

Future research should address these gaps by conducting larger, multi-site studies that incorporate rigorous experimental designs (e.g. randomized controlled trials, longitudinal follow-ups to assess sustained impact), exploring inclusivity through participatory and co-design approaches, and examining long-term impacts of gamification on sustained (media) literacy outcomes. In line with this, theoretically grounded studies that explore the mechanisms through which specific game elements influence learning processes would sustain our knowledge base on gamification's effectiveness. Comparative studies across different cultural and educational contexts - including formal, non-formal, and informal learning environments - could also strengthen the evidence base and support the development of more culture conscious gamified interventions.

Additionally, research on implementation factors, including cost-effectiveness, scalability, and teacher professional development needs would support the practical adoption of evidence-based gamified approaches in media education, in diverse contexts.

2.2.9. Implications for practice and policy

For practice, the findings indicate that educators should move beyond simplistic gamification approaches and adopt strategies that integrate immersive experiences, authentic problem-solving, and continuous feedback. Tailored

design, aligned with curricular objectives, is key to ensuring that gamification supports not only engagement but also critical literacy development. Professional development programmes for teachers could enhance capacity to integrate gamification effectively into media education. Besides this, embedding gamification within broader pedagogical frameworks, combining digital elements with face-to-face discussion, and reflection activities based in real-world scenarios would enhance cohesive learning experiences that bridge the existing gap between game-based activities and critical media literacy development. Involving students in co-design processes can increase relevance and ownership, while attention to formative assessment and data analytics can inform instructional adjustments.

For policy, the review highlights the importance of supporting investment in inclusive and scalable gamification platforms. This includes addressing the digital divide through investment in infrastructures, mandating design principles in funded platforms, and supporting the adaptation or replication of platforms with positive results. In this line, quality assurance mechanisms also play a fundamental role in ensuring that investments support pedagogically sound interventions. Policymakers should encourage the integration of accessibility features and adaptability into educational technologies, ensuring that gamified interventions reach diverse learner populations, including those traditionally excluded from digital innovation.

2.3. Focus groups

The focus groups reveal diverse international perspectives on integrating gamified tools into media and news literacy education. The discussions span Cyprus, France, Portugal, and Denmark as table 12 portrays and involve educators, journalists, researchers, and media literacy specialists working with students between the ages of 12 and 25.

The partial transcriptions of the focus groups were analysed with a view to identifying common themes and issues, as well as pressing and essential aspects to be considered both in the development of gamified tools for media literacy education purposes and in the implementation of tools with these characteristics in formal educational contexts. Below, we present the major themes and issues that resulted from these sessions.

Table 12. Participant list according to country

COUNTRY	PARTICIPANT NUMBER
Portugal	P1 - Portugal
	P2 - Portugal
	P3 - Portugal
	P4 - Portugal
	P5 - Portugal
	P6 - Portugal
Cyprus	P1 - Cyprus
	P2 - Cyprus
	P3 - Cyprus
Denmark	P1 - Denmark
	P2 - Denmark
	P3 - Denmark
	P4 - Denmark
	P5 - Denmark
	P6 - Denmark
	P7 - Denmark
	P8 - Denmark

	P9 - Denmark
	P10 - Denmark
France	P1 - France
	P2 - France
	P3 - France
	P4 - France
	P5 - France

1. Conceptual understanding of gamification

Participants that engaged in the focus groups demonstrate varied interpretations of gamification, revealing both opportunities and confusion.

Participant 6 from Portugal warned that gamification may not be the right term to use whenever the development of tools based on game features is in question. He notes that the concept has been somewhat “hijacked to promote productivity” and there is a strong critical line against this in academia.

Participant 7 from Denmark provides another technical definition: "when we talk about gamification, normally it's not about a game but introducing like game mechanics to a classroom". This participant goes on to distinguish this approach from actually making games, pointing out that "making games...is apparently not considered gamification by literature."

Within the focus group conducted in France, the group discussed gamification, serious games, and ludopedagogy, stressing out that there is a need to provide clear distinctions between these three approaches.

Current gamification practices

During the focus groups, participants reported substantial use of gamified elements, whether digital or analog tools.

Participant 8 from the Danish focus groups described using Kahoot extensively for language learning. Besides this one, this participant also shares the experience of using a Swedish program called "On the Inside" that uses videos with embedded pauses for discussion, worksheets for self-evaluation, and creates "a drawing" where students can visualize their life balance.

Within the French group, participants mentioned using "escape games, debates, and role plays" along with platforms like "InfoHunter, Infolympique".

During the focus groups in Portugal, P4 also highlighted that debate and game formats are useful methods in informal contexts and group dynamics.

2. Benefits of Gamification

The benefits of gamification were also extensively discussed during the sessions. Participants identify several advantages. On the one hand, participants emphasise 1) engagement and participation, referring that gamification encourages participation, especially from weaker or shy students who fear giving wrong answers, whilst creating lasting memories through collective, experiential learning. In Cyprus, P3 observes that presenting content "in a specific way and not so much focusing on the educational purpose of the game, it would be interesting for the students". The participant added that this tactic would be attractive and engaging for them".

Another benefit mentioned during the focus groups was 2) discovering and revealing hidden skills. French participants noted that gamification "reveals hidden skills (e.g. leadership, cooperation, initiative) that aren't usually visible in traditional classroom contexts.

Furthermore, participants point out to 3) practical learning opportunities. During the Danish focus group, P9 described using business simulation games where participants play and simulate real-life situations, such as doing business with real money and highlight that these experiences allowed students to assimilate information and understand complete dynamics in a more playful and motivating way.

3. Drawbacks and concerns regarding gamification

Although participants identified a number of advantages and added value in gamified tools for educational purposes during the focus groups, participants also expressed significant reservations.

Firstly, they point out that there is a risk of over-engagement with the tools and approaches. P7 (Denmark) mentioned that particularly with age groups – e.g. kids and young adults – who tend to already avoid the news there is a drawback: if they enjoy the game, it can help overcome that avoidance, but if they aren't interested in the game, the added demand for engagement may actually lead to even more disengagement or shutdown.

Then, participants also draw attention to the possibility of there being a greater focus on mechanics than on content. One participant from the Danish focus groups (P3) warns that motivation is external rather than intrinsic - "you're not actually focusing on the content. You're focusing on scoring points". Another participant (P1) adds that students sometimes simply tend to interact with platforms with no particular critical thinking or critical approach to the content.

Within the French focus groups arose a question related to the possible superficiality of the approach based on gamification. The group warned that there might be the danger of overselling 'game' quality. According to the participants, tools must remain pedagogical rather than attempt to compete with professional video games.

During the focus groups in Portugal, P1 added another risk factor to the discussion. According to the participant, there might be the risk of infantilising the theme under discussion in a specific educational context through approaches using games like Kahoot

4. Challenges in media literacy education

The focus group also aimed to address challenges in media literacy education. In Cyprus, P7 shared that

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"a lot of game research and practices have to do with, say, like language learning or sciences where there are hard answers, right? You get points when you answer correctly. But a system like that doesn't work for news media literacy (...) ...it's about the discussion and it's about the analysis and the critical thinking. And so at what point can you, let's say reward? Ohh, you've thought critically enough for me". According to this participant, gamification somehow seems to fit subjects with clear answers but struggles with topics that demand critical thinking over ready-made answers, such as news and media literacy.

Another participant from the Danish focus groups (P1) explains that addressing topics related to news and media literacy is also increasingly difficult due to the amount of information received by young people from alternative sources. The participant connects this idea to the fact that there is a big gap in terms of student's basic media literacy knowledge – not only in critical terms but also in operational matters such as accessing hyperlinks.

5. Institutional readiness

The discussions also delved into matters related to the institutions' readiness to implement gamified practices, platforms and tools into its dynamics. The analysis of the focus groups demonstrate that opinions vary significantly according to country and context.

In Denmark, P1 explains that Danish teachers from various educational levels are ready to use gamification since there is already previous experience with tools and materials developed by organisations and other actors. On the other hand, in Cyprus, focus groups participants highlight a different scenario. P2 mentions that there are other needs in educational contexts (e.g. air conditioning) that exceed the urgency of implementing gamified practices in educational contexts.

In Portugal, participants of the focus groups expressed concerns about infrastructures, with P3 particularly drawing attention to the fact that various schools still don't have conditions for implementing digital platforms. In France,

participants believe teachers are usually open to adopting tools, as long as they are easy to use and adaptable.

During the discussions, participants from several countries also reflect on teachers' characteristics and demands. P2 from the Danish focus groups mention that teachers who implement and understand these tools are usually younger, more dynamic and open-minded. To the characteristics, P7 – also from Denmark – adds personality traits and a personal interest in disruptive and game-based approaches.

