

Data management and verification of findings

I. Learning objectives
<ul style="list-style-type: none"> • To recognise improper data management • To explain the importance of complying with data management responsibilities
II. Target group(s)
<p>X Master's students</p> <p>X Doctoral students</p> <p>X Supervisors</p>
III. Determining a story
<p>Nick is an archaeology student who is involved in a CS project that collects and preserves artefacts. He is responsible for mentoring the citizen scientists during data collection and the provision of items for data validation. Accidentally, he finds out that some artefacts, such as pottery, were destroyed in the data collection stage, and due to the failure to ensure safe transportation to the museum, some pottery items were shattered. Therefore, concerns emerged about the accurate description of decoration techniques used in a certain century. Moreover, in view of the losses, the research team raises the question of who should take responsibility for them.</p> <p>Did Nick manage the data collection stage well?</p>
Answer options
<ol style="list-style-type: none"> 1. He did manage well, as the loss of the pottery items was not up to him. Now the research team must sort out who is responsible for what. 2. He should have made sure that the citizen scientists packed the pottery safely for transportation to prevent possible damage. 3. Although the research team was responsible for collecting the artefacts, since the artefacts had to be transported to the museum, the responsibility should be taken by the museum. 4. Nick was expected to instruct the citizen scientists beforehand about the rules of excavation and of artefact storage, loading, delivery, ownership, and associated responsibilities, and had to proceed with careful monitoring. 5. Nick is only a learner, and the research team should not expect him to instruct the citizen scientists beforehand about the rules of excavation and of artefact storage, loading, delivery, ownership, and associated responsibilities.
IV. Game design elements

Instructions	
Option A1 Topic-by-topic, individually	Option A2 Topic-by-topic with a facilitator (in-team)
<p>For learners:</p> <ul style="list-style-type: none"> familiarise yourself with the topic in the <i>Guidelines</i> (10 min), then read the corresponding vignette (5 min), choose one answer option (4 min), and access the score and the feedback (1 min). <p>Total duration: 20 min</p>	<p>For a facilitator:</p> <ul style="list-style-type: none"> inform learners of the time allocated to read the topic in the <i>Guidelines</i> (10 min; optional), then introduce the corresponding vignette (e.g., by reading) and the answer options (5 min), explain how the answer options should be understood and emphasize that only one answer option may be chosen (2 min), once the chosen answer options are reported, summarise the results and announce the right answer (10 min), present scores for all answer options and discuss the options using feedback (5 min), and actively moderate the discussion. <p>Total duration: 32 min</p>
Answer scores	
1. He did manage well, as the loss of the pottery items was not up to him. Now the research team must sort out who is responsible for what.	0
2. He should have made sure that the citizen scientists packed the pottery safely for transportation to prevent possible damage.	5
3. Although the research team was responsible for collecting the artefacts, since the artefacts had to be transported to the museum, the responsibility should be taken by the museum.	0
4. Nick was expected to instruct the citizen scientists beforehand about the rules of excavation and of artefact storage, loading, delivery, ownership, and associated responsibilities, and had to proceed with careful monitoring.	10
5. Nick is only a learner, and the research team should not expect him to instruct the citizen scientists beforehand about the rules of excavation and of artefact storage, loading, delivery, ownership, and associated responsibilities.	5
Feedback	
<p>The research team (including a student involved in a CS project) should provide appropriate training to citizen scientists on good record-keeping practices both before and throughout the research. The training should encompass all details relevant to the research. Also, the division of responsibilities should be made explicit given the diverse stakeholders involved (e.g., research team, museum, student, and citizen scientists) and the potential consequences of failure to meet these responsibilities should be explained. Such failure would impede the application of data validation methods.</p>	

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