Just- in-time teaching: Communicating and learning

Pauline Baird
Kanazawa Institute of Technology

Reference Data
Baird, P. (2007). Just- in-time teaching: Communicating and learning
In K. Bradford-Watts (Ed.), *JALT2006 Conference Proceedings*. Tokyo: JALT.

For many teachers, what students know or don't know becomes evident only after tests. The Just-In-Time Teaching (JITT) feedback strategy helps students studying English to identify areas of difficulty and to communicate their needs early and clearly through warm-up exercises and knowledge surveys. As a result, teachers and students maximize teaching–learning opportunities. This paper presents research showing how JITT without the Web promotes inquiry, self-confidence, and engaging language learning experiences.

多くの教師は試験をして初めて学習者の理解度を把握する。だが、ジャストインタイム教授フィードバック法ではウォームアップ練習と知識調査で学習者の苦手分野やニーズを早期に、明確に把握できる。結果、最大限に効果的な授業が可能となる。本論ではインターネットを利用しない上記手法での学習効果向上の様子を紹介する。

If, as Tim Murphey (2006) says, "Teachers work too hard and guess too much about what they should teach," then learners work hard and guess about what they should learn as well. Quite often, a few days before tests students ask, "What should I study?" So, many teachers provide study guides with answer keys, from which students cram. Nuhfer and Knipp (2003) suggest that one reason few students ever seek help well before tests is because they are often "unaware of what they do not know or understand." Opportunities for students to assess their knowledge and communicate their own needs in time for those needs to be addressed are crucial to successful learning and teaching (Wirth & Perkins, 2005). By employing certain communication strategies, teachers can help students become aware of their needs throughout the course, and the students can then become active learners who find ways of addressing their own needs and become successful learners (Garvin, 2003).

The communication strategies of Just-In-Time Teaching (JITT) offers many benefits for teaching and learning in science disciplines when using Web based exercises (Novak et. al., 1999); as such, the author of this paper wanted to use its strategies to help students communicate for the learning of English grammar. However, not having the Web tools available, my primary research question was, "Can a teacher adapt JITT to enhance communication for the learning of English grammar?" This paper shows how the author adapted JITT, by applying its warm-up component without the Web, and incorporating the Knowledge Survey (KS) (Nuhfer & Knipp, 2003), to help students communicate for learning, thereby, fostering their awareness, confidence, and autonomy in English language learning.

Background and reasons for using JITT

JITT is a rapid-response teaching strategy, developed by Gregor Novak, Andrew Gavrin, Wolfgang Christian and Evelyn Patterson, after more than 30 years of experimentation by Novak, using the Web to link in-class and out-of-class work (Rozycki, 1991). In JITT, students submit electronic responses to assignments teachers post on the Web. Each assignment focuses on an up-coming lesson for which students receive no formal instruction by the teacher. As students preview and prepare, they warm-up before class, taking full advantage of learning actively and independently (Patterson, n.d; Novak et.al., 1999). Also, because students engage in learning outside of class, they come to class to reinforce or clarify ideas (Gavrin, 1999). More importantly, students receive teachers' responses immediately because of the prompt *feed back loop* principle which defines JITT. Then, teachers adjust the up-coming lesson, aiming to reinforce, clarify or instruct, based on students' answers to the assignments *just in time* for the responses to be meaningful for students. (Novak et.al., 1999).

JITT offers many benefits for teaching and learning in science disciplines that can be garnered in language teaching. In his article "What is Just in Time teaching?" Novak states that JITT has four main objectives. Firstly, it aims to optimize learning in and out of class. Secondly, it structures "out-of-class time for maximum learning benefit." Thirdly, it seeks to "create and sustain team spirit" among teachers and learners as they work toward the objectives of the course. Finally, it endeavors to help all students pass the course with the "maximum amount of retainable knowledge" (Novak, 1999).

However, can JITT be adapted at all? Novak (n.d), acknowledges that JITT can be adapted for personal preferences and subject areas because of its flexibility. Its popularity with more than 300 faculties of 25 disciplines in about 100 institutions in North America and Israel proves that it is adaptable to various fields, including English language studies. JITT's writing and response style, when used in teaching English, helps create the *need-to-know* in students that teachers require for presenting materials that students are ready to learn (Sands, 2002).