6. Design recommendations

The sessions also focused on design recommendations for the development of gamified tools. According to participants in Cyprus, format and accessibility should be one of the main concerns. They mentioned not only the visuals, but also the amount of information (text) to be presented, as an individual's attention span is quite reduced – it should be concise. On the same note, French participants pinpoint offline mode as a fundamental option, as many schools across Europe have a weak internet connection. Even if some of the French participants also mention that compatibility with interactive whiteboards and visible collective displays should be considered, P7 from Denmark advocates for both analogue and digital materials. As the participant mentions, having a broad variety of options within a toolkit provides freedom of choice and greater adaptability.

Regarding pedagogical features, participants from various partner countries highlighted several aspects they consider relevant for gamified educational platforms and tools. French educators state that these materials should have clear pedagogical objectives displayed in each module, the possibility to adapt contents locally (different countries, contexts, languages), as well as include a debrief and critical discussion. P7 from Denmark proposes to include a variety of design principles and find a balance between competitive games and collaborative games. Moreover, the same participant recommends role-playing games as

learning moral values and that learning through discussion can have, from his point of view, positive outcomes.

On another note, P3 from Denmark and P6 from Portugal addressed the topic of co-creation. These participants recall some experiences from teachers in their home countries that challenged their students to collectively create games and their rules. Both participants highlight that these approaches stimulate student enthusiasm, creativity and collaboration skills.

7. Implementation challenges

The focus groups also delved into the implementation challenges. Participants point out 1) the difficulty of collecting evidence of successful gamification – particularly as it needs long-term commitment – (P7 - Denmark), 2) needs and requirements in terms of skills and competencies (P8 - Denmark), and 3) teacher training and specific recommendations (P1, P2, P5 - Portugal).

8. Final remarks

During the sessions, participants questioned whether "gamification" is the appropriate term. P6 from Portugal, who has a background in Game Design and Interactive Storytelling, suggests the use of alternative terms focused on co-creation and play rather than productivity optimisation. Other participants, such as P7 identified a critical thinking paradox, asking how contradictory it is to reward critical thinking with points. Also, the cultural differences between the various countries became apparent - Danish participants describe sophisticated existing practices while Cypriot participants report basic infrastructure deficits.

All in all, reveals some sort of cautious optimism about gamification tempered by significant concerns. Participants who engaged in the sessions value experiential, active learning but worry about superficiality, over-stimulation, and the mismatch between game mechanics (which reward correct answers) and media literacy goals (which require nuanced critical judgment). Analysing the feedback collected during the sessions points out role-playing simulations with structured debriefing

and combined with analogue-digital hybrid approaches as the most promising direction, rather than point-based quiz games. According to the feedback, these methods seem to be the most impactful and successful in the eyes of the participants. Though, participants leave important messages about the use of gamified approaches within educational contexts – gamification success will likely depend less on the sophistication of the technology than on teacher facilitation skills, institutional support, and long-term commitment to iterative development.

2.4. Interviews

Table 13. List of participants in interviews per country

COUNTRY	PARTICIPANT NUMBER
Portugal	I1 - Portugal
Cyprus	I1 - Cyprus
	I2 - Cyprus
	I3 - Cyprus
	I4 - Cyprus
Denmark	I1 - Denmark
	I2 - Denmark
	I3 - Denmark
France	I1 - France
	I2 - France

In the following paragraphs, we sum up the information collected during interviews with educators, media professionals, and researchers from Cyprus, Denmark, France, and Portugal (table 13) regarding gamified tools for media and news literacy education.

This analysis synthesises interviews with educators, media professionals, and researchers from Cyprus, Denmark, France, and Portugal regarding gamified tools for media and news literacy education.

The participants demonstrate cautiously optimistic views about gamification, recognising both significant potential and significant limitations.

Several educators emphasised gamification's motivational power. I2 from France stated that gamification can be very interesting from the earliest grades to motivate students, encourage them to enter the activity, and even engage students who are in academic difficulty. In line with this, I2 from Denmark shared practical success cases attesting to the effectiveness of gamified approaches to education, and I1 from France added that while engaging with gamification, students tend not to feel they are engaged in academic tasks, which works as a motivational factor.

Nonetheless, participants stressed that gaming elements alone are insufficient. I2 (from France) explained that making students play is not enough – media education is about skills and knowledge, and gamification is just a starting point. I4 from Cyprus echoes this idea, stressing that a middle term is fundamental - a balance between play and learning.

During the interviews, key design principles were addressed. Participants consistently emphasised ease of use as one of their concerns. I3 (Denmark) stated that journalists are notoriously bad at math and bad at technical issues, an aspect that requires tools to be extremely user-friendly. I1 (also from Denmark) points out the same features, adding that simplicity of use and access is key, an idea that I2 (Cyprus) reinforces.

Time constraints emerged as a major concern among participants. I2 (in France) noted that teachers may use very short teaching sequences with students, which might present some difficulties in the implementation of a game. Other participants mention that gamified tools divided into short sequences and tasks would be easier to implement. Together with this idea, participants state that tools must connect to students' actual experiences. P1 from France mentions that having space for fitting in students' realities. "If you create something that doesn't make sense or is completely disconnected from their world, it just won't work", P1 (from France) adds.

The interviews also addressed examples and models that participants saw as good practices that could be replicated in other contexts. I1 (France) mentions Class investigation, a role-playing game where players act as journalists and have to discover how information is produced, the constraints, and choices faced by

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professionals. I1 (Portugal) recalls Bad News, a game that helps students understand media manipulation mechanisms. This participant, who is a researcher in the field of Media Literacy and worked previously as a journalist, also listed a set of key preferences for youth (13-17 years old): Role-playing mechanics, 2) short dialogue sequences, 3) audio and visual elements over text, 4) story progression systems, 5) attractive colours and easily identifiable characters, 6) reward systems and 7) customizable functionalities and mini-games.

The interviews also identified key barriers to implementation. I1 from Cyprus emphasised the critical need for experience-based, hands-on teacher training. Building on this point, I1 from Portugal stressed that such training should focus specifically on tools, platforms, and games that educators are genuinely willing to use in their classrooms. Curriculum limitations emerged as another significant barrier, with interviewees highlighting both outdated curricula (I1, France) and insufficient space for integrating more innovative approaches (I1, Portugal). The technical complexity of the platforms and tools should be taken into consideration, as they can be discouraging aspects.

The interviewees were challenged to present a set of recommendations for tool development and implementation. According to them, successful gamified tool development and implementation requires attention to both technical design and pedagogical support structures. On the development side, tools must incorporate regular updates to maintain relevance with evolving media landscapes, alongside clear instructional materials (e.g. video tutorials, step-by-step guides). Involving teachers directly in the development process to ensure practical usability in real classroom contexts might be key, while also advocating for multiplayer functionality that blurs boundaries between physical and digital interaction. Also on the development side, interviewees warn of the need for age-appropriate balance, with entertainment elements gradually decreasing as students mature and informational depth increases.

For successful implementation, comprehensive hands-on teacher training emerges as foundational - moving beyond manuals to provide experience-based professional development. Alongside this, clear integration guidance demonstrating curriculum alignment, glossaries explaining game objectives and methods for analysing student results should be tools considered at the genesis of gamified educational tools.

In brief, the interviews reveal unanimous support for well-designed gamified tools while emphasising they are not simple solutions. Successful implementation of

gamified tools requires tools that are simultaneously engaging yet credible, simple yet substantive, and entertaining yet educational.

2.5. Survey

The NewsArcade survey aimed to collect insights from students between the ages of 12-25 regarding preferences and perceptions towards gamified tools and how they can effectively support media and news literacy education. The survey was created on GoogleForms and distributed - between June and September 2025 - via email and other online channels by all partners engaged in the project. No personal data was collected and all participants were about their rights before filling in the survey.

Overview

The survey gathered responses from 246 participants, though only 222 answers were considered valid (e.g. participants outside the pre-determined age range). As table 14 portrays, the sample was predominantly female (65.8%), with 32% male respondents and 1.4% identifying as non-binary or preferring not to specify.

Table 14. Gender distribution survey respondents

4. What is your gender?	Frequency	Percent	Valid Percent	Cumulative Percent
Female	146	65.8	65.8	65.8
Male	71	32.0	32.0	97.7
Non-binary	2	0.9	0.9	98.6
I prefer not to say	3	1.4	1.4	100.0
Missing	0	0.0		
Total	222	100.0		

The age distribution centered around late adolescence, with a mean age of 19.12 years (SD = 2.52, range: 12-25 years) and a median of 19 years.

Educational status reflected the age demographic (see table 15): 51.8% identified their educational level as upper secondary education (high school), 37.4% university or college, and 5% lower secondary education.

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Table 15. Distribution of survey respondents per education level

5. What is your education level?	Frequency	Percent	Valid Percent	Cumulative Percent
Lower secondary (middle school)	11	5.0	5.0	5.0
Upper secondary (high school)	115	51.8	51.8	56.8
University/ college	83	37.4	37.4	94.1
Other	5	2.3	2.3	96.4
Not currently enrolled	8	3.6	3.6	100.0
Missing	0	0.0		
Total	222	100.0		

The sample was geographically concentrated, with 77.3% of respondents from Portugal and 12.9% from Cyprus, with remaining participants distributed across various countries, as table 16 portrays.

