學 能 提 升 研 究 中 心
Centre for Learning Enhancement And Research

Working Paper No. 2

The Chinese University of Hong Kong

Report on the Student Engagement Project

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Centre for Learning Enhancement And Research

2006

[Document designed to be printed double-sided.]

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1. Synopsis of the Student Engagement Project

There are three main aspects to the Student Engagement Project (SEP). The first is the Student Engagement Questionnaire (SEQ) which is a programme-level questionnaire on students' perceptions of their development of important capabilities, and their perceptions of the teaching and learning environment. The second aspect is the use of the SEQ feedback data provided by students in consultations with programmes in a diagnostic fashion. The data has provided 'triggers' in discussions with teaching staff in programmes, enabling the clear identification of strengths and challenges, and forming the basis for follow-up activities. The third aspect is the incorporation of SEQ data as evidence in programme reviews which are integral to the quality in teaching and learning policy of The Chinese University of Hong Kong (CUHK). This is shown diagrammatically in Figure 1. The SEP team is based at the Centre for Learning Enhancement And Research (CLEAR) at CUHK. Members are listed in *Appendix 1*.
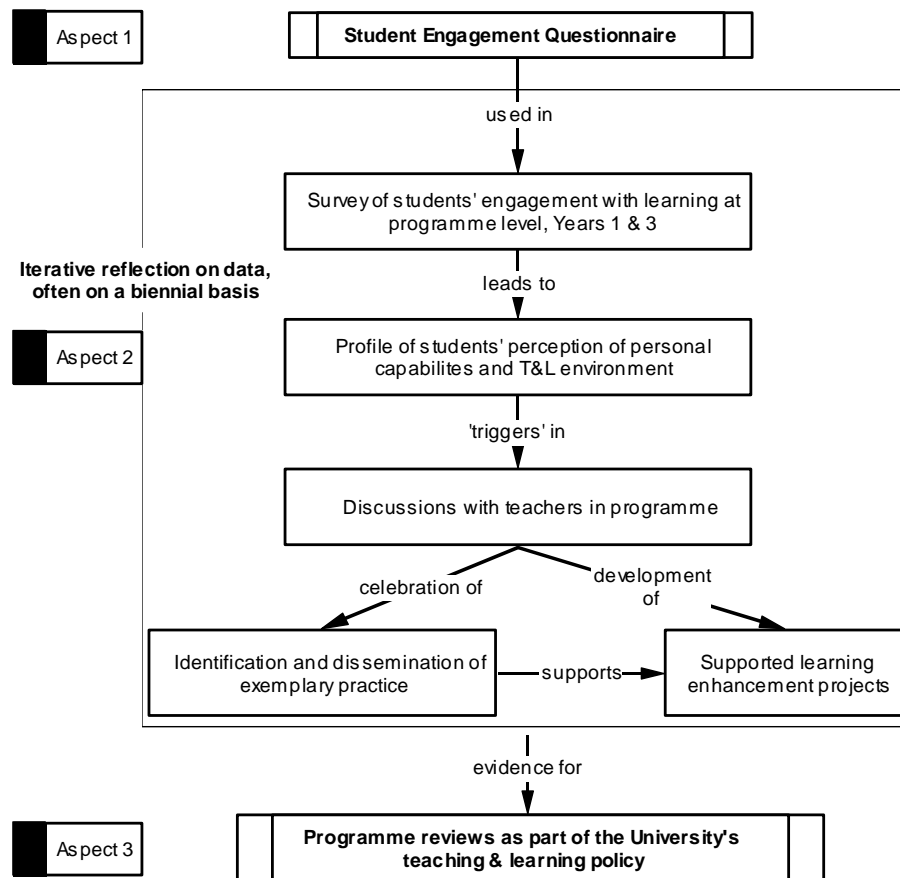

Figure 1. Overview of the Student Engagement Project

2. Development of the Student Engagement Questionnaire (SEQ)

The SEQ is designed to collect data on students' holistic reflections of their experience at key stages in their studies – at the end of first year and at exit point from their undergraduate degree programme. The first version of the questionnaire was developed and piloted in 2002 with good evidence of reliability and validity being obtained. It was used during the academic years 2002–03 and 2003–04 across all undergraduate programmes at CUHK. It was then revised after extensive feedback from all faculties. Version 2 of the SEQ consists of 35 closed-ended items and two open-ended items. The closed items seek quantitative feedback on two types of information – eight scales measuring perceived development of learning outcomes or capabilities (critical thinking, creative thinking, self-managed learning, adaptability, problem solving, communication skills, interpersonal skills and group work, and computer literacy) and nine scales seeking feedback on the teaching and learning environment (relating to: variety of learning activities, the level of interactivity with teachers, and with other students, the quality of the feedback received from teachers, if the assessment was relevant and guided learning, if the courses fitted together to make a coherent whole, and so forth). A five-point Likert scale is used to gather responses. Each scale of the SEQ has two or three items. The questionnaire also includes some demographic variables and two open-ended questions to gather student comments on the best aspect and the aspect most needing improvement in their programmes (Leung, 2005).

It should be noted that the SEQ differs from normal micro-level course feedback questionnaires in that it is designed to collect data on students' holistic reflections of their experience at key stages in their studies and not just on recent experiences of a course. Each year the SEQ is administered to Year 1 and Year 3 students from half of the undergraduate major programmes (~25) in the seven faculties of CUHK. The remaining programmes are sampled the following academic year. Between 2,500 and 3,000 students are contacted by email and mail each year. Response rates are between 50% and 60%. Students can choose to complete the questionnaire either online or by mailing back the paper version. Both English and Chinese versions of the questionnaire are provided. Most students understandably opt for the Chinese version and the nuances of translation were taken very seriously. The questionnaires are in *Appendix 2*.

3. Programme consultations using the SEQ data

Feedback of the results from the project is sent to the chairperson of the relevant department or programme director for each of the selected programmes. The data on each scale is provided as a z-score with respect to the University mean. (An example of a profile is provided in *Appendix 6* on p. 28.) The interpretation guide sent to programmes in 2006 is included in *Appendix 3*. The confidentiality of the data is stressed; this data is only given to each programme and not to the University administration. After this material had been sent out, individual chairs of the departments or her/his designate(s) are contacted for a meeting. During these meetings between CLEAR staff (either Professor Carmel McNaught or Professor David Kember) and senior programme teachers, areas of teaching contributing to demonstrated strengths of the individual programmes are explored so that others might use the information as a model of best practice. Ways in which the feedback could be used in the processes of curriculum development and revision are also discussed. The intended design for

the Student Engagement Project fits a three-stage conceptual change model (Kember, Ma, McNaught, et al, 2006, chapter 9; see Table 1).

Table 1. The Student Engagement Project and a three-stage conceptual change model

Stage	Planned activity
Evidence of the need for change	The profiles produced for departments provide quantitative and qualitative explicit feedback on aspects of the programme. These profiles show programme performance in relation to the mean scale scores for the University as a whole. The data is presented diagrammatically, in numbers and in words.
Confronting the situation	The meeting that is scheduled is essential in ensuring that the report is not just filed. It should be noted that in the meeting positive features of the programme are celebrated and this assists the process of addressing more challenging issues.
Reconstruction of a new approach	Meetings are followed up and initiatives that address identified challenges are supported by workshops, training sessions and ongoing consultations. In a given programme the SEQ is usually administered every two years. This enables longitudinal tracking to support progressive improvements.

Reference: Kember, D., Ma, R., McNaught, C., & 18 exemplary teachers. (2006). *Excellent university teaching*. Hong Kong: Chinese University Press.

The feedback from the SEQ provides evidence of the need for change in the form of profiles reporting the programme's rating by its students on the development of eight capabilities and nine aspects of the teaching and learning environment. Comparison of these ratings with those of other departments suggests potential strengths and challenges for each programme. This information is supplemented with qualitative feedback from responses to two open-ended questions.

In the meetings the initial focus is often on the strengths of the programme. An intention of this discussion is to identify forms of good practice in teaching and curriculum design so that other departments can learn from these. The meetings also try to focus on challenges, with the aim of jointly devising strategies to address them. This aim has been met most successfully in programmes where the profiles have generally been on the positive side. In such cases the departments concerned have often been quite keen to identify relative weaknesses and determine how to deal with them.

Where the profiles have been generally on the negative side, there has usually been less progress in persuading departments to confront the issues. However, it has to be said clearly that there have been two or three exceptions to this generalization when departments have tried to comprehensively address strongly negative feedback from their students. As change on this scale does not occur frequently, it is sensible to adopt an incremental approach where small challenges are confronted and acted upon first. While this may not result in rapid fundamental changes to beliefs and practice across the whole department, such an approach can, over time, build up an evidence base that becomes a 'turning point' for the department. Some examples of interventions that have been useful in this small scale approach are described in Section 6.

