

NORTH CAROLINA DIGITAL LEARNING INITIATIVE

Quality Review Tools for Digital Learning Resources



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Public Schools of North Carolina
State Board of Education
Department of Public Instruction



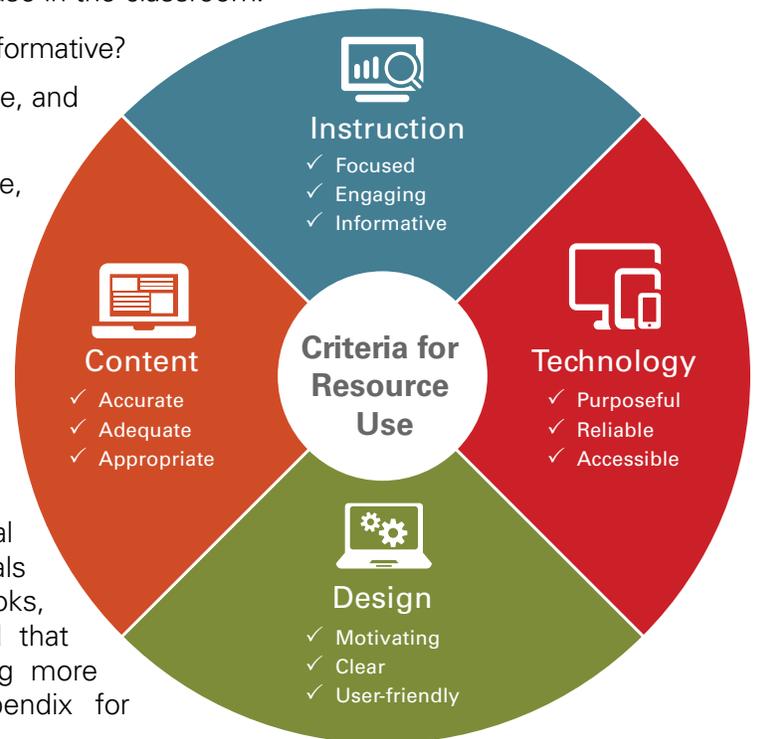
UNIVERSITY OF
NORTH CAROLINA

Recent initiatives such as the U.S. Department of Education’s [#GoOpen Campaign](#)¹ and [North Carolina’s Digital Learning Initiative](#)² have highlighted the potential equity, flexibility, and cost-saving benefits of leveraging open educational resources to support teaching and learning. As schools and districts continue to expand access to broadband and devices, the availability of free or inexpensive digital learning resources has expanded exponentially. However, with an increase in quantity comes uncertainty about the quality of instructional materials. In response, the North Carolina Department of Public Instruction and the Friday Institute for Educational Innovation have developed and identified several resources³ to support educational organizations in their adoption, development, and use of digital learning resources.

The Quality Review Checklist and Rubric presented here are designed to supplement the report [Selecting Digital Education Content: A Guide for North Carolina Schools and Districts](#). Based on a review of the existing literature and feedback and support from district leaders across the state, the checklist and rubric identify four domains and twelve key indicators for assessing the quality of digital learning resources. The following questions summarize the criteria for high-quality resources and should be answered in the affirmative before approving their use in the classroom:

- Is the **instruction** focused, engaging, and informative?
- Is the **content** presented accurate, adequate, and appropriate?
- Are **technology** features purposeful, reliable, and accessible?
- Is the **design** of the resource motivating, clear, and user-friendly?

Both the checklist and rubric are designed to evaluate supplemental digital learning resources such as online educational games, simulations, apps, instructional tasks or lesson plans that require a digital device (e.g. computer, tablet, or smartphone). The checklist and rubric may also serve as an initial screening tool for more comprehensive materials such as multi-lesson curricular units, e-textbooks, or online courses. However, it is recommended that subject specific criteria be used when reviewing more comprehensive instructional materials. See appendix for suggested rubrics.



Tool 1: The NC Quality Review Checklist is intended as a quick reference tool to help identify any red flags that should give pause when considering the use of digital learning resources. To use the checklist, simply respond “Yes” or “No” to the provided questions. If the answer to any of the questions is “No,” consider using an alternate resource or ways in which the resource can be modified to address the identified shortcomings.



Tool 2: The NC Quality Review Rubric is designed for situations where a more in-depth review of digital learning resources is required, such as the selection of resources to include in a school, district, or state-wide online repository or as recommended resources as part of a pacing guide or a curriculum map. To complete the rubric, review each indicator and assign a value of 0-4 based on closest match to the criteria described.

