Assessment

Brushing up on chemistry

Assessment criteria

The assessment of this Task can be based on a number of student assessment tools. First there is a list of questions (see Student's Sheet) from the original publication (in JCE) together with their answers (see Teacher's Sheet). The questions aim to test student's reporting ability and comprehension of issues related to the activity. Marking of the answers to these questions will contribute to the students' overall assessment in this task. Note that formative assessment is more appropriate for practical activities and group work, to the extent that summative assessment might be redundant.

The following tables provide criteria for further assessing the students' work. Table 1 provides criteria for assessing the pre-experimental group work. Table 2 relates to the presentation of each group. Table 3 focuses on the execution of the practical work. Finally, Table 4 assesses the attitudes of student toward this activity and chemistry in general. Information about the latter assessment could derive from anecdotal evidence collected by the teacher, by informal questioning/interviewing of students, or by written questionnaire that is distributed to the students at the end of the activity. Students can be asked to add their comments for improving the activity. Needless to comment that the proposed student assessment tools are mere suggestions. Teachers can include their own criteria for assessment.

Developers: Georgios Tsaparlis and Georgios Papaphotis
Institution: Department of Chemistry, University of Ioannina
Country: Greece

Table 1 – Criteria for assessing the pre-experimental group work.

Pre-experimental work	The group has responded successfully	The group has responded in part	The group has done limited work	The group did not produce any work

Table 2 – Criteria for assessing presentation by each group.

Use of Power-Point	Presentation was excellent	Presentation was adequate	Presentation was poor
Use of overhead	Presentation was excellent	Presentation was adequate	Presentation was poor
Overall assessment	Presentation was excellent	Presentation was adequate	Presentation was poor

Table 3 – Criteria for assessing execution of practical work. [1]

Setting-up and execution (manipulation)	Excellent	Adequate	Poor
Observational skills	Excellent	Adequate	Poor
Interpretation and evaluation	Excellent	Adequate	Poor

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[1] Kempa (1986) has considered that the following qualities should be taken into account in schemes for the assessment of practical abilities: (a) recognition and formulation of a problem (NOT APPLICABLE HERE); (b) design and planning of experimental procedures (NOT APPLICABLE); (c) setting-up and execution of experimental work (manipulation); (d) observational and measuring skills (including the recording of data and observations); (e) interpretation and evaluation of experimental data and observations.

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Table 4 – Criteria for assessing students' attitudes toward the performed activity and chemistry in general.

Students' opinion about the activity	High	Average	Low
The activity has contributed to increased knowledge and understanding of chemistry	Yes a lot	Yes a little	No
Arrange in order of interest the phases of the activity**	Pre-experimental work	Presentation	Execution of experiment
Arrange in order of usefulness the phases of the activity**	Pre-experimental work	Presentation	Execution of experiment
In comparison with traditional practical activities* the activity was	Much better	About the same	Worse
Has the activity improved their image of chemistry?	Yes, a lot	Yes, somehow	No

* Lab work or class demonstrations.

** From 1 (most interesting/useful), to 3 (least interesting/useful).

Bibliography

Kempa R. (1986). *Assessment in science* (Ch. 5). Cambridge: Cambridge University Press.

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