

## Digital educational resources usability tests focused on participation and social inclusion

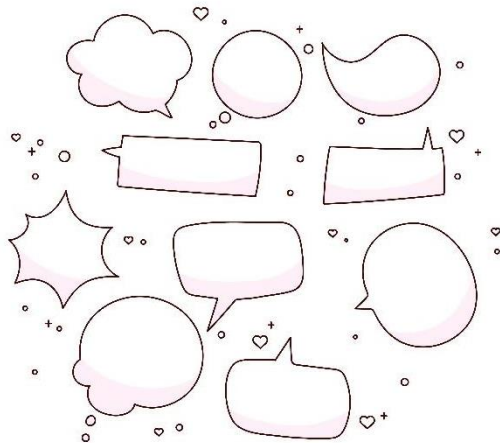
**Usability** is widely used to define the degree of comfort and ease for users when interacting with websites, media products, and devices to achieve better results. It is an important concept since it is focused on the knowledge and understanding of the relationship between user and device, allowing the necessary changes to improve interactivity and granting an enhanced experience to the user. This way, while registering personal gains and capitalizing on the experience, the user will be more likely to return and interact with the resource again.

In *MindtheGaps – Media Literacy Towards Youth Social Inclusion*, “usability” is a concept of major relevance, as the project promotes the access and use, consciously and safely, of media devices and online resources, particularly among youngsters. Accordingly, it becomes of paramount importance for tutors, educators, and similar stakeholders, to be able to choose the adequate way to test the levels of usability of the resources in use.

This document provides three examples of usability tests that may be chosen in accordance to the conditions and objectives of the required assessment. The person in charge for the testing should consider issues such as the number of participants, their age, the available time, and alike, as well as the envisaged aims of the testing, being those of an educational scope or rather recreational, or yet, of a mixed nature. Once the functioning of the provided example tests becomes clear for the promotor, he/she can adapt the test according to specific needs in order to better fit it to its required aims (for example, by introducing variations in the duration, in the materials used, in the questions in place, in the assessment grids, and alike).

## Test 1 - Thinking aloud<sup>1</sup>

Participants verbalize their thoughts at the same time they realize tasks in the online environment/resource asked by the facilitator



Picture by mamewmy – (freepik.com)

### 1- Elements involved

The participant, the facilitator.



The test should be done in a quiet environment, with one participant at a time. Since the resource should be accessible to all, consider representativeness as a criterion for choosing participants.

According to Nielsen (1993)<sup>2</sup> you only need to test with 5 users. However, if you have different target groups, it becomes necessary to test with persons representing each of the groups separately.

### 2- Duration

The duration can vary according to the extension of the evaluated content or functionality.



Consider different paces and timing according to the participant's characteristic and the level of difficulty associated to the task.

### 3- Materials

- The test, the digital resource to be evaluated;
- Tablet, cell phone or personal computer (according to the specificities of the resource);
- Excel table or paper and pen to write down observations, tips and results;
- Audio and/or video recorder;
- Screen recorder, if applicable.

It is mandatory to have the previous permission to record the session. You can have some free templates and documents in

<sup>1</sup> Source: <https://www.nngroup.com/articles/usability-testing-101/>

<sup>2</sup> Nielsen, Jakob, and Landauer, Thomas K.: "A mathematical model of the finding of usability problems," *Proceedings of ACM INTERCHI'93 Conference* (Amsterdam, The Netherlands, 24-29 April 1993), pp. 206-213.

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<https://www.usability.gov/how-to-and-tools/resources/templates.html>

#### 4- Procedures

According to Nielsen (2012, Defining Thinking Aloud Testing, para. 4-7), *to run a basic thinking aloud usability study, you need to do only 3 things:*

- 1- "Recruit representative users.
- 2- Give them representative tasks to perform.
- 3- Shut up and let the users do the talking".



If possible, you have to record the session to be analyzed after its conclusion.

Do not forget to register sociodemographic information of the participants and other relevant characteristics, however, the evaluation results must respect anonymity.

During the session pay special attention to the difficulties expressed, misunderstanding, comments and facial expressions of displeasure or satisfaction

## Test 2 - WAI Site Usability Testing Questions <sup>3</sup>

Participants answer questions before, during and after testing a website

### 1- Elements involved

The participant, the facilitator, the website to be evaluated.



The test focus mainly in accessibility issues, should be done in a place with good internet connection. Consider representativeness as a criterion for choosing participants.

### 2- Duration

The test is quite extensive, participants must be informed about the complete evaluation plan and estimated duration.



Consider different paces and timing according to the participant's characteristics and the level of difficulty associated with the task.