4. Report on the final year of the project, 2005–06

Four rounds of surveys of SEQ had been administrated at CUHK since 2003; this constitutes two complete cycles of data collection on all the undergraduate programmes offered by the University.

The most recent round of administration of the Student Engagement Questionnaire (SEQ) to a total of 3,064 students from Year 1 to Year 5 in the 29 undergraduate programmes was successfully completed in the second term of 2005–06. A feedback package reporting the results was provided to each of the 29 undergraduate programmes. The details about the administration process and data analysis are in *Appendix 4*.

The nature of the discussions in programme visits was somewhat different in the second round. Because the programme teachers were familiar with the project it was easier to get more directly to serious discussions about matters of teaching and learning. In addition, there was distinction made between challenges which could be met relatively easily and those which might require a longer time frame. Thus, longer term planning has been facilitated.

5. Relationship between students' development of capabilities and factors in the teaching and learning environment

The data from the SEQ have been analyzed using Structural Equation Modeling (SEM). SEM has the ability to test hypothesized models of the causal relationship between measured variables. In this case the hypothesized model is of the teaching and learning environment influencing the development of a set of generic capabilities. The model is shown in Figure 2 and details of the use of SEM in the SEP are given in *Appendix 5*.

The excellent fit of the data from the questionnaire to the model provides further evidence of the validity to the questionnaire. Its design is based on a hypothesis that the teaching and learning environment, as characterized by the variables included in the questionnaire, will have a significant impact on the development of the set of generic capabilities, selected as being important for graduates. Data collected with the questionnaire, from a large sample of students, shows an excellent fit to the model confirming that the questionnaire has been based upon a valid overall model.

The model has been extremely valuable in discussions with programmes. CUHK is a research-intensive university and teachers at this University are more likely to consider suggestions about change which come from a clear evidence base. Being able to show a clear model facilitates discussion. The language becomes easier when one can talk about clusters or groupings of capabilities and teaching and learning factors. At a recent meeting, one department chair commented: "So, we are doing OK in the intellectual area but I can see now why we need new strategies in order to improve students' communication skills. Clearly, we have to think about the relationships area in more detail."
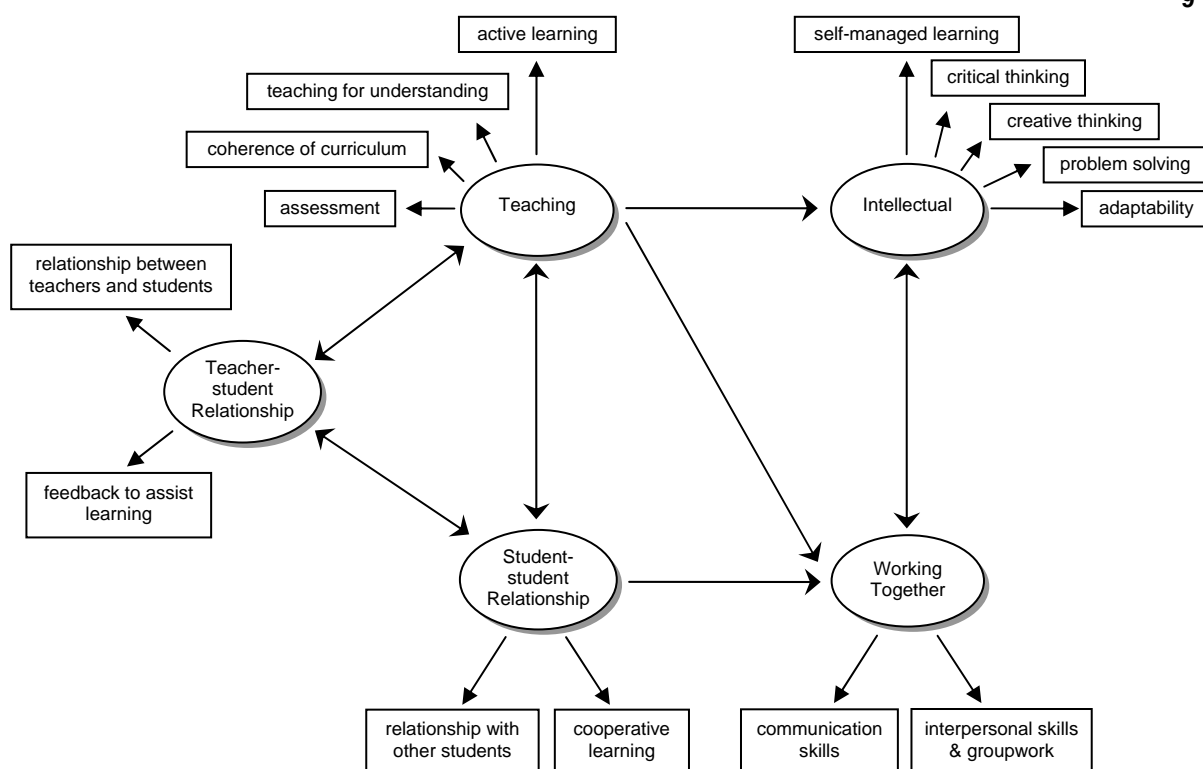
Figure 2. The relationships between the development of capabilities and
factors in the teaching and learning background

6. Examples of follow-up strategies with individual programmes

While the SEP team believes that the SEQ data does provide useful diagnostic data that can assist in the process of reflection and decision-making about change, it is important to clearly state that the SEP is just one set of data that programmes have – it is just one piece in the overall jigsaw puzzle. Curriculum change is complex and multi-faceted, and there are always a range of perspectives and options to be considered. It is in this light that suggestions for interventions, such as those noted in Table 2, are offered to programmes.

Table 2. Interventions resulting from the Student Engagement Project

Issue identified by the SEQ	Intervention focus
Unengaging large group teaching	Seminars on active learning and presentation skills
Low interactivity in tutorials	Suggestions for group work and facilitating communication. All teaching assistants at CUHK undergo mandatory professional development courses; these are tailored for each department.
Assessment inconsistent with course goals	Developing a matrix of learning outcomes and assessment tasks as a stimulus for discussion about how best to write appropriate assessment tasks
Student concerns with professional development	Exploration of strategies for lifelong learning, often using a case-based approach

As longitudinal data grows, the diagnostic value of the SEQ should be more easily seen. One case study is included in *Appendix 6*. Issues about students' confidence in problem solving and groupwork were highlighted in the 2003 meeting notes. The programme decided to act on these issues in the ways suggested and significant improvements were seen in the 2005 SEQ data. This was noted in the extract from the 2005 meeting notes. The case study shows how the collection of diagnostic feedback through evaluation informs and facilitates the enhancement of teaching and learning quality.

The SEQ data is now used in a variety of review and enhancement activities across the University. The momentum of this consultative engagement between CLEAR staff and CUHK teachers has been maintained. One development over the last few years is a growing interest in case-based learning at the University. In this particular situation, the SEQ data has reinforced the findings of other reviews, departmental reflections and other projects (including those funded as TDGs). The synergy between the SEQ data and other teaching and learning projects is very welcome and shows a growing maturity in the use of evidence in curriculum decision-making here at CUHK.

7. Incorporation of the SEQ into policy on quality assurance for teaching and learning

The 'Integrated Framework for Curriculum Development and Review' (Integrated Framework) was launched in March 2004 after wide consultation. Its main objective is "to ensure that teachers and programmes engage in *reflection* about teaching and learning, that such reflection is rooted in *evidence* and leads to *action* for improvement, and that *incentives* be provided for such efforts" (Section 3.1.1). The five integrated or aligned curriculum elements of the framework are learning outcomes, content, learning activities, assessment and feedback for evaluation. The processes of programme and course planning and review that are outlined in the Integrated Framework have been crafted to support programmes in the process of defining appropriate learning outcomes, designing suitable teaching and learning environments, and then monitoring students' attainment of the desired learning outcomes. Key features of the Integrated Framework are in *Appendix 7*.

One of the components of the Integrated Framework is comprehensive **undergraduate programme reviews**. Each review involves a panel of senior CUHK teachers and a visiting examiner who examine evidence of teaching and learning quality, and interview teachers, students and alumni.

Ten reviews have been conducted during the last two years. One of this project's investigators was present on each review panel. The process begins with the programme's own evidence-based self-evaluation report. Programmes are expected to use SEQ data as one source of evidence of teaching and learning in writing their self-evaluation report. One particularly useful feature of SEQ profiles is that they emphasize that outcomes are more than subject knowledge. The administration of the SEQ began in 2003 and so programmes now have access to a growing set of longitudinal data.

