Learning Outside the Box!

The ViTaL Development & Research Programme

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Learning Outside the Box!

How can the language, concepts, principles, assessment and practice of learning power add measurable value to already high academic achievement in a Malaysian Sixth Form College and assist its students in their preparations for life and learning at universities in the United Kingdom?

This is the Report of an ELLI Research and Development Project undertaken in partnership with Kolej Yayasan UEM, at Lembah Beringin in the State of Selangor in central Malaysia, between January 2005 and September 2006

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1. Introduction

Kolej Yayasan UEM is a residential Sixth Form College occupying a fine, expansive campus in a rural setting in central Malaysia. It has typically about 40 teaching and academic student support staff and between 190 and 230 students in each of its two year groups at any one time.

The College has a distinctive intake of high-attaining students preparing for university entrance, as is made clear in this extract from its current prospectus and website:

In the 2006 Cambridge International Examinations (CIE) A-Level, two of its scholars came top in the world in Sociology and Mathematics (November Session). Three students were top in Malaysia in Physics, History and Critical Thinking. 46% of the students who sat for the exam obtained 3 A’s or more. Eight students were admitted into Oxford and Cambridge in 2005. Over 95% successfully achieved placement in medical schools overseas and in other prestigious universities such as LSE, Imperial College, Warwick University, UCL and top Irish and Australia Universities.

Whilst English is the second language of the vast majority of students and over half of the staff, it is the main medium of instruction and discourse between staff and students. The Malay language is sometimes used as well as English, in assemblies and other formal occasions. A large majority of students are proficient in English, though some are more confident orally and some more accurate in writing than others.

In 2003-4, the Chief Executive and new Headmaster were asking such questions as ‘How can we improve on an outstanding record of success in exam outcomes? How do we add value to such a high-achieving intake? How might we measure that added value, when top grades are already being attained? Are we preparing our students effectively for a higher level of education and different learning culture at university?’ Are we doing enough to promote a pro-active, independent-minded, critically curious attitude to learning in students whose indigenous culture is characterised by a tendency towards diligent but unquestioning acceptance of authority and regulation?

The College was looking at psychometric testing, new leadership and personal development programmes and it was already offering a wide range of student support, citizenship and extra-curricular activities to meet these objectives. Finding out about the ELLI programme through a chance conversation in the Spring of 2004, the Chief Executive, Dr Muhammad Ikmal, decided that an ELLI R&D project might offer a practical way to take the College forward with these strategic issues.

ViTaL partnerships was engaged in August 2004 to design and manage an action-enquiry project, using the Effective Lifelong Learning Inventory (ELLI), its concepts, assessments and strategies, to explore its impact on and capacity to illuminate these issues.
2. **Methodology**

The project’s broad aims, therefore, were to:
- To introduce the concepts, assessment and learning strategies of Learning Power into KYUEM
- To compare findings with those for similar groups in UK
- To evaluate the applicability of ELLI to SE Asian culture, using KYUEM as a Case Study

These were formulated into **three research questions (RQs)**, which informed the methodology, data collection and analysis:
- How do students and teachers in KYUEM respond to ELLI concepts, dimensions, profiles and learning strategies?
- How helpful can the ELLI Assessment Instrument be to self-evaluation strategies in a college such as KYUEM?
- What are the differences between findings in KYUEM and findings for similar groups in UK?

The research was designed as an adaptable, collaborative action enquiry, led by a core group of teaching staff, ‘ELLI Champions’, supported by the college leadership and their own nominated coordinators. It was adapted in the light of early interim findings and developed in two stages, with two discrete cohorts of students. An experienced ELLI practitioner/researcher acted as external project manager, trained the champions and worked with the teams of staff through the course of the project, adjusting the design in the light of interim findings and assisting with further training, data collection and analysis.

The ELLI learning power ideas and assessment principles were first introduced to the whole staff in a half-day seminar in January 2005. In the same visit, fourteen staff were trained as ‘Champions’ in their use and inducted into the methods required, which included: managing and preparing students for ELLI assessments; interpreting ELLI profiles and supporting students in interpreting their own; devising and implementing interventions to support their students in developing their learning power selectively in response to their profiles; and gathering and recording of narrative and qualitative evidence.

The ELLI learning profiles were first administered to a ‘Lower Sixth’ (Stage 1) cohort of 217 students in March and April 2005. Four of their tutors, already trained as Champions, followed this up with interventions, including eliciting 32 written responses to the profiles from their students. Although the Champions were free to use the strategies and ideas in their subject teaching, the emphasis was on interventions designed to give the students the capacity and responsibility for developing their learning power dimensions: tutors explaining the ideas, discussing with students the interpretation of their individual profiles, encouraging them to reflect on them, orally and in writing and discuss and decide on their own strategies for developing their learning dispositions.

During a second visit in June a College executive decision led to fourteen more of the staff being inducted (trained) in the above ideas and strategies as Champions,
including a member of the Leadership Team, to strengthen and make more consistent the tutors’ role in promoting and implementing intervention strategies. These now included a list of suggested strategies made available to students for developing learning power dimensions independently of their teachers (see Appendix 1). A significant number of the Stage 1 tutors would now be in a better position to support their students when it came to their second surveys. An Interim Report was submitted to the College following this visit (see Appendix 2).