Record your responses and recommendation on the provided scoring sheet. Resources that score a “0” or “1” on any indicator should be carefully considered before recommending their use by educators and students.

1 <https://tech.ed.gov/open/>
 2 <https://ncdli.fi.ncsu.edu>
 3 <https://ncdli.fi.ncsu.edu/resources/content.html>

Quality Review Checklist for Digital Learning Resources

	No	Yes
 Is the INSTRUCTION...		
Focused: Is the instructional purpose and alignment with North Carolina curricular standards explicitly stated or easily inferred?		
Engaging: Are students engaged in an activity that promotes critical thinking, communication, collaboration, and/or creativity?		
Informative: Is there an instructional record or student product to help gauge the resource's effectiveness?		
 Is the CONTENT...		
Accurate: Is the content presented free of errors, bias, or outdated material that could confuse or mislead students?		
Adequate: Is the content provided adequate to address stated or implied learning goals?		
Appropriate: Are vocabulary and concepts at an appropriate level for the target audience?		
 Is the TECHNOLOGY...		
Purposeful: Do technology features (e.g. interactivity, animation, automated feedback, etc.) enhance content and instruction?		
Reliable: Do technology features work reliably and as intended in the environment (e.g. devices, wireless connectivity, etc.) where the resource will be used?		
Accessible: Does technology support accommodations for learners with cognitive, developmental, or physical disabilities?		
 Is the DESIGN...		
Motivating: Does the resource contain motivational elements (e.g. choice, multimedia, interactivity, humor, real-life examples, gamification) likely to sustain the interest of students?		
Clear: Do visual and auditory elements (e.g. font, size, and legibility of text; video or sound quality; headings; graphics) support, rather than distract from, content and activities?		
User-Friendly: Is the resource easy to understand and use for teachers and targeted learners?		

Quality Review Rubric for Digital Learning Resources

 INSTRUCTION	Absent/ Unusable (0) 	Weak (1) 	Strong (2) 	Exemplary (3) 
Focus <i>Is the instructional purpose⁴ and alignment with North Carolina standards explicitly stated or easily inferred?</i>	Instructional purpose and/or alignment with associated NC curricular standard(s) are unclear or misaligned. For example, instructional purpose or learning goals may not match the intended standard(s) or address the standard(s) in a superficial way.	Instructional purpose and alignment with NC curricular standard(s) are explicitly stated or easily inferred. However, the resource addresses only a limited part of the content and performance expectations in the associated standard(s).	Instructional purpose and alignment with NC curricular standard(s) are explicitly stated or easily inferred. Majority of content and performance expectations in the associated NC standard(s) are addressed.	Instructional purpose and alignment with associated NC curricular standard(s) are explicitly stated or easily inferred. All content and performance expectations in the identified standard(s) are completely addressed and are the sole focus of the resource.
Engagement <i>Are students engaged in an instructional task⁵ that promotes the Four C's?</i>	Instructional task is either undefined, limited to passive engagement, or misaligned with the instructional purpose of the resource. For example, instructional tasks may not support instructional goals.	Students are actively engaged in an instructional task, but task may focus on basic information recall or lacks sufficient guidance, supports, or scaffolding to ensure success on more cognitively demanding tasks.	Students are actively engaged in an instructional task that promotes critical thinking, collaboration, communication, and/or creativity. Task is appropriate given the age and ability of targeted learner.	Students are actively engaged in an appropriate task that promotes the Four C's. Resource provides a range of cognitive demand and varied ways in which learners can engage with instruction.
Evaluation <i>Is there a resulting instructional record⁶ to help evaluate the resource's effectiveness?</i>	A means to evaluate resource's effectiveness is either missing, contains significant errors, or is misaligned with the knowledge and skills students are expected to acquire or demonstrate.	Instructional record(s) is insufficient to fully gauge the effectiveness of resource. For example, an embedded quiz may only address a portion of the knowledge or skills students are expected to acquire or demonstrate.	Instructional record(s) is sufficient to gauge the effectiveness of the resource. Any collection and use of student data by third-parties is transparent and adheres to laws governing privacy and data security.	Instructional record(s) is sufficient to gauge the effectiveness of the resource. Students are provided flexibility to demonstrate targeted knowledge and skills. Collection and use of student data by third-parties is transparent and adheres to local and federal laws.

4 **Instructional purpose** refers to the resource's intent to provide instruction, practice, and/or assessment with respect to subject specific knowledge and skills.

