

Implementation & Usability Testing

The module was implemented in a classroom setting and evaluated through usability testing to assess navigation, engagement, accessibility, learner performance, and overall satisfaction. Data collected during testing informed revisions and improvements to enhance the learning experience.

Purpose of Usability Testing

The purpose of usability testing was to determine whether learners could successfully:

- Navigate the course independently.
- Access learning materials and resources.
- Complete learning activities and assessments.
- Demonstrate achievement of learning objectives.
- Engage with the course content.
- Use accessibility features effectively.
- Complete the final project successfully.

The evaluation focused on identifying barriers to learning and opportunities for improvement before broader implementation.

Learning Objectives Evaluated

By the end of the course, learners were expected to:

Module 1- Identify and classify renewable and non-renewable natural resources with at least 80% accuracy.

Module 2- Compare and contrast renewable and non-renewable resources with at least 80% accuracy.

Module 3- Create a real-world project demonstrating understanding of natural resources using a format of their choice (poster, slide deck, video, or teacher-approved alternative).

Preparing and planning usability test

Prior to usability testing, participants were informed about the purpose, procedures, and expectations of the session. Consent was obtained before testing began. During the session, learners interacted with the e-learning module while a moderator facilitated the process, provided instructions, and ensured a supportive testing environment.

Participants, Setting and Equipments for a Usability Test

- **Participants:** 10 Grade 6 students representing the target learner population.
- **Setting:** Middle school classroom environment; Teacher-guided implementation.
- **Equipment:** Student laptops or tablets, Internet access, Canvas LMS, Google Slides collaborative activity.

Roles in Usability Tests

- **Facilitator-** Provided instructions, monitored testing sessions, and ensured learners remained on task.

- **Observer**-Recorded learner behaviors, navigation difficulties, and usability issues.
- **Data Recorder**-Collected performance metrics, survey responses, and observational notes.
- **Participants**-Completed course activities and provided feedback regarding their learning experience.

Usability Testing Methodology

A mixed-methods approach was used to collect both quantitative and qualitative data.

Testing Methods

- **Task-Based Testing**- Learners completed specific course activities while their ability to navigate and complete tasks was observed.
- **Performance Testing**-Learner performance data, including quiz scores, task completion rates, and project completion rates, were collected.
- **Accessibility Testing**-Accessibility features such as captions, readable content, clear navigation, and multiple submission options were evaluated.
- **Attitudinal Testing**-Learner perceptions and satisfaction were measured through a post-course survey.

Usability Test Metrics

The evaluation was based on three primary usability dimensions.

Effectiveness

Measured by:

- Task completion rates
- Navigation success
- Quiz performance
- Final project completion
- Error frequency

Efficiency

Measured by:

- Time on task
- Ease of completing activities
- Number of attempts required

Satisfaction

Measured by:

- Learner feedback
- Engagement levels
- Confidence in completing the project
- Overall course satisfaction

Accessibility Evaluation Checklist

	Yes	No
Captions on videos	☒ Provided	☐
Clear navigation structure	☒ Provided	☐
Readable fonts and formatting	☐ Provided	☐
Alternative text provided when applicable	☐ Provided	☐
Multiple content formats available	☐ Provided	☐ ☐
Flexible submission options	☐ Provided	☐
Accessible support resources	☐ Provided	☐ ☐

Notes - Accessibility standards were generally met.

Learning Objective Validation

Learning Objective	Evidence Source	
Identify and classify natural resources	Module 1 activities, video watch time, readings	☒ Aligned
	Module 2 - Knowledge check answers and submission	☒ Aligned
Compare and contrast resource types	Module 1 Collaborative activity participation	☒ Aligned
	Module 2- Practice quiz formal score	☐ Needs Improvement
Create a real-world project	Final project submission and rubric evaluation	☐ Aligned
Notes		

- Learning objectives were adequately addressed.
- Assessment methods relied heavily on multiple-choice questions, indicating a need for more authentic performance-based assessments.