In response to the interim findings in this report, the project was extended to include a second cohort of students (Stage 2), to be admitted into the Lower Sixth in July 2005, who would have the benefit of almost all of their tutors being trained Champions from the start. New and more authoritative leadership and coordination of the project was also put into place by the Senior Management Team. Whilst the emphasis was still on students using the ideas and deciding on strategies for themselves, they would have better-informed, more consistent and sustained support and the profile of the work would be kept high in the College. It was agreed between the researcher, the newly trained Champions and the College Leadership that this (Stage 2) cohort would be in a much stronger position than the first cohort to gain full benefit from the learning power ideas and that the Stage 2 pre-post comparative data, once available, would represent a more likely source of clear and valid evidence of significant impact and response.

This cohort completed their first ELLI assessment profiles in September 2005.

A third visit in January 2006 included a whole staff seminar to disseminate interim findings from Stage 1 and training for all remaining staff not yet having received the two-day Champions training programme. The first cohort (Stage 1) completed their second surveys in April and May 2006.

The final visit took place in July 2006 and included a whole staff dissemination seminar and briefing for recently arrived staff. It remained for Stage 2 students to complete their second profiles in August 2006.

**Qualitative and narrative** evidence was collected in the following ways:

- **During the second visit in June 2005,**
  - comments were recorded verbatim from:
    - two focus groups of nine and ten (Stage 1) students
    - two focus groups, each of seven staff Champions
  - written narrative responses to their 1st ELLI profiles by 32 students were collected by the four trained tutors and made available to the researcher.

- **During the third visit in January 2006,** comments were recorded verbatim from:
  - two (Stage 1) student focus groups of six students
  - semi-structured interviews with two tutors

- **In June 2006:**
  - narrative written reports on the whole experience, following a common rubric set by the project leader in the College, were collected by twelve tutors from 109 students and made available to the researcher, as follows:
This report (should) comment on their response to the profile changes, if any, and why these changes might have occurred. EG:

i) teaching methods at KYUEM/deliberate interventions

ii) their personal efforts to think about their learning and try new approaches

iii) the learning environment/peer support and interaction

iv) their overall response to the value ELLI profiling had to them as individuals.

- During the final visit in July 2006, comments were recorded verbatim from:
  - two focus groups, each with six (Stage 2) students
  - semi-structured interviews with four College Leaders

3 Selection of evidence

3.1 Summary of evidence base:

3.1.1 Qualitative and narrative data:
- Students involved in focus groups: 43 (31 from Stage 1, 12 from Stage 2)
- Staff involved in focus groups: 14
- Student written narratives in response to first assessment profiles: 32
- Student written narratives in response to second assessment profiles and whole process: 109 (all Stage 1)
- Tutors interviewed face-to-face: 5
- Leaders/managers interviewed face-to-face or by telephone: 4
- Written evidence and reflections submitted by tutors/leaders: 7
- Staff trained and involved in generating feedback in response to training: 42
- Emails received from staff and leaders: 59; replies sent: 35

3.1.2 Quantitative data
- Stage 1 students: pre-intervention test data from surveys taken in March-April 2005, 8-9 months after admission – total 236 (male 96, female 140)
- Stage 2 students: pre-intervention test data from surveys taken in Sept-October 2005, 2-3 months after admission - total 178 (male 94, female 84)
- Stage 1 students: post-intervention test data, including pre-post comparisons, from surveys taken in April-May 2006, twelve to thirteen months after first tests - total matched students: 184 (male 70, female 114)
- Stage 2 students: post-intervention test data, including pre-post comparisons, from surveys taken in August, September, October 2006, about twelve months after first tests – total matched students 173 (male 91, female 82)

3.2 Selection criteria for evidence in support of findings
The findings below were arrived at by the researcher immersing himself in the qualitative, quantitative and narrative data collected through the above process, identifying emerging key themes in relation to each research question and verifying
these by matching them with available evidence from the documentation which met the following criteria:

- For qualitative evidence (largely related to Stage 1 students):
  - Being freely offered, orally or in writing, in response to open questions, without leading or prompting
  - Either being reported as a personal example of a general observation agreed with by a clear (stated) majority of other respondents or being supported, in its representation of the finding in question, by at least two other independent written responses
  - Relevance to the research questions
  - Where relevant, being supported by quantitative data

- For quantitative data (from online surveys of both Stages):
  - being statistically significant or (where stated) at a level approaching statistical significance
  - where relevant, being supported by qualitative and narrative evidence that met the above criteria

The findings (in **bold** type) are organised under each of the four research questions (RQs). The RQs are in bold type, italicised and underlined, with their related findings numbered and presented in bold type below, followed by the evidence in support of them. If the evidence is qualitative, it will either have been transcribed or quoted verbatim, in which case it is *italicised*, or it is paraphrased closely, using the same key words as the respondents. Where it reflects on evidence generated by the online surveys (such as ELLI profiles) the relevant characteristic of the profile is summarised in brackets, or the entire profile is shown. If the evidence is quantitative, using the words of the data-analyst at the University of Bristol.

