UNIVERSITY OF SURREY

Faculty of Engineering & Physical Sciences

Final Report

SCEPTrE Fellowship Scheme

Supplemental Instruction Surrey Scheme (SISS)

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Contents

1. Introduction

Supplemental Instruction (SI) is a peer assisted academic programme to support students in their academic performance. It targets historically difficult modules and offer regular out-of-class sessions in order to improve student performance and retention rate. SI is originally developed by Dr Deanna Martin in 1973 at the University of Missouri at Kansas City, and nowadays more than 1500 institutions worldwide are implementing their own SI programme.

The main contributors in the scheme are the students, SI leaders, SI supervisor and academic members of staff. The SI leaders, who are normally senior undergraduate students, are the key people in the programme and play an important role in the success of the scheme. They act as model students of the subject, thinking, organising and mastering the academic module. SI leaders receive appropriate training before the start of the SI programme.

In general, the SI sessions are open for all students, who are enrolled on the module, but are attended on a voluntary basis. The SI sessions start at the beginning of the semester and continue to the end on a weekly basis. Research has indicated that the SI participants very often earn higher grades and withdraw less than the non-SI participants.

Within the framework of SCEPTrE fellowship, the SI Surrey Scheme (SISS) was implemented for the first time in Surrey University. The scheme was launched in January 2008 and made use of the module Dynamics, part of SE0107 Statics and Dynamics module, taught for level 1 Undergraduate Engineering students in the Faculty of Engineering and Physical Sciences, as a pilot SI module.

This report summarises the procedures that have been followed in order to launch, implement and evaluate SISS. The report contains five main sections, namely, introduction, milestones and implementation of SISS, evaluation of SISS, dissemination of SISS and conclusions and recommendations. Section 2, implementation of SISS, describes how the knowledge required to start the SI programme was obtained and how the SI leaders were recruited and trained. Section 3 describes the evaluation of SISS through the experiential learning award and the final exam results. Section 4 presents the dissemination of scheme, which involves presentation in SCEPTrE workshop, reporting results to high officers in the University and attending the SI international conference in Orlando. Finally, section 5 presents conclusions and recommendations.

2. Implementation of SISS – Milestones

2.1 Manchester visit

On the 3rd and 4th of May 2007, I have visited the University of Manchester and I have observed a Supplemental Instruction (SI) session in Civil Engineering. I have spoken to students and staff involved in the SI Scheme. I have also attended an event for presentation of awards, in which students, including SI leaders have been rewarded for their efforts. The SI scheme in Manchester is called 'PASS' (Peer Assisted Study Sessions) and has been launched in Manchester since 1993. Figure 1 shows the PASS poster, which is used to promote the PASS scheme. I have met with Maricia Ody and William Carey, who are developing the peer assisted study scheme at the University of Manchester.

The visit has been very useful as I have seen for the first time how a SI session would be organized and planned.

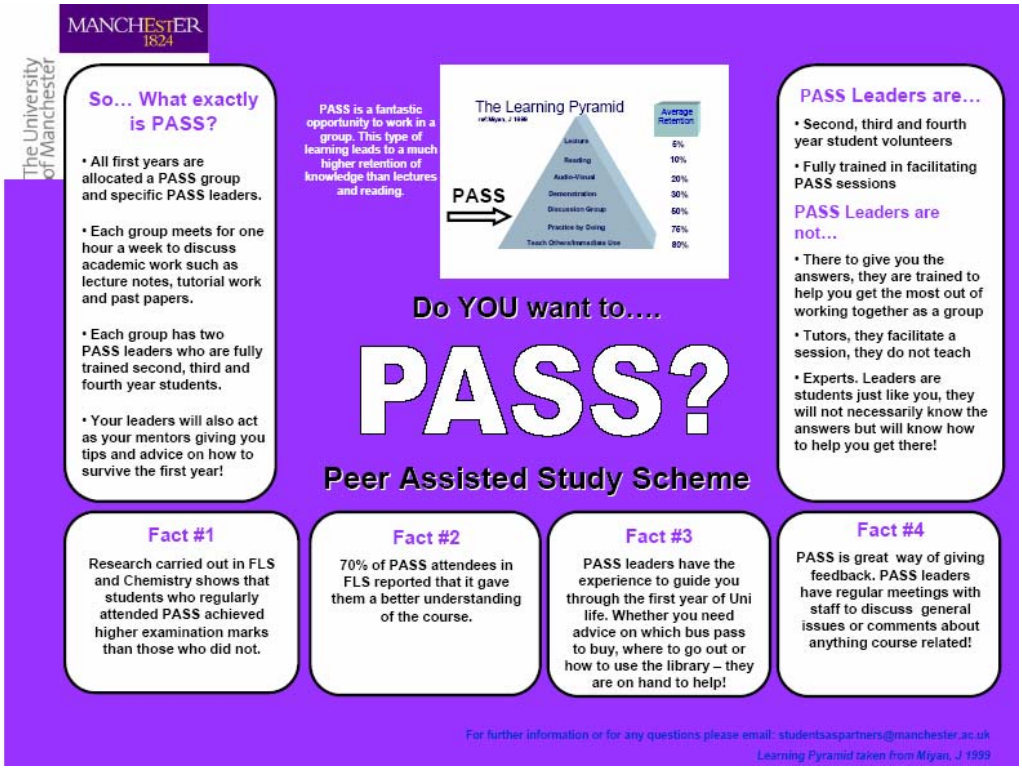

Figure 1: Poster for SI Manchester Scheme

2.2 SI Supervisor workshop training

From the 9th to the 11th of September 2007, I have attended the SI supervisor training workshop organised by the University of Missouri, Kansas City, USA. The workshop has covered all aspects that are required to run a SI programme. The University of Missouri, Kansas City, offers six SI Supervisor Workshops annually. The SI supervisor workshop addresses the different important aspects of initiating and administrating a SI programme. The topics that are covered in the workshop include: procedures for selecting SI courses and SI leaders; evaluation and funding of the programme; ongoing training and supervision of SI leaders; theoretical frameworks underlying the SI model; and effective learning strategies and SI session activities. Figure 2(a) shows a standard agenda of the two days SI supervisor workshop. By the end of the workshop, I have obtained the required qualifications to train SI leaders and to supervise an accredited SI Scheme. Figure 2(b) shows the SI supervisor certificate I have obtained from the University of Missouri, Kansas City.

SI Supervisor Training Workshop

Agenda

Sunday

1:00 - 1:30 PM	Registration
1:30 - 5:00 PM	SI Overview

Monday

8:30 - 9:00 AM	Breakfast (provided)
9:00 - 10:00 AM	Group Work
10:00 - 10:15 AM	Break
10:15 - 11:30 AM	Group Work
11:30 - 12:30 PM	Lunch (provided)
12:30 - 2:30 PM	Group Work
2:30 - 2:45 PM	Break
2:45 - 3:15 PM	Lecture (Simulated SI)
3:30 - 4:30 PM	Simulated SI & Debrief

Tuesday

8:30 - 9:00 AM	Breakfast (provided)
9:00 - 10:15 AM	Group Work
10:15 - 10: 30 AM	Break
10:30 - 11:30 AM	Group Work
11:30 - 12:30 PM	Lunch (provided)
12:30 - 1:30 PM	Simulated SI & Debrief
1:45 - 3:00 PM	Group Work

Figure 2(a): Agenda of the SI supervisor workshop – University of Missouri, Kansas City

Figure 2(b): SI supervisor certificate – University of Missouri, Kansas City

2.3 SI Leader job advertisement

In October 2007, I have advertised the SI leader job by e-mail and attached a SI flyer, as shown in Figure 3. During my Dynamics lecture for level 2 Aerospace and Mechanical Engineering students, I have prepared and presented a PowerPoint presentation to the students to explain the SI Surrey Scheme and request their participation. I have also designed a SI leader application form and a job description document. The SI leader employment application form and SI Leader Job description have been made available to level 2 and level 3 students and distributed to students in the Level 2 Dynamics lecture. Figure 4 shows the SI leader employment application form, while Figure 5 shows the SI leader job description.