Course Success Criteria

The course was considered successful if:

- At least 80% of learners completed all required activities.
- Average quiz scores met or exceeded 80%.
- At least 80% of learners successfully completed the final project.
- Learners reported positive usability and satisfaction ratings.

Data Collection Sheet

Project: Natural Resources eLearning Module (Canvas LMS)

	Participants: Grade 6 students (targeted learners) No-10					
	Task Completion and Navigation					
	Module/Task	Navigation Success (yes/ no & %)	Content Errors (Spelling/Grammar)	Technical issue (links buttons etc.)	Time spend or Completion of task	Notes
Module 1	Warm-Up 1	Yes 100%	None	None	3 min	Completed successfully
	Topic Video& captions	Yes	None	None	8 mins	Positive Feed back
	Guided Readings Activity	90 %	None	None	10 mins	One learner skipped the section
	Collaborative Google Slides Activity	90%	None	Minor confusion accessing Slides	12 mins	Navigation support needed
Module 2	Warm up 2	100%	None	None	3 min	Reported inconsistencies in color usage compared to

						other modules
	Practice quiz	100 %	None	None	18 mins	Learners reported quiz felt lengthy
	Final Project Guideline	100%	None	None	6 mins	No issues reported
	Rough draft	70 %	None	None	10 mins	Learners expected feedback opportunity on their rough draft
Module 3	Warm up 3	100%	None	None	3 min	Reported inconsistencies in color usage compared to other modules
	Project work time	90%	None	None	25 mins	Additional guidance requested
	Rubric page	80 %	None	None	4 mins	Some learners had difficulty locating rubric
	Assessment policies page	85%	None	None	2 mins	Low engagement
	Help and support page	75 %	None	None	2 mins	Learners' overlooked the page
	Review Practice activities	100%	None	None	8 mins	Positive learner feedback find it useful.

Performance Data Collection (Average completion rate)						
	Metric	Average Completion rate	Notes			
1	Guided Reading Usage	90%	Most learners completed readings			
2	Collaborative Activity Participation	90%	High engagement overall			
3	Practice Quiz average score	84%	Content mastery demonstrated			
4	Rubric Access Rate	80%	Learners requested easier access			
5	Support Page Access Rate	75%	Support resources underutilized			
6	Final Project Completion Rate	90%	Strong completion rate			
7	Learners Requiring Additional Support	30%	Mostly related to technology and project expectations			

Learner Satisfaction Survey- This survey was given to learners at the end of the course modules to collect data over all satisfaction on course modules.

		Yes	No	Any thing Specific you to let us know about this task
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1.	Modules were easy to access and navigate	☐ 9	☐ 1	
2.	Warm-up activities helped activate prior knowledge.	☐ 10	☐ 0	
3.	The video was accessible and included captions.	☐ 10	☐ 0	
4.	The readings provided useful examples and support.	☐ 9	☐ 1	
5.	The collaborative activity helped me understand the content.	☐ 9	☐ 1	
6.	Instructions were clear and easy to follow.	☐ 8	☐ 2	
7.	The practice quiz prepared me for the final project.	☐ 7	☐ 3	
8.	The rubric was easy to locate and understand.	☐ 7	☐ 3	
9.	I felt confident completing the final project.	☐ 8	☐ 2	
10.	The course activities were engaging.	☐ 8	☐ 2	
11.	I would recommend this learning module to other students.	☐ 9	☐ 1	

Common Learner Feedback

- The practice quiz was longer than expected.
- More real-world and scenario-based activities were requested.

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| | <ul style="list-style-type: none">• Rubric and project expectations should be easier to locate.• Additional technology guidance would improve learner confidence.• Opportunity for rough draft feedback would help improve final project quality. |
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Reflection	
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Usability testing provided valuable insights into learner behavior, navigation patterns, engagement, and performance.	
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The data confirmed alignment between learning objectives, instructional activities, assessments, and learner outcomes. The testing process also identified opportunities to improve navigation, accessibility, and learner support, resulting in a more effective and learner-centered instructional experience.	
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