Table 16. Distribution of survey respondents per country

What country are you from?	Frequency	Percent	Valid Percent	Cumulative Percent
Angola	1	0.5	0.8	0.8
Argentina	1	0.5	0.8	1.5
Australia	1	0.5	0.8	2.3
Belgium	1	0.5	0.8	3.0
Brazil	2	0.9	1.5	4.5
Cyprus	17	7.7	12.9	17.4
France	1	0.5	0.8	18.2
Germany	3	1.4	2.3	20.5
Japan	1	0.5	0.8	21.2
Portugal	102	45.9	77.3	98.5
România	1	0.5	0.8	99.2
Kipro	1	0.5	0.8	100.0
Missing	90	40.5		
Total	222	100.0		

Detailed results

Analysis of the answers related to news consumption demonstrated consistent news engagement (table 17). Around 33% of respondents consumed news on a

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daily basis; 45.5% accessed it 1-6 times weekly. Only 4.5% reported never consuming news, indicating high overall engagement with news.

Table 17. Media consumption habits (1) of survey respondents

6. Do you watch, listen to or read news?	Frequency	Percent	Valid Percent	Cumulative Percent
Never	10	4.5	4.5	4.5
Once a week	37	16.7	16.7	21.2
1-3 times a week	76	34.2	34.2	55.4
4-6 times a week	25	11.3	11.3	66.7
Daily	74	33.3	33.3	100.0
Missing	0	0.0		
Total	222	100.0		

As to platform preferences, the answers displayed in tables 18, 19 and 20 revealed a marked shift towards digital media. Social media dominated as the primary news source (87.4%), while traditional and other digital platforms played secondary roles. Among those participants who selected additional platforms, online video platforms (37.9%), online news websites (27.6%), and television (26.4%) were the most common. Data also suggests some generational trends in media consumption, as radio, print newspapers, and podcasts captured minimal attention.

Table 18. Media consumption habits (2) of survey respondents

7. What platforms/ media do you usually use to access news? (Select all that apply)	Frequency	Percent	Valid Percent	Cumulative Percent
Social media	194	87.4	87.4	87.4
Online video platforms	10	4.5	4.5	91.9
Online news websites/ magazines	8	3.6	3.6	95.5
Television	9	4.1	4.1	99.5
Print newspapers/magazines	1	0.5	0.5	100.0
Missing	0	0.0		
Total	222	100.0		

Table 19. Media consumption habits (3) of survey respondents

Coluna2	Frequency	Percent	Valid Percent	Cumulative Percent
Online video platforms	66	29.7	37.9	37.9
Online news websites/ magazines	48	21.6	27.6	65.5
Television	46	20.7	26.4	92.0
Radio	7	3.2	4.0	96.0
Print newspapers/magazines	4	1.8	2.3	98.3
Podcasts	3	1.4	1.7	100.0
Missing	48	21.6		
Total	222	100.0		

Table 20. Media consumption habits (4) of survey respondents

Coluna3	Frequency	Percent	Valid Percent	Cumulative Percent
Social media	1	0.5	0.9	0.9
Online video platforms	23	10.4	20.4	21.2
Online news websites/ magazines	25	11.3	22.1	43.4
news websites/online magazines	1	0.5	0.9	44.2
Television	31	14.0	27.4	71.7
Radio	18	8.1	15.9	87.6
Print newspapers/magazines	7	3.2	6.2	93.8
Podcasts	7	3.2	6.2	100.0
Missing	109	49.1		
Total	222	100.0		

Questioned about preferred characteristics in news content, participants prioritised accessibility and efficiency. As portrayed in table 21, 73.9% valued content that is short and easy to read" as their primary preference. Visual engagement ranked second (18.5%), while interactive tools, narrative formats, and real-time engagement were features that attracted little initial interest.

Table 21. Preferred characteristics in news according to survey respondents

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8. Which characteristics do you usually appreciate in news content? (Select up to 3)	Frequency	Percent	Valid Percent	Cumulative Percent
Short and easy to read	164	73.9	73.9	73.9
Visually engaging	41	18.5	18.5	92.3
Interactive or participatory tools	6	2.7	2.7	95.0
Storytelling or narrative-based formats	4	1.8	1.8	96.8
Real-time comments or reactions	1	0.5	0.5	97.3
Other	6	2.7	2.7	100.0
Missing	0	0.0		
Total	222	100.0		

However, data shows that among those selecting secondary preferences, visually engaging content stood out (67.8%) – this points out that while conciseness is vital, visual appeal is also a relevant characteristic among the target groups under study.

When quizzed about engagement with games (table 22), the sample split almost evenly: 44.6% reported not playing video games, while 55.4% engaged with games to varying degrees, as table x shows. Among those who reported engaging with games, play styles were distributed between solo gaming (23%), team-versus-team modes (23.9%), and cooperative modes (8.6%).

Table 22. Gaming habits (1) of survey respondents

9. What mode do you usually play online video games in?	Frequency	Percent	Valid Percent	Cumulative Percent
I don't play videogames	99	44.6	44.6	44.6
Alone	51	23.0	23.0	67.6
Team vs. Team	53	23.9	23.9	91.4
Co-operative mode (i.e. co-operative against the computer)	19	8.6	8.6	100.0
Missing	0	0.0		
Total	222	100.0		

Gaming frequency (table 23) among active players showed substantial variation (table x). While 41.4% never play, those who do ranged from casual engagement (19.4% several times monthly) to intensive daily play, with some reporting spending 6-7 hours a day with games (2.3%).

Table 23. Gaming habits (1) of survey respondents

10. Characterise the average time you spend playing video games.	Frequency	Percent	Valid Percent	Cumulative Percent
I never play	92	41.4	41.4	41.4
Several times a month	43	19.4	19.4	60.8
A few times a month (1-3 hours)	2	0.9	0.9	61.7
Several times a week	32	14.4	14.4	76.1
Several times a week (1-3 hours)	1	0.5	0.5	76.6
Almost every day	12	5.4	5.4	82.0
An hour a day	9	4.1	4.1	86.0
One hour per day	2	0.9	0.9	86.9
About 2-3 hours a day	16	7.2	7.2	94.1
Around 4-5 hours a day	7	3.2	3.2	97.3
Around 6-7 hours a day	5	2.3	2.3	99.5
Eight or more hours a day	1	0.5	0.5	100.0
Missing	0	0.0		
Total	222	100.0		

When asked about ideal gaming time if unconstrained (table 24), 36.9% still indicated no interest; many existing casual players expressed desire for increased play time. This suggests that time constraints may limit their gaming, rather than lack of interest in gaming.

Table 24. Gaming preferences of survey respondents

11. How long would you like to play online games if you could?	Frequency	Percent	Valid Percent	Cumulative Percent
I never play	82	36.9	36.9	36.9
Several times a month	39	17.6	17.6	54.5
Several times a week	34	15.3	15.3	69.8
Almost every day	19	8.6	8.6	78.4
An hour a day	13	5.9	5.9	84.2
Around 2-3 hours a day	11	5.0	5.0	89.2
Around 4-5 hours a day	15	6.8	6.8	95.9
Around 6-7 hours a day	4	1.8	1.8	97.7
Eight or more hours a day	3	1.4	1.4	99.1
Never	2	0.9	0.9	100.0
Missing	0	0.0		
Total	222	100.0		

The survey delved into questions related to media and information literacy, namely media literacy awareness. Concern about misinformation was nearly widespread. As table 25 shows, 91% rated learning to recognize misinformation as either "very important" (27.9%) or "essential" (63.1%) – this demonstrates high awareness of the issue's importance.

Table 25. Understanding of media and information literacy of survey respondents

13. How important do you think it is to learn how to recognize misinformation or fake news?	Frequency	Percent	Valid Percent	Cumulative Percent
Not important	2	0.9	0.9	0.9
Slightly important	2	0.9	0.9	1.8
Moderately important	7	3.2	3.2	5.0
Very important	62	27.9	27.9	32.9
Essential	140	63.1	63.1	95.9
Other	9	4.1	4.1	100.0
Missing	0	0.0		
Total	222	100.0		

Notwithstanding this concern, confidence in media analysis skills was pointed out at more moderate levels. 53.2% rated themselves at 4 or 5 on a confidence scale for independently analysing media content; 41% positioned themselves at the neutral midpoint (3), and 5.9% rated themselves at 1 or 2 (table 26). This gap between perceived importance and confidence seems to suggest an opportunity for skill development.