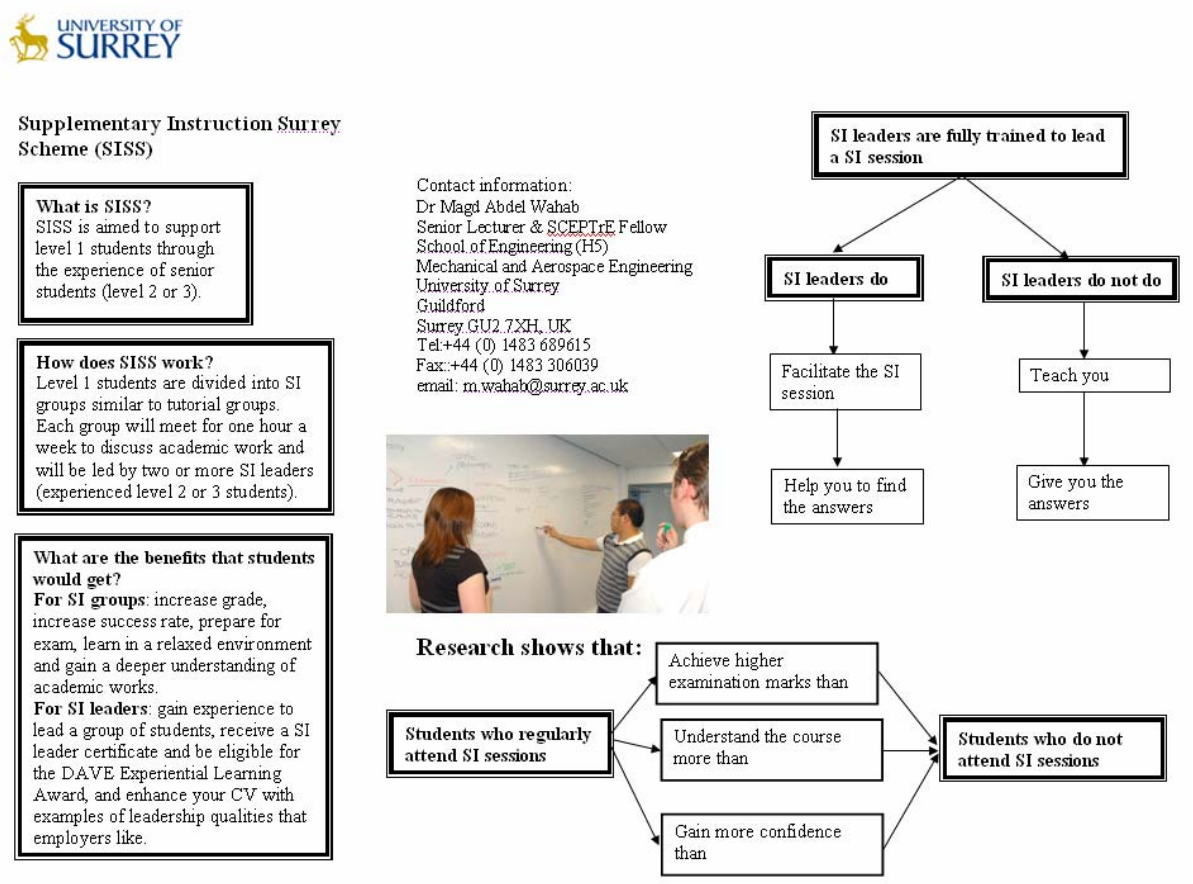

Figure 3: SI flyer to promote SISS and advertise the SI leader job

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SI Leader Employment Application

Name: ……

Local Address: ……

……

Department: ……

Faculty: ……

Level: ……

Course:……

E-mail Address:……

Aggregate level mark achieved: in Level 1 …… and (if applicable) in Level 2 ……

Module mark in Statics and Dynamics (SE0107): ……

1. I am confident with my abilities in Statics and Dynamics (SE0107)? ….Yes …..No

2. If selected for this position, I will be able to attend the SI leader training workshop on Wednesday 7th of November 2007 5pm to 7:30pm and on Wednesday 14th of November 2007 5pm to 7:30pm? …..Yes …..No

3. List the number of credit hours in which you will be enrolled during the next semester:
……
4. Describe your anticipated involvement in clubs, organizations, part-time employment during the next semester:……

……
5. Why are you interested in this position, and why do you feel that you are a good candidate?

……
6. What advise would you give freshmen to help them become successful students?
……
7. Describe three study strategies that have helped you perform well in your studies.

……
8. List one academic reference
……
I hereby attest that all information contained in this application is truthful and accurate.

…… ……
Signature date

(Submit to Dr M Wahab, Faculty of Engineering and Physical Sciences (J5), University of Surrey. Application Deadline 10 October 2007)

Figure 4: SI leader employment application form

UNIVERSITY OF SURREY

Job description: SI Leader

SI Leader Qualification

1- Level 2 or Level 3 student is preferred.
2- Upper Second Class Honours is preferred, but Lower Second Class Honours is the minimum.
3- Above 60% module mark in Statics and Dynamics is preferred.
4- Content-competency in Statics and Dynamics is required.
5- Good interpersonal and communication skills are required.

Primary Activities

1- Conduct one hour study session (SI session) per week throughout the Spring semester 2008 (10 weeks) using strategies learned through the SI Leader training workshop.
2- Regularly meet with the SI supervisor for debrief sessions:
    a. Discuss observations of the SI sessions.
    b. Discuss the creation and use of SI session handouts.
    c. Discuss the planning of SI sessions and use of a wide variety of learning strategies.
3- Assist SI supervisor in training SI Leaders.

Secondary Activities

1- Attend all class meetings of the module, take notes, do homework and read all assigned materials including text and supplementary readings.
2- Provide extra SI sessions and/or marathon sessions as necessary (e.g. prior to examinations).
3- Provide handout for use during SI sessions.
4- Ascertain module requirements and maintain contact throughout the semester with the module lecturer or designated representative.
5- Meet with other SI leaders and supervisory staff at scheduled time.
6- Other duties as assigned by SI supervisor.

Maintenance Activities

1- Complete necessary personnel paperwork.
2- Attend SI leader training workshop prior to the beginning of the semester.
3- Ensure that semester surveys and feedback surveys are distributed and assist with data analysis
4- Collect attendance data for every SI session, including student names, course title, date and time of session.
5- Assist SI supervisor in the preparation of the end-of-term reports and other reports as requested.
6- Maintain a professional attitude about matters such as class standards, grades and students complaints.
7- Model appropriate professional attitudes and behaviours to staff, students and others.
8- Provide your SI supervisor with up-to-date schedule of your SI sessions.
9- Notify your SI supervisor in advance if you cannot conduct your SI session as scheduled.
10- Maintain regular working hours.

Figure 5: SI leader job description

2.4 SI Leader recruitment

Three outstanding students have been selected and recruited as SI leaders on the 1st of November 2007. They are:

1- Adam Wade, Level 2 Aerospace Engineering, first class in level 1 and 82% mark in Statics and Dynamics module,
2- Kerstin Huber, Level 3 Mechanical Engineering, upper second class in level 1 and 70% mark in Statics and Dynamics module,
3- Alex Rainer, Level 2 Mechanical Engineering, first class in level 1 and 94% mark in Statics and Dynamics module.