### 3- Materials

- The test, the digital resource to be evaluated;
- Tablet, cell phone, or personal computer (according to the specificities of the resource);
- Excel table or paper and pen to write down observations, tips, and results;
- Audio recorder.



It is mandatory to have previous permission to record the audio session.

### 4- Procedures

According to WAI (<https://www.w3.org/WAI/EO/Drafts/UCD/questions.html>), the facilitator must ask pre-test questions, ask for the participant to realize tasks, make a post-test interview and a post-test survey.

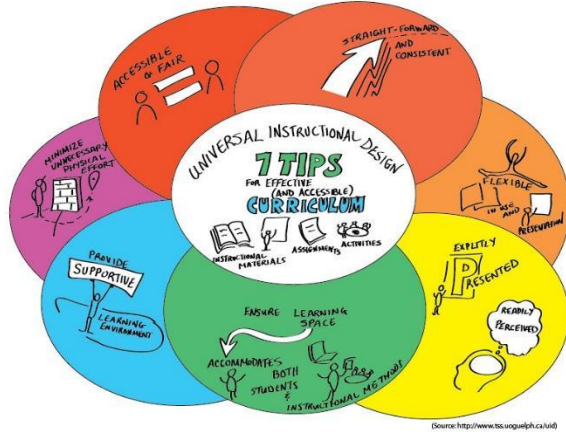
Pre-test questions sample

- 1- "Do you ever research issues related to Web accessibility for people with disabilities?- (...)
- 2- If you were to envision your ideal Web accessibility Web site, what sorts of information would it contain? What would it look and act like? How would it be organized?"

Participant tasks question sample

<sup>3</sup> <https://www.w3.org/WAI/EO/Drafts/UCD/questions.html>

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(Source: <http://www.tts.uoguelph.ca/uid/>)

Please give me your initial reactions to this page. Feel free to explore this page as you normally would. You can scroll around with your mouse, but please don't click on anything just yet. Questions:

- 1- Have you ever seen this Web site before?
- 2- Please give me your initial impressions about the layout of this page and what you think of the colours, graphics, photos, etc.
- 3- Without clicking on anything yet, please describe the options you see on the home page and what you think they do. Feel free to move around the page, but again I'll ask you not to click on anything right now.
- 4- Without clicking on anything yet, if you were exploring, what would you click on first?
- 5- What do you think is the purpose of this site?
- 6- Who do you think this site is intended for?
- 7- Whose Web site is this?



If possible, you have to record the session to be analysed after its conclusion.

Do not forget to register sociodemographic information of the participants and other relevant characteristics. During the session pay special attention to the difficulties expressed, misunderstanding, comments and facial expressions of displeasure or satisfaction

### Post-test Interview questions sample

- 1- What are your overall impressions of the Web site?
- 2- If you had to give the site a grade, from A to F, where A was exemplary and F was failing, what grade would you give it, and why?
- 3- Name three words or characteristics that describe this Web site.
- 4- What are the three things you like best about the Web site?
- 5- What are the three things you like least about the Web site?

### Post-test Survey questions sample

A *Likert* scale is provided for the participant to rate your agreement with each statement.

- 1- "The homepage is attractive.
- 2- The overall site is attractive.
- 3- The site's graphics are pleasing.
- 4- The site has a good balance of graphics versus text. (...)"



You can make new statements for a new post-test survey based on MINDtheGaps "Digital educational resources quality assessment test"<sup>®</sup>

## Test 3 - "Five-second test"<sup>4</sup>

The user is shown a website page for about 15 seconds (TrymyUI test adapted version), and then have to answer basic questions.



### 1- Elements involved

The participant, the facilitator



Consider representativeness as a criterion for choosing participants.

### 2- Duration

The test is very short; it takes only a few minutes to complete.



The time is the same for all, but you can take note and reconsider if this test is applicable, considering the target-group involved.

### 3- Materials

- The website to be evaluated, the test;
- Tablet or personal computer (according to the specificities of the resource);
- Paper and pen to write down observations, tips and results;
- Audio recorder, if necessary.



It is mandatory to have previous permission to record the audio session.

### 4- Procedures

According to TrymyUI (<https://www.trymyui.com/impression-testing>), in this test, the facilitator shows the main website page for about 15 seconds to the participant, and then we ask them 4 basic questions:

- 1- "Say three words that you remember from the site, or that you would use to describe the site.
- 2- What is this website about?"
- 3- What are the ideas of this site, and for whom is it targeted?
- 4- "What is the feel of this site?"