The review panel considers all the evidence and produces a report documenting strengths and challenges. After discussion, the programme then produces an explicit action plan to guide work during a six-year cycle before the next formal review. There are financial incentives to ensure that the review process is taken seriously.

The SEQ is now well integrated into quality assurance for teaching and learning at CUHK. The SEP team has been able to effectively demonstrate the value of the SEQ to our University's teaching and learning quality, and potentially to other universities in Hong Kong and elsewhere.

Several programmes have already sought customized administration. This has been in the form of more frequent administration or variation in the years surveyed. However, CLEAR is now receiving requests for customization through the addition of a customized section with items of specific relevance to the programme. This should increase the value of the SEQ and should raise response rates. The SEQ is administered directly to students by email and mail. More active encouragement from programme teachers who have become more engaged in the process of a customized SEQ should be beneficial for the response rates and hence the overall value of the whole SEP.

The University has allocated funding to CLEAR for the continued administration of the SEQ. This is part of a comprehensive Evaluation Service under the direction of Professor David Kember.

8. Dissemination details

Seven events have been held in Hong Kong, and six presentations overseas. Details are in *Appendix 8*.

Nine papers have been written thus far. Four papers have been published in refereed journals, one is in press, and two other journal articles are under review. Two refereed conference papers have been written. Details are in *Appendix 9*.

The papers written address a number of different aspects of the SEP. These are:

- *Establishment of a mechanism on how teaching and learning environment affects the development of learning outcomes.*
  Kember, D., & Leung, D. Y. P. (2005). The impact of the teaching and learning environment on the development of generic capabilities needed for a knowledge-based society. *Learning Environments Research, 8,* 245–266.
  Kember, D., Leung, D. Y. P., & Ma, R. S. F. (in press) Characterising learning environments capable of nurturing generic capabilities in higher education. *Research in Higher Education.* **[Full paper provided as an attachment.]**

- *Evaluation data collected through internet is a valid and efficient way of data collection.*
  Leung, D. Y. P., & Kember, D. (2005). Comparability of data gathered from evaluation questionnaires on paper and through the internet. *Research in Higher Education, 46(5),* 571–591.

- *Use of longitudinal data in enhancing teaching and learning in higher education*
  McNaught, C. (2005). From diagnostic feedback to university policy: Programme-level evaluation at a Hong Kong university. In C. S. Nair (Ed.), *Communicating evaluation outcomes: Issues and approaches* (pp. 96–106). Proceedings of the 2004 Evaluation Forum, Melbourne, 24-25 November 2004.

- *The effect of teaching and learning environment on students' perception of workload*
  Kember, D., & Leung, D. Y. P. (2006). Characterising a teaching and learning environment conducive to making demands on students while not making their workload excessive. *Studies in Higher Education, 31(2),* 185–198.

- *Development of a useful questionnaire in assessing facets in teaching and learning environment.*
  Leung, D. Y. P. (2005). Development of a questionnaire for assessing students' perception of teaching and learning environment. *Proceedings of the 2005 Annual Conference of the Forum for the Advancement of Continuing Education* (pp. 187–193). University College Cork, Ireland, 6-8 July 2005.
  Leung, D. Y. P., & Kember, D. (submitted). Development of a questionnaire for assessing students' perception of the teaching and learning environment and its use in quality assurance.

- *The usefulness of structural equation modeling in describing complex educational phenomenon*
  Leung, D. Y. P., & Kember, D. (2006) The influence of teaching approach and teacher-student interaction on the development of graduate capabilities. *Structural Equation Modeling, 13*(2), 264–286.
  Leung, D. Y. P., & Kember, D. (submitted). Use of structural equation modeling for testing realistic models of complex educational phenomena.

Appendix 1

Members of the Student Engagement Project team

Directors	Professors Carmel McNaught and David Kember
Manager and Statistics Officer	Dr Doris Leung
Qualitative Researchers	Dr Rosa Ma and Ms Celina Hong
Graphic Designer for the SEQ and programme profiles	Ms Teresa Lo
Administrative support	Ms Cherie Yip

The purpose of this questionnaire is to find out about your experience as a full-time university student in a broad sense. ***Consider your undergraduate studies programme.*** When answering questions please treat the term "programme" to mean all courses you studied in your ***undergraduate studies.*** The term "teaching staff" refers to the professors, lecturers and tutors who taught you at this university. Take into account all types of classes.

Instructions

Please mark your responses to the items below by filling up the most appropriate oval.

Use BLACK/BLUE ball pens to fill up the oval completely: *Right* ●   *Wrong* ⊖ ⍋ ⊗ ⊘

For questions 1 to 35 please fill up the appropriate circle alongside the question number to indicate your level of agreement with the statements below. Please choose the one most appropriate response to each question.

▲ — strongly agree (SA)   ▶ — agree (A)
◀ — only to be used if a definite answer is not possible (0)
⊟ — disagree (D)   □ — strongly disagree (SD)

		SA	A	0	D	SD
Critical thinking						
1.	I have developed my ability to make judgements about alternative perspectives	▲	▶	◀	⊟	□
2.	I have become more willing to consider different points of view	▲	▶	◀	⊟	□
Creative thinking						
3.	I have been encouraged to use my own initiative	▲	▶	◀	⊟	□
4.	I have been challenged to come up with new ideas	▲	▶	◀	⊟	□
Self-managed learning						
5.	I feel that I can take responsibility for my own learning	▲	▶	◀	⊟	□
6.	I have become more confident of my ability to pursue further learning	▲	▶	◀	⊟	□
Adaptability						
7.	During my time at university I have learnt how to be more adaptable	▲	▶	◀	⊟	□
8.	I have become more willing to change my views and accept new ideas	▲	▶	◀	⊟	□
Problem solving						
9.	I have improved my ability to use knowledge to solve problems in my field of study	▲	▶	◀	⊟	□
10.	I am able to bring information and different ideas together to solve problems	▲	▶	◀	⊟	□
Communication skills						
11.	I have developed my ability to communicate effectively with others	▲	▶	◀	⊟	□
12.	In my time at university I have improved my ability to convey ideas	▲	▶	◀	⊟	□
Interpersonal skills and groupwork						
13.	I have learnt to become an effective team or group member	▲	▶	◀	⊟	□
14.	I feel confident in dealing with a wide range of people	▲	▶	◀	⊟	□
Computer literacy						
15.	I feel confident in using computer applications when necessary	▲	▶	◀	⊟	□
16.	I have learnt more about using computers for presenting information	▲	▶	◀	⊟	□
Active learning						
17.	Our teaching staff use a variety of teaching methods	▲	▶	◀	⊟	□
18.	Students are given the chance to participate in classes	▲	▶	◀	⊟	□
Teaching for understanding						
19.	The teaching staff try hard to help us understand the course material	▲	▶	◀	⊟	□
20.	The course design helps students understand the course content	▲	▶	◀	⊟	□

16 *Feedback to assist learning*

		SA	A	0	D	SD
21.	When I have difficulty with learning materials, I find the explanations provided by the teaching staff useful	▲	▶	◀	⊟	☐
22.	There is sufficient feedback on activities and assignments to ensure that we learn from the work we do	▲	▶	◀	⊟	☐

Assessment

23.	The programme uses a variety of assessment methods	▲	▶	◀	⊟	☐
24.	To do well in assessment in this programme you need to have good analytical skills	▲	▶	◀	⊟	☐
25.	The assessment tested our understanding of key concepts in this programme	▲	▶	◀	⊟	☐

Relationship between teachers and students

26.	The communication between teaching staff and students is good	▲	▶	◀	⊟	☐
27.	I find teaching staff helpful when asked questions	▲	▶	◀	⊟	☐

Workload

28.	I manage to complete the requirements of the programme without feeling unduly stressed	▲	▶	◀	⊟	☐
29.	The amount of work we are expected to do is quite reasonable	▲	▶	◀	⊟	☐

Relationship with other students

30.	I feel a strong sense of belonging to my class group	▲	▶	◀	⊟	☐
31.	I frequently work together with others in my classes	▲	▶	◀	⊟	☐

Cooperative learning

32.	I have frequently discussed ideas from courses with other students out-of-class	▲	▶	◀	⊟	☐
33.	I have found that discussing course material with other students outside classes has helped me to reach a better understanding of the material	▲	▶	◀	⊟	☐

Coherence of curriculum

34.	I can see how courses fitted together to make a coherent programme of study for my major	▲	▶	◀	⊟	☐
35.	The programme of study for my major was well integrated	▲	▶	◀	⊟	☐

A. What are the best aspects of your programme?

_____

_____

_____

B. Which aspects are most in need of improvement?

_____

_____

_____

36. Which faculty do you belong to?

   O Arts   O Business Admin.   O Education   O Engineering
   O Medicine   O Science   O Social Science