Table 26. Confidence in analysing and verifying media content according to survey respondents

14. On a scale of 1 to 5, how confident are you to independently analyse or verify media content?	Frequency	Percent	Valid Percent	Cumulative Percent
1	4	1.8	1.8	1.8
2	9	4.1	4.1	5.9
3	91	41.0	41.0	46.8
4	101	45.5	45.5	92.3
5	17	7.7	7.7	100.0
Missing	0	0.0		
Total	222	100.0		

Exposure to media literacy education was rather common. As shown by table 27, 54.1% of participants reported having had discussions on the topic, primarily at school (48.4%). However, 38.3% had not engaged with such discussions, and 7.7% were uncertain about their exposure to these topics.

Table 27. Previous experience with media and information literacy discussions survey respondents

15. Have you had any discussions on media or news literacy?	Frequency	Percent	Valid Percent	Cumulative Percent
Maybe	45	20.3	20.3	20.3
No	40	18.0	18.0	38.3
Not sure	17	7.7	7.7	45.9
Yes	120	54.1	54.1	100.0
Missing	0	0.0		
Total	222	100.0		

Reported interest in media and news topics was moderate. 56.8% expressed interest at level 4 or 5, though 32.9% remained neutral. Topic preferences showed clear patterns: politics (40.7%) was mainly the participants' first choice, followed by entertainment (34.4%) (table 28). Economics, environment, and international news emerged as more popular secondary and tertiary interests. Economics rose to 18.6% as a second choice, and international news to 20.2% as a third choice.

Table 28. Preferred topics in news content according to survey respondents

18. What topics are most interesting to you?	Frequency	Percent	Valid Percent	Cumulative Percent
Politics	90	40.5	40.7	40.7
Economics	5	2.3	2.3	43.0
Environment	22	9.9	10.0	52.9
International News	9	4.1	4.1	57.0
Safety & Human Rights	5	2.3	2.3	59.3
Education & Technology	7	3.2	3.2	62.4
Entertainment	76	34.2	34.4	96.8
Music & Culture	5	2.3	2.3	99.1
Sports	1	0.5	0.5	99.5
Other	1	0.5	0.5	100.0
Missing	1	0.5		
Total	222	100.0		

Educational gaming experience was quite widespread across the sample: 50% had used complete educational games, and 18% had encountered gamified elements on learning platforms. However, 19.8% were uncertain about their exposure, and 12.2% had never engaged with educational games (table 29).

Table 29. Use of games for educational purposes according to survey respondents

19. Have you ever used games or elements of games to learn? (Choose all that apply)	Frequency	Percent	Valid Percent	Cumulative Percent
Yes, I have used complete educational games	111	50.0	50.0	50.0
Yes, I've used game elements on a platform	40	18.0	18.0	68.0
Not sure	44	19.8	19.8	87.8
Never used	27	12.2	12.2	100.0
Missing	0	0.0		
Total	222	100.0		

School, as portrayed in tables 30 and 31, was the predominant context for educational gaming (52.3% of respondents), with mathematics being the most common subject in which gamified tools were explored (36.2%), followed by language learning (16.9%). History (8.2%) and media/ICT (7.2%) were the subjects least mentioned in terms of the use of gamified tools and/ or platforms.

Table 30. Contexts of use of games for educational purposes according to survey respondents

20. Where did you use this game?	Frequency	Percent	Valid Percent	Cumulative Percent
At school	113	50.9	52.3	52.3
With my family	7	3.2	3.2	55.6
With my friends	26	11.7	12.0	67.6
At the study center/ At the after-school program	5	2.3	2.3	69.9
Somewhere else	65	29.3	30.1	100.0
Missing	6	2.7		
Total	222	100.0		

Table 31. Disciplines in which games were used for educational purposes according to survey respondents

21. If you used it at school	Frequency	Percent	Valid Percent	Cumulative Percent
Math	75	33.8	36.2	36.2
Science	7	3.2	3.4	39.6
History	17	7.7	8.2	47.8
Language	35	15.8	16.9	64.7
Media/ ICT	15	6.8	7.2	72.0
Citizenship	2	0.9	1.0	72.9
Other	21	9.5	10.1	83.1
N/A	33	14.9	15.9	99.0
question 20–21 shouldnt be obligatory	1	0.5	0.5	99.5
👉	1	0.5	0.5	100.0
Missing	15	6.8		
Total	222	100.0		

Regarding effectiveness (table 32), when rating game-based learning's engagement level compared to traditional methods, 57.6% of participants scored it at 4 or 5, though 28.4% remained at the neutral midpoint (3). Perceived helpfulness for understanding complex topics received similar ratings, as shown by table 33 - 46.8% at 4 or 5, with 30.6% neutral. The high number of neutral responses suggests that while many find value in game-based learning,

experiences may have been inconsistent or benefits may not be universally apparent.

Table 32. Perceptions of engagement on learning through games

22. On a scale of 1 to 5 (5 = very engaging), how engaging do you find learning through games compared to traditional methods?	Frequency	Percent	Valid Percent	Cumulative Perce
1	11	5.0	5.0	5.0
2	20	9.0	9.0	14.0
3	63	28.4	28.4	42.3
4	82	36.9	36.9	79.3
5	46	20.7	20.7	100.0
Missing	0	0.0		
Total	222	100.0		

Table 33. Perceptions of helpfulness on learning through games

23. On a scale of 1 to 5 (5 = very helpful), how much does using games help you better understand complex topics in school?	Frequency	Percent	Valid Percent	Cumulative Percent
1	15	6.8	6.8	6.8
2	35	15.8	15.8	22.5
3	68	30.6	30.6	53.2
4	72	32.4	32.4	85.6
5	32	14.4	14.4	100.0
Missing	0	0.0		
Total	222	100.0		

Openness to using games for media literacy education was considerable: 48.6% expressed clear interest, 36% were open to the possibility, totalling 84.6% with positive or potential interest. Only 9.5% - as portrayed in table 34 - declined interest outright.

Table 34. Reported interest on learning through games

24. Would you be interested in using games to learn more about news and how to detect misinformation?	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	108	48.6	48.6	48.6
No	21	9.5	9.5	58.1
Maybe	80	36.0	36.0	94.1
Not sure	13	5.9	5.9	100.0
Missing	0	0.0		
Total	222	100.0		

Participants were asked to list feature preferences (table 35). Story-based gameplay was the favoured preference (45.9% as first choice), followed by competitive elements such as points and rankings (23% as first choice). When participants selected additional features, real-life news examples gained prominence (30.5% as second choice), along with quizzes and challenges (22.5% as second choice). Visual elements and team-based modes showed

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stronger appeal as third choices (24.3% and 20.4% respectively), which hints they function better as complementary features rather than primary selling points.

Table 35. Preferred characteristics on games related to news/ media literacy

25. Which of these features would make a news/media literacy game appealing to you? (Select up to 3)	Frequency	Percent	Valid Percent	Cumulative Percent
Story-based gameplay	102	45.9	45.9	45.9
Competitive elements (points, rankings)	51	23.0	23.0	68.9
Real-life news examples	37	16.7	16.7	85.6
Provide examples of reliable news sources	1	0.5	0.5	86.0
There should be examples of reliable news	1	0.5	0.5	86.5
Customizable characters/avatars	8	3.6	3.6	90.1
Quizzes and challenges	13	5.9	5.9	95.9
Team-based or multiplayer mode	2	0.9	0.9	96.8
Visuals and animation	2	0.9	0.9	97.7
Short levels or modules	4	1.8	1.8	99.5
Other	1	0.5	0.5	100.0
Missing	0	0.0		
Total	222	100.0		

Regarding play context (table 36), 48.6% preferred playing with friends, while 18.9% had no preference. Playing alone and playing in class with teacher guidance were equally but less preferred (16.2% each), suggesting flexibility in implementation approaches and a preference for social engagement while exploring gamified tools.

Table 36. Preferred play context for games related to news/ media literacy

26. Would you prefer to play such a game:	Frequency	Percent	Valid Percent	Cumulative Percent
Alone	36	16.2	16.2	16.2
With friends	108	48.6	48.6	64.9
In class with teacher guidance	36	16.2	16.2	81.1
Doesn't matter	42	18.9	18.9	100.0
Missing	0	0.0		
Total	222	100.0		

Participants were inquired about their expectations in terms of learning from a gamified media literacy tool. As displayed in table 37, the primary goal participants sought was learning to spot fake news and misinformation (74.3%), directly reflecting the high concern levels identified earlier.

