Conducting Classroom Observation for the JiTT Project at IUPUI: Handout for Research Assistants

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Brief Overview of Just-in-Time Teaching (JiTT)

Just-in-Time Teaching (JiTT) is a teaching and learning strategy comprised of two elements: classroom activities that promote active learning and World Wide Web resources that are used to enhance the classroom component. In other words, JiTT is a strategy for improving student learning, retention, and attitudes through use of web assignments and an interactive classroom that fundamentally rely upon one another. The main instructional objectives for JiTT are as follows:

- Encourage frequent, short study sessions
- Connect textbook to the real world
- Encourage the development of critical thinking, estimation skills, and the ability to deal with ill-defined problems
- Develop cooperative work habits and communication skills

(Detailed information about Just-in-Time Teaching is available at the following Web site: http://webphysics.iupui.edu/jitt.html)

Classroom Observation of JiTT Classes

The purpose of classroom observation is to obtain a view of the climate, rapport, interaction, and functioning of the JiTT classes in the four disciplines of interest: Biology, Chemistry, Mathematics, and Physics. Help in understanding and ultimately in improving instruction can come from seeing just how events take place in the classes that employ JiTT strategies (Evertson & Holley, 1981). Through classroom observation, we hope to collect relevant information pertaining to the adequacy and effectiveness of JiTT strategies that facilitate interactivity, teamwork, or collaborative learning among students and faculty. More specifically, classroom observation can provide valuable information that should help us to address the following evaluation questions:

- To what extent are JiTT strategies helping students?
- Is the introduction of JiTT strategies changing pedagogy?
- In what ways can JiTT methods be significantly improved?

In the context of project assessment or evaluation, it is important that we determine whether Just-in-Time Teaching is being employed as prescribed by the developers of JiTT and whether the prescribed strategies are appropriate for the particular classrooms under investigation. Such information needs can be met through classroom observation (Evertson & Holley, 1981). However, it is important to note that classroom observation is only one, albeit a very important, source of relevant information for evaluating the WebScience/JiTT project and will be supplemented by other sources of information such as focus groups, surveys, and outcome measures.

Schedule of Classes (Fall 2000)

BIOLOGY:

BIOL N100 classes meet from 1:00-2:15 p.m. in room LE 101, and the preferred dates for observations are: Monday, October 16, Monday, October 23, and Monday, October 30.

BIOL540 classes meet from 5:45-7:00 p.m. in room LD 136, and the preferred dates of observations are: Thursday, October 19, Thursday, November 2, and Thursday, November 9.

CHEMISTRY:

CHEM C105 B105 meets on TR, 8:00-9:15 a.m. in LE 101, and
CHEM C105 B106 meets on TR, 5:45-7:00 p.m. in LE 100
Recitation meets Thursday, 8:10—9:50 p.m., and Friday, 8:00-9:50 a.m.

MATHEMATICS:

MATH 164 classes meet on MTWR, 11:00 a.m. — 12:10 p.m. in LD 136
MATH S118 classes meet on MW, 9:30-10:45 a.m. in SL 137

PHYSICS:

PHYS 152
Lecture meets MW 10:00-11:00 a.m. in LD 010
Recitation meets TR 10:00-11:00 a.m. in LD 010

PHYS 251
Lecture meets MWF 11:00 a.m. - 12:00 p.m. in LD 010
Recitation meets TR 11:30 a.m. - 12:30 p.m. in LD 010

Procedure: Using the structured observation forms provided in the Appendix, three observers will observe each JiTT class in session (lecture and recitation, where applicable) on two separate occasions for approximately 30 minutes per observation. The classroom observations should be conducted and completed during a 3-week period, preferably beginning the week of October 16, 2000.

Quality of Informal Observation of Classroom Activities

For results of informal observations to be useful, we must be especially concerned about the quality of the information we will collect. Poor quality information will lower the validity of interpretations and uses of the data collected. Therefore, each observer should guard against the following threats to the validity and reliability of information gathered through informal observations:

- bias on the part of the observer reporting the information (e.g., over-reliance on first impressions)

- incorrect judgments about student characteristics
- inadequate sampling of classroom activities to support the generalization about students (e.g., making a decision about a student from one incident)

As a *complete observer*, your role will be to observe and record the activities that go on in the lecture or recitation. Therefore, you should familiarize yourself with the items on the observation forms so that information relevant to each item can be gathered during the observation. The two ingredients for successful observation are: (1) a systematic approach and (2) reliable and valid instruments. For the present study, a systematic approach is characterized by a careful focus on the items of interest, as depicted in the instruments that were jointly developed by the evaluators and participating instructors. (Refer to the attached instruments in Appendix A for the specific behaviors to look for during each classroom observation.) Content validity of the instruments was assessed via professional judgment of the evaluators and instructors.

Also, note that as part of training, you will be required to participate in some practice observation sessions using the attached forms. Our goal is that all observers must be trained to see the classroom in terms of the instrument. Training with using the observation instruments should be helpful in ensuring that each observer enters the classroom with a careful, well-defined sense of what to look for; which should enhance reliability of data. Otherwise, lack of adequate training is likely to result in our getting a confused representation of the classroom. By using three well-trained observers, we should be able to assess the reliability of the instruments via inter-rater correlations.

As the classroom observation will be essentially *overt*, both the instructor and students will be informed about your participation. It is important that each observer must maintain good human relations with the respective instructors so as to ensure (1) that the entire process is conducted unobtrusively as possible and with little disruption of the normal routine as possible, and (2) that good communication is maintained throughout the evaluation process (Evertson & Holley, p. 93).

The present study will employ two systems of observation namely, *rating* and *narrative* approaches. The rating system will be used to assess the degree and frequencies of classroom events, as specified in the rating scales provided in Appendix A. In contrast to rating systems, the narrative approach will give you an opportunity to simply describe in more or less ordinary terms what happens in the classroom. More specifically, during the observation, you should take brief notes which will be used to answer the four open-ended questions on the instructional observation form. Note that the questions are designed to address each one of the four standards: motivation, interpersonal skills, knowledge base, and application of knowledge base. The four questions, and information from the pre-conference with the instructors will be helpful in providing a frame for conducting the classroom observation. As an observer, you will be asked to provide your own reflective or narrative comments about the class you observe (refer to question #4 on the instructional observation form). See Appendix B for examples of written classroom observation reports that should help you think about the differences in instructional quality and effectiveness, and how to write your response to question #4 on the form. (Note: The principal evaluators will be responsible for coding or categorization of data and analysis of classroom observation data.)

Suggested Timeline of Activities

Week	Activity
9/25/2000-10/2/2000	Prepare Training Material for Observers
10/2/00	Recruit and Hire 3 Research Assistants
10/2/2000	Training of Observers
10/9/2000	Practice with Using Observation Instruments
10/16/2000	Finalize Schedules of Classroom Observation
10/23/2000—11/13/2000	Conduct Classroom Observation

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