4 Findings and evidence

4.1 (RQ1)  *How do students and teachers in KYUEM respond to ELLI concepts, dimensions, profiles and learning strategies?*

4.1.1 Face validity of their first learning power profiles was generally high for almost all of the students

In the cases of 24 students who produced ‘pen portraits’ of themselves in response to their first profiles, where some dimensions could be identified as significantly weaker than others, students’ narrative responses clearly agreed in relation to 41 out of 43 of the identified dimensions. (See also examples 1-9 below). Of eight students in one group who were asked to ‘rate’ the validity of their own profiles in terms of a percentage, one said 100%, three 90%, the lowest was 60% and the average 85%.

4.1.2 In a small minority of cases (2/43), students’ accounts appeared to disagree with dimension ‘scores’ in their first profiles.

Example 1 (Weaker dimension: Strategic Awareness)
*From the description, I think it suits me although the score suggests differently. Well, maybe the questions were answered incorrectly…*(1DV3)

Example 2 (Relatively weaker dimension: Critical Curiosity)
*I like to learn something that is new for me…I like to get below the surface of things and see what is really going on… but I don’t really like new situations*  (1JZ4)
4.1.3 Despite English being their second language, students were able to understand the seven dimensions and relate what their first profiles indicated, personally, accurately and convincingly, in writing, to their learning identities and needs.

(Fig. 1) Example 3 (Weak dimensions: Resilience and Critical Curiosity)
I really hate it when what I do does not really work out the way I want it to be… I like to ask questions, but only on things that I’m interested in. If I don’t really like something, I won’t bother finding more information… (1DV1)

(Fig. 2) Example 4 (Weak dimensions: Resilience and Critical Curiosity)
I’m not a risk taker and very dependent to other people. I will not survive if I’m alone in one place… (re: Critical Curiosity) I’m not this type of student. I prefer ‘straight forward’ questions rather than the questions that need me to think deeply. (1DV5)

(Fig. 3) Example 5 (Much the weakest: Learning Relationships)
I normally don’t share my ideas with other people due to fear of rejection or fear of people not understanding what I am talking about (1DV4)

(Fig. 4) Example 6 (Weak dimensions: Creativity and Learning Relationships)
I don’t fancy taking risks, especially when I am studying and exams + tests are looming threateningly around the corner. I prefer to stick to my usual studying method. I like routines… I think I have bad learning relationships. I do not usually voice out my thoughts (1DV10)

(Fig. 5) Example 7 (Weak dimensions: Critical Curiosity and Strategic Awareness)
I’m not so curious, especially when it comes to subjects I don’t like. I won’t go around asking other people unless the exam is near… I don’t really have any strategic awareness – I don’t plan my study table (even if I do, it’s only for room decoration. I tend to study according to my mood and my preference of the subject at a given time. (1HT1)

(Fig. 6) Example 8 (Weak dimension: Changing and Learning)
My weakest point is Changing and Learning. This basically reflects my pessimism and lack of confidence in my academic abilities (1HT3)

4.1.4 Students sometimes combined acceptance of the validity of their profile with clearly stated intentions, either to do something about their weaker dimensions or to do nothing about them, especially where exam performance was a higher priority (see also example 6 above).

(Fig. 7) Example 9 (Weak dimensions: Critical Curiosity, Learning Relationships, Creativity and Resilience)
I don’t really bother questioning why I have to learn something; I know that things I learn now will most probably not come in handy later in my life. I guess I need to improve this by finding out the truth and purpose of learning things; it’ll probably motivate me. I’m also bad at ‘learning relationships’…people at home just nag, most of the time. I shall not go into detail. As for creativity, this is a weakness most probably because I’m an arts student… Creativity is not important in the subjects I am taking, but I will nevertheless work on that. I’ll try to utilize my imagination while learning. Another weakness is resilience. This ONLY applies to Maths. It’s ‘blumming’ tough and I get frustrated easily. (1HT4)
4.1.5 In response to their second profiles and commenting on differences from the first ones a year earlier, out of 109 students:

93 (85%) noted positive change in one or more of their learning dimensions and the average number of gains reported was almost exactly 3 dimensions per student (out of all 109 students), saying such things as:

• Surprisingly, all dimensions have improved. It shows that I have changed a lot (ZM8)
• Overall, there has been a marked improvement in my post-ELLI diagram (JKB9)
• There are several changes in my profile, which are, an increase in resilience, learning relationships, changing and learning, and also critical curiosity (NF6)
• Distinctly, my changing and learning has improved while others basically stay the same with just a little improvement or decrease (ZM4)

58 (53%) attributed gains in their learning power to specific strategies of their own that they had adopted and employed, saying such things as:

• I tried to improve myself after doing this ELLI for the first time (CD3)
• After the PRE session, I changed my attitude toward learning and I strongly differentiate between studying and learning as learning is much (more) fun than studying alone. My deliberate intervention was to have more discussions and vary my styles in learning (AM1)
• Learning relationship – it has increased because I interacted more with people…and I started to learn in different ways from before (TB9)
• In order to improve my studies I try to make plan and do some changes in the way I study (NF1)
• I believe that the changes are due to my personal efforts to improve my learning capacity and create alternatives in my approaches (NF3)
• My changing and learning area had increased tremendously, simply because I can now study in the presence of my friends. This had also improved my learning relationships area. (ZM1)
• My changing and learning has improved significantly probably because I did try to change my way of studying. Long way before this I usually studied last minute or only prepared for examination. Now I changed my mindset that learning has to be all life long (ZM4)
• …especially about my strategic awareness. I plan my revision time carefully nowadays cause I realise there is not enough time left (ZM10)
• With ELLI, I know that learning involve at least 7 steps. From there I start to improve my learning process by changing ways to interact with friends and teachers, ideas and experiences (CF10)
• My Strategic Awareness level improved significantly...This indicates that I have become more capable of organising an effective learning strategy, in order to maximise the input that I receive from my efforts. I also set specific learning targets that are reasonably attainable in order to constantly develop my abilities (NAM3)