Table 37. Main interests related to learning through gamified media literacy tools

27. What would you want to learn from a gamified media literacy tool?	Frequency	Percent	Valid Percent	Cumulative Percent
How to spot fake news and misinformation	165	74.3	74.3	74.3
Learn to fact-check information and use reliable sources	14	6.3	6.3	80.6
Understand how social media algorithms influence what I see	18	8.1	8.1	88.7
Identify bias or propaganda in news stories	7	3.2	3.2	91.9
Create and share responsible, ethical content	1	0.5	0.5	92.3
Think critically about influencers, online ads, and multimedia content etc.	6	2.7	2.7	95.0
Learn how news is made (behind the scenes of journalism)	2	0.9	0.9	95.9
Understand the use of AI in news stories	2	0.9	0.9	96.8
Other	7	3.2	3.2	100.0
Missing	0	0.0		
Total	222	100.0		

Secondary objectives revealed broader interests: fact-checking skills and source evaluation dominated second choices (58.1%), followed by understanding social media algorithms (37.5% as third choice) and identifying bias or propaganda (27.3% as third choice). Behind-the-scenes journalism, AI in news production, and ethical content creation drew smaller interest.

Conclusions

According to the data collected and analysed through the NewsArcade survey, respondents get most of their news from social media and expect it to be short and short, targeted and objective content. They show major concerns towards misinformation, with 91% stating it is important or essential to learn about. Though, on another note, less than half feel very confident in their own ability to spot it.

Story-based gameplay appeals to young people more than any other feature. Educational games seem to be quite widespread, and young respondents rated them as somewhat more engaging than traditional methods. Furthermore, 85% of respondents are open to trying a game about media literacy.

The gaming landscape shows different routines and habits: less than half don't play games, while the rest range from casual to heavy gamers. Those who do play favor either solo or competitive team modes. Nearly half prefer to play with friends rather than alone or in a classroom setting - an aspect that is crucial to address in terms of design.

As to the topics of interest in news, politics and entertainment seem to dominate their interests, with economics and international news picking up as secondary topics.

Overall, the data suggest an interest in these kind of tools, but set the bar high as young respondents tend to prefer story elements, brief sessions and practical skills learning - instead of solely awareness.

PART 3 – MAIN CONCLUSIONS

The evidence collected through desk research, focus groups, interviews, and surveys and presented in this report, reveals that gamification holds substantial potential for media and news literacy education.

Firstly, it shows that its effectiveness depends on implementation quality and pedagogical integration. The comparative analysis of existing initiatives (desk research) reveals a field in transition, moving from superficial reward mechanisms towards experiential, simulation-based approaches that engage learners in authentic and reality-based media environments.

Secondly, interviews and focus groups highlight tensions between game mechanics and educational objectives, specifically the contradiction inherent in rewarding critical thinking through point systems. Professors, researchers and other educators express cautious optimism tempered by fair concerns about over-stimulation, technological determinism, and the risk of privileging engagement over substantive learning.

As a third note, the cultural and infrastructural disparities identified across countries further underscore that scalability cannot be assumed without attention to context-specific barriers - digital access, teacher preparedness, and institutional support structures. This presents a set of implications that can be determined for the sustainability of gamified approaches and tools.

Furthermore, the findings indicate that successful gamified media and news literacy interventions require a fundamental reorientation away from gamification as a technical solution, toward gamification as a pedagogical strategy embedded within broader educational frameworks. Role-playing simulations combined with structured reflection, hybrid analogue-digital formats, and co-design processes involving both educators and learners emerge as more promising than quiz-based or points-driven approaches. Also, as the surveys show, young people tend to prefer story-based gameplay, brief sessions, and practical skill development. Together with their social gaming habits, this aspect suggests that design must prioritise

narrative coherence, peer interaction, and transferable competencies over isolated knowledge acquisition.

Finally, the evidence suggests that the value of gamified tools will be less determined by their technological sophistication than by the quality of teacher facilitation, the coherence of curricular integration, and the commitment to iterative development informed by classroom practice. As a final note, Policymakers and developers should invest not only in platform development but also in professional development, quality assurance mechanisms, long-term interventions and inclusive design principles that ensure these tools serve diverse learner populations across varied educational contexts.

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PART 5 – ANNEXES

5.1 Template for the Desk research

CASE NUMBER	1, 2, 3 ...
TITLE (name of the project or initiative)	
NAME OF PROMOTING ENTITY	
YEARS OF ACTIVITY	
WEBPAGE	
CONTACT	

SNEAK PEAK
<i>Provide here a short description of the initiative/ project. Think of which could be the main relevant keywords you could use to describe it (maximum 250 characters)</i>

AIMS and OBJECTIVES and MAIN TOPICS (between 1.500-2.000 characters)
<i>How did the idea of the initiative emerge? Which was the nature of the initiative (local, regional, national, international)? What was its main focus? Please, outline the initiative's main identified aims and objectives in the form of bullet points.</i>
TARGET GROUP(S) (between 350-500 characters)

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Which were the main target groups addressed throughout the initiative? In which age range? Did the initiative focus on participants belonging to specific groups? If yes, which ones?

NEEDS and CONTEXT ANALYSIS (between 2.000-2.500 characters)

Which was the social / geographical area in which the initiative took place? Which needs and issues needed to be addressed through this initiative?

GAMIFICATION STRATEGY and APPROACH TO NEWS LITERACY (between 1000-1.500 characters)

What gamification XXX did the project explore or implement?

Key information to keep in mind when you use the template:

- copy/paste is possible. Necessary rephrasing can be done during the revision phase;

the template should be used for each case study initiative (meaning each partner will fill in the template 3/4 times);

- all the elements within the template (the questions, the length recommendations, the sections, etc.) are there only and exclusively to guide, inspire and support in structuring the content. If you have any questions or difficulties with task or with the template, please reach out to us via the dedicated channel on Mattermost;
- even though the text is organized in sections, the idea is still to provide to the readers the experience of going through a coherent narrative flow, so be mindful of text harmonization when you write your content.

Please, keep in mind that the template has been designed with the aim to unify the length and scope of the contributions - not to limit them in any way.

5.2 Desk research report

A. Initiative description

(Under the statement: ***“Provide here a short description of the initiative/project. Think of which could be the main relevant keywords you could use to describe it”***)

Table 6. - Identifying the practices under a short description

Case number	Sneak Peak
1	InVID develops verification technologies to help journalists detect, authenticate and contextualize online videos. It empowers newsrooms to debunk misinformation and verify user-generated content at scale, ensuring journalistic integrity in the age of deepfakes.
2	The Week of the Press and Media in School® is a large-scale national initiative that introduces students to media ecosystems. The 2025 theme, “Where is the news?”, invites pupils to navigate the blur between information, entertainment, and AI-generated content.
3	Truth or Lies is a pedagogical fact-checking game, in quiz format, to work on media literacy and combat disinformation in primary and secondary schools. Resource from the Citizenship 2020/21 project, with support from the Directorate-General for Education.
4	COMEDIG Game is a game tool for mobile devices that aims to contribute to the development of digital and media literacy among children and young people in basic education and to stimulate dialogue between children, young people and adults (teachers,

	parents) about media.
5	Data Defenders is a digital tower defense game that blends rich narrative and engaging mechanics to highlight media literacy during crises. It was developed by Yo-Media project that aims to train education and media professionals to promote media literacy among young people in times of crisis, particularly health crises and wars.
6	Fake It To Make It is a simulation in which players are immersed in the mechanisms of creating and spreading fake news. This immersive approach encourages critical thinking and equips players with the tools to recognise and refute misleading information on the internet.
7	Ubbu is an educational platform designed to teach coding to children, through game based lessons about the UN <u>Sustainable Development Goals</u> . To empower children to solve the problems of tomorrow, ubbu helps teachers with comprehensive training to inspire young minds.
8	Safe School for the Internet is a national program empowering schools to develop digital safety action plans through a whole-school approach. Focus keywords: digital citizenship, safe internet, formal education, Cyprus, media literacy.
9	Youth Coaches for the Internet is a peer-education initiative empowering students to become digital mentors and promote internet safety in schools. The project keywords are: peer learning, media literacy, student empowerment, digital safety, Cyprus, formal education.
10	Stärker mit Games (Stronger with Games) stands as a significant nationwide initiative. Through game-centered activities, it aims to foster a wide spectrum of competencies crucial for youth development. These include enhancing media literacy, improving

	communication and teamwork skills, developing problem-solving abilities, nurturing creativity and self-expression, and building self-confidence and a sense of self-efficacy.
11	Lie Detectors is an independent and award-winning media literacy organisation in Europe whose remit is to counter the corrosive effect of online disinformation and online polarisation on democracy.
12	Bad News is a game where the player takes on the role of a super-spreader of disinformation. Along the way, the player learns the techniques that disinformation spreaders use to disrupt public debate.