5 **Instructional tasks** may include reading, writing, discussion, or problem solving that promote critical thinking, collaboration, communication, and/or creativity.

6 **Instructional record** may include quizzes, student performance, resource analytics, written products, etc.

Quality Review Rubric for Digital Learning Resources

 CONTENT	Absent/ Unusable (0) 	Weak (1) 	Strong (2) 	Exemplary (3) 
Accuracy <i>Is content⁷ free of errors, biases or stereotypes⁸, and outdated material that could lead to confusion or misunderstanding?</i>	Content contains significant errors, biases or stereotypes, or outdated material that could lead to student misunderstanding, confusion, or exclusion.	Content is free of harmful stereotypes, but contains minor errors, omissions, biases, or outdated material that will not significantly impact student understanding or attainment of instructional goals.	Content is free of errors, biases or stereotypes, and outdated material . Differences among cultural and ethnic groups are represented in a balanced and sensitive manner.	Content is accurate, current, objective, and non-discriminatory. Resource provides references to authoritative source material and credit to resource creators .
Adequacy <i>Is the content presented adequate to address stated or implied learning goals?</i>	Content presented is irrelevant to instructional goals or inadequate to address even minor aspects of stated or implied curricular standards.	Content presented is inadequate to fully support learning goals or contains irrelevant or extraneous content likely to distract learners from primary learning objectives. Content needs to be modified or augmented with additional information or materials.	Content presented requires minimal or no additional material to address instructional goals . Key concepts, ideas, and arguments are clear and supported by an appropriate level of detail to ensure student understanding.	Content is adequate to support instructional goals. The resource facilitates connections within subject matter and/or across content areas . For example, relationship between place value and procedural steps are explicitly linked within a lesson on multi-digit addition.
Appropriateness <i>Are vocabulary and concepts appropriate for the target audience?</i>	The majority of content presented is inappropriate given the age and maturity of the target audience . For example, the resource uses advanced vocabulary or overly complex language that is likely to result in student frustration or confusion.	Vocabulary or concepts presented are too advanced or overly simplistic for majority of students . The resource will likely require modification or students may need additional support to achieve the instructional goals.	Vocabulary and concepts presented are appropriate for the target audience . Supports are provided (e.g. glossaries, visual aids, alternate text) to assist students who may have difficulty comprehending content.	Vocabulary and concepts presented are appropriate to the target audience with supports to aid comprehension. Content is sensitive to cultural affiliations, language, or dialect of targeted students .

7 **Content** is defined as information (e.g. text, audio, video, graphics, visual aids, etc.) presented to the learner or teacher in support of instructional goals.

8 **Biases or stereotypes** may include cultural, political, ethnic, racial, or gender representations, or intentional lack thereof.

Quality Review Rubric for Digital Learning Resources

 TECHNOLOGY	Absent/ Unusable (0) 	Weak (1) 	Strong (2) 	Exemplary (3) 
Purpose <i>Are technology features⁹ purposeful, enhancing content and instruction and serving in support learning goals?</i>	The resource is either static content in a digital form, such as a PDF document, or contains technology features that are poorly conceived and/or executed such that they distract learners from the content and instruction.	Technology features may slightly improve motivation, but are not directly relevant to the subject matter and are unlikely to support students in acquiring or demonstrating targeted knowledge and/or skills.	Technology features clearly enhance content and instruction and are directly relevant to instructional goals. For example, an interactive diagram may be used to illustrate concepts or automated feedback to check comprehension.	Technology features clearly enhance content and instruction and support a personalized learning experience by adapting to user behavior and/or providing the user with flexibility or control of the learning experience.
Reliability <i>Will it reliably work as intended in the context where it will be used?</i>	Technology features may contain major bugs or issues that may render the object unusable or are likely to significantly impact learning.	Technology features contain minor bugs or issues that may be temporarily distracting but are not likely to significantly impact learning.	Technology features reliably function as intended across a narrow range of specified contexts. For example, resource may be restricted to specific devices, operating systems, or Internet browsers.	Technology features appear to reliably function as intended across a wide range of contexts. For example, resource is device agnostic, works on major browsers, and/or uses responsive design to adapt to different screen sizes.
Accessibility <i>Does technology support accommodations¹⁰ for learners with cognitive, developmental, or physical disabilities?</i>	Resource does not provide accommodations for learners with disabilities to access content and/or demonstrate learning.	Resource provides few accommodations for learners with disabilities to access content and/or demonstrate learning.	Resource provides accommodations for learners to access and/or input information such that learners with disabilities would have minimal difficulty using the resource.	Resource can be accessed through assistive devices and follows the IMS Guidelines for Accessible Learning Applications. Web-based resources conform to W3C Web Content Accessibility Guidelines .