37. What is your major? _____

38. Which college do you belong to?

   O Chung Chi   O New Asia   O Shaw   O United

39. Where have you lived this academic year?

   O Campus hall of residence   O Off Campus

學生參與問卷調查

本問卷旨在了解你作為全日制大學生的廣義經驗。 填寫問卷時，請將問卷中的「課程」視為你作為本科生時修讀過的所有科目 ；「教職員」指在本大學中曾教授過你的教授、講師和導師。 請將各類課堂列入你的考慮範圍內。

填寫問卷指引

請填滿最適合答案旁的橢圓形空格。

*請用**黑色/藍色**原子筆填滿橢圓形空格:* 正確 ● 不正確 ⊖ ⊘ ⊗ ⊘

第一至第三十五題是一些有關學生大學生活參與的句子。請你在下面各題句子旁選出你對該句子的同意程度。請在每題選出一個最適合的答案。

- ▲ — 非常同意 (SA)   ▶ — 同意 (A)
- ◀ — 只在不能肯定的情況下使用 (0)
- ⊟ — 不同意 (D)   □ — 非常不同意 (SD)

	SA	A	0	D	SD
批判思考 (Critical thinking)					
1. 我學會判辨不同的看法	▲	▶	◀	⊟	□
2. 我變得更願意考慮不同的觀點	▲	▶	◀	⊟	□
創意思維 (Creative thinking)					
3. 在學習上，我被鼓勵採取主動	▲	▶	◀	⊟	□
4. 我經歷了不同的挑戰，從而產生新的想法	▲	▶	◀	⊟	□
自學能力 (Self-managed learning)					
5. 我能肩負自我學習之責任	▲	▶	◀	⊟	□
6. 我有信心自己可以持續進修	▲	▶	◀	⊟	□
適應力 (Adaptability)					
7. 我的適應力比以前更強	▲	▶	◀	⊟	□
8. 我變得更願意改變自己的看法和接受新的想法	▲	▶	◀	⊟	□
解決難題 (Problem solving)					
9. 我懂得利用自己的知識去解決學科中的問題	▲	▶	◀	⊟	□
10. 我能融匯貫通各類資訊和不同的意見去解決問題	▲	▶	◀	⊟	□
溝通技巧 (Communication skills)					
11. 我掌握到與人有效地溝通的技巧	▲	▶	◀	⊟	□
12. 在大學修讀期間，我表達意見的能力進步了	▲	▶	◀	⊟	□
人際關係與團隊精神 (Interpersonal skills and groupwork)					
13. 我學會團隊精神	▲	▶	◀	⊟	□
14. 我有信心跟不同類型的人相處	▲	▶	◀	⊟	□
電腦知識 (Computer literacy)					
15. 當有需要時，我相信自己能應用相關的電腦程式	▲	▶	◀	⊟	□
16. 我學會使用電腦作資料報告	▲	▶	◀	⊟	□
主動學習 (Active learning)					
17. 教職員使用多元化的教學方法	▲	▶	◀	⊟	□
18. 同學有機會在課堂中參與	▲	▶	◀	⊟	□
有效教學(Teaching for understanding)					
19. 教職員盡力幫助我們去明白教學材料	▲	▶	◀	⊟	□

20. 課程設計能夠幫助同學了解課程內容	▲ ▶ ◀ 🗗 ☐

18 *輔助學習的回應 (Feedback to assist learning)*	SA A 0 D SD
21. 當我在學習材料上遇到困難時，教職員能夠給予有用的解釋	▲ ▶ ◀ 🗗 ☐
22. 在活動和功課中我們都得到充分的回應，確保我們能夠從中有所學習	▲ ▶ ◀ 🗗 ☐

評估 (Assessment)

23. 課程使用了不同類型的評估方法	▲ ▶ ◀ 🗗 ☐
24. 要在課程評估中得到優良的成績，我要有良好的分析能力	▲ ▶ ◀ 🗗 ☐
25. 評估測試了我們對課程中主要概念的理解	▲ ▶ ◀ 🗗 ☐

師生關係 (Relationship between teachers and students)

26. 教職員與學生之間有良好的溝通	▲ ▶ ◀ 🗗 ☐
27. 教職員樂意解答學生的問題	▲ ▶ ◀ 🗗 ☐

工作量 (Workload)

28. 我能夠在沒有過多的壓力下完成課程要求	▲ ▶ ◀ 🗗 ☐
29. 我們所需承擔的工作量是合理的	▲ ▶ ◀ 🗗 ☐

與其他同學的關係 (Relationship with other students)

30. 我對自己的課程組別有強烈的歸屬感	▲ ▶ ◀ 🗗 ☐
31. 我經常在課堂中跟其他同學合作	▲ ▶ ◀ 🗗 ☐

協作學習 (Cooperative learning)

32. 我經常在課餘跟其他同學討論課堂的內容	▲ ▶ ◀ 🗗 ☐
33. 我認為課餘與其他同學的討論加深了我對課堂材料的了解	▲ ▶ ◀ 🗗 ☐

課程的連貫性 (Coherence of curriculum)

34. 整個主修課程有連貫性，各科目之間有系統地銜接	▲ ▶ ◀ 🗗 ☐
35. 我的主修課程整合得宜	▲ ▶ ◀ 🗗 ☐

A. 你所修讀的課程中哪些方面是最好的?

B. 哪些方面是最需要改善的?

36. 你屬於以下哪一個學院?

   O 文學院   O 工商管理學院   O 教育學院   O 工程學院
   O 醫學院   O 理學院   O 社會科學院

37. 你的主修科是甚麼? _____

39. 你屬於以下哪一個書院?

   O 崇基   O 新亞   O 逸夫   O 聯合

39. 在這學年中，你居住在哪兒?
   O 學校宿舍   O 校園外

多謝填寫本問卷

Appendix 3

Interpretation of feedback from the Student Engagement Project: 2006

The Student Engagement Project has sought feedback from undergraduate students on their perceptions of the development of important generic capabilities, and on the quality of aspects of teaching and learning known to encourage meaningful learning since 2003. Feedback is sought from all first and third year students on all the undergraduate programmes offered by the University on a two-year rotational basis. This year feedback was again sought on those programmes surveyed in 2004 and hence two cycles of data collection have been completed for all the programmes.

Feedback was gathered through the administration of a questionnaire. Copies of the English and Chinese versions are enclosed. About 80% of students completed the Chinese version. Students could complete the paper version of the questionnaire, which was delivered by mail, or submit their feedback through a web-based version. A total of 1,384 students completed the questionnaire, giving an overall return rate of 51.3%, which is a high return for surveys of this type.

The instrument contained two open-ended questions. Enclosed is a tabulation of all responses to these questions for the specified programme for first and third year students. The responses are tabulated in two columns so that responses from individual students to the two questions appear alongside each other.

The feedback from the quantitative part of the instrument is summarised in two profile sheets for first and third year students. The main purpose of this document is to guide the interpretation of these results.

The quantitative part of the questionnaire seeks two types of information. Results from these are shown in the two vertical sections.

Development of capabilities
This section measured students' perceptions of the development of the types of capabilities needed by university graduates in the knowledge-based society that Hong Kong is striving to become. Eight capabilities were selected as appropriate by expert panels and each is measured by a scale containing two items. The students were asked to respond to the items on a five-point Likert scale, from strongly agree to strongly disagree.

Teaching and learning environment
The items gathered feedback on nine aspects of the broad curriculum which play a part in establishing the learning and teaching environment within a programme. The nine aspects are measured by two- or three-item scales. The same response scale was used.

Standard psychometric tests have been performed on the instrument. The reliability of all scales exceeds the normally accepted values. There is evidence of validity from methods such as: the use of expert panels in formulating the instrument, consistency with the literature, congruence with a hypothesised model, triangulation against qualitative data, consistency with results of other projects, and explanatory power.

On the profile sheets **Column 1** gives the *name of the scale* on the questionnaire for the capabilities and teaching and learning sections. Further insight into the meaning of scales can be gained by examining the constituent items.

Column 2 (*the bar charts*) shows the frequency of responses. Students were asked to respond to the items using five-point Likert scales from strongly agree to strongly disagree. For graphical simplicity the column shows the frequencies of the first three responses. The thicker bar shows responses for 2006 and the thinner one for 2004.

To provide some guidance in interpreting these frequencies, the chart below shows the overall frequencies for the responses of all students, in all programmes sampled in 2006, to all items on the questionnaires.