<sup>4</sup> <https://www.trymyui.com/impression-testing>

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If possible, you have to record the session to be analysed after its conclusion.

Do not forget to register sociodemographic information of the participants and other relevant characteristics.

You can make new questions for a new five-second test based on MINDtheGaps “Digital educational resources quality assessment test”®

# MINDtheGaps

## Digital educational resources quality assessment test<sup>1</sup>

### What is it?

The following tool has been created in the scope of the project “MindtheGaps” – Media Literacy Towards Youth Social Inclusion, an Erasmus+ Strategic Partnership in the Youth Field (in order to collect further information and details about the project, please visit its website: <http://digitaliteracy.eu/mindthegaps/> ).

The aim of this Quality Assessment Test is to provide a practical tool where tutors and educators, namely teachers, trainers, parents, and other, can resort in order to assess the main features of the Digital Educational Resources in use by children and youngsters. This tool aims to cover the formal, the informal, and the non-formal contexts, respecting the “MindtheGaps” approach, namely with regards to the importance of pedagogy and didactics, the respect for the other (individual and culture), the use and promotion of competences and soft skills, the respect for the technical features of a robust and well-conceived educational product.

### How to use it?

In order to use this tool, the educator needs to be fully acquainted with the resource under assessment in benefit from the assessment process. Tutors and educators who are not the conceivers of the resource under testing, or do not know it in detail, are invited to perform a previous in-depth analysis of the resource to get to know it as better as possible. Once possess solid knowledge about the resource’s features, assessors should follow the provided questionnaire. What does it tell you? The Quality Assessment Tool is organized into 4 primary criteria. Each criterion includes several questions that should be answered using a Likert scale ranging from 1, the extreme negative score, to 5, the extreme positive score. Once the questionnaire is completed, concise feedback is provided, pointing out the overall score of the resource’s quality and the partial scores per major criteria.

Decision-making in respect for the target audiences and the aims of the resource: - Conceivers: review and improve the resource in the applicable domains. - Users: decide whether to use the resource or choose a different one.

If applicable, please rank by order of importance the most valuable criteria in the assessment of your digital resource Default ranking Pedagogy and didactic:

Competence-based features: 40%

Social Inclusion: 40%

Usability features: 20%

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<sup>1</sup> This document must be adapted to the resources and made available through an online form





# MINDtheGaps

## Bulgarian

### Какво е то?

Следният инструмент е създаден в рамките на проекта "MindtheGaps".

Медийна грамотност към социално включване на младите хора", стратегическо партньорство по програма "Еразъм+" в

Младежта (за да съберете допълнителна информация и подробности за проекта, моля посетете неговия уебсайт: <http://digitaliteracy.eu/mindthegaps/>)

Целта на този тест за оценка на качеството е да предостави практически инструмент, с който преподавателите и възпитатели, а именно учители, обучители, родители и други, може да прибегне, за да оцени основните характеристики на цифровите образователни ресурси, които се използват от децата и младежи.

Този инструмент има за цел да обхване формалния, неформалния и неофициалния контекст, да се спазва подходът "MindtheGaps", а именно по отношение на значението на педагогиката и дидактиката, зачитането на другия (индивид и култура), използването и на компетенциите и меките умения, зачитането на техническите характеристики на на стабилен и добре замислен образователен продукт.

### Как да го използваме?

За да може да използва този инструмент, преподавателят трябва да е напълно запознат с ресурса който се оценява, в полза на процеса на оценяване. Преподаватели и възпитатели, които са не са създатели на тествания ресурс или не го познават в детайли, се приканват да извършат предварителен задълбочен анализ на ресурса, за да го опознаят като възможно най-добре. След като придобият солидни познания за ресурса характеристиките на ресурса, оценителите трябва просто да следват предоставения въпросник.

### Какво ви казва той?

Инструментът за оценка на качеството е организиран в 4 основни критерия. Всеки критерий включва няколко въпроса, на които трябва да се отговори, като се използва скалата на Ликерт, варираща от 1, т.е. до 5 - крайно положителна оценка. След като въпросникът е се предоставя кратка обратна връзка, в която се посочва общата оценка на качеството на ресурса, както и частичните оценки по основните критерии. Вземане на решения

Съобразяване с целевите аудитории и с целите на ресурса:

- Замислящите: преглеждат и подобряват ресурса в приложимите области.
- Потребители: решават дали да използват ресурса или да изберат друг.