55 (over 50%) made a positive comment on ELLI and the assessment it offers, such as:
• First of all, I would like to say that this is v interesting, and as you put it, quite accurate because we did not know how our answers will reflect our personality. In other words, we cannot possibly cheat because there is no right answer (ZM1)
• …overall ELLI does help me realising my current skills as a learner and so helping me to try to improve them (ZM4)
• ELLI gives me a better view about myself which I do not aware before (CD3)
• I think this diagram is quite true (ZM10)
• The ELLI programme has enabled me to recognise that there are so many domains in learning (KAT1)
• At first, I have no idea what ELLI is all about. However, after being given details and explanation from my tutor, I have noticed that ELLI can help me to improve my performance and my attitudes. ...In conclusion, I recommend ELLI to everyone as it can help us to identify and improve our performance (KAT3)
• Finally, I think that ELLI is a very valuable method in order to improve learning and process (CF10)
• I am glad that the ELLI profile has made me realise that studying is not only about studying hard but it is also about studying smart (JKB2)
• Finally, I personally like to express my gratitude to the researchers who take the programme seriously in effort to provide some information about the best study skills for students...ELLI help me a lot to discover my strengths and weaknesses as a lifelong learner. I strongly recommend that this programme should be made more available to help more students to improve their study skills. (NF2)

33 (30%) attributed changes in their learning power to the learning environment, support, relationships or activities available in the college, saying such things as:
• My friends and teachers are very helpful in being the most influential factor in my road to achieve my goal (AM1)
• Through involvement in college activities and socializing, I have learned to accept my mistakes and to improve myself. (TB5)
• Discussion with them inspired me to ask more questions for deeper understanding (NF2)
• Significant changes are mainly due to changes in teaching methods at the college, as well as changes in my learning environment, especially because of the interaction with other students (NF6)
• I believe that this college has really change(d) the way I’m learning (KAT11)
• Learning relationships decreased significantly. The teaching method in this college favours more to be able to work independently from other people. It is also my opinion that self-sufficiency is more important than dependency on other people (NF5)
• I do find myself getting ideas when it comes to the college – especially when I was still in the SC (RR5)
• College held many activities which demand a lot of thought to be put into. In other words, we are required to be creative to finish the task (CD1)
• Changing and learning improved much. Environment and friends gave so much courage and create high spirit in myself. Learning process become more enjoyable as they (friends) are open to lend their hand whenever I have problems (ZM9)
• In a nutshell, I strongly feel I have improved tremendously in my learning patterns and am grateful for the teaching methods and pro-active approach introduced to the students at the college (KAT9)

26 (24%) commented on wider personal gains that they had noticed in themselves through the year, saying such things as:
• ELLI is helpful to me as it helps me to discover my weaknesses and strength, as well as the type of person I am (NF3)
• I do believe that if I continue to develop my styles and freedom in learning, I will become a first-class life-long learner (AM1)
• I realise that process of learning is not only until I complete my tertiary education but I have to love reading and enjoy learning as to me life long learning is crucial to make me become a knowledgeable person (CF4)
• I told myself that I could overcome any problem as long as I believe in myself. Today, I have changed a lot. My self-confidence, intelligence, learning relationship and resilience have improved significantly. (KAT3)
• After doing the previous ELLI program, I try to make some changes. Surprisingly, all the dimensions have improved. It shows that I have change a lot…I’ve learnt a lot from the past. It make(s) me become someone else. Someone with full of confidence and enjoy learning new things. (ZM8)
• In conclusion, this ELLI program is a very good one because it makes us know ourselves better (CD3)

25 (23%) expressed clear intentions to take (further) steps to improve their learning, such as by saying:
• I will try my best to increase my learning relationships but I want to retain my ability to become independent (KAT5)
• I am aware that I have to educate myself in order to change and succeed in my life (ZM9)
• In the future I shall improve myself to become a better student and get better results in all my examination (CF4)
• In conclusion, I have to improve myself a lot and this attempt for improvement should be continuous by time (KB5)
• My strategic awareness has reduced…I will try to make a schedule to make sure that everything is organise(d) (TB8)
• I hope that I can develop my Resilience more in the future (KB6)
• I hope I can improve my learning profile for years to come (NF7)

23 (21%) attributed gains explicitly to the understanding they had gained from their ELLI profiles and decisions they had made in the light of these, including:
• I’ve improved in changing & learning and resilience. I think, this is due to some changes in my learning strategy. I’ve made a lot more discussion … ELLI really does
help me. When I realised that resilience is one of my weaknesses, I approached some teachers and student for their advice (CF2)

