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A Hybrid Approach to Case Teaching

Abstract

We structure case based teaching using a combination of computer-support technology and in-class activities. We create and design an on-line learning tool, Case Study On-line (CSOL) that enables instructor to structure the delivery of teaching resources and set up assignment tasks in the system. The tool enables tasks to be set in a way that they can be completed sequentially, and learning resources can be accessed only when required by students. Upon submission of their assignments, students can promptly receive instructor's explanations to the tasks. Follow up activities take place in class, with the objective to promote active learning. The tool was adopted over two semesters in an undergraduate economics course and surveys were conducted among the students to evaluate the effectiveness of the tool. The results of the survey were very positive, providing support to our belief that a system of well-designed case teaching delivery tool, together with classroom activities, is able to increase the level of students' engagement and interest. The paper helps to address some concerns about teaching methods in undergraduate economics courses.

Key words: Technologies-based Instruction, In-class Activities, Scaffolding, Active-based Learning

Introduction

In recent years, some concerns have been raised about the teaching methods in Undergraduate Economic Courses. First is the lack of active learning-based teaching methods. Studies have shown that the typical economics instructor spends nearly 80% of class time lecturing with little emphasis on collaborative learning projects, small-group discussions or other active learning teaching pedagogies (Becker and Watts 1995; Siegfried, Saunders, Stinar and Zhang 1996; Benzing and Christ 1997, and Becker 1997). Given that research has pointed to better retention, thinking and motivational effects when students are more actively taking part their learning (McKeachie 1997), the lack of active learning techniques is a valid concern. A second concern is that minimal attention is given to training students to acquire the skills and expertise to apply theories and models to real events. Papers have been written to explain that when students find that they cannot apply the economic theories they are taught to real life situations, they will not appreciate the value of economic analysis (Strober, Cook and Fuller 1997; Becker 2000). Finally, it has also been noted that teaching practices in Economics has lagged behind other disciplines in implementing technology-based instructional innovations (Katz and Becker 1999).

In response to these concerns, we propose a hybrid system that comprises of an on-line learning component followed by in-class activities. To address the lack of technology based instructional innovations, we adopt some internet / web-based tools in a computer support software. We develop the software and name it Case Study On-Line (or, CSOL). We design learning activities in the application tool with the purpose of getting students

to be more active in their learning process. We explain in the next section the web-based tools in the CSOL software and how these features support active learning. To address the concern that minimal attention is given to training students to apply theories and models to real events, we advocate the use of case studies. Other advantages of doing case teachings is that it provide instructors with a way of beginning the class discussion by referring to a real life event that is familiar to most students. When instructors show students how they can relate economic theories to real world events, the students will appreciate the value of economic analysis more and stay engage during lessons.

We test the system in an introductory Economics course in a medium-size management university. In one teaching session, we refer to the case study of the Asian financial crises of 1997 to teach open macroeconomics concepts, such as balance of payments, fixed and flexible exchange rate regimes and currency crisis. Assignment exercises are constructed in the system. Students submit their work electronically in the system for instructors to review prior to class. Follow up activities take place in class which comprises of small-group work, discussions and interactive seminars.

Pedagogical Features in CSOL

The section explains the pedagogical ideas behind the CSOL tool. Our explanation focuses on the scaffolding role of technology. Scaffolding can be achieved in multiple ways, including prompts, hints, comments, explanations, questions, examples and suggestions. The common feature is that the instructor provides the learner with support or assistance necessary to complete a task that would not have been completed well without help. In the literature, the notion of scaffolding students to move from a current state of competency to a more advanced level has been recognized some four decades ago in Vygotsky (1962).

We explain the features of CSOL first, because an understanding of the features will help the reader see the basic structure of the CSOL pedagogy.

CSOL is a server based application software originally developed in year 2003. It consists of an administrative interface for the instructor to post textual information, video files and assignment tasks. It also consists of a user interface for students to access their class assignments and post their comments and responses to the assignments. Once the student launches the software, the screen shows a frame with four tabs, labeled “Introduction”, “Read Me”, “Interactive”, and “Resources” (Figure 1).