Thus, in an English course taught in the summer of 2006, 31 students learned grammar using JITT strategies without the Web. The students comprised two classes of freshmen who were engineering majors at a technical university in Japan. The students studied for four weeks, twice weekly, for two hours. They had previously studied English during high

school and junior high school for an average of 6-8 years and were considered false beginners. Two of the students had had only 4 years of English language study because they had attended vocational schools where they did not study English. This study can be viewed as an experiment with JITT without the Web; however, because the classes were so small and students studied English before, it raises questions about its effectiveness in large classes, and with students with less previous knowledge.

Using warm-ups without the Web

Procedure

First, students were given a warm–up exercise, worth 7 class participation points, on the first day of class. Students examined the target grammar and practiced its usage before the up-coming class (Figure 1). They turned it in on the Saturday before the Monday class at the teacher's office because it required more time for the teacher to read all the warm-ups. While this exercise showed that many students could use the *be* verb, it also showed that they needed to focus on accuracy in spelling, vocabulary, and forming negatives. Class participation points were given when the assignment was at least 90% complete and when students responded by the deadline (Marrs et.al., 2003). Second, after reading, the teacher selected some good samples of students' answers and some with minor errors to highlight grammar points (Gavrin, 2003).

Third, while teaching, the teacher wrote pre-selected samples of student's responses on the white board as focused examples. Also, students corrected mistakes on a peer activity sheet, prepared by the teacher (Figure 2). It included a student's error-free answer (Figure 2①) and three other student's answers marked X which contained errors. The students read the error-free sample then covered it. After that, for 3 minutes they corrected all other mistakes on the sheet. Students took the worksheet home to review for a quiz. When students saw their own answers they paid particularly close attention. Also, students showed each other how to find and correct mistakes.

Warm – Up #1	(Due Saturday 12:00 PM) / 7 points
Please introduce yourself to your teacher. Write 7 sentences. (see KS #1)	
Include (name? age? nationality? country? interests? favorites?	

Figure 1. The first warm–up assignment.

Over time, when students got used to the warm–ups and to sharing, the class became more like a dynamic workshop rather than a teacher-centered lecture.

The knowledge survey and its role in JITT

Since warm-ups are for up-coming lessons, the author believed that students may not see the entire course objectives clearly and still expect a test study guide with an answer key. As such, the author incorporated a Knowledge Survey (KS). The KS is a self-monitoring tool, developed by Edward Nufer, to help propel students toward reflection and independence when learning. Also, it makes students become aware of their learning progress. Because the KS is used at the beginning and end of the course to determine students' needs and gains (Nuhfer, 1996; Nuhfer & Knipp, 2003),

Figure 2. A peer worksheet based on students answers for the warm-up activity.

teachers can get data concerning students' needs "just in time." As a result, teachers use the data to make adjustments to lessons, to increase or decrease the pace, or organize tutoring sessions.

The KS is easy to make and use. It involves compiling a list of review questions, organized in the order of the syllabus. The questions cover the entire course. Students must read the questions and indicate their confidence to perform the objectives of the course as reflected in each question. However, students are not required to answer the questions (Nufer & Knipp, 2003). They simply mark their responses on the mark sheet. The KS is beneficial because it allows teachers to organize and disclose the content and performance objectives of the course to the students, at the very beginning of the course. More importantly, teachers are ready from the inception of the course and are more just twenty four hours head in their planning and preparation. In this research, the KS was regarded as a pre-class warm-up tool and a pre–test or self check tool.

Creating and using the knowledge survey in JITT without the Web

Procedure

First, the teacher modified the old test review questions to vary the demands based on cognitive domains categorized in Blooms taxonomy as needed (Bloom, 1956). In this study, some old questions were changed to include writing, describing and discriminating between usages of grammar. Modifying old review questions in keeping with Bloom's taxonomy ensures a variety of question types and levels to

reflect the course objectives (Nuhfer & Knipp, 2003). Also, modifications ensured that the items "cover[ed] the length and breadth of content and levels of inquiry" to help students master the material (Wirth & Perkins, n.d., p. 1).

Next, the teacher selected 30 questions from each half of the course so as not to overwhelm students and to fit the capacity of the mark sheet. Nevertheless, the questions reflected a realistic overview of the performance objectives of the course (Wirth and Perkins, n.d.). Then, the questions were arranged in order of the syllabus. Figure 3 shows an example of 11 questions included in the KS for the first half of the course.