- This second feedback has directly proved that my strategy does really work (NF2)
- I try to overcome my weaknesses when the first time I did the learning profile, the outcome of the test was shocking. I never realise that my resilience is very low. I try to forget my past failure and think positively about my future. It works, my resilience has increase. (NF7)
- I have noticed that ELLI can help me to improve my performance and my attitudes. I have found out that my weaknesses are in learning relationship and resilience... After discussing with my tutor and friends, I finally got the solution. (KAT3)
- ELLI is a really good programme. Within the 2 years, I have improved in so many aspects. This programme helps me to identify my weaknesses and push me to work on them so that I can achieve a much better or positive attitude in learning (ZM4)
- Thanks to the ELLI profile I have managed to enjoy studying and I look forward to future challenges
- After I did the learning profile a year ago, I discovered that there are so many weaknesses that I seriously need to correct...Therefore, this profile makes me think that I need to change the way I’m learning...After a year, I observed that there is a lot of improvements to my polygon (KAT11)
- There has been a tremendous increase in terms of creativity, meaning making and strategic awareness. This may possibly have been due to several changes I’ve made to enhance my understanding in learning. For example, instead of just reading the materials direct from the text books before this, I have started to do my own notes, refer to other reference books…and also comparing and sharing my knowledge with some of my friends (AM3)

14 (13%) made explicit reference to the influence of exams and/or tests on their learning power and its development, saying such things as:

- Learning relationships and critical curiosity decreased because the 2nd profile was done very near the exam period when most people had no time to be ‘critically curious’ or develop new relationships (CD7)
- Critical curiosity: this dimension shows some degree of decreasing. This may be due to I become more passive lately because of exam pressure. There’s not much time to think of something at very bottom (CD6)
- My ‘Resilience’ has decreased. I would blame it on the pressure that I encounter in preparing myself for this upcoming exams. Sometimes I felt that there are too many burdens and wanting to quit and that I need to overcome but nevertheless I am still with the spirit of ‘never give up’ (CF6)
- I have experienced many changes in the way I study and all since I did my ELLI profile. Nervous wrecks for the trial examinations plus the stress I had to endure acted as a sound impediment to my study. Nevertheless, it did not mean that I was already giving up. I said to myself that I would not let all those negative feelings get over me. (NAM1)
- From the diagram, it state that my critical curiosity is decreasing. I guess it’s because previously I’m a very curious person. But I didn’t think my curiosity has any use for the score in my A-level (JKB5)
- A number of bad results in tests and exams did not make myself stronger, and this is proven by the ELLI survey (JKB8)
13 (12%) noted a decline in their Resilience dimension

5 (under 5%) noted little or no change in their learning power

4 (under 4%) made negative comments about the ELLI programme, saying:
- Overall, ELLI does not really make any significant effect or changes in my life. (KAT10)
- In my case, the ELLI test did not help me much…. I tend to choose the answer not which I have done, but which I prefer to do… for some question, (in the second test) it was still difficult to escape the problems mentioned earlier and when the result came out, still, it mean nothing to me (NAM5 & NAM6 – substantial sections of identical, word-processed text)
- This test does help to a certain extent as my reference. However, I think there is some inaccuracy because I have done it once and it may influence my choices when doing the second test (KB9)

3 (under 3%) made positive suggestions and recommendations about the programme, such as what follows, including one with a substantial section:
- In conclusion, I recommend ELLI to everyone as it can help us to identify and improve our performance (KAT3)
- I want to make some suggestions about this programme. Firstly, the questionnaire is too long. We find it not very attractive to do and so we tend to lose… enthusiasm near the end…Secondly, I think it is better to record the time taken… in answering the questionnaire… students who take a long time… have the higher chance of not being honest. I strongly recommend that this programme should be more available (ZM2)

2 (under 2%) were either absent or made no comment on change in their profiles

4.1.6 Some of these responses to the second profiles contained a wider than usual range of insights showing a high level of reflexive awareness, about self and learning in relation to the seven dimensions and the college environment. These were more common amongst students with ‘rounded’ profiles, but were not exclusive to them, as illustrated by the following extracts (with the first profile shaded blue, the second superimposed as a red line):

(Fig. 9) Example 11

Overall, there has been a marked improvement in my post- ELLI diagram. In the past year, I have made a lot of effort to improve my academic grades and a direct corollary of that effort is the improvement in my learning ability as well as my whole outlook/perspective on education: Learning is no longer a one-off process to achieve good grades but I can honestly say that I have finally come to realise all the positive benefits that it can generate. I have become more analytical and more conscious of the events happening around me. It excites me when I can fit the pieces of the puzzle together and understand the meaning of the input I gained in class as well as from informal discussions with friends, the internet, books and magazines.

Student A JKB_04_05 Gains in CC, MM, Cr, St A.
I have been thinking about what improvement I have made in myself after about 2 years in KYUEM… I strongly believe that new life and surrounding affect me a lot mentally and physically. The ELLI profiles’ report has proved some of them.

I have changed so much in my learning ability and this makes me feel a bit more confident in myself. Apart from just learning whatever I need, knowing why should I learn them is an important part for me and then analysing them.

First of all I would like to say that this is very interesting and…quite accurate… we cannot possibly cheat because there is no right answer.

Anyway, I was quite shocked to see that my resilience level had decreased. This may be caused by a new method of studying that I’d tried; grouping study. I have been spending all my free blocks studying with a friend… Unfortunately, I tend to feel tired every time… I realise that I am too dependent on the study group sessions to complete my revision.