Distribution of responses
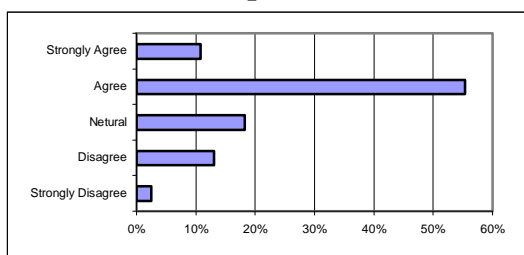
Column 3 (headed *Mean*) gives the mean response score for each scale for the undergraduate programme in year 2006. The scores have been normed to give a score out of five by dividing by the number of items in the scale. At the head of the column the return for the programme is shown (n = X).

Columns 4 (headed *Uni. Mean*) give *mean scale scores* for all the programmes sampled in the University as a whole in the 2005–06 cycle. This column provides a basis for interpreting programme scores by comparing them to overall University results. The number at the head of the column (N = 47) refers to the number of programmes surveyed in 2005 and 2006, to produce the mean values.

Column 5 (headed *Mean*) gives the mean response score for each scale for the undergraduate programme in year 2004. At the head of the column the return for the programme in 2004 is shown (n = X).

Between the 2003–04 and 2005–06 administrations of the questionnaire, University committees supported changes in wording to items in the questionnaire. It was hoped that the changes would be sufficiently minor that scores could be compared between the two-cycles of data collections. Unfortunately, analysis indicates that scores have been significantly affected by the changes. Some indication of change between 2003 and 2005 can be gathered by comparing changes in programme scores to changes in University means (columns 4 and 6). Changes substantially greater or less than the changes to the University means should indicate real changes to teaching and learning outcomes.

Columns 6 (headed *Uni. Mean*) give *mean scale scores* for the programmes sampled in the University as a whole in the 2003–04 cycle. The number at the head of the column (N = 50) refers to the number of programmes surveyed in the 2003–04 cycle.

The final column gives the *z-score*. A z-score is the number of standard deviations from the mean. In this case it indicates the number of standard deviations by which the mean scores by programme differed from the University mean. The standard deviation is a measure of the spread of scores. The deviations of the scores approximated to a normal distribution, so about 68% of scores fall with ± one standard deviation of the mean.

A further indication of progress between 2004 and 2006 can be gained by comparing z-scores between the two years. Those for the former are available from CLEAR if copies have not been kept.

Appendix 4

Administration of SEP in 2006

Sample

A total of 3,064 students from Year 1 to Year 5 in the 29 undergraduate programmes across the seven faculties were surveyed in the final round of the project. As a result, four rounds of surveys have been administrated at CUHK since 2003 which constitutes two complete cycles of data collection on all the undergraduate programmes offered by the University. The 29 programmes and year of study surveyed in this year are shown in Table A4.1. The programmes were slightly different from the 26 programmes surveyed in 2004 due to programme changes at the University and special requests by individual departments. In particular, the intercultural section of the department of Modern Languages and Intercultural Studies was combined with the Department of Religion which now offers three distinct programmes including the Religious Studies programme. Two new programmes (Cultural Studies and Linguistics) were launched in 2004. The Religious Studies programme exists in its original form and hence both Year 1 and Year 3 students were included in the survey while only Year 1 students were available for the other two programmes. Moreover, there were no new intakes for the two programmes (Internet Engineering, and Material Science and Engineering) and they were consequently excluded from the study.

Data from the Language Education programme, on the other hand, has been split into streams, the Chinese and English streams, for analysis by request. For the three programmes in the Faculty of Business Administration, Year 2, instead of Year 1, students were included in the population because of the generic nature of Year 1 courses in that faculty. For the School of Nursing, data from Year 1 and Year 4 students were solicited because it offers a four-year degree programme. Moreover, it was requested that Medical Studies (MBChB; Year 1, and Year 3 to Year 5) and Pharmacy (Year 1 to Year 3) students be surveyed on a yearly basis to investigate the effect of the newly implemented reforms to the two programmes. Finally, the Anthropology programme was relocated in the Faculty of Arts in 2004.

Instrument and administration
The SEQ was administered to the 3,064 students in late March 2006. Both the Chinese and English versions of the instrument were sent through both email and mail to the students. However, the MBChB students received only the English version of the questionnaires through the internet as requested. One week later, reminders through email were sent; another week later reminders were sent through both email and mail. All returns after April 19 were discarded and not included in the analysis.

Data
A total of 1,540 students completed and returned the questionnaire which constitutes an overall return rate of 50.3%. Again, all the data obtained from the online version was directly transferred to an Excel format; then converted to a SPSS database for the quantitative date and to Word documents for the comments to the two open-ended questions. The quantitative data from the completed paper questionnaires were scanned into a SPSS database directly through an optical mark reader while the responses to the two comments were typed into Word documents. The two sources of data were then combined into two data files.

Analysis

The reliabilities of the 17 scales in the instrument were assessed with the Cronbach alpha values which are given in Table A4.2. The alpha values ranged from 0.59 for Communication Skills to 0.82 for Coherence of Curriculum and hence the scales were considered as reliable in this sample. 1,384 out of the total 1,540 returns were from either first year or final year students. The responses from these 1,384 students were used to generate the profiles that were sent to the departments.

For the two 'special' programmes, Pharmacy and Medical Studies, means of the scales in the capabilities and the teaching and learning environment domains were compared across cohort years. Effect sizes of mean differences, as measured by Cohen's d, were computed between the data obtained in the cohort year 2005 and 2006 for all the year of study being surveyed. For the Language Education programme, the analyses were performed with the Chinese and English streams separately. In addition to the profiles, mean scores of the scales for Year 1, Year 4, and Year 5 students were also computed. All the analyses were completed in late April 2006.

Result dissemination

The same feedback practice developed before was adopted for this final year of the project. Feedback of the results was sent to the chairperson or programme director of the relevant department for each of the 29 programmes in late April 2006. The feedback package included the same items as before:

1. copies of the Chinese and English language versions of the questionnaire;
2. profiles sheets showing the responses to the quantitative items from two cohorts 2004 & 2006 from first and third year students separately;
3. a completed set of transcribed responses to the two open-ended questions;
4. a guide to the interpretation of the data;
5. a model relating the capabilities scales and the facets in the teaching and learning environment; and
6. a cover letter explaining the four items above and asking for a meeting to explore possible ways to use the feedback in the processes of curriculum development and revision of the programme.

Additional results on the mean comparison across cohort years were also given for the Pharmacy and the Medical Studies programmes. Mean scores of the scales for each of the three years of study being surveyed in the Language Education programme were also provided in the feedback package.

As usual, meetings took place with all programmes which were surveyed.

Table A4.1. The 29 programmes and level of study surveyed in 2006

Faculty	Programme	Level of study surveyed
Arts	Anthropology	Year 1 & Year 3
	Cultural Studies	Year 1
	English	Year 1 & Year 3
	History	Year 1 & Year 3
	Linguistics	Year 1
	Music	Year 1 & Year 3
	Religious Studies	Year 1 & Year 3
	Translation	Year 1 & Year 3
Business Administration	Hotel and Tourism Management	Year 2 & Year 3
	Insurance, Financial & Actuarial Analysis	Year 2 & Year 3
	Quantitative Finance	Year 2 & Year 3
Education	Language Education – Chinese stream	Year 1, Year 3, & Year 4
	Language Education – English stream	Year 1, Year 3, & Year 4
Engineering	Computer Science	Year 1 & Year 3
	Electronic Engineering	Year 1 & Year 3
	Systems Engineering & Engineering Management	Year 1 & Year 3
Medicine	MBChB	Year 1, Year 3, Year 4, & Year 5
	Pharmacy	Year 1, Year 2, & Year 3
	Nursing	Year 1 & Year 4
Science	Biochemistry	Year 1 & Year 3
	Chemistry	Year 1 & Year 3
	Environmental Science	Year 1 & Year 3
	Molecular Biotechnology	Year 1 & Year 3
	Statistics	Year 1 & Year 3
Social Science	Geography and Resource Management	Year 1 & Year 3
	Journalism & Communication	Year 1 & Year 3
	Social Work	Year 1 & Year 3
	Sociology	Year 1 & Year 3

Table A4.2. Cronbach alpha values of the 17 scales in the SEQ (2006 administration)

Scale	# of items	Cronbach alpha
Capability		
Critical thinking	2	0.76
Creative thinking	2	0.62
Self-managed learning	2	0.61
Adaptability	2	0.64
Problem solving	2	0.66
Communication skills	2	0.59
Interpersonal skills & groupwork	2	0.66
Computer literacy	2	0.62
Teaching & Learning Environment		
Active learning	2	0.74
Teaching for understanding	2	0.70
Feedback to assist learning	2	0.70
Assessment	3	0.65
Relationship between teachers & students	2	0.66
Workload	2	0.79
Relationship with other students	2	0.80
Cooperative learning	2	0.73
Coherence of curriculum	2	0.82

Appendix 5

Statistical model of capability development

A good demonstration of construct validity for the SEQ comes from using structural equation modeling (SEM). SEM has been used to establish that the elements included in the teaching and learning environment make a significant contribution to nurturing the set of generic capabilities included in the questionnaire. Anderson (1987) suggested that external validity of a construct can be established through examining the set of relationships of the construct with other constructs in a nomological network.