Sequencing the survey not only helped students and the teacher keep abreast of the syllabus, but also allowed the teacher to keep the course objectives in focus and relay them to the students. Consequently, students were able to preview the course and be put on notice about the course's demands, in a timely manner. Openness addresses students' complaints that instruction is sometimes given at one level but testing at a more challenging one. So, with this survey, students could see the teacher's plan and find and fill gaps in their own learning (Nuhfer, 2005). Furthermore, students could use the KS as a study guide and a post-course survey to determine if they met the course objectives (Nuhfer & Knipp, 2003). Five teachers teaching other sections of the same course, but not practicing JITT, made various parts of the tests. Of the 60 questions on the survey, 10 were the same as the KS on each section of the tests. Others were similar in format only. So, students were comfortable with the style of the tests.

Next, a letter of the purpose of the survey was prepared, in Japanese, to ensure comprehension and to provide instructions on how students should respond (Appendix 1). It invited students to describe their confidence in their ability to answer each question using a rubric modeled on Nuhfer's descriptors, A= "I could answer this," B= "I could find the answer to this in ten minutes," C= "I could not answer this," (Bowers, et. al, 2005; Nuhfer, 2005). However, based on a trial practice with students in the spring of 2006, the rubric was modified to A= "I can teach this to my classmate." / "I can do this on a test". B= "I have seen this before." / "I can do this on a test after I study." C= "I don't know this."/ "I need help." This modified rubric guided students to adopt the attitudes of sharing with each other, seeking information, and displaying confidence. Also, the rubrics gave students a language with which to communicate their confidence and needs in ways that were meaningful to them. In practicing self-assessments students develop independent thinking that is necessary for life-long learning (Wirth & Perkins, n.d.; Fink, 2003).

In the next step the KS and mark sheet were given to each student on the first day of class with a deadline for submission. It is important to set a deadline for its submission as well as explain the instructions and invite questions. When students understand what to do, they can appreciate the survey (Erdle & Murray, 1986). Afterwards, the teacher collected the data for each student, by using a mark sheet machine. The teacher utilized the information to plan subsequent lessons. For example, on the appropriate day, 2 or 3 KS questions were used as focus questions. Students worked in pairs to answer them in the first 3-5 minutes of each class as a review. Constant reference to the survey (Nufer & Knipp, 2003) and the subsequent warm-up

activities, give students a road map to navigate the course (Bowers, et. al. 2005). In addition, students who indicated a lot of *Cs* on the survey received direct instruction in the teacher's office, well ahead of that grammar lesson and at a time when they saw their need to know. Whenever possible, the teacher gave students a chance to find information for themselves. As a result, students started to work ahead, showing their eagerness to get started.

Finally, the same KS is given again on the day before the test review class. Responses are shown in figures 4, 5, 6.

Units	**Knowledge Survey**: ONLY mark A, B or C on your mark sheet **A**= I can teach this to my classmate / I can do this on a test. **B**= I have seen this before / I can do this on a test after I study. **C**= I don't know this. I need help.
Unit 1-2 Is/ am/ are	1. Write 7 sentences to introduce yourself to the teacher. E.g. (name? from? Nationality? age? interested in? hobbies?)
Units 3 Adverbs /Simple Present Tense	2. Write 5 sentences about your habits (use usually, often, sometimes, always, never)
Unit 4	Simple Present or Present Continuous? Choose the best answer. 3. It's a nice day today. The sun _____. *is shining/ shines/ not shine / don't shining* 4. The earth _____ around the sun. *going / go/ goes/ is go*
Unit 11-12	Past Tense/regular and irregular verbs: Write the correct form–positive, negative, or question. 5. We went to the movies, but the film wasn't very good. We _____ it. (enjoy) 6. Tim _____ some new clothes yesterday (buy) 7.A: I cut my hand this morning. B "How _____ that? (do)
Unit 26-27	8: Write about your activities and plans. (Use Be going/be going to/ will) What are you doing now? _____. What are you doing tomorrow? _____. What are you doing after KIT (graduation)? _____. What will you probably do after you get a job? _____.
Unit 38	9. Describe your hometown to your classmate. (Use it's + adjective; there is/isn't; there are/aren't) Classmate: What's your hometown like? You: It's ……
Unit 48	Making and using WH- questions: + prepositions. Write the question. 10. Tom's father is in the hospital. _____? (hospital / which / in / is / he) 11. Did you have a good vacation? _____? (what / was / like / the / weather)

Figure 3. A sample of 11 questions on the knowledge survey.

