

Quality Criteria for Educational Media Related to Sustainability (GreenUp-Award)

Evaluation areas - Quality criteria - Test aspects

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Introduction to the quality criteria for educational media related to sustainability

The quality of educational media in adult education is not only measured by the medium or the media program itself, its content, its didactic-pedagogical format or its media-technological finesse in order to ensure the most lasting effects of teaching and learning, but also - thought of in the context of media-cultural education - by the configuration of the values recognizably associated with the interplay of teaching and learning: Usefulness, aesthetics and ethics. None of these value categories stands alone. The use of media is useful if it fulfils the criteria of aesthetics and ethics. The use of media in an educational context is aesthetic if normative and useful values are incorporated into a cultural educational format, and such formats are ethical if they benefit a cultural-aesthetic educational format.

It is therefore about a complex relationship between connectivity and contextuality: media connect - not only people, but also their knowledge, experience, attitude and history. They connect worlds as we think we can or should think them. And they are used in the individually determined context of life, lifestyles, life prospects, life horizons and, ultimately, values.

Sustainability is a value that can only be identified as a critical pattern (criteria) of quality if and because it determines the usefulness of intellectual and practical education (knowledge, awareness, understanding, retention). And: if and because it is conveyed as a meaningful superstructure of an ethically conceivable and culturally and aesthetically actionable (practicable) combination of economy and ecology as a socially organized framework of a social development oriented towards continuity (harmony, balance) and coherence (justice, balance, dignity).

The interpretative horizons of sustainability are contextual (growth, growth limits and growth opportunities of the economy and society) and transfigurative in the language model of media: a medially configured education refers to the characterization of communication, organization, culture and society as such, which are mutually in use, necessary and possible: Sustainability of natural resources as an opportunity and necessity for a socially sustainable society that communicates with each other in this way in the model of sustainably oriented programmes of education, increasingly realized in the context of their medialization and medialization.

This requires the quality - firstly of content (sustainability-relevant and subject-defined knowledge, expertise, references, experience), but also requires the sustainable quality of medial aestheticization (didactic use of media in the role play of teaching and learning (e.g. possibilities of internalization, motivation and sovereignty) and sustainability-effective pedagogical intention (social practice in the pattern of ethical understanding of learnable content: Identification, responsibility) when educational content is sustainably characterized (medially aestheticized) through its educational-cultural mediation (medialization) and its educational-technologically possible mechanisms (medialization).

The decisive factor in determining whether the educational media submitted for the award are worthy of the prize will therefore be whether and to what extent sustainability criteria are fulfilled in all or in certain categories (content, didactic-pedagogical orientation, media formats, retention and implementation values, creativity, media affinity). One perspective of evaluation will therefore (have to) be sustainability as a universal educational value: The image of a sustainable world (social-discursive, symbolic-cultural), conceptualized and described in the media, is recognizable in a harmonious relationship between knowledge, awareness and attitude towards the natural, social, cultural, symbolic and inspirational values of the world. Understanding

their meaning then means making their usefulness, their appearance (aesthetics) and their value (ethics) for the organization of human existence (life) credible in the modalities of knowledge, consciousness and attitude. All of this is implied in the universal concept of sustainability in such a way that the concept can be used like a metaphor to describe contexts (represented in the media): Sustainability as a competence (knowledge and awareness as a basis for responsibility and attitude) to connect values, states, happenings, events and attitudes to each other, in order to give meaning to what is included in the conceptualization of sustainability.

Sustainability model for digital educational media for sustainable development (BMNA) (cf. <https://studyflix.de/erdkunde/dreieck-der-nachhaltigkeit-5364>,)

The sustainability model outlined below is a basis for the evaluation of (digital) educational media for sustainable development (BMNA), which are characterized below.

(Digital) Educational media for sustainable development (BMNA)

are carriers of information about objects and processes and a means of communication between all participants.

They are pedagogically or didactically structured, designed for use in teaching and learning processes, in particular for sustainable development, and are available on various electronic and digital data carriers (Internet, USB, hybrid products, etc.).

Further principles for the evaluation of educational media are derived from the following goals and messages for sustainable development:

1. Sustainability triangle:

- Ecology - goals of the ecological dimension of sustainability,
- Economy - goals of the economic dimension of sustainability,
- Social - goals of the social dimension of sustainability.