SEM has the ability to test hypothesized models of the causal relationship between measured variables. In this case the hypothesized model is of the teaching and learning environment influencing the development of a set of generic capabilities. The model is shown in Figure A5.1. The diagram of the model includes standardized coefficients, which are results from the testing of the model. These are not part of the hypothesized model, but showing them avoids duplication of the diagram on the next page.
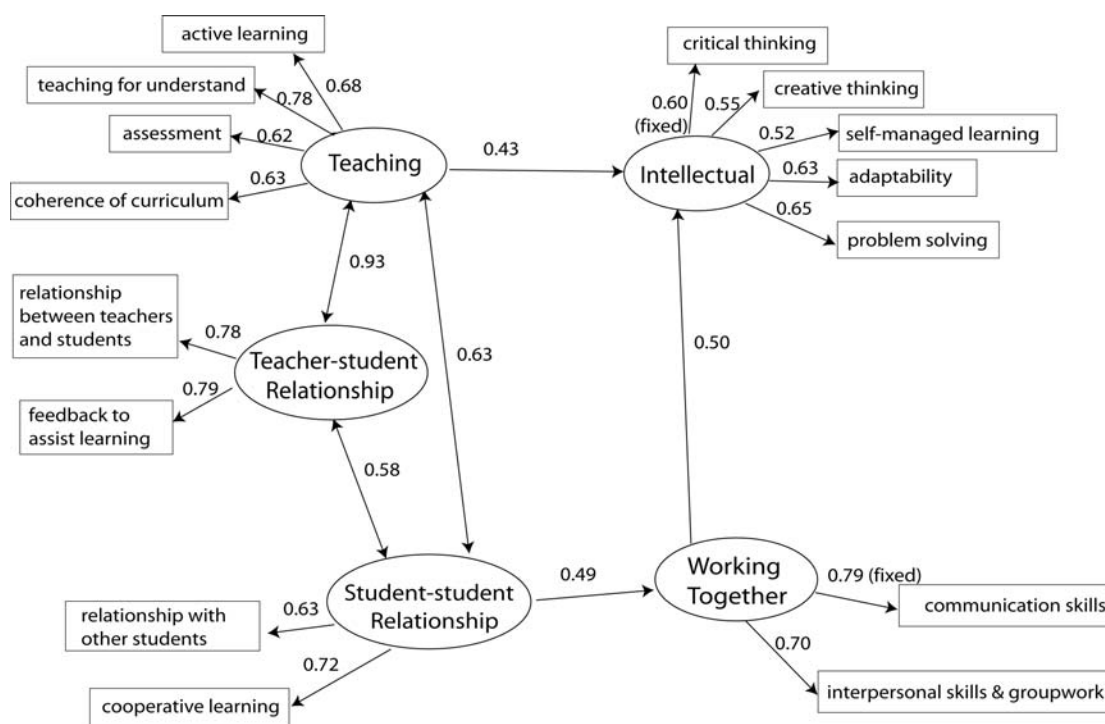

Figure A5.1: The SEM model showing how the teaching and learning environment
influences capability development

The scales from the questionnaire appear in the model as indicators, which are represented in SEM models as rectangles. It will be noted that two scales from the questionnaire do not appear as variables in the model. Computer literacy is somewhat different in nature to the other generic capabilities; so did not correlate well with them. Students' perceptions of workload relate only weakly to hours worked but are influenced by their perceptions of other elements of their learning environment (Kember, 2004). Workload can, therefore, be modelled as being weakly influenced by most of the variables in this characterization of a

teaching and learning environment (Kember & Leung, 2006), which makes its inclusion in the model problematic.

In addition to the variables corresponding to the questionnaire scales, the model includes five latent variables shown in ovals. On the teaching and learning environment side of the model, there are three latent variables, teaching, teacher–student relationship, and student–student relationship, which can be envisaged as higher-order factors grouping distinct facets of the environment. Similarly on the capabilities side of the model the two latent variables are intellectual and working together. Again these represent logical groupings of the capabilities.

SEM models are tested by examining the goodness of fit of the model against a collection of data measuring the variables included in the model. Assessment of model fit was based on multiple criteria including both absolute misfit and relative fit indexes. The absolute misfit indexes included the Root Mean Square Error of Approximation (RMSEA; Browne & Cudeck, 1993) and the Standardized Root Mean Squared Residual (SRMR; Bentler, 1995). The relative goodness-of-fit index used in the study was the Comparative Fit Index (CFI; Bentler, 1990). A model with RMSEA<0.08, SRMR<0.08, and CFI>0.95 would be considered as an excellent fit to the data. The goodness-of-fit indexes for this model were RMSEA=0.057 (90% CI = 0.052, 0.062), SRMR=0.042 and CFI=0.943, which indicates an excellent fit to the observed data. The standardized parameter estimates of the model are shown in Figure A5.1. All of the paths between the latent variables were statistically significant, except the one from teaching to working together. Moreover, the directions of the all the paths were positive as anticipated.

The excellent fit of the data from the questionnaire to the model provides further evidence of the validity to the questionnaire. Its design is based on a hypothesis that the teaching and learning environment, as characterized by the variables included in the questionnaire, will have a significant impact on the development of the set of generic capabilities, selected as being important for graduates. Data collected with the questionnaire, from a large sample of students, shows an excellent fit to the model confirming that the questionnaire has been based upon a valid overall model.

Anderson, J. C. (1987). An approach for confirmatory measurement and structural equation modeling of organizational properties. *Management Science, 33*, 525–541.

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin, 107*, 238–246.

Bentler, P. M. (1995). EQS structural equations program manual. Multivariate Software, CA: Encino.

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds), *Testing structural equation models* (pp. 136–161). Newbury Park, CA: Sage.

Kember, D. (2004). Interpreting student workload and the factors which shape students' perceptions of their workload. *Studies in Higher Education, 29*(2), 165–184.

Kember, D., & Leung, D. Y. P. (2006). Characterising a teaching and learning environment conducive to making demands on students while not making their workload excessive. *Studies in Higher Education, 31*(2), 185–198.

Appendix 6

Example of the use of SEQ data to track changes within a programme

The example shows how the collection of diagnostic feedback through evaluation informs and facilitates the enhancement of teaching and learning quality. Evaluation is an integral component of just about all of the learning enhancement initiatives of CLEAR.

The example involves the SEQ which is administered to first and third year students for every undergraduate programme in alternate years. Following the survey the responsible department receives a feedback sheet, in the form shown on the next page, together with sets of all comments in response to the open-ended questions. A member of CLEAR then meets with representatives of each department to discuss the feedback and action which might be taken. A summary of the meeting is provided to the department.

Following is an extract from the meeting notes of one department from the 2003 round of the survey.