Figure 1: There are four tabs in CSOL.

The tabs are sequenced in a manner that moves the student through a process of learning activities. First, clicking on the "Introduction" tab brings the student to a page that provides a brief synopsis of the case study (Figure 2).



Figure 2: The Introduction page contains a brief synopsis of the case study.

Second, clicking on the “Read Me” tab brings the student to a page that specifies the learning objectives and instructs on procedural matters. Third, the student accesses the case study and assignment by clicking on the “Interactive” tab (Figure 3).

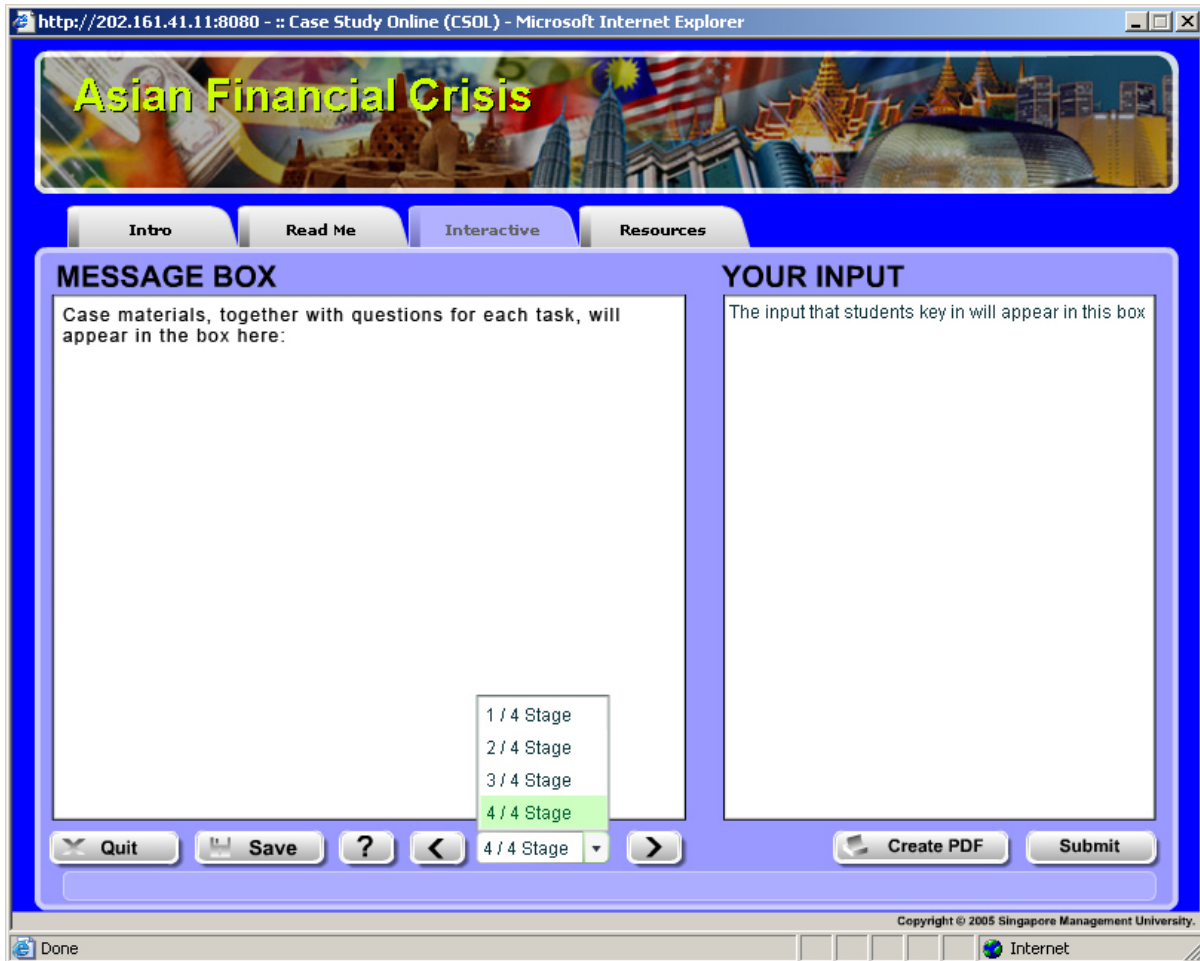


Figure 3: Students complete the assignments and submit them in the “Interactive” tab.