(cf. <https://studyflix.de/erdkunde/dreieck-der-nachhaltigkeit-5364>)

(cf. https://www.nachhaltigkeit.info/artikel/1_3_a_drei_saeulen_modell_1531.htm)

2. Five key messages of the 2030 Agenda ("5 Ps") of the BMZ:

- Protect the planet (Planet)
Limit climate change, preserve natural resources
- Promote prosperity for all (Prosperity)
Making globalisation fair
- Putting human dignity at the centre (People)
A world without poverty and hunger is possible
- Promoting peace (Peace)
Human rights and good governance
- Building global partnerships (Partnership)
- Moving forward together globally

(cf.

<https://www.demokratiewebstatt.at/thema/thema-sustainable-development-goals/die-agenda-2030/die-drei-bereiche-und-die-fuenf-ps-der-agenda-2030>

3. 17 Sustainable Development Goals (SDGs):

1. Take urgent action to combat climate change and its impacts
2. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

3. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss
4. Strengthen means of implementation and revitalize the global partnership for sustainable development
5. Ensure availability and sustainable management of water and sanitation for all
6. Ensure access to affordable, reliable, sustainable and modern energy for all
7. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
8. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
9. Reduce inequality within and between countries
10. Make cities and settlements inclusive, safe, resilient and sustainable
11. Ensure sustainable consumption and production patterns
12. End poverty in all its forms and everywhere
13. End hunger, achieve food security and improved nutrition and promote sustainable agriculture
14. Ensure healthy lives and promote well-being for all at all ages
15. Ensure inclusive, equitable and quality education and promote lifelong learning opportunities for all
16. Achieve gender equality and empowerment for all women and girls
17. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels. (see <https://www.bmz.de/de/agenda-2030/sdg-17>)

(Digital) Educational media for sustainable development (BMNA)

Educational media for sustainable development are generally pedagogically or didactically structured and designed for use in teaching and learning processes. They are used in didactically intended pedagogical functional contexts and are intended to enable learners to develop their skills (as professional, social and personal skills).

For the evaluation of (digital) educational media for sustainable development, the method of evaluation using an evaluation system and quality criteria, as tested and proven in the Comenius-Edu Media Award, is proposed. The advantage of this method is that it is easy to handle, simple to organize and saves time and money. Evaluation with a rating system and quality criteria cannot anticipate the actual learning situations and learning conditions. With this method of evaluation, the potential possibilities for the use of a medium are well determined. However, it cannot be used to draw direct conclusions about the effectiveness of the medium, as the success of the learning process depends on many other factors in addition to the medium, such as the learning environment and learning situation.

Quality requirements and quality criteria that can be applied in educational practice must be well structured and clearly designed. They must emphasize the essentials and leave out the trivial. From this perspective, various criteria areas have been designed for the evaluation of didactic digital media for sustainable development. They include sustainability criteria as well as pedagogical, didactic and media criteria.

Based on this, the following criteria areas were derived and used for the evaluation with quality criteria for educational media for sustainable development:

Criteria areas

Criteria area 1:

Quality criteria for sustainability:
Ecology, economy, social issues; (sustainability triangle)

Criteria area 2:

Quality criteria
Sustainable educational media
Educational media for sustainability

Criteria area 3:

Quality criteria for education and skills,

Criteria area 4:

Quality criteria on didactics and methodology

Criteria area 5:

Quality criteria for design and organization

Criteria area 6:

Quality criteria for technology, organization and innovation

Criteria area 1

Quality criteria for sustainability: ecology, economy, social issues; (sustainability triangle)

Quality criteria of this criteria area

1. ENVIRONMENT

Protect the planet (Planet)
Limit climate change, preserve natural resources

2. ECONOMY

Promote prosperity for all (Prosperity)
Making globalization fair

3. SOCIAL

- Focus on human dignity (People)
 - A world without poverty and hunger is possible
- Promoting peace (Peace)
 - Human rights and good governance
- Building global partnerships (Partnership)
 - Moving forward together globally

Quality criteria and test aspects

1. ENVIRONMENT

At the level of the ecological dimension, the product promotes

- The reduction of risks to people and the environment
- The principles of environmental protection in an educational context and cultivates and promotes the corresponding idea in public awareness
- The fight against climate change and global warming
- To raise awareness of the importance of rational land use to protect natural habitats and landscapes and to minimize urban pollution
- The careful use of resources, the conservation of natural resources and waste management
- Minimizing energy consumption
- The reduction of emissions
- The use of renewable forms of energy
- The protection of species and habitats.