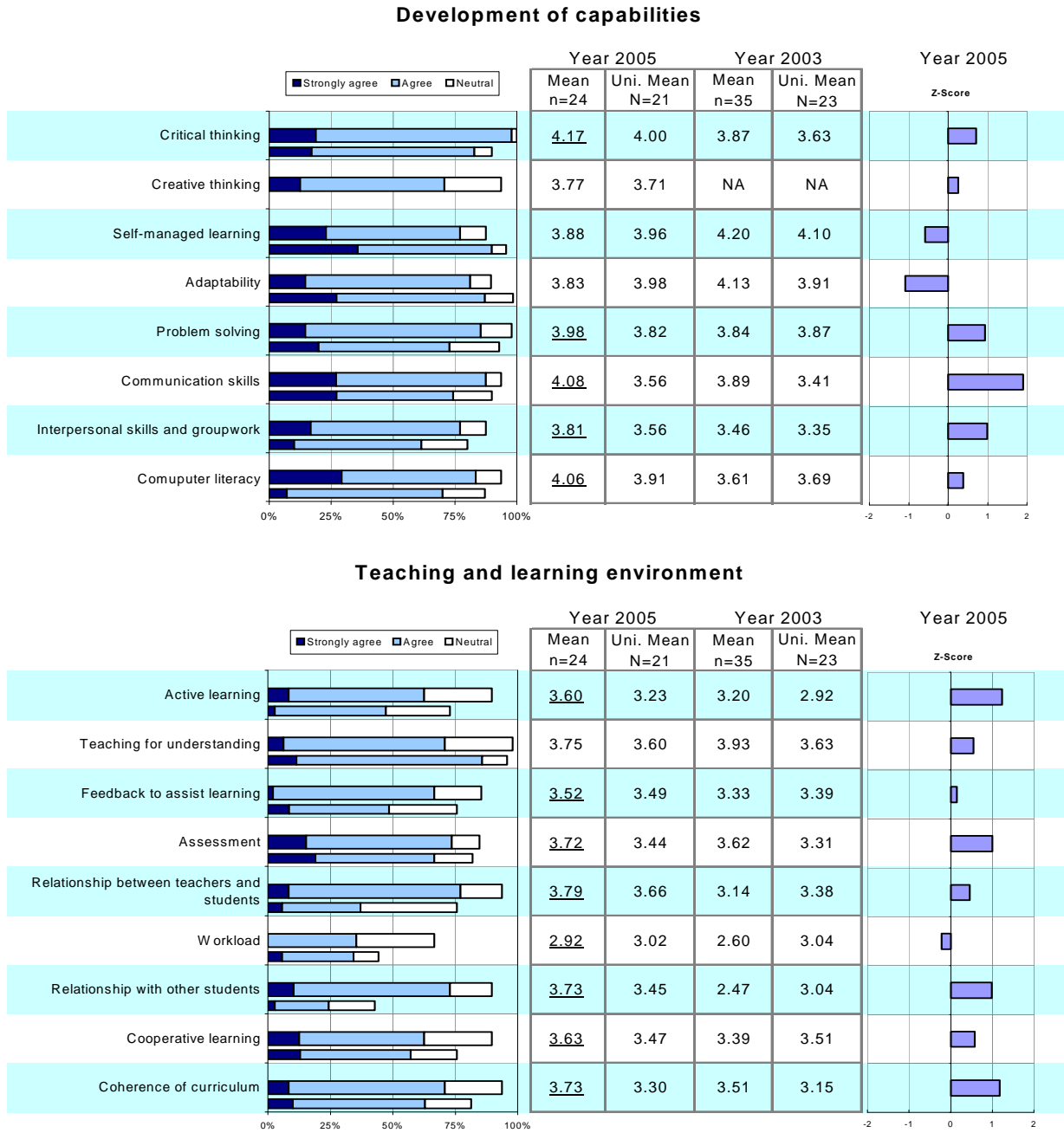*Extract from meeting summary 2003*

> Areas which may need further attention:
> - Inconsistency appears in students' perceived low **interpersonal and groupwork skills** despite them having been involved in a great number of group projects;
> - A low perception on **problem solving** and **career preparation**;
> - Heavy **workload**.

Suggestions for ways forward were made during the meeting:
1. The compulsory first year courses, such as X and Y, could be examined to see if practical applications could be stressed more in order for them to become a means of developing critical thinking and problem solving ability.
2. The new module which introduces 'Z' with guest speakers sharing their experience in their profession seems likely to improve problem-solving and career preparation.
3. Examine the nature of group projects to see why they appear to be having negative effects on student relationships and cooperative learning. Possibly the introduction of peer assessment of contributions to the group might help.

Feedback on Programme X (Year 3, 2005)
from Student Engagement Project

Development of capabilities

	Year 2005		Year 2003		Year 2005
	Mean n=24	Uni. Mean N=21	Mean n=35	Uni. Mean N=23	Z-Score
Critical thinking	4.17	4.00	3.87	3.63	
Creative thinking	3.77	3.71	NA	NA	
Self-managed learning	3.88	3.96	4.20	4.10	
Adaptability	3.83	3.98	4.13	3.91	
Problem solving	3.98	3.82	3.84	3.87	
Communication skills	4.08	3.56	3.89	3.41	
Interpersonal skills and groupwork	3.81	3.56	3.46	3.35	
Comuputer literacy	4.06	3.91	3.61	3.69	

Teaching and learning environment

	Year 2005		Year 2003		Year 2005
	Mean n=24	Uni. Mean N=21	Mean n=35	Uni. Mean N=23	Z-Score
Active learning	3.60	3.23	3.20	2.92	
Teaching for understanding	3.75	3.60	3.93	3.63	
Feedback to assist learning	3.52	3.49	3.33	3.39	
Assessment	3.72	3.44	3.62	3.31	
Relationship between teachers and students	3.79	3.66	3.14	3.38	
Workload	2.92	3.02	2.60	3.04	
Relationship with other students	3.73	3.45	2.47	3.04	
Cooperative learning	3.63	3.47	3.39	3.51	
Coherence of curriculum	3.73	3.30	3.51	3.15	

Note: The thicker bar represents Year 2005 and the thinner bar represents Year 2003

Figure A6.1 Feedback profile for Year 3 students of programme X in 2005

The feedback profiles permit the identification of strengths and weaknesses through the z-score profiles which compare the mean score of the programme to that for all of the undergraduate programmes in the University. The z-score shows the number of standard deviations by which the programme in question is above or below the University mean.

The graphic portrayal of the z-scores in the right hand column of the profile permits easy identification of relative strengths and weaknesses. In general this department has a good record in teaching and learning, but relative strengths and weaknesses can clearly be identified. The survey has been designed to have this diagnostic quality, unlike many teaching evaluation questionnaires which can rank teachers, but do not identify aspects of teaching performance which can be improved.

Comparison of mean scores between 2003 and 2005 enables the department to monitor changes. In this case it can be seen that issues highlighted in the 2003 meeting notes have been acted upon in the way suggested and that significant improvements have resulted. This has been noted in the extract from the 2005 meeting notes.

Extract from meeting summary 2005

Compared to the 2003 data there were significant increases in the ratings for problem solving for both first and third years. This was attributed to teachers stressing applications to solve typical problems. This improvement is worth communicating to the Department for wider application.

There were also very major advances in student-student relationships and cooperative learning. This was attributed to better handling of group projects and the wider adoption of the assessment of individual contributions to group projects. It could be worthwhile to suggest that the purpose and anticipated outcomes of projects are clearly explained to students each time as they are a time-consuming, but very worthwhile, form of learning.

The improvements in the identified aspects of teaching and learning are shown graphically below. The graph compares z-scores for 2003 and 2005 for the scales corresponding to the issues identified in the 2003 summary. It can be seen that there have been significant improvements.
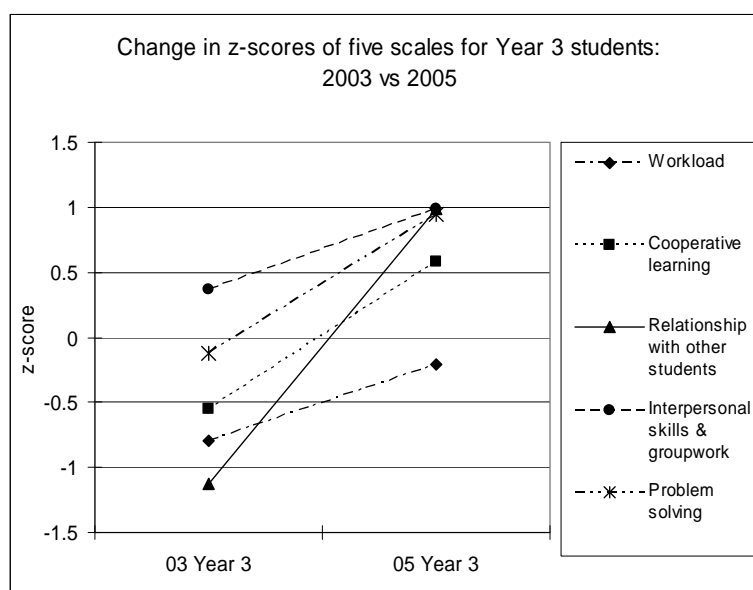

Figure A6.2 Changes in z-scores for Year 3 students from 2003 to 2005

Appendix 7

Key aspects of the Integrated Framework for Curriculum Development and Review

The integrated framework for curriculum development and review was developed by the CUHK Senate Committee on Teaching and Learning Quality. Broadly, the policy focuses on:
- student learning in terms of concepts, skills and attitudes;
- both individual courses and whole programmes;
- both planning and review of courses and programmes;
- coherence between content, learning outcomes, learning activities and evaluative feedback;
- obtaining evidence of the success of curriculum design in promoting student learning;
- annual reports, course reviews (every three years) and programme reviews (every six years);
- active involvement of external examiners in programme reviews;
- the need for professional development of teachers and teaching assistants; and
- using incentives (financial and personnel) to encourage quality improvement.

Guides for programme and course planning, and for programme and course review have been written.