The three SI leaders are shown in Figure 6.

a) Adam Wade - Level 2 Aerospace Engineering

b) Kerstin Huber, Level 3 Aerospace Engineering

c) Alex Rainer, Level 2 Mechanical Engineering

Figure 6: The first ever three SI leaders for SI Surrey Scheme (SISS) -2008

2.5 SI Leader training sessions

Two training workshop sessions have been organised for the SI leaders on Wednesday 7th November 2007 from 5pm to 7:30pm and on Wednesday 14th November 2007 from 5pm to 7:30pm. In the first training workshop, the SI leaders have been introduced to the SI programme and have learned the tasks of the SI leader. They have also learned the relationships between the SI leader, the professor, the student and the SI supervisor. In the second training workshop, the SI leaders have learned how to conduct SI sessions. Especial emphases have been given on how to a) introduce SI to the class, b) open the SI session, c) conduct the SI session, d) direct discussion back to the group, e) close the SI session and f) SI attendance strategies. The SI leaders have also learned about the forms required for the SI sessions, e.g. SI survey, end of term survey, SI sign in sheet, etc… Finally, polishing session strategies and study skills have been introduced to the SI leaders. Photos of the SI leaders sessions are shown in Figures 7 and 8. At the end of the training sessions, the SI leaders have received a SI leader certificate. An example of such a certificate is illustrated in Figure 9.

Figure 7: SI Leaders training session – 07 November 2007

Figure 8: SI Leaders training session – 14 November 2007

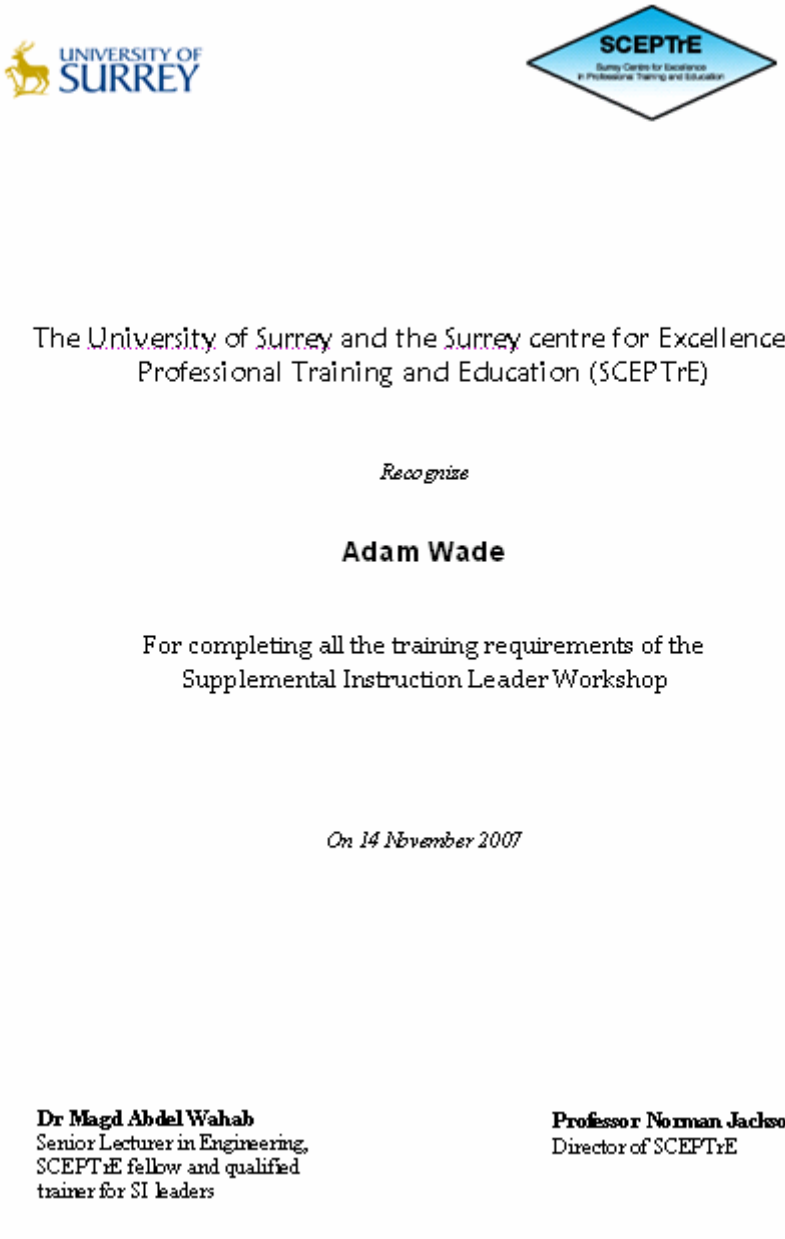

Figure 9: Example of a SI leader certificate

2.6 Launching SISS

In January 2008, SI has been introduced to level 1 students in my first lecture Dynamics (14th January 2008). One hour SI session per week was scheduled on every Tuesday from 5 pm to 6 pm in teaching block rooms. Originally, the students have been divided into 3 groups, each of which has a SI leader as follows:

SI Leader	Room	Groups
Kerstin Huber	TB10	A1, A2, A3, A4, D1
Alex Rainer	TB18	B1, B2, B3, B4, D2
Adam Wade	TB06	C1, C2, C3, C4, D3, D4

However, because the attendance of the SI sessions was on a voluntarily basis, only 17% to 35% of the students have turned up and therefore the three groups have merged into one group supervised by the three SI leaders. Photos of SI sessions are shown in Figures 10 to 12.

Figure 10: SI session – 15 January 2008

Figure 11: SI session – 29 January 2008

Figure 12: SI session – 11 March 2008

3. Evaluation of SISS

3.1 Experiential leaning award for SI Leaders

The University of Surrey students' union DAVE experiential learning award is to promote deeper self-awareness and understanding of learning gained through rich experiences. The means of recording experiences and learning are through a) to make a concept map at the start, the end and during the experience, b) use pebble pad e-portfolio to maintain a reflective blog describing the experience (using shareexperience web site http://www.shareexperience.net/homepage.php) and c) create a story at the end of the experience that reflects motivations, aspirations, experience and evaluation.

The SI leaders have participated in the experiential learning award scheme. They have produced concept maps throughout the experience and at the end. Figures 13 to 16 show the concept maps, at the beginning of the SI scheme (14 November 2007), during the SI scheme (29 January 2008 and 19 February 2008) and at the end of the SI scheme (11 March 2008). The SI leaders have also produced reflective blogs in the shareexperience website. Some of these blogs are illustrated in Figures 17 and 18.

A video clip that summarised the SI scheme has been produced and submitted to SCEPTrE. The reader may contact SCEPTrE if he wishes to obtain a copy of this video clip.