Knowledge survey results

The graphs below illustrate students responses to 11 questions on the above sample KS. They show how the teacher identified areas of need and what to teach *just-in-time*.

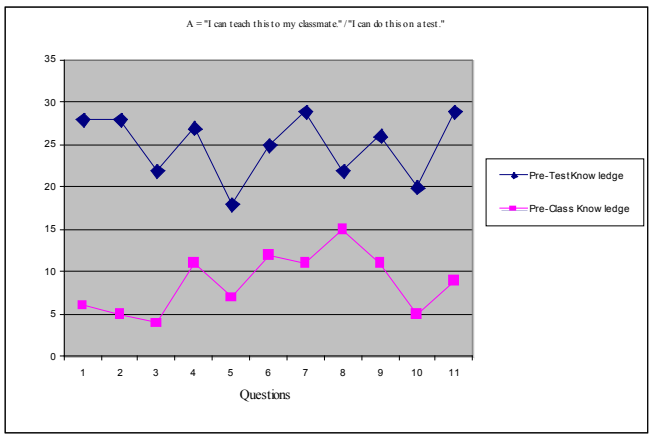

Figure 4. Response "A" from 31 students to 11 questions on the pre-class and pre-test KS.

The results in figure 4 show that for the response A, the number of students who were confident they could teach a classmate or do 11 items on a test, is significantly higher at the pre-test time than at the pre-class time.

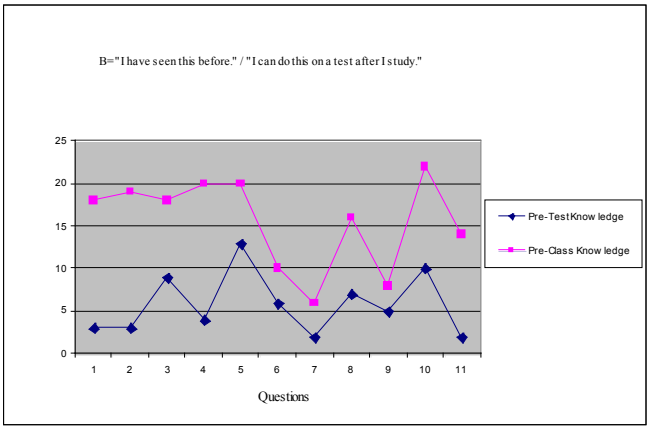

Figure 5. Response "B" from 31 students to 11 questions on the pre-class and pre-test KS.

In figure 5, the B responses, indicating students'need to study more, decreased significantly. The teacher used the results to review the specific grammar points *just in time*.

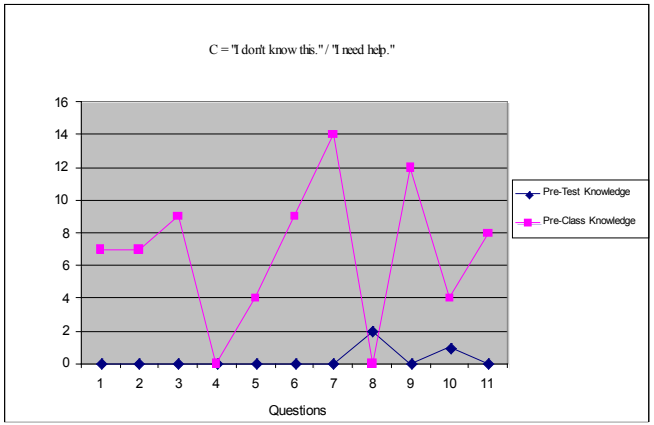

Figure 6. Response "C" from 31 students to 11 questions on the pre-class and pre-test KS.

Figure 6, shows significant decrease in response C, indicating that students did not know the item and needed help. On item 8, whereas no student needed help at the pre-class time, two students indicated that they needed help at the pre-test time. This was good to know in order to help students at a time when it mattered most.