2. ECONOMICS

At the level of the economic dimension, the product promotes

- The application of the principles of the circular economy
- The careful use of renewable raw materials
- The reduction of energy consumption to a minimum, the economical use of energy, water and raw materials, the increase in operational efficiency, the reduction of waste, the use of environmentally friendly materials and the manufacture of environmentally friendly products
- Long-term survival in the economy instead of short-term profit maximization
- Growth and increased sales not at the expense of employees in the region and the environment
- Technological changes in the production process to avoid and minimize waste, recover energy and recycle materials
- New, environmentally friendly technologies, which generally offer new, more cost-effective and socially acceptable products that can increase sales.
- Environmental stewardship, specifically an innovative set of processes, methods, projects and techniques to improve environmental performance and optimize a company's environmental behavior.
- The cooperative economy
- The internationally equitable distribution of the wealth produced.

3. SOCIAL

At the level of the social dimension, the product promotes:

- Freedom and peace
- Justice, equal opportunities and solidarity (within and between generations) and financial security (pensions) for the elderly and sick
- The satisfaction of basic needs (drinking, eating, sleeping, security)
- The eradication of poverty
- The right to education
- Employment and the creation of jobs under fair conditions
- Access to basic infrastructure and health services with free medical care
- The distribution of power and resources
- Gender equality
- Access to centers of influence and decision-making

- Participation and democracy
- Global partnerships, international cooperation and solidarity
- The preservation of local and global cultural heritage
- Ways of seeing and thinking, such as holistic, systemic and multi-perspective thinking as well as forward-looking, visionary and critical thinking

Criteria area 2:

Quality criteria Sustainable educational media

Educational media for sustainability:

Sustainability is a normative construct of economically, socially and politically relevant, ecologically conceived values, which can be recognized from the critical perception of the complex connections, the socially conditioned interrelationships and the resulting contradictions between public and private, between individual and social, as well as from political and ideological understanding (discourse) about the demands of lifestyle.

Media, especially those that are used in the public or private context of education, are examined here in the context of assessing their quality not only in terms of their usefulness (sustainable technology), their clarity or pleasantness (sustainable aesthetics), but also in terms of their inherent value (sustainable ethics): how they are used or which patterns of individual and/or social use (mediality) are suggested or recommended in the context of education (knowledge, awareness and attitude).

Education, especially in the broad horizon of increasing medialization (cultural) and mediatization (structural) of patterns of public and personal communication about knowledge and things worth knowing, is not only to be understood as didactically arranged content transfer from teachers to learners, but also gains the value of knowledge, awareness and competence in the context of communication between people who are socially and institutionally integrated into roles with assigned (personal and social) expectations of teaching and learning. However, this takes place in a social-media environment that increasingly intervenes in institutional processes and the institutional understanding of education (social media and AI). On the one hand, this calls for an open and discursive concept of education, acceptance of diversity and, on the other, a critical perception of the possibilities and suggestions for the sustainable use of resources and sources: literacy, resilience, competence are the relevant keywords here, which justify the (new, emancipatory, culturally and discursively conceived) distribution of skills, ability, motivation and responsibility for meaningful values relevant for (social and personal) life in the long term.

For this reason, the following quality criteria should be taken into consideration when examining and evaluating educational media:

Quality criteria of this criteria area

1. Complexity
2. Contextuality
3. Mediality

4. Discursivity
5. Educational quality
6. Media quality
7. Empathy
8. Sustainability competence
9. Responsibility
10. Social policy

Quality criteria and test aspects

1. Complexity

The project is justified and explained:

- Complex contexts are substantiated in terms of content and theory in a way that is easy to comprehend because it is clear,
- Sustainability as a value of the complexity / contextuality / mediality of the topic pointed out, drawn attention to, demanded,
- Explanation of the complex relationships between power and the economy with regard to problems of concentration of wealth and power and values of justice in the distribution of opportunities and goods.

2. Contextuality

The project justifies:

- Sustainability is made recognizable as a universal value of contextualization of spheres of life (depending on the topic), in the sense of the triangular model.
- Draws attention to the factor of social inequality as an obstacle to social efforts towards sustainability.
- References (media didactic paths) to the usefulness (reason) of aesthetics and ethics, to the ethics of usefulness and aesthetics of media contextualization, as well as to the aesthetic requirements of usefulness and ethics of media use in the context of education.