Figure 13: Recording experience and learning – Concept map 14 November 2007

Figure 14: Recording experience and learning – Concept map 29 January 2008

Figure 15: Recording experience and learning – Concept map 19 February 2008

Figure 16: Recording experience and learning – Concept map 11 March 2008

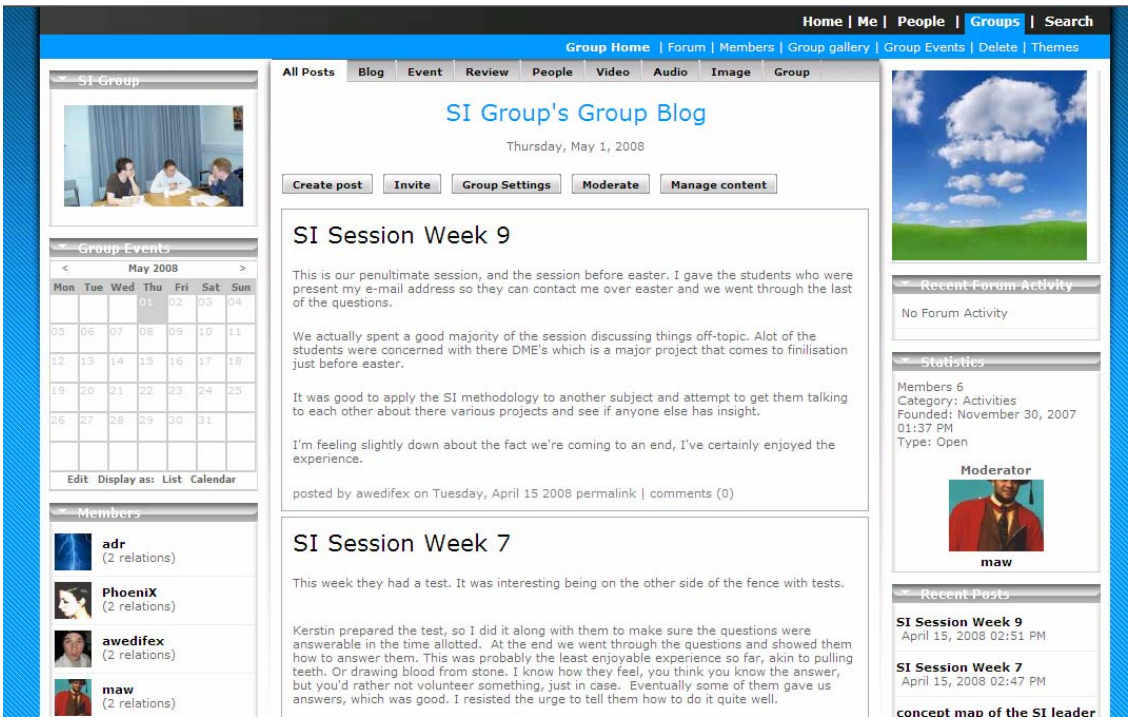

Figure 17: Recording experience and learning – Share experience blog 1

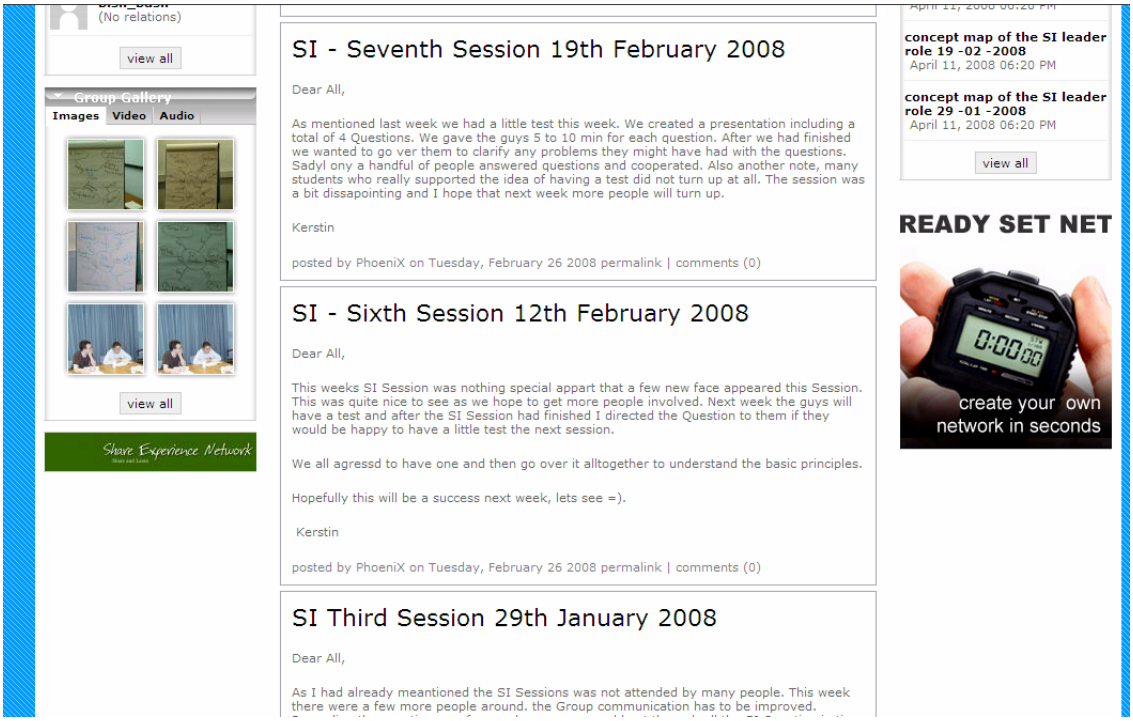

Figure 18: Recording experience and learning – Share experience blog 2

3.2 Final Exam results

Because of the nature of the SI sessions, which is voluntary based attendance, the attendance of the SI sessions varies significantly from one SI session to another. The percentage number of students who has attended at least one SI session is 35%, while the percentage number of students who has attended two or more SI sessions is 17%.

Therefore, the final exam results are analysed in two different categories, namely students who attended more than one SI session (at least 2 SI sessions) and students who attended at least one SI session.

Attendance for more than one SI session (at least 2 SI sessions)

The comparison between the results of the students who attended more than one SI session and those who did not attend any SI session is presented in Tables 1 and 2, and Figures 19 to 21. On one hand, SI group has scored higher rate for first class than non-SI group (17.14% compared to 15.06% for non-SI group), higher rate for upper second class than non-SI group (17.14% compared to 10.84% for non-SI group) and higher rate for lower second class than non-SI group (25.71% compared to 20.48% for non-SI group). On the other hand, SI group has scored lower rate for failure mark – compensatable than non-SI group (8.57% compared to 16.27% for non-SI group) and lower rate for failure mark – non compensatable than non-SI group (11.43% compared to 17.47% for non-SI group). Third class results are almost the same for SI and non-SI groups (20.00% compared to 19.88% for non-SI group). Overall, from Table 2 and Figure 21, it can be seen that the rate of pass mark is higher for the SI group than non-SI group (80.00% compared to 66.27% for non-SI group) and that the rate of fail mark is lower for the SI group than for non-SI group (20.00% compared to 33.73% for non-SI group).