Observations and recommendations

JITT classroom is dynamic. However, creating the JITT environment required time, for selecting and modifying KS questions that were suitable for course objectives. Time spent preparing the KS was worthwhile because after the students completed the surveys, the teacher got information about every student's ability. As the course progressed the teacher was able to create JITT assignments to help students to learn "just in time".

Without the Web, JITT is slower and requires more time for students to submit assignments. It was easier for students to submit assignments at the beginning of each class rather than bringing them to the office. However, because JITT was practiced everyday, the teacher had to make a lot of copies and had to allow time to distribute and collect papers at the beginning and end of every class. Giving JITT assignments only once a week, would reduce incidences of confusion and conserve time. Also, displaying student answers on the whiteboard or overhead projectors will alleviate the burden of making large amounts of copies, and reduce reading time. More research is needed to find other ways to practice JITT warm-ups with more JITT speaking activities.

Since this research, the author has tried a JITT warm–up game for reading in which students read an assignment at home. Then, they prepare an exercise to be used in class. For example, students write one false statement for the next reading class. In class, a student chosen at random corrects that statement. This activity seemed to make students focus on vocabulary and meaning a lot more than usual.

Nevertheless, this study found that JITT without the Web enhances both the teacher-student, and student-student conversation about what they are learning (Astin, 1993). The teacher and students see their needs. As a result, the learners make use of teachable moments because students are alert to what they need to know. Some students started to teach each other. So, the teacher had to slow down the pace of the class to accommodate the spontaneous teaching moments.

Students worked ahead and asked questions to fill gaps in their own knowledge, having awareness of what they did not understand. This behavior is described as students' transitions to active learning (Wirth & Perkins, n.d.). Students saw that the teacher responded to them immediately, so they participated both in and out of class.

JITT certainly creates and sustains team spirit among teachers and students. In the office hour sessions, done in groups of three, the teacher learned some student talk that was helpful in understanding how to explain concepts in ways students understood. In taking responsibility for their learning, some students came to the office to check to see if they were doing the warm up correctly. Others noted their errors and made corrections in a dedicated notebook. Some students took the initiative to check the textbook (Murphy & Smalzar, 2002) to get information to increase their understanding. Also, since the KS had the units written on it, students actually answered the questions on the survey even though they were not required to.

Some teachers in Japan who practice JITT collect written responses to the course and assignments from students' notebooks then use some of those responses in newsletters to students (Edwards, et.al., 2006). One colleague, who tried the warm–ups for the one semester, found that it made her better prepared and without it, the feedback rhythm was broken. Also, her students expected it and asked for it.

JITT without the Web works in small classes. Its effectiveness has implications for use in large classes. The KS remains an invaluable tool for pinpointing the needs of students who might otherwise not get noticed easily.

An End-of-Course Questionnaire (Office of Education Reform, 2004) shows students' reflections on the course. On the last day of class, students completed the questionnaire. An assigned student returned the questionnaire (Appendix 2) to the Office of Educational Reform where the students' responses were collated and made available to the teacher on the school's database one semester later (Figure 7).

In figure 7, B and C show that about 90% of the students understood the objectives of the course, and took the course in earnest, trying to understand the course content. D indicates that approximately 76 % of the students spent at least one hour preparing and reviewing for the course. E asked about the effectiveness of supplementary material and assignments (KS and Warm-up) and approximately 90% responded favorably. Item F indicates all agreed that assignments helped them understand the content of the course. G shows that 92% said the class content matched the content on the syllabus. As students engaged in learning, the teacher had to slow down for them to teach each other and ask questions. So, when asked in item H, if the pace of the course was appropriate, 90% said *yes*. Item I shows that 55% of the students found office hour tutorials useful, and 45% did not. There seems to be an inaccuracy in students' responses or an error in data compilation because all the students did not attend office hours. Item A indicated that although 64% of the students were initially interested in the course, approximately 90% (K) left the class feeling satisfied.