3. Mediality

The product promotes:

- Creative-proactive, preferably collaborative, interactive, media-aesthetically challenging use of media technology finesse,
- Diverse media expressions of the idea of sustainability, sustainability values, sustainability requirements linked to the topic or subject matter / content,
- refers to offers / discourses or conversations in or from the social media environment.

4. Discursivity

The product offers:

- As much scope as possible for debate, discussion of the content and its relevance, attribution,
- Interpretations of sustainability, media-typical formats, characteristics, paths for multi-perspectivity,
- Open space for dialectics and contradictory content.

5. Educational quality

The product offers:

- Suggestions, paths for collaborative, interactive, emotional learning,
- Suggestions, ideas, paths for the highest possible degree of authenticity, self-reflection,
- Identification for learners to get involved, draw their own conclusions and incorporate them into the program.

6. Media quality

The product offers suggestions for:

- The highest possible degree of productive media participation by learners,
- For the inclusion of individually media-determined life contexts,
- The widest possible range of spheres of media performance by learners,
- Contextualization with the media discourse experiences

7. Empathy

The product motivates to:

- Soft skills: is the didactic media environment structured in such a way that space is given to the introduction, expression and understanding of emotion, also with regard to sustainability (meaning).
- On the other hand, is the emotional connotation, especially in its media expression, balanced in such a way that emotional overload (emotionalization as an attention booster) does not disavow the aesthetics or usefulness of a statement?

8. Sustainability competence

The product increases interest in:

- Content knowledge-based arguments, references,
- Reflection values of sustainability,
- Consistency, pragmatism of the suggestions, advice, tips.

9. Responsibility

The project explains:

- In addition to individual responsibility, social responsibility for sustainability values is also addressed (as a problem and for solutions,
- Does the product contain knowledge positions that substantiate the responsibility character of the interdisciplinarity of science and/or the cooperation of institutions, organizations and companies?
- Are there any references to the aspects of the responsibility of political economy for/against state intervention or liberal economics?

10. Social policy

The product thematizes:

- Ethical values in the interest of the sustainability, stability and peacefulness of society: social justice as a prerequisite for human dignity,
- Critical attention to pseudo-rational ideologemes (ideologies, assumptions, myths, conspiracy theories, populisms) that work against human dignity and deepen inequalities,
- Criticism of politically capitalist-motivated argumentation patterns on environmental and climate protection.

Criteria area 3:

Quality criteria for education and skills

The pedagogical-content evaluation deals with the basic categories of education, with the objectives, content and competencies and analyzes the educational intentions and educational possibilities of didactic digital media products.

Setting and realizing goals and sub-goals are basic prerequisites and guidelines for successful learning. Which knowledge, values and skills are to be acquired on the various learning paths in connection with the target group are therefore fundamental questions for a pedagogical and content-related evaluation of didactic digital media products. Closely linked to this is the question of what content or material, such as facts, rules, concepts, laws, methods and relationships, should be practiced, learned and acquired.

The evaluation to assess the educational intentions and educational possibilities of didactic digital media products is therefore an overarching approach that constitutes the evaluation area.

The pedagogical-content evaluation is the first step in the overall evaluation and deals with the following quality criteria.

Quality criteria of this evaluation area

1. Learning objective
2. Learning content
3. Target group
4. Innovation
5. Competences
6. Values.

Quality criteria and test aspects

1. Learning objective

- In the didactic digital media product, the learning objectives are recognizable for the user and are implemented in realizable, logically structured and didactically appropriate sub-objectives and work steps.

- The learning objectives must be geared towards the acquisition of qualified competencies and correspond to the respective educational programs.

- All target and content components (cognitive, affective, psychomotor, social-communicative) are coordinated with the overall concept.

2 Learning content

- The learning content enables the intended learning objectives of the didactic digital media product to be achieved.
- The learning content is presented in a factually and scientifically correct manner (structure, selection, quantity and density as well as linking of information, essential statements with reference to the degree of generality and the level of abstraction).
- The selection and presentation of the learning content are appropriate from a pedagogical point of view.
- The learning content is coordinated with corresponding educational programs.
- Terms and terminology are used consistently, appropriately and logically.

3. Target group

- Learning content and learning objectives are appropriate for the target group.
- Learning content and learning objectives can be chosen by the learners and correspond to their prerequisites and interests.
- Necessary prior knowledge and skills of the target group are taken into account (knowledge and skills, emotions and attitudes, ability to pay attention and concentrate, socio-cultural environment).
- Opportunities for individual and cooperative learning are designed to suit the target group.