Grade	SI Group	% SI Group	Non-SI Group	% Non-SI Group	Total	% Total
First Class (>70%)	6	17.14%	25	15.06%	31	15.42%
Upper second class (60%-70%)	6	17.14%	18	10.84%	24	11.94%
Lower second class (50%-60%)	9	25.71%	34	20.48%	43	21.39%
Third Class (40%-50%)	7	20.00%	33	19.88%	40	19.90%
Compensatable mark (30%-40%)	3	8.57%	27	16.27%	30	14.93%
Non-compensatable mark (<30%)	4	11.43%	29	17.47%	33	16.42%
Total	35	100.00%	166	100.00%	201	100.00%

Table 1: Comparison of grade - SI Group (2)

Grade	SI Group	Non-SI Group
Pass mark (>40%)	80.00%	66.27%
Fail mark (<40%)	20.00%	33.73%
Average mark	50.68%	46.28%

Table 2: Comparison of pass mark and fail mark - SI Group (2)

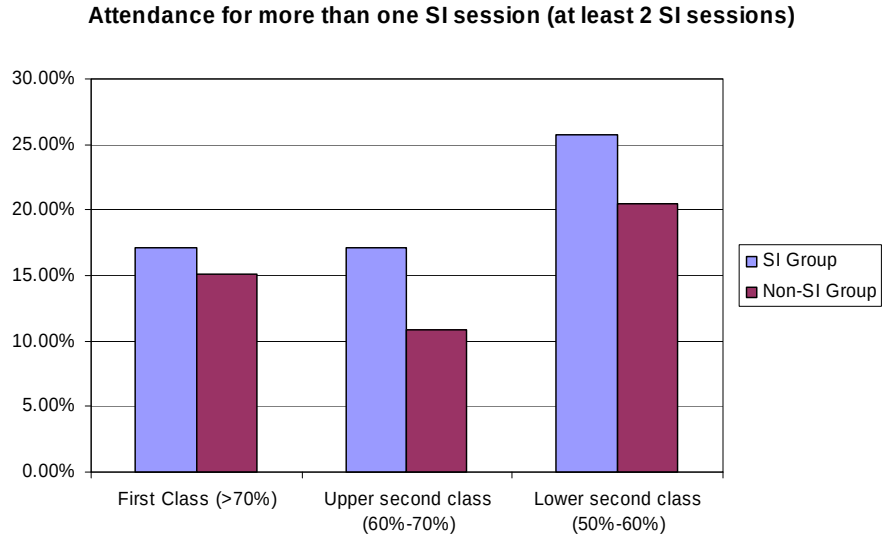

Figure 19: Comparison of first class, upper second class and lower second class – SI Group (2)

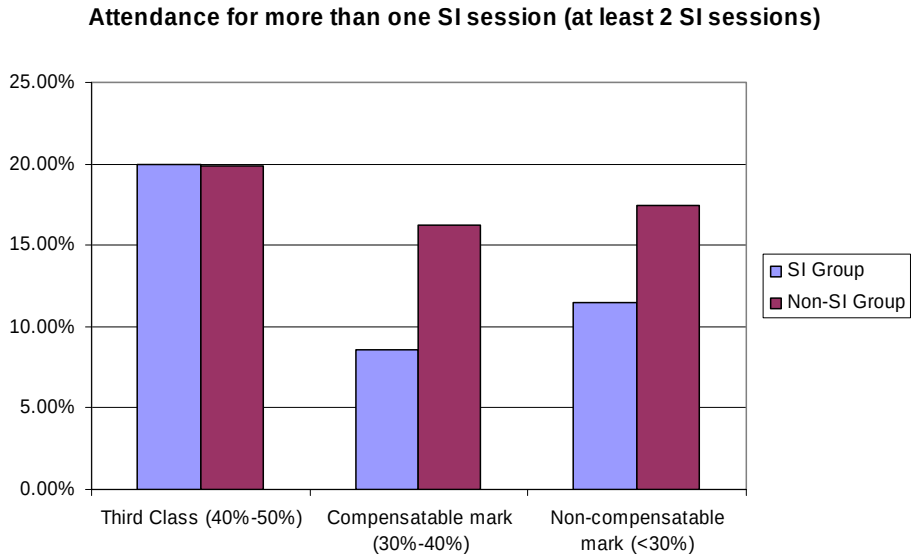

Figure 20: Comparison of third class, compensatable mark and non-compensatable mark – SI Group (2)

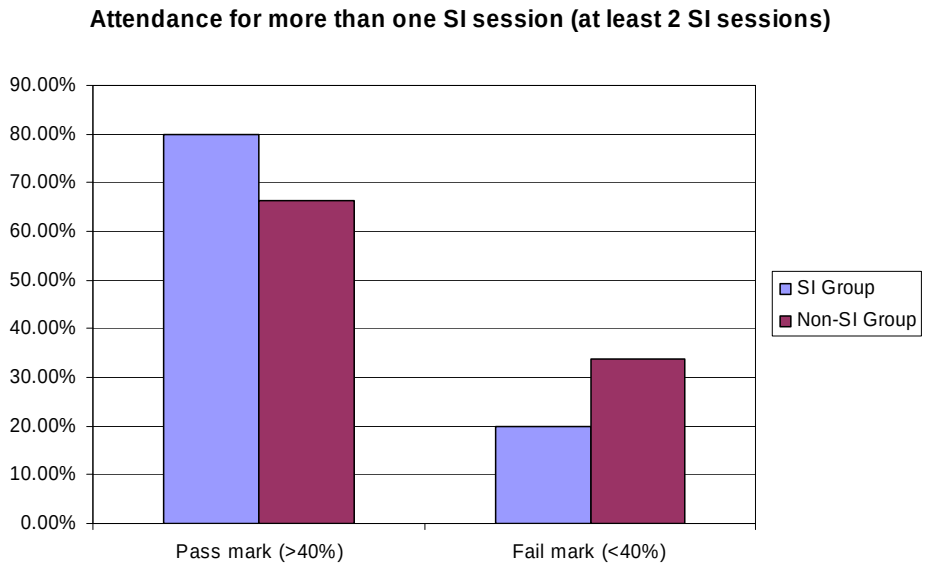

Figure 21: Comparison of pass mark and fail mark – SI Group (2)

Attendance for at least one SI session

The comparison between the results of the students who attended at least one SI session and those who did not attend any SI session is presented in Tables 3 and 4, and Figures 22 to 24. On one hand, SI group has scored a bit higher rate for first class than non-SI group (15.49% compared to 15.38% for non-SI group), a bit lower rate for upper second class than non-SI group (12.68% compared to 13.08% for non-SI group) and higher rate for lower second class than non-SI group (26.76% compared to 18.46% for non-SI group). On the other hand, SI group has scored lower rate for failure mark – compensatable than non-SI group (9.86% compared to 18.46% for non-SI group), lower rate for failure mark – non compensatable than non-SI group (12.68% compared to 16.15% for non-SI group) and higher rate for third class mark (22.54% compared to 18.46% for non-SI group). Overall, from Table 4 and Figure 24, it can be seen that the rate of pass mark is higher for the SI group than non-SI group (77.46% compared to 65.38% for non-SI group) and that the rate of fail mark is lower for the SI group than for non-SI group (22.54% compared to 34.62% for non-SI group).

Grade	SI Group	% SI Group	Non-SI Group	% Non-SI Group	Total	% Total
First Class (>70%)	11	15.49%	20	15.38%	31	15.42%
Upper second class (60%-70%)	9	12.68%	17	13.08%	26	12.94%
Lower second class (50%-60%)	19	26.76%	24	18.46%	43	21.39%
Third Class (40%-50%)	16	22.54%	24	18.46%	40	19.90%
Compensatable mark (30%-40%)	7	9.86%	24	18.46%	31	15.42%
Non-compensatable mark (<30%)	9	12.68%	21	16.15%	30	14.93%
Total	71	100.00%	130	100.00%	201	100.00%

Table 3: Comparison of grade - SI Group (1)

Grade	SI Group	Non-SI Group
Pass mark (>40%)	77.46%	65.38%
Fail mark (<40%)	22.54%	34.62%
Average mark	47.55%	46.77%

Table 4: Comparison of pass mark and fail mark - SI Group (1)