Nevertheless, my changing and learning area had increased tremendously simply because I can now study in the presence of my friends. This has also improved my learning relationships area.

My creativity has increased considerably.

My critical curiosity has also increased. I realised that I began to feel unsatisfied with the answer given to me.

Strategic awareness increased by about 25%. I recorded all my daily achievements and performances for future reference.

Student B ZM_04_05 Gains (v significant in CC) in all except Res

Throughout the whole year since I last took my ELLI Profile test.. I have always referred to the ELLI profile as an essential part of my learning procedure and (it) has help to improve and intensify my learning capability throughout my stay here in KYUEM.

I have managed to sharpen and improve on my critical curiosity… I have tried to teach myself to be more curious about how things work and why all the phenomena in this world actually happen. Thanks to the ELLI profile I have managed to enjoy studying and look forward to new challenges…

Student C JKB_04_05 Significant gains in Res, CC, Cr and MM

I have been thinking about what improvement I have made in myself after about 2 years in KYUEM… I strongly believe that new life and surrounding affect me a lot mentally and physically. The ELLI profiles’ report has proved some of them.

I have changed so much in my learning ability and this makes me feel a bit more confident in myself. Apart from just learning whatever I need, knowing why should I learn them is an important part for me and then analysing them.

Student D JKB_04_05 Significant gains all round

The big improvement in creativity is I think due to the number of activities I participated throughout the past year… The decrease in resilience might be due to the number of ‘failures’ I had. Taking 4 difficult subjects just did not help the cause. A number of bad results in tests and exams did not make myself stronger and this is proven by the ELLI survey

Student E JKB_04_05 Gains in CC, MM, Cr, St A, LR; down in Res
The increase in “Learning Relationships” is a result of having improved in my communication and teamwork skills...I have acquired the ability of expressing my thoughts, ideas and opinions whilst...being mindful of what the others think...Contrary to being quite rigid in my learning patterns previously...I (have) a slightly more creative approach...I feel that active participation in class has nurtured my ability to, as it were, think outside the box.

Student F KAT_04_05: big gains in LR and Cr

4.1.7 Tutors’ evaluation of ELLI, after working with their students on it and consulting them for their informal feedback, is best represented by three findings in a written report by one tutor of Stage 1 students, who used the project as part of her own Research Degree in Malaysia:

- Awareness of the ELLI dimensions provided students with a new perspective on the meaning of learning, which went beyond the study skills that they focus on purely to pass exams.
- ELLI provided an indication of each student’s strengths and weaknesses. This was valuable in helping to plan future activities to redress the balance.
- Resilience appears to be a problem. It has been the weakest dimension and become weaker in several members of the group.

4.2 (RQ2) How helpful can the ELLI Assessment Instrument be to self-evaluation strategies in a college such as KYUEM?

In addition to the contribution to self-evaluation made by the qualitative feedback above, the online assessments enable analysis of the data generated, to characterise the sample populations and make some comparisons in quantitative terms in support of judgements or hypotheses. These include:

- characteristics of the students in terms of their initial mean scores on each of the seven dimensions, for the Stage 1 (236) and Stage 2 (178) cohorts
- characteristics of the first two groups of trained staff (28) in terms of their mean scores on each of the seven dimensions
- comparisons between the genders in the student populations
- gains in learning power, through comparisons between pre-intervention and post-intervention scores for both Stage 1 and Stage 2 ‘matched’ students (i.e. those with both pre- and post- profiles)
- comparisons between the Stage 1 and Stage 2 cohorts, in terms of:
  - their initial mean scores on each dimension
  - the extent of any gains, between their pre- and post-intervention scores

4.2.1 Characteristics of the Stage 1 students in terms of their pre-intervention mean scores on each of the seven dimensions (N = total: 236)
These initial mean scores indicate particularly high levels of Meaning Making and Changing and Learning, with percentages in the mid-eighties; high levels of Strategic Awareness, Critical Curiosity, Creativity and Learning Relationships, all in the seventies and a significantly lower level of Resilience, at under sixty percent.

4.2.2 Characteristics of the Stage (Cohort) 2 students in terms of their pre-intervention mean scores on each of the seven dimensions (N = total: 178) and comparisons between these and Stage (Cohort) 1 students

These initial mean scores for the Stage 2 Cohort indicate a similar pattern to Stage 1, with particularly high levels of Meaning Making and Changing and Learning, with percentages in the low-eighties; high levels of Critical Curiosity, Strategic Awareness and Creativity, in the lower-seventies and Learning Relationships in the upper-sixties, and again a significantly lower level of Resilience, at just over sixty percent.

Except in Resilience, the mean scores for Stage 2 are lower than those for Stage 1. Stage 1 students took the tests up to nine months after their arrival at the College in July 2004. Stage 2 students took the tests much sooner, within three months of their arrival in the college in July 2005.
4.2.3 Characteristics of Staff in terms of their pre-intervention mean scores on each of the seven dimensions (N = total: 28). (Data from the first two groups of fourteen staff to be trained, in January and June 2005)

The initial mean scores for the staff indicate a similar pattern to that of the students, across a slightly broader range from highest to lowest dimensions, with particularly high levels of Changing and Learning (88.4%) Meaning Making (86.2%), Critical Curiosity (79.3%), Creativity (78%) and Strategic Awareness (77.5%); high, but somewhat lower levels of Learning Relationships (68.6%) and again a significantly lower level of Resilience, at (52.2%), the only dimension in which the staff mean was lower than either of the student groups.