4. Innovation

- The subject matter or the way in which it is realized in the didactic digital media product is novel and progressive.
- The learning content and learning objectives correspond to the current state of research, development and specialist discussion.
- The media product has pedagogical advantages over other forms of implementation.
- The content focuses primarily on a specific subject or topic area or is interdisciplinary in nature.
- The product can be characterized as a successful didactic digital media product or digital interactive educational medium, teaching aid, learning aid, work tool or edutainment or infotainment program.

5. Competence to act

- Working with the didactic digital media product promotes independent, critical, multi-perspective and flexible thinking and action in social, ethical and cultural contexts.
- The media product enables independent decisions to be made in order to complete the task.
- The media product provides opportunities for creative design and interactivity.

6. Values

- Working with the didactic digital media product promotes humane thoughts and values.
- The targeted values and norms promote solidary behavior.
- The targeted values and norms are free from: violence-glorifying, radical or obscene depictions, ideological influence, negative prejudices and targeted manipulation.
- The content is free from narrow gender role thinking and prejudice.
- T The digital media product promotes ethical education.

Criteria area 4:

Quality criteria for didactics and methodology

The didactic-methodological evaluation deals with essential aspects of teaching and learning and analyzes which learning arrangements and learning opportunities are pursued with the didactic digital media product. Didactics as a scientific discipline of education deals with the rules of learning and the connections between learning and teaching. The didactic-methodological question asks about the method and the way in which knowledge and skills are imparted and acquired.

The didactic-methodological evaluation of didactic digital media products therefore forms a second key area of evaluation and structures the answers and criteria to the question of which learning arrangements and learning opportunities are pursued with the didactic digital media product. The following quality criteria can be assigned to this evaluation area.

Quality criteria of this evaluation area

1. Didactic principles
2. Didactic rules and procedures
3. Forms of teaching and learning
4. Didactic steps
5. Learning control
6. Interaction structures.

Quality criteria and test aspects

1. Didactic principles

- The didactic digital media product is based on a recognizable learning theory approach, for example a more objectivist, constructivist, traditionalist, science-oriented or action-oriented approach.
- The learning theory approach is implemented appropriately.
- The educational content is appropriately selected and justified from a didactic point of view.
- An appropriate didactic reduction has been made in accordance with the educational objective.

2. Didactic rules and procedures

- Basic didactic rules and procedures are recognizable in the digital didactic media product and have been adhered to, such as
 - Comprehensibility
 - Scientificity
 - Consistency
 - Clarity
 - From the general to the specific
 - From the simple to the complicated
 - From the easy to the difficult
 - From the near to the distant
 - From the known to the unknown
 - Connecting the concrete with the abstract.

- Logical learning processes, such as analyzing, synthesizing, comparing, differentiating, generalizing, abstracting, generalizing, ordering, concretizing are inherent in the media product and are encouraged.

3. Forms of teaching and learning

- Basic methodological forms of teaching (presenting, assigning, developing forms) are used in the digital didactic media product.
- Possible and meaningful forms of cooperation in teaching, such as. Frontal teaching, partner learning, group learning or individual learning were taken into account.
- The media product enables individual and cooperative forms of learning. Individual learning can be combined with cooperative learning. Individual learning is sensibly combined with entertaining forms or games.
- The media product is primarily suitable for one or more areas of use, such as
- Individual users or for use in groups including online groups
- Afternoon activities / project lessons / subject lessons / free work / substitute lessons / individual work.
- Training, further education, lifelong learning.
- The areas of application are recognizable and feasible.

4. Didactic steps

- Essential didactic steps that enable an optimal learning process are consistently applied in the digital didactic media product:
- Introduction (goal setting and orientation, motivation, reactivation)
- Work on new material / initial teaching / introduction
- Consolidation (memorization, repetition, practice)
- Systematization, application,
- control, evaluation.
- With the didactic steps, the educational intentions can be achieved in a meaningful and appropriate way.
- The intended didactic steps allow users to work at different levels of difficulty and at different speeds.