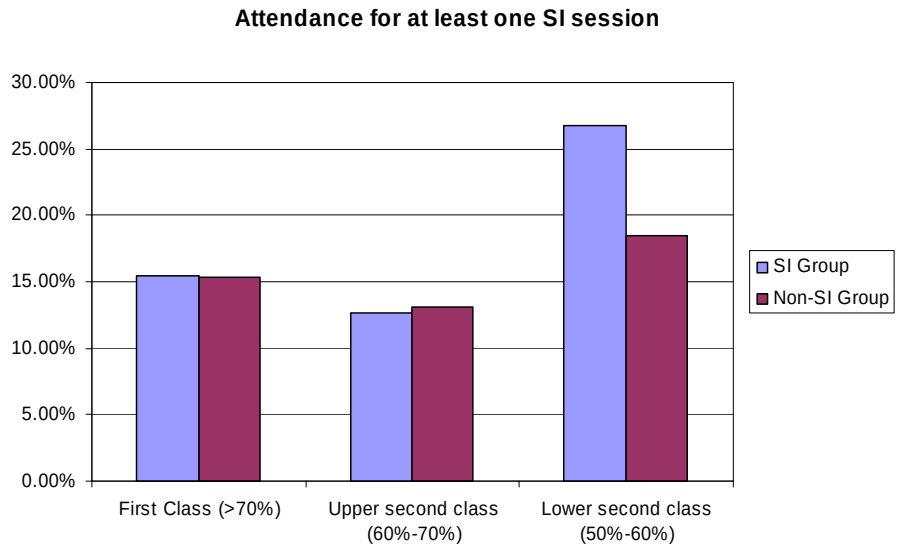

Figure 22: Comparison of first class, upper second class and lower second class – SI Group (1)

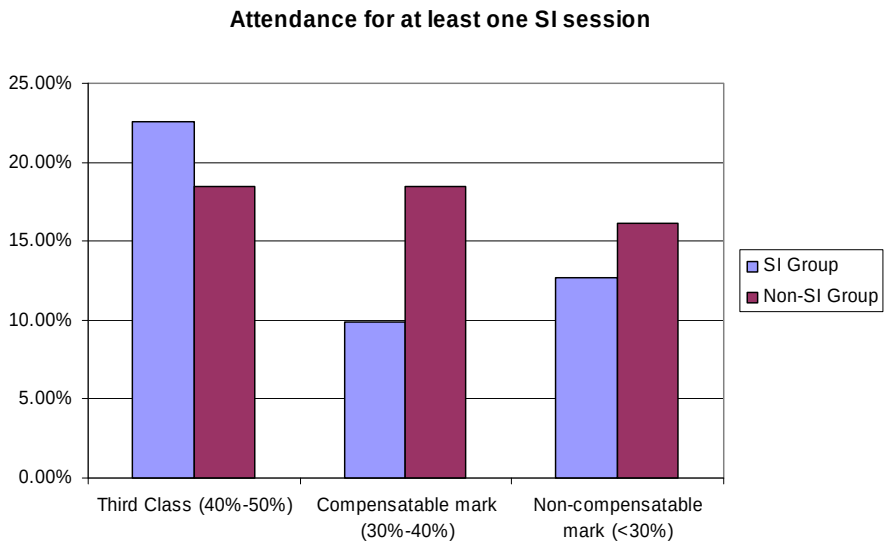

Figure 23: Comparison of third class, compensatable mark and non-compensatable mark – SI Group (1)

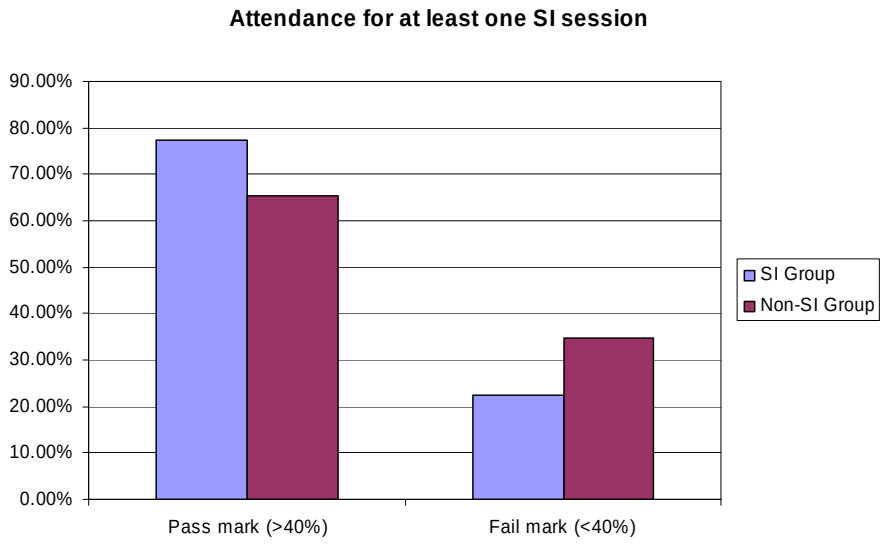

Figure 24: Comparison of pass mark and fail mark – SI Group (1)

Comparison between SI Group (2) and SI Group (1)

A further comparison between the results of the students who attended at least one SI session (Group (1)) and those who attended two or more SI sessions is presented in Tables 5 and 6, and Figures 25 to 27. On one hand, SI group (2) has scored higher rate for first class than SI group (1) (17.14% compared to 15.49% for SI group (1)), a higher rate for upper second class than SI group (1) (17.14% compared to 12.68% for SI group (1)) and a bit lower rate for lower second class than SI group (1) (25.71% compared to 26.76% for SI group (1)). On the other hand, SI group (2) has scored lower rate for failure mark – compensatable than SI group (1) (8.57% compared to 9.86% for SI group (1)), lower rate for failure mark – non compensatable than SI group (1) (11.43% compared to 12.68% for SI group (1)) and lower rate for third class mark (20.00% compared to 22.54% for SI group (1)). Overall, from Table 6 and Figure 27, it can be seen that the rate of pass mark is higher for SI group (2) than for SI group (1) (80% compared to 77.47% for SI group (1)) and that the rate of fail mark is lower for SI group (2) than for SI group (1) (20% compared to 22.54% for SI group (1)).

Grade	SI Group (2)	% SI Group (2)	SI Group (1)	% SI Group (1)
First Class (>70%)	6	17.14%	11	15.49%
Upper second class (60%-70%)	6	17.14%	9	12.68%
Lower second class (50%-60%)	9	25.71%	19	26.76%
Third Class (40%-50%)	7	20.00%	16	22.54%
Compensatable mark (30%-40%)	3	8.57%	7	9.86%
Non-compensatable mark (<30%)	4	11.43%	9	12.68%
Total	35	100.00%	71	100.00%

Table 5: Comparison of grade - SI Group (2) versus SI Group (1)

Grade	SI Group (2)	SI Group (1)
Pass mark (>40%)	80.00%	77.46%
Fail mark (<40%)	20.00%	22.54%
Average mark	50.68%	47.55%

Table 6: Comparison of pass mark and fail mark - SI Group (2) versus SI Group (1)

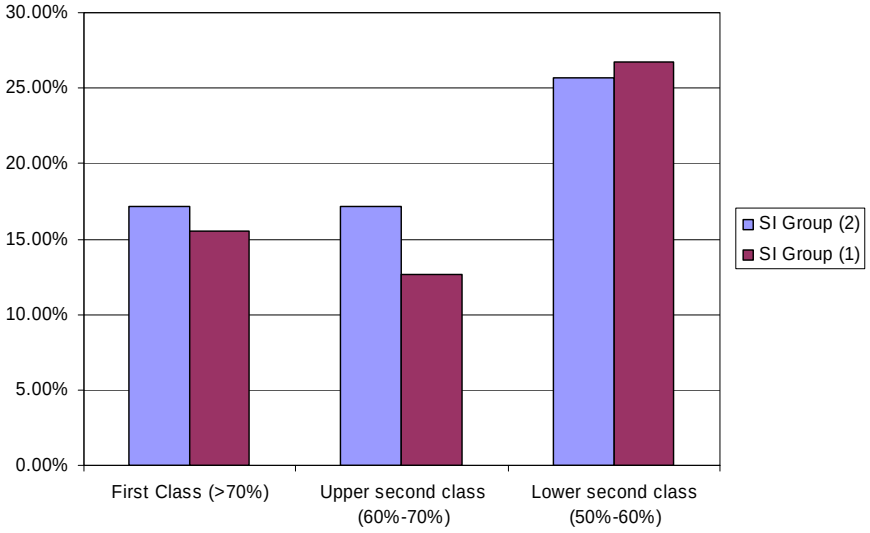

Figure 25: Comparison of first class, upper second class and lower second class – SI Group (2) versus SI Group (1)