On this screen, there are two boards labeled “Message Box” and “Your Input”, together with buttons with functions for student to quit the program, save his work, submit his responses to the tasks, and create documents of his work in Adobe pdf format. The “Message Box” is the board on the left hand portion of the screen – it is used by the instructor to display teaching materials, video clips, case studies and class assignments. When the student is ready to post the comments, he clicks on the board that is labeled “Your Input”, which is on the right hand portion of the screen and key in their input. By clicking on the submit button, the input will be recorded and captured on the board. Immediately, the student is able to view on the board the instructors’ comments / pointers to the task. After completion of all tasks, the student clicks on the “create pdf” button to generate a pdf file which contains a compilation of the tasks, the student’s input as well as the instructor’s pointers. The last step requires the student to submit the pdf file to the instructor as an e-mail attachment in Microsoft Outlook.

The fourth tab is the “Resources” tab. It provides the student with a repository of resources that can include power point slides, economics data and article readings (Figure 4). With the repository feature, instructors can set tasks that require students to explore or search actively for answers, always within the boundaries and scope defined by the instructors.

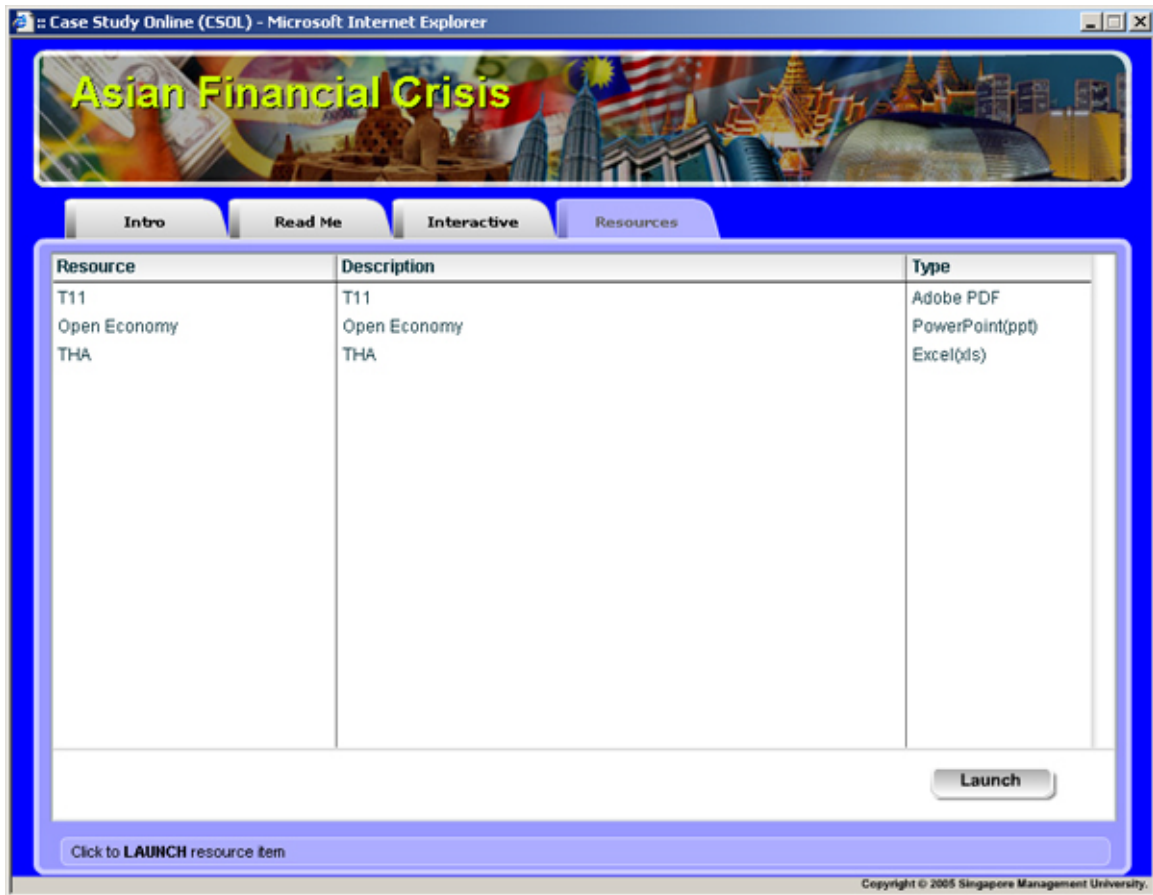


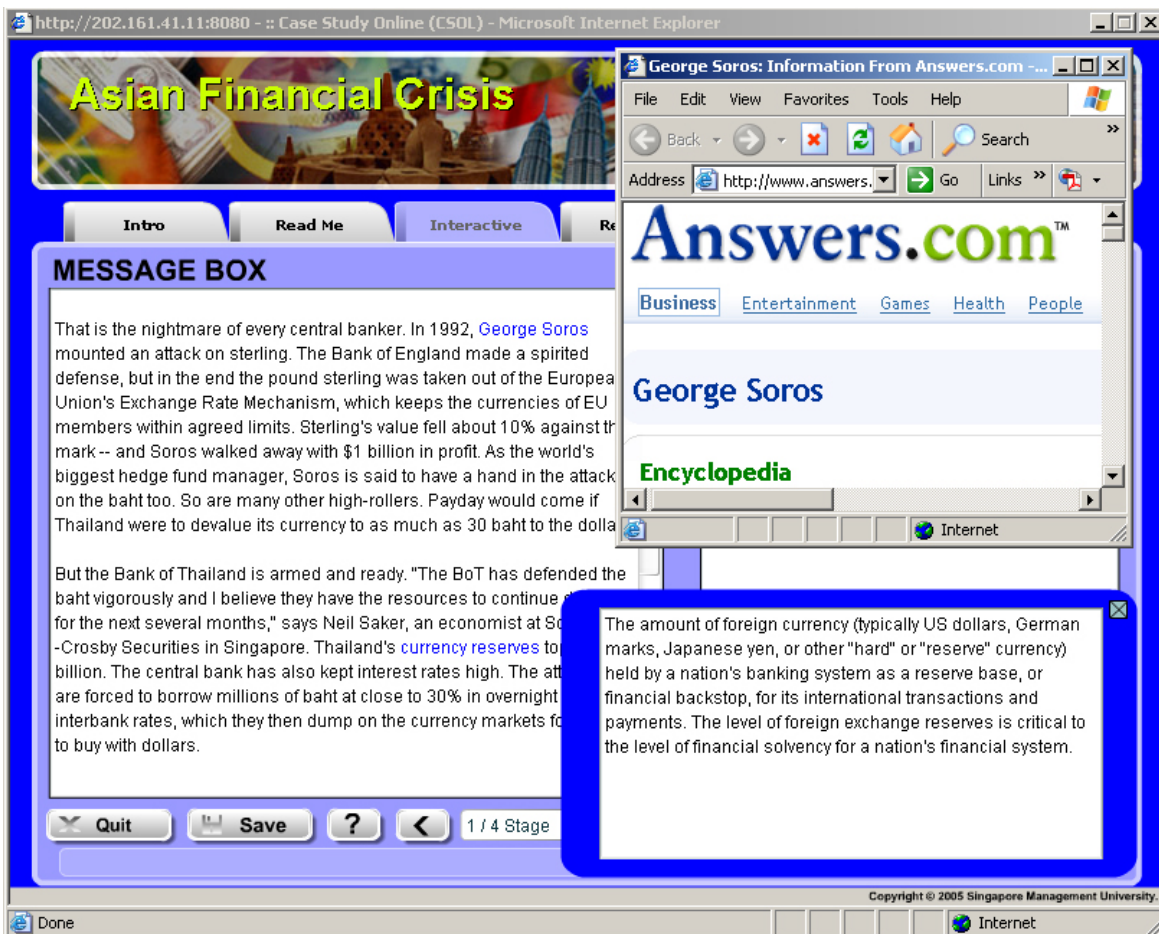
Figure 4: The “Resources” Tab is a repository of teaching materials.