5. Learning control

- The learning process is controlled in the digital didactic media product in a clear and self-explanatory manner.
- The processing of learning steps is emotionally stimulating and motivating.
- Tasks, answer forms and other learning activities are designed in a way that is factually correct and meaningful, and the combination of text and images is comprehensible and clear.
- The task processing is variable and is not just reduced to mechanical processing. The learning path can be determined by the student. The answer design is variable and can be supported by acoustic or graphic hints or corrections.
- The exercises and repetitions are varied and variable.
- Branching out is based on didactic considerations and meets the requirements of the target group.
- Games and other entertainment elements are recognizably linked to the educational concept. The media product enables varied learning and is not limited to entertainment.

6 Interaction structures

- The didactic digital media product enables interactive work, modification of tasks and flexible reaction according to different learning needs and learning prerequisites. Feedback is offered in variable, motivating and effective forms.
- The media product reacts to the learning process by analyzing the individual performance level and recommending appropriate branches.
- Branches are automatically initiated after answer and learning progression analysis and can be freely selected. Branches are available in an appropriate and manageable number. Branches offer tasks of varying difficulty and variation.
- Interactivity between user and media product is made possible by setting tasks and work assignments, demanding solutions and encouraging the development of solution strategies.
- Interactivity is supported
 - by making the progress of the program dependent on the user's contributions and activities,
 - by triggering user activities, e.g. collecting data, expanding information,
 - by providing data for further processing,
 - through error messages with factual reference,
 - through factual and variable confirmation of work results,
 - by creating LINKS to other media or reward systems (leaderboards, games, etc.).
- The user's performance level and learning progress are determined during the exercises and communicated in an appropriate, motivating and encouraging manner. The evaluation of performance results is technically and didactically correct and sensible.
- The performance evaluations in the media product are technically and pedagogically meaningful. The determination of performance results is statistically correct.
- Appropriate options (such as text, sound, graphics, animation) are offered for performance evaluations. Incorrect solutions are indicated in different and variable ways. Feedback on incorrect solutions is given in a motivating manner and evaluates the answer and not the person.

Criteria area 5:

Quality criteria for design and layout

The media requirements for assessing the design and layout of didactic digital media products deal with the question of the extent to which the transformation of an idea into an aesthetically and functionally sophisticated result has been successful. This involves the assessment of the formal and functional design. The media requirements for the assessment of design and layout are closely related to questions of media education and media didactics, but represent a third group of criteria in their own right.

The design and layout of didactic digital media products can have a significant influence on important skills of the learner, such as perceptual ability, imagination, constructive-productive thinking, sensitive grasp of aesthetic values and the ability to restructure. The use of the various media elements for the medial preparation of learning content must be considered as a whole and the individual elements must be examined with regard to their function and their interaction with the other forms (cf. Zimmer, G.: E-Learning, BW Bildung und Wissen 2004, p. 103.).

The media design evaluation is based on the following quality criteria.

Quality criteria of this evaluation area

1. Content-adequate design
2. Target group-oriented design
3. Design of the user interface
4. Visual design
5. Auditory design
6. Design basics

Quality criteria and test aspects

1. Content-adequate design

- The design (colors, typography, non-textual elements, etc.) of the didactic digital media product was appropriate to the content (e.g. drawings for children, "cold" colors for winter, etc.).
- The type of media (video, images, text, etc.) was chosen appropriately for the content (videos for movement sequences, audio recordings for music and speech).
- The learning content is coordinated with the possibilities of the media type (media and graphic design).
- A multi-symbolic form of presentation appropriate to the content was chosen. The multi-symbolic forms of presentation (texts, graphics, images, videos, audios, etc.) are correct and correspond to aesthetic aspects).

2. Target group-oriented design

- The didactic (digital) media product was designed with the target audience in mind.
- Different graphic and media design concepts are dedicated to different target groups.
- The design is adapted to the needs of the user. (letter size, contrasts, subtitles, etc.).
- Forms of content presentation such as language, sound, image, animation are appropriate to the target group. Users can structure content themselves. (emphasize, skip, etc.) and add content.
- Accessibility was taken into account in the design.

3. Screen design

- The user interface of the didactic (digital) media product is clear, concise, accurate and comprehensible. The amount of information per screen page is appropriate for the target group. The screen layout has an appropriate level of detail.
- The technical quality of the screen pages is characterized by clear resolution, uniform luminance and good contrasts.
- Text and images on the screen pages are functionally and aesthetically related.
- Each screen page is self-contained with a coherent content.
- Viewing time and processing time for a screen page can be freely selected.
- The screen design appeals to the user rationally and emotionally. It is a unit in detail and as a whole.