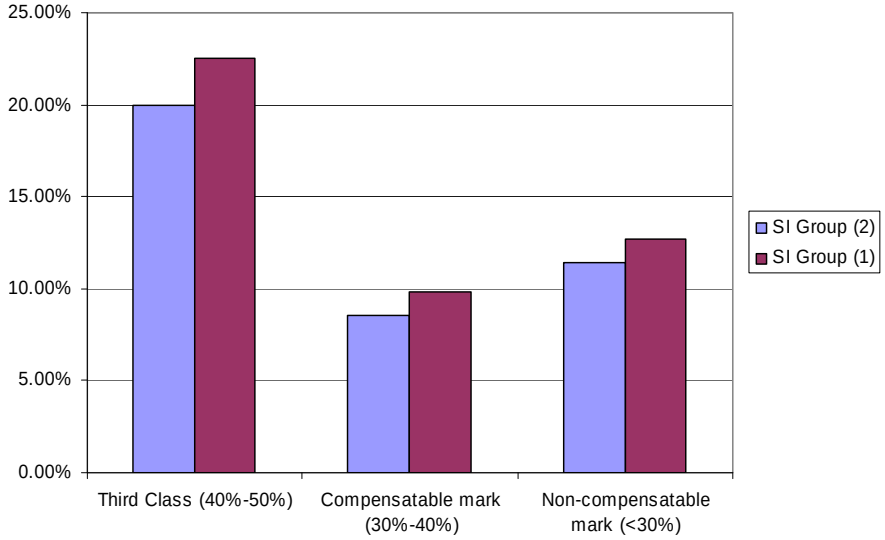

Figure 26: Comparison of third class, compensatable mark and non-compensatable mark – SI Group (2) versus SI Group (1)

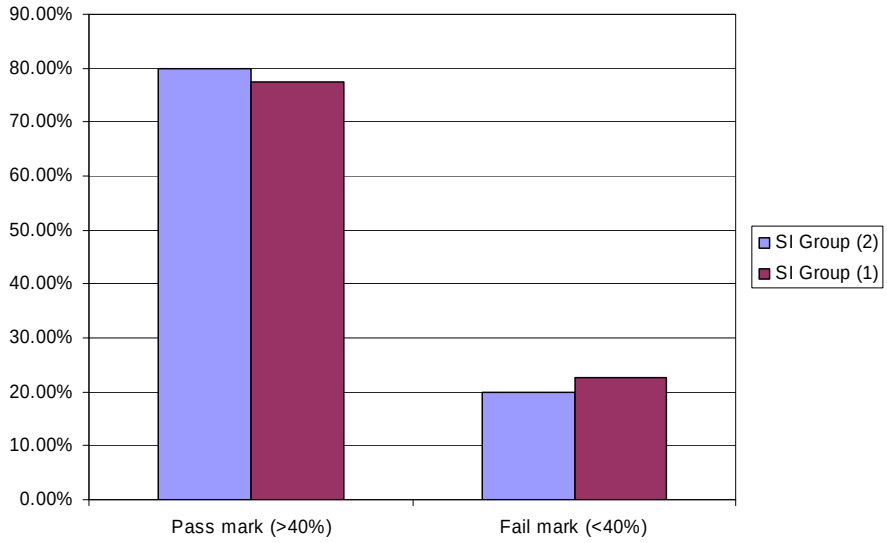

Figure 27: Comparison of pass mark and fail mark – SI Group (2) versus SI Group (1)

4. Dissemination of SISS

4.1 SCEPTrE workshop

On the 10th of October 2007 between 13.00 to 16.30 pm, an event entitled: Students as Partners: The Peer Assisted Study Scheme at the University of Manchester, was organised and I have been invited to present the SI Surrey Scheme. Because the Manchester team hasn't made it, my presentation became the main theme of the event. The event was attended by the director of SCEPTrE, the Pro-Vice Chancellor for Teaching and Learning and some SCEPTrE fellows. Some slides from the PowerPoint presentation are shown in Figure 28.

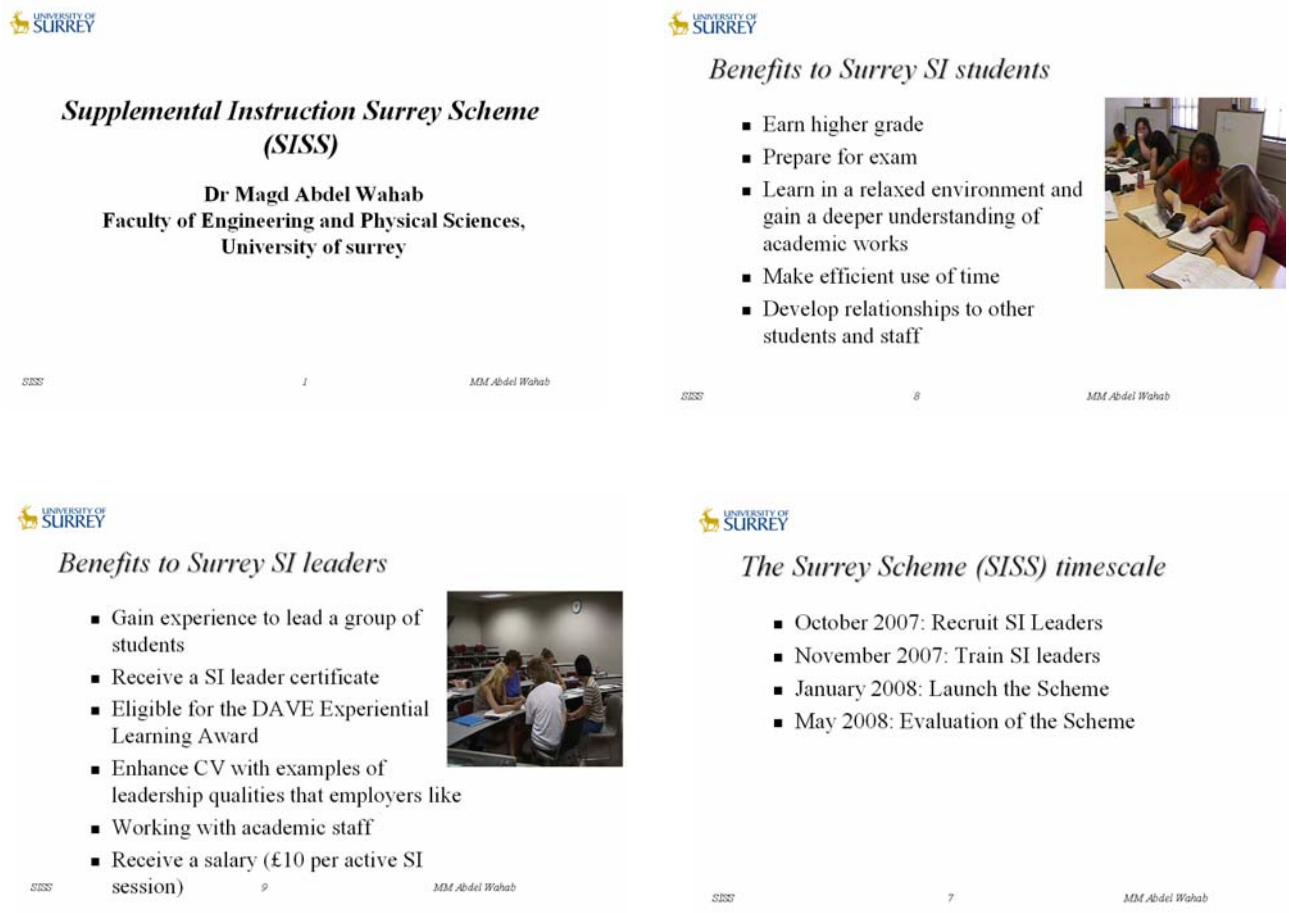

Figure 28: Some slides from the PowerPoint presentation – October (2007)