The remaining section explains the pedagogical ideas behind the CSOL tool, with focus on the scaffolding role of technology. We group each of the pedagogical ideas in the following categories:- (i) highlighted text, (ii) hyperlinks to sources, (iii) task structuring and (iv) instructor’s pointers. Each of the pedagogical ideas can also be implemented piece-wise using any web-based tool. What is innovative about CSOL is that as an instructional tool it brings the students through a sequence of learning process - beginning with reading the case study and doing assignment tasks, to submitting the assignment - all within the system. Through the process, students experience different

methods of scaffolding, all of which is absent in traditional homework assignments or quizzes.

i) **Highlighted Text**

Words or phrases in the “Message Box” that are supposed to convey key information can be highlighted to indicate their importance. By clicking on the highlighted texts, a scrollable text-field pops up on the screen with definitions and references (Figure 5). With this feature, students can actively retrieve definitions and glossaries on a need-to-know basis. This non-sequential access to information is especially useful for a non-homogeneous class of students possessing different levels of academic ability. Landow (1992) argued that the use of hypertexts in teaching has the potential of revolutionizing what occurs inside and outside the classroom. According to him, the use of hypertexts does encourage students to take more responsibility for their own learning.



Source of article: <http://www.asiaweek.com/asiaweek/97/0228/biz4.html>

Figure 5: Pop-up and Hyperlink text features in the Message Box

ii) Hyperlinks to sources

The hyperlink feature allows the instructor to make use of the Internet as a teaching resource, which puts the application tool in line with current thinking regarding the advantages of using the Internet for classroom teaching (Katz and Becker 1999, and McCain 1999). A major advantage of the hyperlinks is that it guides the students to the relevant information without spoon feeding them with the actual answers. In addition, it allows students to customize their experience according to the depth of detail which they need.

iii) Task Structuring

The assignment process in CSOL can be structured in a progressive format so as to build students' knowledge and comprehension skills. As an illustration, let us say the assignment consists of four tasks with the tasks designed so that in terms of complexity, they lead up to the last task which requires students to show more critical thinking skills. In the first task, students are instructed to read one article, sort and categorize the information in it. The second and third tasks direct students to some database and students explain economic data, identify trends and patterns as well as make comparisons of the data. In the fourth task, students make an assessment of the various responses and actions taken by decision makers in the case study. The idea behind the task structuring system is that once the student has completed each task, he submits the task and only then the next task will be displayed.

iv) Instructor's Pointers

Following the pedagogy idea discussed above, the student submits each tasks and he can promptly view in the "Message Box" board the instructors' guideline or pointers to the task. As opposed to receiving the instructor's guide after an extended period of time, the prompt delivery of these guidelines serves to affect learning in a more meaningful way.

This section has explained that through the process of complete the tasks, students experience different methods of scaffolding, all of which is absent in traditional homework assignments or quizzes.

Setting of Assignment Tasks : Using A Case Study

This section illustrates a case study assignment for an Open Macroeconomics section of a 15-week Introductory Economics course. This case study is based on Thailand during the financial crisis in 1997, and is used to achieve the following objectives: to teach open macroeconomic concepts, and to show how theories and models can be applied to actual economic situations.

The trial composes of four tasks meant to guide the understanding of the students. In the first task, students are instructed to read the news article and based on their reading, to give their comments on what they suggest whether the currency Thai baht will devalue, or remain pegged to the US dollar. The purpose of the task is to highlight to students the contradiction in official announcements of central bankers and views of speculators.