4.2.4 Comparisons between the genders in the Stage 1 cohort (taking pre-intervention scores only)

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>changing and learning</td>
<td>male</td>
<td>96</td>
<td>84.5703</td>
<td>12.66188</td>
</tr>
<tr>
<td></td>
<td>female</td>
<td>140</td>
<td>84.6429</td>
<td>12.64243</td>
</tr>
<tr>
<td>critical curiosity</td>
<td>male</td>
<td>96</td>
<td>77.4306</td>
<td>10.68822</td>
</tr>
<tr>
<td></td>
<td>female</td>
<td>140</td>
<td>74.7421</td>
<td>10.43026</td>
</tr>
<tr>
<td>meaning making</td>
<td>male</td>
<td>96</td>
<td>85.0818</td>
<td>8.79402</td>
</tr>
<tr>
<td></td>
<td>female</td>
<td>140</td>
<td>84.3112</td>
<td>9.92462</td>
</tr>
<tr>
<td>creativity</td>
<td>male</td>
<td>96</td>
<td>76.1458</td>
<td>11.85947</td>
</tr>
<tr>
<td></td>
<td>female</td>
<td>140</td>
<td>72.5179</td>
<td>11.84999</td>
</tr>
<tr>
<td>strategic awareness</td>
<td>male</td>
<td>96</td>
<td>76.8429</td>
<td>10.66869</td>
</tr>
<tr>
<td></td>
<td>female</td>
<td>140</td>
<td>75.5495</td>
<td>10.75382</td>
</tr>
<tr>
<td>learning relationship</td>
<td>male</td>
<td>96</td>
<td>68.5981</td>
<td>11.84406</td>
</tr>
<tr>
<td></td>
<td>female</td>
<td>140</td>
<td>72.3810</td>
<td>10.73806</td>
</tr>
<tr>
<td>resilience</td>
<td>male</td>
<td>96</td>
<td>58.3027</td>
<td>9.47535</td>
</tr>
<tr>
<td></td>
<td>female</td>
<td>140</td>
<td>60.5987</td>
<td>9.95918</td>
</tr>
</tbody>
</table>

Table 3: Gender Comparisons on all dimensions for Stage 1 Students, pre-intervention, March/April 2005

Male students in Stage 1 had statistically significantly higher Creativity than their female counterparts (mean difference = 3.6280, t=2.31, df=234, sig.<.0225); but females had statistically significantly higher Learning Relationships than their male counterparts (mean difference = -3.7829, t=-2.549, df=234, sig.<.0115);

Except for Creativity and Learning Relationships, there was no significant difference between male and female students in Stage 1. However, in Critical Curiosity, male students were also clearly higher than female students but not to a statistically significant degree (mean difference = 2.6885).
Table 4: Gender Comparisons on all dimensions for Stage 2 Students, pre-intervention, Sept/Oct 2005

Male students in Stage 2 had statistically significantly higher Critical Curiosity than their female counterparts (mean difference = 4.0175, t=2.5, df=176, sig.<.013).

4.2.5 Comparisons between pre-intervention and post-intervention scores for both Stage 1 and Stage 2 ‘matched’ students (i.e. those with both pre- and post- profiles)

Here, the differences are shown graphically by frequency charts (i.e. showing the frequency with which percentiles are populated) and mean scores for the post-tests in all seven dimensions, showing the percentage difference from the pre-test means. Statistically significant gains (i.e. of an order that could not be explained by chance) are marked with an * asterisk. (Frequency charts for all pre-and post-test results are available in Appendix 3). Two tables follow the charts, summarising the comparisons in terms of their statistical significance.

4.2.5.1 Stage 1 Cohort: Comparative data: pre-post interventions

Fig. 16: Pre-test and post-test comparisons for Stage 1: Changing & Learning

Pre-test mean: 79.3931; post-test mean: 84.6467. Gain = 5.2536*
Fig. 17: Pre-test and post-test comparisons for Stage 1: Critical Curiosity

Pre-test mean: 68.7802; post-test mean: 74.2351. Gain = 5.4549*

Fig. 18: Pre-test and post-test comparisons for Stage 1: Meaning Making

Pre-test mean: 79.8913; post-test mean: 83.8509. Gain = 3.9696*

Fig. 19: Pre-test and post-test comparisons for Stage 1: Creativity

Pre-test mean: 66.3768; post-test mean: 71.7029. Gain = 5.3261*
Fig. 20: Pre-test and post-test comparisons for Stage 1: Strategic Awareness

Pre-test mean: 69.0217; post-test mean: 75.1533. Gain = 6.1316*

Fig. 21: Pre-test and post-test comparisons for Stage 1: Learning Relationships

Pre-test mean: 61.7452; post-test mean: 61.8659. Gain = 0.1207

Fig. 22: Pre-test and post-test comparisons for Stage 1: Resilience

Pre-test mean: 57.2357; post-test mean: 59.9105. Gain = 2.6748*
Table 5: Stage 1 Summary of Pre-post comparison statistics