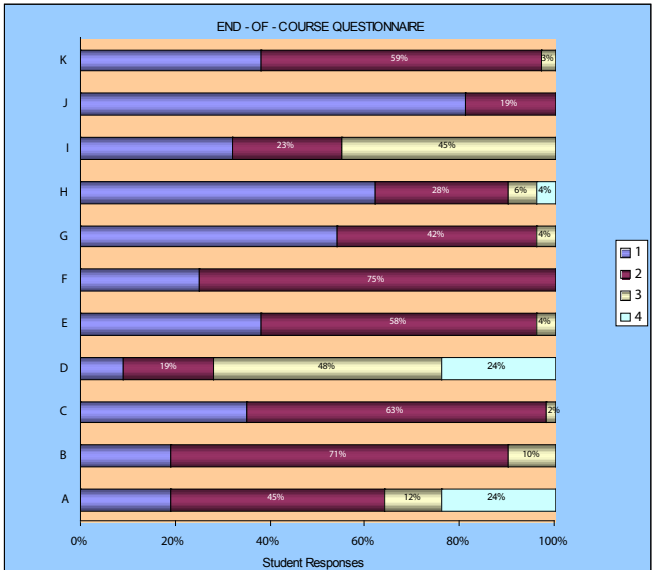

Figure 7. End-of-Course Questionnaire.

Conclusion

Mostly, teachers initiate the process of learning, but students can take initiative to gain control of when and how they learn, too. JITT students should be further encouraged to create their own banks of items they need to learn *just in time*; thereby, taking responsibility for their own learning.

Pauline Baird has been teaching in Japan for five years and is currently an Assistant Professor at Kanazawa Institute of Technology. She has taught English in Palau for several years. Her interests include classroom inquiry, learner development and teacher education. She can be contacted at <paulinefbaird@hotmail.com>.

References

Astin, A. (1993). *What Matters in College? Four critical years revisited.* San Franscico, CA: Jossey-Bass Publishers.

Bloom, B. S. (1956). *Taxonomy of Educational Objectives- The Classification of Educational Goals*. *Handbook I. - Cognitive Domain*. New York, NY: David McKay.

Bowers, N. (2005). Maureen Brandon and Cynthia D Hill. The Use of a Knowledge Survey as an Indicator of Student Learning in an Introductory Biology Course. *Cell Biology Education*. Vol. 4, 311-322, Winter 2005. Retrieved November 10, 2006, from <http://www.pubmedcentral.nih.gov/botrender.fcgi?blobtype=html&artid=1305893>

Edwards, J., Mehring, J., & Murphey, T. (2006). Exploring JiTT: Just-in-Time-Teaching. *The Language Teacher*, 30 (11), 12.

Erdle, S., & Murray, H.G. (1986). Interfaculty differences in classroom teaching behavior and their relationship to student instructional ratings. *Research in Higher Education*, 24 (2), p.15-127.

Fink, L. D. (2003). *Creating Significant learning Experiences: An Integrated Approach to Designing College Courses*: Jossey-Bass. p. 295.

Gavrin, A. (1999). *JiTT Learning Goals*. Retrieved June 3, 2006, from <http://Webphysics.iupui.edu/jitt/goals.html>

Gavrin, A., Watt., J. X., Marrs., K. A. & Blake., R. E. (2003) Just-in-Time Teaching(JiTT): Using the Web to Enhance Classroom Learning. *Computers in Education Journal*, Vol. XIV (2). Retrieved November 13, 2006, from <http://Webphysics.iupui.edu/papers/asee_paper.pdf>

Marrs, K. A., Blake, R E., & Gavrin, A. (2003). "Web-Based Warm Up Exercises in Just-in-Time Teaching." *Journal of College Science Teaching*, v. 33, n. 1, p. 42-47.

Retrieved November 10, 2006, from <http://serc.carleton.edu/introgeo/justintime/assess.html>

Murphy, R. & Smalzer, W. R. (2002). *Basic Grammar in Use.* Cambridge: Cambridge University Press.

Murphey, T. (2005). *Just in Time Teaching (JiTT) and Knowing What Students Need*. HPU Brown Bag Lunch presentation . Thursday August 4.

Office of Educational Reform Suishinka (2004). *End-of-Course Questionnaire*. Kanazawa Institute of Technology, Summer 2006.

Novak, G., Evelyn, P., Gavrin, A. & Wolfgang, C. (1999*). Just-in-Time Teaching: Blending Active Learning with Web Technology*. NJ: Prentice Hall: Upper Saddle River.