Appendix 8

Dissemination events about the Student Engagement Project

Place & Date	Presenter(s)	Topic
Hong Kong seminars		
The Chinese University of Hong Kong 18 May 2005	DK	Creating a teaching and learning environment to nurture graduate capabilities – Qualitative version
The Chinese University of Hong Kong 24 May 2005	DK & DL	Modeling a teaching and learning environment to nurture graduate capabilities – Quantitative version
Hong Kong Polytechnic University 1 January 2005	CM	The use of the SEQ as a diagnostic tool for programme reflection and as an evidence base for quality assurance purposes*
Hong Kong Institute of Education 23 March 2005	CM	
University of Hong Kong 21 October 2005	CM	
City University of Hong Kong 17 November 2005	CM	
Hong Kong University of Science and Technology 3 March 2006	CM	
International presentations		
School of Computing and IT, UNITEC New Zealand 23 September 2004	CM	A capability framework: The model at the Chinese University of Hong Kong
RMIT University, Melbourne 26 November 2004	CM	Do they learn? Are they satisfied? Building an evidence base about university teaching – on- and off-line
2004 Evaluation Forum, Melbourne 25 November 2004	CM	From diagnostic feedback to university policy: Programme-level evaluation at a Hong Kong university
La Trobe University, Melbourne 13 April 2005	CM	New directions in university learning research
Inauguration as an Adjunct professor, Swinburne University, Melbourne 14 April 2005	CM	Quality and curriculum
2005 Annual Conference of the Forum for the Advancement of Continuing Education, University College, Cork, Ireland 7 July 2005	DL	Development of a questionnaire for assessing students' perception of teaching and learning environment

DK – Professor David Kember
DL – Dr Doris Leung
CM – Professor Carmel McNaught

Appendix 9

Abstracts of published papers

International Journals

Kember, D., Leung, D. Y. P., & Ma, R. S. F. (in press). Characterising learning environments capable of nurturing generic capabilities in higher education. *Research in Higher Education.*

Abstract:

There has been wide recognition that today's graduates need the type of generic capabilities necessary for lifelong learning. However, the mechanism by which universities can develop these generic skills is not clearly established. This study aimed to investigate the mechanism for their development. Structural equation modeling (SEM) was used to test a hypothesized model of capability development through a suitable learning environment with 1756 undergraduates at a university in Hong Kong. To triangulate against this model and more fully characterize the learning environment, focus group interviews were held with five to six students from three programs with good records of capability development. Analysis of the interview data resulted in a set of categories, describing a learning environment, which were consistent with the SEM model. The learning environment which seemed conducive to capability development aimed for understanding of key concepts through a variety of assessment methods and active engagement in learning activities. Teacher-student relationships were developed through interaction, feedback and assistance. The promotion of peer-student relationships led to a high degree of collaborative learning.

Kember, D., & Leung, D. Y. P. (2006). Characterising a teaching and learning environment conducive to making demands on students while not making their workload excessive. *Studies in Higher Education, 31(2),* 185–198. **[Full paper provided as an attachment.]**

Abstract:

A qualitative study of perceptions of workload found that it was very weakly related to hours of work. The complex construct was better characterised as being influenced by a broadly conceived teaching and learning environment. It appeared to be possible to encourage students to perform a great deal of high quality work, without complaining about excessive workload, by attention to this environment. This hypothesis was tested quantitatively with structural equation modelling (SEM) with a sample of 3320 undergraduate students at a university in Hong Kong. The hypothesised SEM model had nine factors of the teaching and learning environment grouped under three higher-order latent variables: teaching, teacher-student relationships and student-student relationships which have influences to perceived workload. The model showed a good fit to the data, confirming the hypothesis that attention to the teaching and learning environment can spur students to work hard without feeling overly stressed. The questionnaire could be used as a diagnostic tool to discover which aspects of the environment need attention.

Kember, D., & Leung, D. Y. P. (2005). The impact of the teaching and learning environment on the development of generic capabilities needed for a knowledge-based society. *Learning Environments Research, 8,* 245–266.

Abstract:

The effect of the teaching and learning environment on the development of generic capabilities was examined through a survey of 1756 undergraduate students at a university in Hong Kong. The survey investigated students' perceptions of the development of six capabilities; critical thinking, self-managed learning, adaptability, problem solving, communication skills, and interpersonal skills and groupwork. They were also asked to rate the quality of nine facets of the teaching and learning environment. Structural equation modelling was used to test a model of the impact of teaching on the nurturing of the six capabilities. The model grouped the nine facets of teaching and learning under three higher order latent variables; teaching, teacher-student relationship, and student-student

relationship. The model showed a good fit to the data indicating that the teaching and learning environment had a significant impact on the development of the generic capabilities, while the students were taking their degree. The teaching latent variable had the strongest effect on the development of all six of the capabilities. A suitable teaching environment was characterised by a focus on understanding, the active participation of students in learning activities, a coherent curriculum, and assessment which tested analytical skills and self-learning capability. Strong student-student relationships nurtured communication and inter-personal skills. There was a mutually reinforcing effect between the type of teaching, teacher-student relationships and student-student relationships.

Leung, D. Y. P., & Kember, D. (2005). Comparability of data gathered from evaluation questionnaires on paper and through the internet. *Research in Higher Education, 46(5),* 571–591.

Abstract:

Collecting feedback from students through course, program and other evaluation questionnaires has become a costly and time consuming process for most colleges. Converting to data collection through the internet, rather than completion on paper, can result in a cheaper and more efficient process. This article examines several research questions which need to be answered to establish that results collected by the two modes of administration are equivalent. Data were gathered for a program evaluation questionnaire from undergraduate students at a university in Hong Kong. Students were able to choose between completion on paper or through the internet. In six of the seven Faculties the number of responses through each mode was roughly the same. Students in the Engineering Faculty favored the internet. Scores on the 14 out of 18 scales in the instrument showed small differences by mode of response, which became smaller still with controls for pertinent demographic variables. The main response question addressed in the study was whether there was any difference in the way respondents to the two modes interpreted the questions. The study demonstrated the equivalence of the two data sets by showing that both could be fitted to a common model with structural equation modeling. Five levels of tests of invariance further confirmed the comparability of data by mode of administration. This study, therefore suggests that changing to internet collection for course and program evaluations will not affect the comparability of ratings.

Refereed Conference Papers

McNaught, C. (2005). From diagnostic feedback to university policy: Programme-level evaluation at a Hong Kong university. In C. S. Nair (Ed.). *Communicating evaluation outcomes: Issues and approaches* (pp. 96–106). Proceedings of the 2004 Evaluation Forum, Melbourne, 24-25 November 2004.

Abstract:

This paper describes a holistic approach to teaching and learning policy and education development, whereby policy supports an evaluation framework that looks at students' learning experiences at the programme level. This moves evaluation beyond isolated course evaluations, and moves education development work well beyond the provision of isolated support in the form of tips and techniques for teaching teams. At The Chinese University of Hong Kong, a survey of students' engagement with their learning experiences acts as a global diagnostic tool in providing feedback to selected programmes in all faculties each year on a rotating basis. Students are surveyed at both first and third year levels and profiles are developed of their perceptions of how well the programme supports the development of important graduate capabilities and their perception of the value of a range of aspects of the teaching and learning environment. After two years of this process, the survey has been integrated into university policy as a mandatory component of programme review. This paper argues strongly that quality assurance policies need to: be based on student experience; facilitate changes to teaching and learning which are practical and validated by actual projects within the institution; and have acceptance within the organization.

Leung, D. Y. P. (2005). Development of a questionnaire for assessing students' perception of teaching and learning environment. *Proceedings of the 2005 Annual Conference of the Forum for the Advancement of Continuing Education* (pp. 187–193). University College Cork, Ireland, 6-8 July 2005.

Abstract:
The study reports the development and validation of a questionnaire in assessing the teaching and learning environment in a holistic sense for higher education settings. The questionnaire measures student perceptions on three broad areas including contextual elements in teaching, dynamic interplay between teachers and students, and social relationships between students.

Papers under review

Leung, D. Y. P., & Kember, D. Use of structural equation modeling for testing realistic models of complex educational phenomena.

Abstract:
The article provides practical information about using structural equation modelling (SEM) techniques in portraying complex interrelationships among variables in educational research. An in-depth example is presented: firstly, a confirmatory factor analysis for construct validation of two latent constructs in describing students' perceptions of the development of seven generic capabilities, and secondly, a SEM analysis of a model postulating the influence of a teaching and learning environment on the development of these capabilities. The technique for testing the fit of the model to gathered data from a survey of 1532 undergraduate students is explained. The examples suggest that universities can nurture the set of capabilities through a teaching and learning environment containing teacher-student and student-student interaction and specified types of teaching activities.

Leung, D. Y. P., & Kember, D. Development of a questionnaire for assessing students' perception of the teaching and learning environment and its use in quality assurance.

(Description of the development and use of the SEQ)