Appendix H: Observation Protocol Based on the National Science Education Standards

Characteristics From NSES Standards			Intent of Lesson							Success of Lesson						
	Traditional (Less Emphasis should be placed on:)	**Inquiry** (More emphasis should be placed on:)	**NA**	**Trad.**		**Mixed**		**Inq.**		**NA**	**Trad.**		**Mixed**		**Inq.**	
				0	**1**	**2**	**3**	**4**	**5**		**0**	**1**	**2**	**3**	**4**	**5**
1	Activities that demonstrate and verify science content	Activities that investigate and analyze science content.														
2	Investigations confined to one class period	Investigations over extended periods of time.														
3	Process skills out of context	Process skills in context														
4	Emphasis on individual process skills such as observation or inference.	Using multiple process skills – manipulation, cognitive, procedural.														
5	Focus on getting an answer	Focus on using evidence and strategies for developing or revising an explanation.														
6	Science as exploration and experiment	Science as argumentation and explanation.														
7	Providing answers to questions about science content.	Communicating science explanations.														
8																

	Individuals and groups of students analyzing and synthesizing data without defending a conclusion	Groups of students often analyzing and synthesizing data after defending conclusions.														
9	Doing few investigations in order to leave time to cover large amounts of content.	Doing more investigations in order to develop understanding, ability, values of inquiry and knowledge of science content.														
10	Concluding inquiries with the result of the experiment.	Applying the results of experiments to scientific arguments and explanations.														
11	Management of materials and equipment is a focus.	Management of ideas and explanations is a focus.														
12	Private communication of student ideas and conclusions to the teacher.	Public communication of student ideas and work to classmates.														
13	Treating all students alike and responding to the group as a whole.	Understanding and responding to individual student's interests, strengths, experiences, and needs.														
14	Rigidly following curriculum.	Selecting and adapting curriculum.														
15	Focusing on student acquisition of information.	Focusing on student understanding and use of scientific knowledge, ideas, and inquiry processes.														
16	Presenting scientific knowledge through lecture, text, and demonstration.	Guiding students in active and extensive scientific inquiry.														
17	Asking for recitation of acquired knowledge.	Providing opportunities for scientific discussion and debate														

		among students.														
18	Testing students for factual information at the end of unit or lesson	Continuously assessing student understanding.														
19	Teacher maintains responsibility and authority.	Sharing responsibility for learning with the students.														
20	Supporting competition among students.	Supporting a classroom community with cooperation, shared responsibility, and respect.														