Task 1: *Read the article and answer the following questions.*

- i) *What are the signals that suggest the baht may weaken?*
- ii) *What are the signals that suggest the baht may not weaken?*

The second and third tasks require students to read attachments of economic data which are sourced from the Asian Development Bank and Bank of Thailand. Students are required to identify trends and patterns, and make comparisons of the data. The purpose of the task is to teach data interpretation / comparison skills.

Task 2: *You need to refer to this attachment in order to answer the following questions. (An attachment is provided)*

- i. *What was Thailand's economic growth rate in 1990. Compare with 1997, 1998 and 1999.*
- ii. *What was Thailand's bank lending rate 1996? Compare with 1997 and 1998. Explain.*
- iii. *What was Thailand's current account in 1990? In 1996? In 1997? In 1998? Explain.*
- iv. *What was Thailand's foreign exchange reserve in 1990 and 1996? Compare with 1997? Explain.*
- v. *What was Thailand's exchange rate in 1996? Compare with 1997? Explain.*

Task 3: *You need to read this attachment to answer the following questions.*

- i. *What was total foreign direct investment into Thailand in 1990? In 1995 and 1997? Explain.*
- ii. *Describe the trend of FDI in manufacturing industry and real estate industry. Which type of investment activities would generate more future growth opportunity?*

The fourth task requires a higher level of understanding from the students, thus students are directed to advance reading materials. Based on their reading, students are required to make an assessment of the various responses and actions taken by decision makers in the case study. This purpose of the task is to teach students reasoning skills and to provide training to apply economic concepts to make a prediction / judgement.

Task 4: *You need to read the seminar notes "Open Macroeconomics" to answer the following questions.*

- i. *How are foreign investors likely to respond if there is fear that the Thailand's currency will devalue? What will happen to domestic interest rates? Explain using the appropriate economic models.*

- ii. *What action would the Bank of Thailand take when the currency falls, under a fixed exchange rate regime? Under a flexible exchange rate regime? Explain using the appropriate economic models.*
- iii. *What happens when the Bank of Thailand runs out of international reserves?*

It is part of the grading assessment that students complete the tasks prior to class. This has the advantage that students are able to *reflect* on key issues prior to class.¹ Having completed the case study before class, students are aware of gaps in their understanding of the subject matters. This leads them to have relevant questions to ask during class discussion, thus leading to more involved class participation and hence active learning. Not only does this lead to improved learning, but improved teaching as well. Instructors get to read the students comments before class. Hence they anticipate common student errors, and better understand students' thinking processes. Once they are able to uncover gaps in students' knowledge prior to class, they can focus the in-class discussions on areas of students' weaknesses.

Survey Results

To assess if the features in CSOL does increase learning from students' perspectives, we conducted a survey of student users at the end of the semester. About eighty-five percent of those surveyed, or a total of one hundred ten students, responded. The questionnaire was divided into two sections. The first section contained a number of questions which requested students to indicate their impressions on a semantically-differentiated scale ranging from "Strongly Disagree" to "Strongly Agree". Data were recorded nominally on a scale from 1 to 5 to facilitate the statistical analysis. The second section contained open-ended questions on whether the students experienced technical problems with the software. See Table 1 for the results of the questionnaire.