Novak, G. (1999). *What is Just in Time Teaching?* Retrieved July 8, 2006, from <http://134.68.135.1/jitt/what.html?>

Novak, G. (n.d). *JiTT Impact and Citations*. Retrieved June 3, 2006, from <http://Webphysics.iupui.edu/jitt/impact.html>

Nuhfer, E. (2005). *Knowledge Surveys*. From a Knowledge Survey Workshop presented at Honolulu Community College on August 19 and 20, 2005. Retrieved November 14, 2006, from <http://honolulu.hawaii.edu/intranet/committees/FacDevCom/guidebk/teachtip/knowlssurvey.htm>

Nuhfer, E., & Knipp, D. (2003). The Knowledge Survey: A Tool for All Reasons. The United States Air Force Academy. *To Improve the Academy*, 21, p. 59-78. Retrieved June 3, 2006, from <www.knowledgesurveyor.und.edu/includes/nuhfer_knipp_2003.pdf>

Nuhfer, E. (1996). The place for formative evaluations in assessments and ways to reap their benefits: *Journal of Geoscience Education.* 44, p. 385-394.

Patterson, E. (n.d.). *Using the Web for Physics Teaching and Learning: "Just-in-Time Teaching (JiTT)*. Retrieved November 8, 2006, from <http://pen.physik.uni-kl.de/w_jodl/MPTL/MPTL5/mmp/contribution/patterson.html>

Rozycki, W. (1999). Just In Time Teaching. *Indiana University. Research and Creative Activity*. XXII (1). Retrieved June 3, 2006, from <www.indiana.edu/~rcapub/v22n1/p08.html>

Sands, P. (2002). Strategies for Connecting Online and Face-to-Face Instruction in Hybrid Courses. *Teaching with Technology Today*, 8 (6). Retrieved November 14, 2006, from <http://www.uwsa.edu/ttt/articles/sands2.html>

Wirth, K., & Perkins, D. (n.d.). *Knowledge Surveys: An Indispensable Course Design Tool: Innovations in the Scholarship of Teaching and Learning*. Retrieved March 26, 2007, from http://hawaii.hawaii.edu/assessment/Resources/Knowledge%20Surveys-An%20Indispensable%20Course%20Design%20&%20Assessment%20Tool.pdf

Appendix 1

Dear student,

This is a Knowledge Survey (KS). Please read all the questions and mark your response on the mark sheet. You do not have to tell me the answer.

Mark ONLY

A = I can teach this to my classmate / I can do this on a test.

B = I have seen this before / I can do this on a test after I study.

C = I don't know this; I need help in studying it.

Please give an honest answer. This will help me to teach you better. You will get 1 point for each response. No responses = zero. This KS is also your study guide for the test. You will do this KS 2 times.

Appendix 2

End-of-Course Questionnaire

A. Were you interested in this course before you took it?

1. Yes, very. 2. Yes. 3. Yes, somewhat. 4. No, not very. 5. No.

B. Did you understand the outline and objectives of the course after having the syllabus and requirements explained to you in the first class session?

1. Yes, very. 2. Yes. 3. Yes, somewhat. 4. No, not very. 5. No.

C. Did you take the course in earnest and make every effort to understand the course content?

1. Yes, very. 2. Yes. 3. Yes, somewhat. 4. No, not very. 5. No.

D. How long did you study for each class session?

1. Over 2 hours. 2. 1 to 2 hours. 3. About 1 hour. 4. About 30 minutes. 5. Didn't study.

E. Did the supplementary materials effectively help you understand the course content?

1. Yes, very well. 2. Yes. 3. No, not very well. 4. There was no supplementary material. (KS or Warm ups)

F. Did the assignments help you to understand the course content?

1. Yes, very much. 2. Yes. 3. No, not very much. 4. There were no assignments.

G. Did the course content match what was stated in the syllabus?

1. Yes, very. 2. Yes. 3. Yes, somewhat. 4. No, not very. 5. No.

H. Was the pace of the course appropriate?

1. Yes. 2. Yes, more or less. 3. The pace was too fast. 4. The pace was too slow.

I. Did office-hour consultation and other individual tutoring help you understand the course content?

1. Yes. 2. Yes, somewhat. 3. No, not very. 4. No 5. Didn't make use of office hours.

J. In class and in individual tutoring, did the teacher seem enthusiastic and genuinely interested in teaching?

1. Yes, very. 2. Yes. 3. Yes, somewhat. 4. No, not very. 5. No.

K. Having completed the course, are you satisfied with it?

1. Yes, very. 2. Yes. 3. Yes, somewhat. 4. No, not very. 5. No.