B. Initiative purpose

(Under the statement: “***How did the idea of the initiative emerge? Which was the nature of the initiative (local, regional, national, international)? What was its main focus? Please, outline the initiative's main identified aims and objectives in the form of bullet points.***”)

Table 7. - Aims, objectives and main topics of each practice

Case number	Aims, Objectives and Main Topics
1	First idea: InVID was born out of an urgent necessity, to help newsrooms cope with the growing flood of deceptive videos shared online. As social media became a primary source of breaking news content, newsrooms were increasingly confronted with challenges of authenticity, speed, and trust. Nature of the initiative: It’s an international initiative, co-funded by the European Union’s Horizon 2020 programme, in collaboration within Greece, Austria, Spain, France, Germany. Main focus: The platform combined AI, metadata analysis, reverse

	image search, forensics and contextual clues to help evaluate the reliability and provenance of videos circulating on the web. By integrating these tools directly into journalists' workflows, InVID made the verification process faster, more reliable, and scalable — helping rebuild trust in visual information. Main objectives: • Develop robust technologies to detect manipulated or deceptive videos. • Offer automated workflows for verifying online video content. • Empower newsrooms to use user-generated content without risking reputational damage. • Reduce the time and cost of verification in fast-paced news environments. • Prevent the spread of fake news and digital misinformation. • Facilitate contact with original content creators for rights clearance.
2	First idea: The Week of the Press and Media in School® is one of France's flagship media literacy programmes. Nature of the initiative: Organised annually by CLEMI, it mobilises thousands of schools, teachers, and media professionals - in France - to promote news literacy and civic awareness. Main focus: For its 36th edition in 2025, the theme "Where is the news?" borrows from the visual chaos of Where's Waldo? to reflect today's saturated information environment. The initiative aims to help young people locate, question, and interpret information in a world where infotainment, manipulation, and AI-generated content increasingly blur boundaries. Main objectives: • Teach young people to identify and understand what

	constitutes verified, ethical journalism. • Empower students to distinguish news from entertainment through critical analysis of infotainment. • Introduce new media formats such as podcasts, graphic journalism, and livestreaming (e.g. Twitch). • Explore how journalists work with artificial intelligence and how students can critically engage with AI. • Reinforce school-media partnerships and hands-on educational methods. • Strength civic education and trust in democratic institutions through critical engagement with the media.
3	First idea: Recognising the importance of media literacy as a protective strategy, while also enhancing the benefits of digital environments, Portuguese government bodies promoted the creation of a working group. This group was tasked with developing educational resources that support teachers in addressing media literacy competences with students from basic and secondary education levels (including this pedagogical game) - in Truth or Lies. Nature of the initiative: National – Promoted by Portuguese government bodies and implemented through national education structures. Main focus: To develop accessible and pedagogical resources to foster critical thinking, media literacy, and the detection of disinformation among school-aged children and youth. Main aims and objectives: • Raise awareness of disinformation and its societal risks. • Support teachers in integrating media literacy into their teaching practices.

	• Equip students with tools to critically assess digital content. • Promote safe and informed internet usage among young people. • Encourage dialogue on media, citizenship, and democratic participation in schools.
4	First idea: The COMEDIG Project was born at a time marked by profound social and economic changes, in which the active participation of citizens in social dialog has a growing impact on national and international policies, requiring them to make informed decisions. Nature of the initiative: National, with international collaboration (support from international consultants from Spain and Belgium). Main focus, aims and objectives: The game aims to contribute to the development of digital and media literacy in primary school children and young people and to stimulate dialogue between children, young people and adults (teachers, parents) about the media. In addition, the game's support documentation states that the game makes it possible to: • 1) learn about the different types of media, their characteristics and languages and the rules that govern their activity; • 2) reflect on the impact that the media and their messages have on society in their representations of reality; • 3) promote critical and conscious citizenship; • 4) learn to use the forms of communication and entertainment offered by the media responsibly and effectively; • 5) learn to use the media to find useful and credible information and deepen knowledge on a wide variety of topics.
5	First idea: The idea of Data Defenders emerged from the Aveiro Media

	Competence Center (AMCC), a consortium composed of the Aveiro Science and Innovation Park, the Portuguese Press Association, and the University of Aveiro. The initiative was a response to the increasing need to address media literacy and critical thinking among young people, particularly in the context of political, military, and pandemic-related crises that have strongly impacted younger generations. It was funded by the European Media and Information Fund (EMIF). Nature of the initiative: The initiative had an international scope, involving researchers from universities in Portugal, Spain, and Italy. Main focus: The main focus was on using video games as innovative tools to promote media literacy and critical thinking, especially among young people, by creating safe environments for learning and reflection on misinformation and media dynamics. Main aims and objectives: • Promote critical thinking and media literacy among youth through gameplay. • Develop Data Defenders, a game simulating media environments and misinformation. • Provide a safe space to explore the impact of spreading false information. • Reach international audiences with open-access educational tools. • Support educators and journalists with ready-to-use resources. • Raise awareness about misinformation, especially during crises. • Encourage cross-border collaboration in educational innovation. • Introduce game mechanics like Data Analyzer (credibility check) and Crisis Impact (disinformation dynamics).
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6	First idea: The idea for Fake It To Make It emerged from the growing need to address the widespread issue of disinformation, particularly among young people. Recognising the importance of media literacy in today's digital society, the Portuguese Safer Internet Centre (CIS) decided to adapt the virtual game "Fake it to make it" to the Portuguese context, offering a dynamic and immersive way to raise awareness and equip youth with the skills to critically assess online information. Nature of the initiative: The initiative has a national scope, with a regional component through its official launch in the Azores, during the "Are you on? Meeting of youth and associative leaders". It reflects international cooperation, given that it is a Portuguese adaptation of an existing game, yet it primarily targets Portuguese youth and educational settings. Main focus: The main focus of the initiative is to combat disinformation through media literacy education, using an interactive and experiential learning approach to promote critical thinking, digital awareness, and responsible online behaviour among young people. Main aims and objectives: • Adapt an existing digital game (Fake it to make it) to the Portuguese language and context. • Provide an immersive experience that simulates the creation and spread of fake news. • Promote critical thinking by exposing players to the mechanisms of disinformation and emotional manipulation. • Equip young people with the tools to recognise, question, and refute misleading online content. • Encourage reflection and dialogue around the impact of social media and fake news. • Raise awareness of the role of digital and media literacy in sustaining democratic values.
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	• Foster a more informed, conscious, and participatory youth, capable of making responsible decisions in digital spaces. • Integrate discussions on media literacy into youth events and educational initiatives, such as the “Are you on?” meeting.
7	First idea: The Ubbu initiative emerged as a response to pressing social challenges such as digital exclusion, school failure and dropout, and youth unemployment. Recognizing the importance of early digital literacy and the potential of coding education, ubbu was developed to provide accessible and engaging computer science education to young children. The platform also aimed to support teachers - regardless of their technical background - by equipping them with the tools and training needed to teach programming effectively. Nature of the initiative: Initially regional and national in focus (Portugal), targeting public schools in the 1st and 2nd cycles of basic education. Evolved into an international initiative, now present in 20+ countries, with over 600 schools and 100,000+ users. Main focus: The initiative purpose is to promote digital literacy and inclusion among children aged 6 to 12, ensuring they gain early access to essential technological skills. By using engaging, game-based lessons aligned with the United Nations Sustainable Development Goals (SDGs), the project addresses issues such as school disinterest and dropout. In parallel, it empowers teachers with the training and resources needed to introduce coding in the classroom. Ultimately, the initiative aims to equip students with critical thinking, problem-solving, and STEAM-related skills, preparing them to navigate and thrive in an increasingly digital and complex future. Main aims and objectives: • Promote early digital literacy and inclusion. • Combat school disinterest, failure, and dropout. • Train and support teachers in coding education. • Develop students’ logical reasoning, creativity, and problem-

	solving skills. • Integrate SDGs into learning to foster global awareness. • Encourage STEAM learning from a young age. • Ensure gender inclusion in tech education. • Create a scalable and replicable educational model. • Empower children to become technology creators, not just users.
8	First idea: The Safe School for the Internet initiative was created in response to the increasing need for safe and responsible internet use in formal educational environments. Nature of the initiative: Launched as part of Cyprus's national digital literacy strategy, the initiative is national in scale and fully embedded within the educational framework of the Ministry of Education, Sport and Youth. Main focus: The project promotes the design and implementation of tailor-made action plans by schools to foster digital citizenship, enhance media literacy, and address cyber safety concerns at all levels of education. Main aims and objectives: • Foster a safe and creative online culture within schools. • Enable schools to co-create policies and practices on internet use. • Build a supportive ecosystem involving teachers, students, and parents. • Encourage project-based and experiential learning around digital citizenship. • Offer training, tools, and pedagogical resources to educational

	communities.
9	First idea and nature of the initiative: Youth Coaches for the Internet is a pioneering national initiative by the Cyprus Pedagogical Institute that trains students to become peer educators in internet safety and media literacy. Recognizing that youth often learn best from peers, the project empowers selected students with tools, content knowledge, and leadership training, enabling them to deliver sessions and projects in their own schools. Main aims and objectives: • Promote youth leadership in safe internet use and media literacy. • Strengthen students' critical thinking and communication skills. • Support a peer-to-peer model of digital education. • Encourage co-creation of media content and internet awareness campaigns. • Align with national and EU-level digital literacy strategies (like Better Internet for Kids).
10	First idea: The Stärker mit Games initiative was developed in response to the growing need to promote media literacy, creativity, and social inclusion among young people through the cultural and educational potential of games. It leverages the appeal of gaming to foster personal development, critical thinking, and digital skills in diverse learning settings. Nature of the initiative: Launched by the Stiftung Digitale Spielekultur in Germany, Stärker mit Games is a national-level initiative implemented through local alliances involving youth centers, schools, and community organizations. It is rooted in non-formal education and youth work, aiming to reach underserved communities through culturally embedded, accessible formats.