Ако е приложимо, моля, подредете по важност най-ценните критерии в на оценката на вашия цифров ресурс Класиране по подразбиране



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# MINDtheGaps

Педагогика и дидактика: характеристики, основани на компетентност: 40%

Социално приобщаване: 40%

Функции за ползваемост: 20%

## Turkish

### Bu nedir?

Aşağıdaki araç, Gençlik Alanında bir Erasmus+ Stratejik Ortaklığı olan "MindtheGaps" - Media Literacy Towards Youth Social Inclusion projesi kapsamında oluşturulmuştur (proje hakkında daha fazla bilgi ve ayrıntı almak için lütfen web sitesini ziyaret edin: <http://digitaliteracy.eu/mindthegaps/>).

Bu Kalite Değerlendirme Testinin amacı, çocuklar ve gençler tarafından kullanılan Dijital Eğitim Kaynaklarının temel özelliklerini değerlendirmek için öğretmenler, eğitmenler, ebeveynler ve diğer eğitmenlerin başvurabileceği pratik bir araç sağlamaktır. Bu araç, pedagoji ve didaktiğin önemi, ötekine saygı (birey ve kültür), yeterliliklerin ve sosyal becerilerin kullanımı ve teşviki, sağlam ve iyi tasarlanmış bir eğitim ürününün teknik özelliklerine saygı açısından "MindtheGaps" yaklaşımına saygı göstererek resmi, gayri resmi ve yaygın bağlamları kapsamayı amaçlamaktadır.

### Nasıl kullanılır?

Bu aracı kullanmak için, eğitimcinin değerlendirme sürecinden faydalanarak değerlendirilen kaynak hakkında tam bilgi sahibi olması gerekir. Test edilen kaynağı tasarlamayan veya ayrıntılı olarak bilmeyen eğitmenler ve eğitimciler, mümkün olduğunca daha iyi tanımak için kaynağın önceden derinlemesine bir analizini yapmaya davet edilir. Kaynağın özellikleri hakkında sağlam bir bilgiye sahip olduktan sonra, değerlendiriciler sadece verilen anketi takip etmelidir. Bu size ne anlatıyor? Kalite Değerlendirme Aracı 4 ana kriter halinde düzenlenmiştir. Her kriter, aşırı olumsuz puan olan 1'den aşırı olumlu puan olan 5'e kadar değişen Likert ölçeği kullanılarak cevaplanması gereken birkaç soru içerir. Anket tamamlandıktan sonra, kaynağın kalitesinin genel puanının yanı sıra ana kriterlere göre kısmi puanları gösteren kısa bir geri bildirim sağlanır. Karar verme Hedef kitleler ve kaynağın amaçları açısından: - Kavrayıcılar: uygulanabilir alanlarda kaynağı gözden geçirir ve geliştirir. - Kullanıcılar: kaynağı kullanmaya veya farklı bir kaynak seçmeye karar verir.

Varsa, lütfen dijital kaynağınızın değerlendirilmesinde en değerli kriterleri önem sırasına göre sıralayınız Varsayılan sıralama Pedagoji ve didaktik:

Yeterliliğe dayalı özellikler: 40%

Sosyal içerme: 40%

Kullanılabilirlik özellikleri: 20%

Assessment result:

0 – 19: VERY LOW: the resource shows significant fragilities; it requires a mandatory global revision;

20 – 39: LOW: the resource shows fragilities; a revision is mandatory, particularly focusing all the lower ranked features;

40 – 59: AVERAGE: the resource shows good potential but includes some aspects requiring revision, which is strongly advised;

60 – 79: HIGH: the resource shows good features; it is advised a revision of the lower ranked features in order to increase its potential of impact;

80 – 100: VERY HIGH: the resource shows very good features, being robust at different levels; if applicable, a revision of the lower ranked features may be conducted;

Digital Resource ID		
Name		
Authors		
Context/Aim	Academic	
	Recreational	
	Mixed	
	Other	
Users	Young Children ( $\leq 5$ )	
	Children (6 – 12)	
	Youngsters (13-19)	
	Young Adults (20-29)	
	Adults (30-69)	
	Elders ( $\geq 70$ )	
Link		