4 Visual design

- The text design of the didactic digital media product is clear, easily recognizable and legible. Text presentations and links are closely and functionally related to educational content. Text presentations are clearly structured and emphasize essential information.

- Graphics, images, symbols and colors are comprehensible, meaningful, aesthetically pleasing, motivating and produced to a high standard. They have a close functional connection with the educational intentions.
- They are characterized by clear lines, shapes, contrasts and comprehensibility.
- Sensible use of visual elements such as color design emphasizes learning content, facilitates learning processes and motivates the target group.
- The animations and videos are understandable, meaningful and motivating. The animation and video sequences used are necessary for the presentation and understanding of the learning content and provide lasting support. Animations and videos are appropriate for the target group and motivate the addressees.
- Language in its phonetic and written form is standardized and correct in the didactic digital media product.
- The linguistic forms of expression and the style of the language are appropriate and motivating.
- The textual form of expression (spelling, grammar and punctuation) is error-free. Texts are clearly structured and emphasize important information.

5. Auditory design

- The acoustic elements of the didactic digital media product, such as speech, music, sounds, noises, etc., are meaningful, understandable and motivating
- The auditory design supports the acquisition of the learning content and interaction.
- Auditory elements are of impeccable quality and are used appropriately.
- Tone and volume can be changed and are motivating for the target group.

6. Design basics

- Tonality of the language
- Iconography (optional)
- Scalability, expandability
- Design, grid, structure, responsive design
- Performance, resources
- Interaction concepts

Criteria area 6:

Quality criteria for technology, organization and innovation

The operating and organizational requirements deal with fundamental aspects of work organization in the use of didactic digital media products. These are questions that deal with the humane design of user interfaces and human-computer interfaces.

Operation and ease of use are essential for the effectiveness of didactic digital media products and are therefore summarized in a fourth group of criteria.

When evaluating operation, work organization aspects such as operating characteristics, handling aspects, usage characteristics, organization and technology are of particular importance.

The evaluation focuses on the working conditions for teachers and learners on and with the computer or with the didactic digital media product.

The organizational-technical evaluation includes the following quality criteria.

Quality criteria of this criteria area

1. Self-explanation and reliability
2. Clarity and flexibility
3. Navigation and control
4. Adaptability
5. Technical functionality
6. Product information and help.
7. Innovations.

Quality criteria and test aspects

1. Self-explanation and reliability

- The didactic digital media product is largely self-explanatory with specific visual and acoustic aids.
- The media product works reliably, error-free, quickly and without interruption.
- All specified functions work without problems, especially loading, saving, printing and exiting.
- The media product is largely resistant to operating errors. Operating errors are corrected by visual or audible warnings. Operating errors are largely ignored.

2. Clarity and flexibility

- The didactic digital media product has a clear and straightforward design and is easy to use.
- The content menu is clearly and logically structured.
- The control elements are used consistently and uniformly. The user can always recognize which part they are in.
- User instructions and explanations for beginners and novices can be canceled and skipped at any time.
- The media product enables a wide range of selection options and application forms.
- The range of commands, terms and symbols are clear, straightforward and appropriate for the target group.
- Users can edit the media product according to their wishes and interests with regard to content, difficulty and aids. A sufficient number of options are available and easy to access.

3. Navigation and control

- The control options of the didactic digital media product are characterized by a change of input forms, facilitation of input, choice of operation (e.g. keyboard, mouse), availability of all control elements, control options for additional information and communication options via networks.
- The learning control options are flexible, such as influencing the speed, selection and sequence of work steps, handling and difficulty of the tasks, setting the learning time.
- The navigation and orientation options are simple and easy to use.
- The user can easily switch between the various displays with familiar or recognizable control symbols.

4. Adaptability

- The didactic digital media product enables adaptation to the user's performance by changing the basic settings (e.g. switching off the sound, switching between text and sound output) and adjusting the level of difficulty (e.g. tasks with different levels of difficulty).
- The adjustment of the time response (e.g. setting the reaction times according to the user's requirements) is ensured by the media product.
- The media product makes it possible to adapt the type and scope of information (e.g. separate and combined selection of text or audio information) to the user's performance.
- Adaptation of the help system (e.g. variable offer of help) is made possible by the media product.

5. Technical functionality

- Installation and uninstallation or access and activation for the didactic digital media product are easy.
- The media product is compatible with various hardware and software.
- Use of the mouse and keyboard is convenient, sensible and self-explanatory.
- Saving and printing all important results is simple, convenient and takes place in a form suitable for the respective target group.