4.2 Reporting results to high officers in the University of Surrey

The results of SISS that have been presented in section 3.2 have been reported to high officers of the University including the Vice Chancellor of the University, Pro-Vice Chancellor for Teaching and Learning, Director of SCEPTrE, Dean of the Faculty of Engineering and Physical Science and Head of Mechanical, Medical and Aerospace Engineering. Copies of the memo's sent to the Vice Chancellor and the Dean of the Faculty are shown in Figures 29 and 30, respectively.

UNIVERSITY OF SURREY

Memorandum

Date: 06 May 2007

To: Prof C Snowden, Vice Chancellor From: Dr M Abdel Wahab

Copies: Prof D Airey, Pro-Vice Chancellor
Prof N Jackson, Director of SCEPTrE

During the Spring semester 2008 and in the framework of my SCEPTrE fellowship, we have implemented for the first time Supplemental Instruction (SI) scheme for the students in my module: Dynamics, Level 1 Engineering students, FEPS. Dynamics represents 50% of the module SE0107 Statics and Dynamics attended by approximately 200 students this year. The total number of SI sessions offered during the semester was 10 sessions.

SI is an academic assistance that increases student's performance and retention. It uses senior students, e.g. level 2 and level 3 students, to assist junior students, level 1, with difficult academic modules. SI sessions normally occur in classrooms, but attended on a voluntarily basis.

SI participation rate ranged from 35 students (17%), those who attended more than one SI session (at least two SI sessions) and 71 students (35%), those who attended at least one SI session. The results summarised in the attached sheet are those for the first group.

The combined mean Dynamics module grade for the SI participants was 50.68% as compared to 46.28% for the non-participants. The rate of failure (mark < 40%) in the SI participant group (20.00%) was lower than for the non-participant group (33.73%). These data suggest that those who attend receive higher course grades than those who do not and that who participate in SI have lower unsuccessful pass rates than those who do not attend. A further analysis indicates that students who attend more than one SI session perform better than those who attend only one SI session.

These data suggest that the treatment (SI) makes a difference in the students' learning. When students learn and achieve higher course grades for their learning, we know that they tend to stay in higher education at a higher rate, thus affecting retention on campus.

Enclosed are the summary data of the results.

We very much appreciate your support in facilitating our work through the SCEPTrE fellowship.

Figure 29: Memo to Vice-Chancellor

UNIVERSITY OF SURREY

Memorandum

Date: 06 May 2007

To: Prof M Kearney, Dean of FEPS

From: Dr M Abdel Wahab

Copies: Prof A Crocombe, Head of MMA
Prof N Jackson, Director of SCEPTrE

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These data suggest that the treatment (SI) makes a difference in the students' learning. When students learn and achieve higher course grades for their learning, we know that they tend to stay in higher education at a higher rate, thus affecting retention on campus.

Enclosed are the summary data of the results.

We very much appreciate the opportunity to work with the students at FEPS to assist them in reaching their academic goals.

Figure 30: Memo to Dean of Faculty

4.3 SI International Conference in Orlando

The results of the SI Surrey Scheme have been presented at the 5th International conference on Supplemental Instruction, held in Orlando Florida in the period between 28 to 30 May 2008. The conference was organised by the International Centre for Supplemental Instruction, University of Missouri – Kansas City (UMKC), the official home of SI. The conference was attended by more than 120 researchers and instructors. The announcement for SISS session is shown in Figure 31 and a photograph at one of the conference events is shown in Figure 32.

42. "Implementation of Supplemental Instruction for Surrey Engineering Students (SISES)" **Michelangelo**

Topic Area: Discipline Specific SI
Presenter: Magd Abdel Wahab, University of Surrey, Guildford, Surrey, United Kingdom

Supplemental Instruction (SI) is implemented for the first time in the University of Surrey, UK, through a pilot module Statics & Dynamics, which is a common first year module attended by Civil, Mechanical, and Aerospace engineering students.
This proposal summarises how the scheme has been adopted in Surrey University.

Figure 31: SISS session at SI International Conference, Orlando, 28-30 May 2008

Figure 32: Dr Magd Wahab with Dr Deanna Martin, Founder of SI, at the SI international Conference – Universal Orlando (May 2008)

5. Conclusions and recommendations

Supplemental Instruction Surrey Scheme (SISS) has been implemented in the University of Surrey for the first time. The module Statics & Dynamics taught to Level 1 Engineering students was used as a pilot module to evaluate the applicability of the Scheme and its usefulness to Surrey students. This report has summarised the step-by-step implementation procedures of the SI scheme. From the results and evaluation of the Scheme, the following conclusions and recommendations could be made:

- Students who have attended SI sessions have scored higher than those who haven't. In general, the pass mark rate for the SI students is higher than that for the non-SI students and the fail mark rate for the SI students is lower than that for the non-SI students.
- Students who have attended more than one SI session have performed better than those who have attended only one SI session.
- The next step is to extend SISS to include more than one module next academic year. This would help in building up the SI programme and make it part of the student culture at the University of Surrey.
- The SI leaders has gained lots of benefits through their participating in the scheme including enhancing their CV, self confidence, revising basic materials, receiving SI leader certificate and DAVE experiential learning award and gain leadership experiences. Some of the SI leaders' quotes, during the experience, are given below:
    - 'it looks good in my CV'
    - 'am looking forward to it'
    - 'Can't wait for next week'
    - 'I now have a greater appreciation for the post grads in my tutorials. Going over to someone with there hand up, and them simply going I don't get the right answer is difficult. What question? What part? Instant mental block. Although we don't give them the answer, or guidance, it is difficult to form a question to make them think of where to go when you don't know where they are.'
    - 'I have learned new concepts, for example the coefficient of restitution'
    - 'I'm feeling slightly down about the fact we're coming to an end, I've certainly enjoyed the experience'

- In order to extend the scheme in future, There are two possibilities:
    - The Faculty could invest in a SI supervisor, who could work for one day a week (part-time job), to look after more than one SI modules,
    - The University could centrally fund a full-time SI supervisor, may be through SPLASH, to look after several SI modules across all Faculties.
- I felt that there was a gap between the SI leaders and the students. The SI leaders have appeared acting as teachers, which was wrong, while the students have tried to challenge the knowledge of the SI leaders, which was also wrong. It is the job of the SI supervisor to narrow this gap.
- There was a problem with attendance (students haven't taken it seriously because it was voluntarily). Proposed solutions for future could be:
    - A compulsory attendance for at least 2 SI sessions during the semester.
    - The academic member of staff attends the first few SI session to motivate students.