Table 1: Results of Questionnaire Survey

No.	Question	Respondents	Options				
			A	B	C	D	E
1	The Asia Financial Crisis case study as presented through the CSOL Application facilitates my understanding and application of concepts taught.	110	1 (0.91%)	3 (2.73%)	13 (11.82%)	81 (73.64%)	12 (10.91%)
2	The features in the application are intuitive to use.	110	3 (2.73%)	6 (5.45%)	23 (20.91%)	67 (60.91%)	9 (8.18%)
3	The "Intro Page" helps me to understand the context of the case study.	110	1 (0.91%)	4 (3.64%)	18 (16.36%)	73 (66.36%)	11 (10%)
4	The "Read Me Page" gives me clear instructions of the objective and the expected tasks to be done.	110	1 (0.91%)	3 (2.73%)	14 (12.73%)	77 (70%)	13 (11.82%)
5	In the "Interactive Page", the way the tasks are sequenced helps me to better analyze the case.	110	1 (0.91%)	1 (0.91%)	21 (19.09%)	73 (66.36%)	12 (10.91%)
6	In the "Interactive Page", the feedback feature has expanded the scope of my understanding.	110	1 (0.91%)	3 (2.73%)	14 (12.73%)	77 (70%)	13 (11.82%)
7	In the "Interactive Page", the hyperlinks to the supplementary materials and definition of key terms are helpful.	108	1 (0.93%)	1 (0.93%)	13 (12.04%)	69 (63.89%)	23 (21.3%)
8	In the "Interactive Page", the compilation of the case study, my input and the instructor's feedback into a PDF document makes it easy for me to review my learning process.	108	2 (1.85%)	3 (2.78%)	18 (16.67%)	71 (65.74%)	13 (12.04%)
9	The collection of all reading materials in the "Resource Page" is a convenient way for me to get information.	108	2 (1.85%)	4 (3.7%)	14 (12.96%)	78 (72.22%)	10 (9.26%)
10	I would like to see more cases to be presented using the CSOL Application.	108	2 (1.85%)	7 (6.48%)	22 (20.37%)	62 (57.41%)	13 (12.04%)

The responses of students to the survey on a whole were positive. Specifically, when asked whether the case study as presented using the CSOL application had facilitated students' understanding and application of concepts taught, 74% of respondents agreed to this, while another 11% strongly agreed and only 3% disagreed and 11% were neutral (Question 1). 66% of respondents agreed while another 11% strongly agreed that the way the tasks were sequenced had helped them to analyze the case better. Only 1% strongly disagreed and 19% were neutral about this (Question 5). Close to 70% of the respondents agreed while 12% strongly agreed that the instructor input to the tasks had expanded the scope of students understanding. Only 3% disagreed and 13% were neutral about this (Question 6).

In addition to the survey, we also conducted an interview of 7 randomly chosen students in a group to gather first-hand information about students' learning experience using CSOL. There were many positive responses, of which an important one was the confirmation that students felt that they had to be more proactive and independent in finding out the necessary information. They found the sequencing of the tasks in levels of difficulty as well as the prompt delivery of instructor's guidelines to responding to each of the tasks extremely useful. They felt that because they could complete the exercises outside of class, they have the flexibility to work on their own or form a study group. In addition, since the tasks forced them to actively look for answers prior to attending the session on open macroeconomics, they felt better prepared and gained more from that session. Another endorsement we received during the interview was that students enjoyed learning about the case on the Asian financial crisis and doing the tasks related to it because it allowed them to see how economic theories can help them analyze and better understand the mechanics behind the financial crisis in the region. Unfortunately, an unexpected finding during the focus group session was that almost all the students interviewed were not aware of the pop-up text box feature that provided the glossary and definitions until they completed all their tasks! In the future, a more visible highlight can be used or a brief introduction to the features should be provided on the introduction page.

Conclusion

In summary, this paper has proposed the usage of web-based case study to address the concerns about teaching methods in undergraduate economic courses that were brought up in the introduction. To reiterate, these concerns are: 1) The lack of active learning-based teaching methods. 2) Minimal attention is given to training students to acquire the skills and expertise to apply theories and models to real events. 3) Teaching practices in Economics have lagged behind other disciplines in implementing technology-based instructional innovations.

Overall what we have learnt from our experience and student feedback is that the features in the instructional tool combined with case method of teaching, can promote active

learning and enhance students' appreciation of the value of economic analysis. This can happen in several ways. There is the sequential task feature that requires students to complete tasks in order of their levels of difficulty, progressing from simple to complex. This helps students understand that complex economic problems can be divided into manageable parts. There is the prompt delivery of instructors' guideline to the task, which makes learning effective while there is time to meaningfully affect learning. There are the hyperlinks and pop-up text boxes, which benefit students with different ability levels because they can learn at their own pace (important for a discipline such as Economics that is known to be heavy on content and concepts). Last but not the least important, there is the use of case studies which provides a bridge that connects Economics to the events in the real world, hence making students appreciate the value of economic analysis.

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