6. Product information and help

- The information required to use the didactic digital media product is user-friendly for the intended users such as children, young people, trainees, adults, parents and teachers.
- The product description and operating instructions contain all the information required to understand and use the media product. They are comprehensible, unambiguous, logical and clearly structured.
- Necessary information for initializing or installing the media product is given accurately and correctly.
- Necessary hardware information and system requirements are presented in an appropriate and user-friendly manner.
- There is a well-functioning support and consulting service for the media product (hotline, e-mail, tutorial, etc.).

7. Innovations.

- Is an innovative idea recognizable?
- Has an innovative concept been created?
- Has an innovative solution been created?
- Does the product have a recognizable innovative potential to be marketable?

Overall evaluation

The arithmetic evaluation (point evaluation) is based

- for criteria areas 1 and 2 on a scale of 10 and
- for criteria areas 3 to 6 on a scale of 5.

In addition, 0 criteria can be rated as "not applicable".

A maximum of 40 points can therefore be awarded for all 6 criteria areas.

Evaluation of criteria areas/sections 1 and 2	
9 and 10 points	The evaluation criterion and the quality objective are designed and can be realized in an excellent manner..

(very good, exemplary, outstanding)	
7 and 8 points (good, successful, recommendable)	Evaluation criterion and the quality objective are successfully designed and can be realized.
5 and 6 points (satisfactory, appropriate, suitable)	The evaluation criterion and the quality objective are designed and can be realized in a satisfactory manner.
3 and 4 points (sufficient, adequate, usable)	The evaluation criterion and the quality objective are sufficiently designed and realizable.
1 and 2 points (inadequate, not recommended)	The evaluation criterion and the quality issue are poorly designed and hardly realizable.
0 points (not applicable)	Evaluation criterion is not applicable to the (multi)media product

Assessment criteria areas 3 to 6	
5 points (very good, exemplary, outstanding)	The evaluation criteria and quality matters are designed and realized in an outstanding manner.
4 points (good, successful, recommendable)	The evaluation criterion and the quality concern are designed and achievable in a successful manner.
3 points (satisfactory, appropriate, suitable)	The evaluation criterion and quality issues are designed and can be realized in a satisfactory manner
2 points (sufficient, adequate, usable)	The evaluation criterion and quality requirements are sufficiently designed and realizable..
1 point (inadequate, not recommended)	The evaluation criterion and quality issues are poorly designed and hardly realizable.
0 points (not applicable)	Evaluation criterion is not applicable for the multimedia product

With this evaluation, a special weighting of the 6 criteria areas is carried out. According to this media category "Educational media for sustainable development", half of the total points (max. 20 points) are awarded for the criteria areas on sustainability (1 and 2) and the remaining points (max. 20 points) for the criteria areas on media specificity (3 to 6).

Criteria area 1: Quality criteria for sustainability: Ecology, economy, social issues ; (sustainability triangle)	Total points divided by number of quality criteria / arithmetic mean, 1 decimal place	max. 10 Points
Criteria area 2: Quality criteria Sustainable educational media Educational media for sustainability	Total points divided by number of quality criteria / arithmetic mean, 1 decimal place	max. 10 Points
Criteria area 3: Quality criteria for education and competencies	Total points divided by number of quality criteria / arithmetic mean, 1 decimal place	max. 5 Points
Criteria area 4: Quality criteria for didactics and methodology	Total points divided by number of quality criteria / arithmetic mean, 1 decimal place	max. 5 Points
Criteria area 5 Qualitätskriterien zu Design und Gestaltung Quality criteria for design and layout	Total points divided by number of quality criteria / arithmetic mean, 1 decimal place	max. 5 Points
Criteria area 6 Quality criteria for technology, organization and innovation	Total points divided by number of quality criteria / arithmetic mean, 1 decimal place	max. 5 Points
Total points	Total points (sum of arithmetic means (1st-6th))	max. 40 Points

Interpretation of Total Points		
36,0 - 40 Points	Exemplary educational media for sustainable development	Very good (1)
25,0 - 34,9 Points	recommendable educational media for sustainable development	Good (2)
18,0 -24,9 Points	suitable educational media for sustainable development	Satisfactory (3)
10,0 – 17,9 Points	usable educational media for sustainable development	sufficient (4)
9,9 Points and less	Educational media for sustainable development not recommended	inadequate (5).

Overall evaluation (verbal) :

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