	Main focus: The initiative uses game-based learning and participatory design to empower children and adolescents. By creating their own digital, analog, or hybrid games, using tools like RPG Maker, Bloxels, and Minecraft, participants explore social themes, develop teamwork skills, and enhance their media literacy through critical engagement with game content. Main aims and objectives: • Enable young people to engage in creative and reflective game design processes. • Promote critical media literacy by exploring topics such as representation, identity, data privacy, and game monetization. • Strengthen key competencies like communication, collaboration, and problem-solving. • Encourage self-expression and identity formation through activities like avatar creation and cosplay. • Provide access to cultural and educational opportunities for underserved youth by building strong local partnerships. • Support social inclusion and personal empowerment through playful and experiential learning. • Offer tools, workshops, and resources tailored to youth workers, educators, and cultural practitioners.
11	First idea: The Lie Detectors initiative was launched to address the urgent need for news literacy and resilience against online disinformation among young people in Europe. By directly connecting students with professional journalists, it empowers them to discern reliable information and understand media processes. Nature of the initiative: Founded in 2017 by a non-profit media-literacy organisation in Brussels, “Lie Detectors” operates at a pan-European level. It is active in countries including Belgium, Germany, and Austria - with plans to expand further, and is anchored by strategic

	partnerships with journalists, teachers, and digital-policy bodies . Main focus: The project delivers interactive, 90-minute classroom sessions led by trained journalists, aimed at children aged 10–15 (and their teachers). These sessions cover fake news, bias, source verification, and the inner workings of journalism. Follow-up materials help deepen understanding of selective storytelling and perspective. Main aims and objectives: • Empower critical news literacy; • Facilitate contact between journalists and schools; • Embed media education in teacher training; • Scale across Europe; • Influence policy and advisory frameworks; • Deliver free-of-charge sessions; • Provide follow-up learning tools.
12	First idea: The BadNews game was originally made by DROG https://drog.group/ and Cambridge University. It is based on the idea that people are able to build up resistance to false or misleading information by being presented with a misleading argument before being exposed to the "real" information. It is a bit like giving people a "vaccine" against false information. If you can recognize it, you can resist it, the idea is. And that is exactly the whole idea of the Bad News game, where the player takes on the role of a disinformation spreader and learns the techniques in order to be able to see through it when the player encounters disinformation in the real world. Main focus: The game focuses on 6 areas - 1. Imitation (eafterligning); 2. Følelser; 3. Polarisering; 4. Konspiration; 5. Miskreditering; 6. Trolling Main objectives:

	• Teach players the techniques of disinformation; • “Inoculate” users against false information; • Raise awareness of misinformation’s impact; • Improve digital media literacy, especially among youth; • Provide an engaging educational tool for schools; • Encourage proactive learning about misinformation.
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C. Target groups

(Under the statement: “**Which were the main target groups addressed throughout the initiative? In which age range? Did the initiative focus on participants belonging to specific groups? If yes, which ones?**”)

Table 8. - The target group of each practice

Case number	Target group
1	InVID primarily targeted media professionals, including journalists, fact-checkers, editors and content moderators. While not aimed at the general public or youth, its outcomes have since been used in media literacy workshops and journalism training curricula across Europe.
2	The Week of the Press and Media in School® targets school-aged children and teens from 5 to 18 years old, spanning primary to secondary education across France. Special attention is paid to rural schools and students from disadvantaged backgrounds. Teachers and education professionals are also key beneficiaries, through dedicated media literacy training sessions.
3	Truth or Lies is aimed at primary and secondary school children and young people, as well as educators. But it doesn't focus on any

	specific group.
4	COMEDIG Game is aimed at children and young people attending primary school, as well as adults who interact with them in educational contexts, such as teachers and parents.
5	Data Defenders is addressed to young people aged 11 to 17, without a specific group.
6	In Portugal, the main target groups addressed through the Fake It To Make It game are young people, specifically those in the teenage and early adulthood age ranges.
7	The Ubbu initiative primarily targeted students from public schools in the 1st and 2nd cycles of basic education in Portugal, specifically children aged 6 to 12 years old. It also focused on supporting teachers, providing them the necessary training and resources to teach coding. In addition, the initiative indirectly involved families. A strong emphasis was placed on inclusion, with 50% of the student users being girls, helping to promote equal access to technology and learning opportunities.
8	Safe School for the Internet primarily targets students aged 6–18, spanning primary, lower secondary, and upper secondary schools. It also involves teachers, school leaders, and parents as co-participants in creating a safe digital culture within the school environment.
9	Youth Coaches for the Internet targets upper primary and secondary students (ages 10–18). Coaches are usually selected from older student groups and are trained to reach their peers across age ranges. Teachers and school staff support implementation but the students lead the learning.

10	Stärker mit Games (Stronger with Games) specifically focuses on participants (8-18 years) belonging to particular groups; namely, children and adolescents who are predominantly from socio-economically disadvantaged or educationally disadvantaged backgrounds.
11	The target group of Lie Detectors is schoolchildren aged 10–15, helping them become critical thinkers about media. It also targets teachers and journalists to support media literacy education in classrooms.
12	The BadNews game from TjekDet is designed primarily for students (young people and school classes) to teach them about misinformation and how to spot digital manipulation. It also targets educators (teachers and youth organizers) who integrate the interactive tool into media literacy lessons and workshops.

D. Needs and context analysis

(Under the statement: “**Which was the social / geographical area in which the initiative took place? Which needs and issues needed to be addressed through this initiative?**”)

Table 9. - The context that each practice was implemented such as the needs it addressed

Case number	Needs and context analysis
1	InVID was deployed in a European and global context marked by growing distrust in media and the proliferation of sophisticated misinformation tactics — from viral hoaxes to deepfakes. The rise of user-generated content offered unprecedented access to raw, on-the-

	ground footage, but also heightened the risk of manipulation. Newsrooms, especially under-resourced ones, lacked the tools and time to properly verify such content before publication. InVID responded to this need by creating a suite of tools validated through pilots with real journalists in several European countries. The project also addressed the legal and ethical concerns linked to video reuse, copyright, and the rights of individuals appearing in shared content.
2	SPME addresses a global challenge: how to equip the next generation to navigate the information deluge. The 2025 edition takes place in a world increasingly shaped by AI, digital content proliferation, and public distrust in traditional news. Fake news, viral disinformation, and algorithmic bias demand new forms of awareness and literacy. In the Bordeaux region alone, 848 schools and institutions took part in 2025, with activities such as: • A podcast workshop with 8-year-olds commemorating a school's 70th anniversary. • A debate on "Fake news in 2025" for civil servants and educators. • A teacher training course on media literacy linked to civic education reform. • A lecture on responsible digital journalism by Brief.me's director. • An interactive session on AI's influence on imagination and perception, in partnership with Arte. • Full-day hands-on training titled "From podcast to livestream" at a local high school.
3	Truth or Lies took place at a national level in Portugal, targeting the school population of basic and secondary education. It focused primarily on children and young people, a group identified as

	particularly vulnerable to the effects of disinformation due to their high exposure to digital media and limited critical tools to assess content. The main needs and issues addressed by the initiative were: • The growing exposure to false or misleading information, especially on digital platforms. • The lack of accessible, structured resources for teachers to address media literacy in the classroom. • The need to develop critical thinking skills among students to promote responsible and informed media consumption. • The importance of strengthening digital citizenship and resilience to manipulation, particularly in light of recent global events like the COVID-19 pandemic.
4	The COMEDIG Project was implemented in Portugal, involving schools, educational institutions, and research centers across the country, with significant participation from the University of Coimbra and the University of Minho. The project also benefited from international expertise, with consultants from Spain and Belgium. Needs and issues addressed: • Digital and media literacy gaps among students and educators, with varying levels of understanding and skills across different regions of the country. • The lack of structured tools to assess the digital and media competencies of students and teachers, leading to difficulties in identifying areas for improvement and tailoring educational interventions. • A growing challenge of misinformation and media manipulation, especially in an era where digital content creation and consumption are central to communication. The project aimed to foster critical thinking and ethical media use. • Limited availability of educational resources designed to

	promote media literacy at various educational stages. This gap was addressed through the development of the COMEDIG game and other educational materials. • Functional digital divides and the need for inclusive strategies to ensure that all students and educators have equal access to media education, regardless of their socio-economic background or digital access. • The urgent need to prepare young people for active participation in civic life, equipping them with the skills to engage in informed decision-making and contribute to a sustainable and innovative society.
5	Data Defenders took place across Portugal, Spain, and Italy, involving researchers and institutions from these countries. It was directed primarily at young people aged 11 to 17, as well as educators, teachers, and journalists working in both formal and informal educational settings. The project aimed to address several pressing issues, including the growing exposure of young people to misinformation - especially during recent political, military, and health crises - and the lack of critical media skills needed to navigate today's complex digital landscape. There was also a clear need for engaging and accessible educational tools that could help young users evaluate the credibility and bias of media content. At a broader level, the initiative responded to industry-wide challenges related to disinformation and the ongoing digital transition in the media sector.
6	The Fake It To Make It initiative took place in Portugal, with a specific focus on addressing the youth demographic across the country. The initiative was designed to address the growing issue of disinformation, particularly among young people, by promoting critical thinking and media literacy. The need for the initiative arose from the widespread impact of fake news and the challenges young people face in discerning credible information in an increasingly digital and interconnected world.