Dimension	Sub-dimension	Criteria/ Question	Scale (1= null/lower rank= negative) (5= full/higher rank=positive)
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Pedagogy and didactic (15)	<i>Objectives</i> (2)	The product states its purpose and/or objectives in a clear and perceptible way according to the foreseen users	
		The aims of the product are able to follow plausible real-life situations and contexts, encouraging the user to further apply the knowledge and skills	
	<i>Information</i> (6)	The content is simple enough to be understood according to the age of its targeted groups	
		Reliability of the information provided (identification of the sources and other strategies allowing for the credit of the information's reliability)	
		Accuracy of the information (i): level of detail and clearness and error-free judgement ( <i>how error-free do the evaluator/assessor perceives the product?</i> )	
		Relevance: the information is relevant for the user (regardless of its aims being academic, scientific, ludic, artistic, purely entertaining, other)	
		Sustainability of the information over time/ Possibility to easily update the information overtime	
		The product contains informational/explanation features (e.g. glossary, abstracts, explanation diagrams, illustrations and/or figures, notes)	
	<i>Structure</i> (1)	The structure of the product is clear and sounds logical (e.g., site plan, introduction, development corpus, conclusions, practical exercises)	
	<i>Activities/ Competencies</i> (4)	The product provides sets for the active involvement of the user (e.g., research queries, peer-consultation, decision-making mechanisms)	
		The product stimulates the ability to see connections and patterns	
		The product stimulates the ability to solve problems	
		The resource requires and/or activates previous knowledge of the user concerning the subjects/issues in place	

	<i>Assessment (2)</i>	The assessment methods are present and aligned with the aims (assessment provides feedback to the user and is aligned with a learning perspective encouraging the further engagement of the user (constructive feedback))	
		The assessment stimulates learning to learn and ability to regulate own learning process	
Social Inclusion (18)	<i>Gender sensitivity (1)</i>	The product is gender sensitive: it considers women/men equal rights and opportunities (by using specific approaches and/or inclusive language,...)	
	<i>Citizenship development opportunities (3)</i>	The product raises questions about citizenship rights and duties, enable citizens to give their opinion without fear of retaliation and develops citizenship skills.	
		The resource supports and enhances the user to a better understanding of the current social context.	
		The product develops skills needed by future citizens to participate in digital spaces that are open to any kind of minority and to diversity of opinion	
	<i>Participation (1)</i>	The product allows participants to engage in deliberation and decision-making processes	
	<i>Health and Well-being (1)</i>	The product develops attitudes, skills, values, and knowledge that bring more awareness of health and well-being issues, including be alert to challenges and opportunities of its digital nature that may affect health and well-being	
	<i>Critical thinking (1)</i>	The product allows to analyze and discuss ideas, processes, or products by focusing on evidence.	
	<i>Digital Accessibility and digital literacy</i>	The product is designed to be accessible to anyone defined as the recipient and is organized to facilitate the promotion of digital skills age appropriate. It allows to access, read, write, enter, and upload information, participate in surveys, or express themselves in a way that engages participants digitally in their community.	
<i>Cooperation (1)</i>	The product encourages cooperation and participation in shared activities, tasks and shared projects and so that collective goals can be achieved		

	<i>Empathy</i> (2)	The product develops skills to recognize, understand and relate to other people's thoughts, beliefs, and feelings, and to see the world from their perspective	
		The resource potentiates the user to apply soft skills (such as empathy, active listening, communication skills, conflict resolution, emotional intelligence, ...)	
	<i>Tolerance of ambiguity</i> (2)	The product enables positive attitudes towards situations that are uncertain and subject to multiple and opposing interpretations.	
		The product involves positively evaluating such situations and dealing with them in a constructive way	
	<i>Cultural sensitivity</i> (2)	The product is culturally sensitive towards other worldviews, people who have different cultural affiliations or beliefs, and practices.	
		The product involves promoting sensitivity, curiosity, and willingness to engage with others.	
	<i>Equity</i> (1)	The product is equal opportunities sensitive (it shows concern for standards'-based bias, such as disabilities, race, gender, sexual orientation, social class)	
	<i>Human Rights</i> (1)	The product shares values concerning human rights, namely that all people have equal value, equal dignity, are entitled to equal respect and to the same set of human rights and set of human rights and fundamental freedoms and should be treated accordingly	
<i>Empowerment</i> (1)	The product may increase the personal, social, economic, and political control users have over their lives		
<i>Sense of belonging</i> (1)	The product promotes feelings of inclusion in society and community and the sense of being valued/important as a self-determined person		
Usability (7)	<i>Learnability</i> (2)	The resource is easy to use for 1 <sup>st</sup> -timers	
		The resource has an increasing learning potential that facilitates the use for returning users	
	<i>Efficiency</i> (1)	The resource time-consuming (and costly) is adequate to the precision and accuracy required	
	<i>Memorability</i> (1)	The resource is still easy to use once the user spends a long time without interacting with it	
<i>Error tolerance</i>	The resource allows the user to attempt-error-retry		

	(2)		
		Once having failed the user can easily recover from failing	
	<i>Satisfaction/engagement</i> (1)	Beyond the need or requirement to use the resource, the user feels real pleasure while using it	