9 **Technology features** may include: embedded media, interactive charts, automated feedback, **adaptive content, etc.**

10 **Accommodations** may include: accessibility features (i.e. ability to resize text or visual content; change contrast, color, volume, or rate of speech, video speed, etc.), adaptive reading levels or instructional tasks, etc.

Quality Review Rubric for Digital Learning Resources

 DESIGN	Absent/ Unusable (0) 	Weak (1) 	Strong (2) 	Exemplary (3) 
Motivation <i>Does it contain a motivational elements⁸ likely to sustain the interest and engagement of students?</i>	The resource lacks a motivational element(s) likely to engage learners, or they are poorly conceived and executed such that the resource is likely to disengage learners or distract from instructional goals.	The resource includes a motivational element(s) intended to increase motivation. However, element(s) are not likely to sustain student motivation or interest over the course of the activity.	The resource includes a motivational element(s) likely to sustain student engagement in the task , enhancing the instructional value of the resource.	The resource includes a motivational element(s) likely to increase student interest in the topic after using the resource , while sustaining student engagement in the specified task.
Clarity <i>Are visual and auditory elements⁹ presented clearly, concisely, and attractively?</i>	Design of visual and auditory elements are likely to cause confusion, frustration, or misunderstanding . For example, key information on charts or graphs is illegible, or intrusive ads or pop-up notifications obscure key content.	Visual and auditory elements are purposeful but may distract the learner or require unnecessary cognitive processing . For example, the resource may include poor audio quality, cluttered diagrams, spelling errors, or distracting colors, fonts or images.	Visual and auditory elements are presented clearly and concisely. The resource is likely to enhance learning and efficient mental processing . For example, meaningful headings are used to highlight key ideas and to help summarize and scaffold key concepts and/or skills.	Design of visual and auditory elements are likely to enhance learning and efficient mental processing. In addition to being functional, auditory and visual elements are aesthetically pleasing .
Usability <i>Is the resource easy to understand and use?</i>	Poor design renders the resource unusable . For example, resource may lack clear directions, use poor navigation, or depend on content or other materials inaccessible to learners.	A non-intuitive user interface, ambiguous directions, or missing components limit the usability of the resource. The resource requires significant modification or intervention by the teacher to avoid student confusion or frustration.	The resource provides clear directions and/or has an intuitive design such that the resource is easy to understand and use . However, the resource may require minor modification or instructor intervention to be used effectively in the local context.	The resource is easy to understand and use, and can be readily transferred to different educational environments and learning sequences with minimal modification or intervention by the instructor.

8 **Motivational elements** may include: use of choice, real-life activities/examples, multimedia, interactivity, feedback, humor, drama, or game-based components.

9 **Visual and auditory elements** may include: font, size, and legibility of text; video or sound quality; headings and visual organizational cues.

Rubric Scoring Sheet

Reviewer Name: _____ **Date:** _____ **Completed:** _____

Resource Reviewed: _____

	Score
 INSTRUCTION	
Focus	
Engagement	
Evaluation	
 CONTENT	
Accuracy	
Adequacy	
Objectivity	

	Score
 TECHNOLOGY	
Purpose	
Reliability	
Accessibility	
 DESIGN	
Motivation	
Clarity	
User-Friendly	

DOMAIN TOTALS	
INSTRUCTION	
CONTENT	
TECHNOLOGY	
DESIGN	
Total Score	

Would you recommend this resource?	
Yes	
Yes, but with reservations.	
No	

General Remarks:

References and Recommended Readings

Selecting Quality Digital Content

- Friday Institute for Educational Innovation. (2016). *Selecting digital content: A guide for North Carolina schools and districts*. Retrieved from https://ncdli.fi.ncsu.edu/resources/docs/selection_and_evaluation_of_digital_content.pdf
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- SETDA. (2015). *Ensuring the quality of digital content for learning: Recommendations for K12 Education*. Retrieved from http://www.setda.org/wp-content/uploads/2015/03/Digital_brief_3.10.15c.pdf

Rubrics and Review Instruments

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- Nesbit, J. C., Belfer, K., & Leacock, T. (2003). *Learning object review instrument (LORI). E-learning research and assessment network*. Retrieved from http://www.academia.edu/7927907/Learning_Object_Review_Instrument_LORI

Other Related Readings

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