7	Ubbu initially took place in Portugal, focusing on public schools across the country, particularly within the 1st and 2nd cycles of basic education. It responded to several pressing social and educational needs, including digital exclusion, low digital literacy, school failure and dropout, and youth unemployment. Many schools lacked the resources and training to integrate technology into the classroom, and teachers often felt unprepared to teach coding or computer science. The initiative aimed to bridge this gap by providing both students and teachers with accessible tools and content, promoting educational equity and preparing younger generations for a technology-driven future.
8	Safe School for the Internet took place in Cyprus, a place that has faced rising concerns about online risks for young users—ranging from cyberbullying to misinformation and data privacy. The initiative responds to: • A national need for comprehensive digital citizenship education. • The European Union’s framework for digital competence (DigComp). • The lack of school-level internet use policies and student involvement in internet governance. The geographic implementation is nationwide, with participation from public schools across Cyprus. Schools voluntarily apply to participate, receiving mentoring and structured support. By equipping schools to independently develop and execute action plans that promote internet safety and media literacy, the initiative embeds responsibility and ownership in the educational community itself. This decentralised but guided model has enabled high flexibility and adaptability, fostering sustainability.
9	Youth Coaches for the Internet targets upper primary and secondary students (ages 10–18). Coaches are usually selected from older

	student groups and are trained to reach their peers across age ranges. Teachers and school staff support implementation but the students lead the learning.
10	Stärker mit Games (Stronger with Games) specifically focuses on participants (8-18 years) belonging to particular groups; namely, children and adolescents who are predominantly from socio-economically disadvantaged or educationally disadvantaged backgrounds.
11	Lie Detectors operates in several European countries, including Belgium, Germany, and Austria, focusing on school environments to engage children aged 10–15, teachers, and journalists. The initiative addresses the urgent need to counteract the spread of disinformation and fake news by fostering media literacy, critical thinking, and trust in quality journalism among young people and educators.
12	BadNews, developed by the Danish fact-checking platform TjekDet, is primarily implemented in Denmark and targets students and educators through schools and youth programs. It seeks to address the increasing exposure of young people to online manipulation and misinformation by using an interactive game to teach them how disinformation works and how to recognize and resist it.

E. Gamification strategy and Approach to news literacy

(Under the statement: “***What gamification did the project explore or implement?***”)

Table 10. - The gamification strategy used by each initiative

Case number	Gamification strategy for news literacy
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1	InVID did not rely on traditional gamification mechanisms (like badges or points). Instead, it used task-based, tool-driven engagement strategies — simulating real-life newsroom scenarios where journalists had to make editorial decisions under time pressure. Its browser extension and verification dashboard functioned as a real-time “puzzle solver,” where users pieced together metadata, visual clues, and contextual signals to authenticate a video. These tools have since been widely adopted in fact-checking workshops and university training, fostering a hands-on, investigative approach to media verification.
2	While SPME doesn’t use traditional gamification mechanics (badges, points), it embraces experiential learning through: • Simulation and roleplay: Students become journalists in simulated newsrooms, producing real media. • Collaborative inquiry: Pupils work in teams to decode media messages and identify fake or AI-generated content. • New formats exploration: Classes engage with podcasts, comics, or Twitch streams to better understand how modern news is consumed. • Live exchanges with professionals: Journalists and media educators lead interactive sessions and workshops. • Interactive and playful materials: Resources include quizzes, visual puzzles, reverse image searches, and misinformation challenges. In this immersive environment, the “game” is real-life media practice — and the reward is better-informed, empowered young citizens.
3	The Truth or Lies initiative implemented quiz-based gamification as a pedagogical strategy to engage students in learning about

	disinformation. The fact-checking game allows students to play individually or in groups, including with their teacher, fostering interaction and collaboration. It incorporates competitive elements such as score rankings, which motivate participation and reinforce knowledge retention through playful challenge and peer comparison.
4	The COMEDIG game incorporates several gamification strategies to engage players in learning digital and media literacy: 1. Interactive Scenarios; 2. Progress Tracking and Feedback; 3. Reward System; 4. Competition and Cooperation; 5. Narrative and Storytelling; 6. Badges and Achievements; 7. Challenges and Quests; 8. Learning through Play.
5	The Data Defenders' main gamification strategies are the use of role-playing elements, where players embody characters like politicians, journalists, scientists, or influencers, competitive team dynamics, and interactive mechanics such as Data Analyzer and Crisis Impact, which simulate real-world media scenarios and challenge players to think critically in an engaging and risk-free environment.
6	The Fake It To Make It game uses key gamification strategies to raise awareness about disinformation. Role-playing allows players to step into the shoes of a fake news creator, understanding how misinformation spreads. Cause-and-effect simulations let players experiment with tactics and see the consequences, reinforcing the

	impact of fake news. The game also features a progression system, where players complete challenges, like maximizing shares and reactions, which promotes strategic thinking. Real-time feedback helps players refine their actions, enhancing learning. Lastly, the game uses storytelling to show how fake news spreads through social media, engaging players and deepening their understanding of disinformation's effects. These strategies together foster critical thinking and media literacy.
7	In the Ubbu platform we can find lessons that are structured as interactive, game-based challenges, where students complete missions and unlock new levels as they progress. Each lesson is linked to one of the UN Sustainable Development Goals, giving learning a real-world purpose and encouraging a sense of global responsibility. The platform includes visual coding exercises, instant feedback, and a reward system that motivates students through positive reinforcement. In addition, collaborative features, such as allowing two students to log in on the same device, promote teamwork and peer learning. This playful and meaningful approach keeps students motivated, curious, and eager to learn.
8	Safe School for the Internet incorporates game-like elements and project-based learning methods, especially: • Badging systems for student engagement. • Interactive workshops using role-play scenarios. Creation of student-led campaigns, competitions, and digital storytelling projects. These elements encourage active participation, peer collaboration, and playful learning within a structured whole-school digital safety framework. News literacy is addressed indirectly through themes like online trust, content verification, and digital ethics.
9	Youth Coaches for the Internet presents gamified elements that

	include: • Role-playing scenarios (e.g., acting as journalists, cyber investigators). • Student-led interactive workshops, quizzes, and challenges. • Recognition systems (certificates, badges, “youth ambassador” titles). These elements enhance engagement, boost motivation, and help students internalize concepts through practice. Youth Coaches are also trained to combat online misinformation and promote fact-checking tools, contributing to grassroots news literacy education.
10	Stärker mit Games (Stronger with Games) implements a variety of game-based learning approaches and creative game design workshops, focusing on the inherent engagement of games and the process of game creation. Rather than just applying superficial gamification elements, the initiative deeply integrates game mechanics and culture into its educational offerings. Specific methods include: • Game Design Workshops; • Adapting Digital Games to Analog Formats (Streetgames); • Escape Room Creation and Play; • Minecraft Workshops; • E-Sports and Competitive Gaming; • Makey Makey Workshops; • Pen & Paper and Tabletop Role-Playing Games; • Critical Reflection on Game Content; • Developing Quality Criteria for Games; • Serious Gaming and Game Reflection. The overarching principles guiding these activities include learning by doing, fostering collaboration and teamwork, developing problem-

	solving and critical thinking skills, encouraging creativity and self-expression, ensuring relevance to youth culture, promoting reflection and discussion, and building self-efficacy among participants.
11	Lie Detectors does not use traditional gamification but relies on interactive classroom sessions led by journalists, where students actively participate through discussions, role-play, and critical analysis of real media content. These sessions simulate real-world media challenges to engage students in a dynamic, participatory learning process that mimics aspects of gamified learning (e.g., active problem-solving, real-time feedback, and peer interaction).
12	BadNews uses: • SCORING to track the players level success; • CHOICES to create agency in the player; and replayability to explore all options; • SAFE SPACE to try being the ‘bad guy’ and understand the effect of “fake news” from the perspective of the misinformant.