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>Lower</th>
<th>Upper</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1       pre-test changing &amp; learning - post-test changing &amp; learning</td>
<td>-5.254</td>
<td>20.02645</td>
<td>1.47637</td>
<td>-8.16652</td>
<td>-2.34073</td>
<td>-3.558</td>
<td>183</td>
<td>.000</td>
</tr>
<tr>
<td>Pair 2       pre-test critical curiosity - post-test critical curiosity</td>
<td>-5.455</td>
<td>15.83671</td>
<td>1.16750</td>
<td>-7.75840</td>
<td>-3.15143</td>
<td>-4.672</td>
<td>183</td>
<td>.000</td>
</tr>
<tr>
<td>Pair 3       pre-test meaning making - post-test meaning making</td>
<td>-3.960</td>
<td>14.76672</td>
<td>1.08862</td>
<td>-6.10748</td>
<td>-1.81177</td>
<td>-3.637</td>
<td>183</td>
<td>.000</td>
</tr>
<tr>
<td>Pair 4       pre-test creativity - post-test creativity</td>
<td>-5.326</td>
<td>16.90762</td>
<td>1.24645</td>
<td>-7.76534</td>
<td>-2.86683</td>
<td>-4.273</td>
<td>183</td>
<td>.000</td>
</tr>
<tr>
<td>Pair 5       pre-test strategic awareness - post-test strategic awareness</td>
<td>-6.132</td>
<td>15.72852</td>
<td>1.15952</td>
<td>-8.41930</td>
<td>-3.84380</td>
<td>-5.288</td>
<td>183</td>
<td>.000</td>
</tr>
<tr>
<td>Pair 6       pre-test learning relationship - post-test learning relationship</td>
<td>-12.077</td>
<td>15.48325</td>
<td>1.14144</td>
<td>-2.37285</td>
<td>2.13130</td>
<td>-1.06</td>
<td>183</td>
<td>.396</td>
</tr>
<tr>
<td>Pair 7       pre-test resilience - post-test resilience</td>
<td>-2.675</td>
<td>12.47255</td>
<td>.91948</td>
<td>-4.48893</td>
<td>-3.80600</td>
<td>-2.909</td>
<td>183</td>
<td>.004</td>
</tr>
</tbody>
</table>

Table 6: Test for statistical significance of Stage 1 pre-post comparisons (significance is at levels below 0.05 in last column)

Commentary on analysis of Stage 1 pre-post comparative data:

“Very interesting and encouraging finding: Except for learning relationships, the students’ learning power increased statistically significantly.”

4.2.5.2 Stage 2 Cohort: Comparative data: pre-post interventions

Fig. 23: Pre-test and post-test comparisons for Stage 2: Changing & Learning

Pre-test mean: 75.9152; post-test mean: 84.7303. Gain = 8.8151*
Fig. 24: Pre-test and post-test comparisons for Stage 2: Critical Curiosity

Pre-test mean: 65.3179; post-test mean: 74.1597. Gain = 8.8418*

Fig. 25: Pre-test and post-test comparisons for Stage 2: Meaning Making

Pre-test mean: 76.4382; post-test mean: 84.4206. Gain = 7.9824*

Fig. 26: Pre-test and post-test comparisons for Stage 2: Creativity

Pre-test mean: 62.8902; post-test mean: 71.7726. Gain = 8.8824*
Pre-test mean: 63.9692; post-test mean: 73.8106. Gain = 9.8414*

Pre-test mean: 57.2575; post-test mean: 63.3751. Gain = 6.1176*

Pre-test mean: 55.888; post-test mean: 61.0563. Gain = 5.1683*
Paired Samples Statistics

<table>
<thead>
<tr>
<th>Pair</th>
<th>post_changing and learning</th>
<th>pre_changing and learning</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1</td>
<td>84.7303</td>
<td>75.9152</td>
<td>173</td>
<td>15.56612</td>
<td>1.18347</td>
<td></td>
</tr>
<tr>
<td>Pair 2</td>
<td>74.1597</td>
<td>65.3179</td>
<td>173</td>
<td>14.21006</td>
<td>1.08037</td>
<td></td>
</tr>
<tr>
<td>Pair 3</td>
<td>84.4206</td>
<td>76.4382</td>
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<td>13.02195</td>
<td>.99004</td>
<td></td>
</tr>
<tr>
<td>Pair 4</td>
<td>71.7726</td>
<td>62.8902</td>
<td>173</td>
<td>16.66487</td>
<td>1.26701</td>
<td></td>
</tr>
<tr>
<td>Pair 5</td>
<td>73.8106</td>
<td>63.9692</td>
<td>173</td>
<td>14.32321</td>
<td>1.08897</td>
<td></td>
</tr>
<tr>
<td>Pair 6</td>
<td>63.3751</td>
<td>57.2575</td>
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<td>15.44291</td>
<td>1.17410</td>
<td></td>
</tr>
<tr>
<td>Pair 7</td>
<td>61.0563</td>
<td>55.8880</td>
<td>173</td>
<td>12.98276</td>
<td>1.05625</td>
<td></td>
</tr>
</tbody>
</table>

Paired Samples Correlations

<table>
<thead>
<tr>
<th>Pair</th>
<th>Correlation</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1</td>
<td>.156</td>
<td>.041</td>
</tr>
<tr>
<td>Pair 2</td>
<td>.388</td>
<td>.000</td>
</tr>
<tr>
<td>Pair 3</td>
<td>.238</td>
<td>.002</td>
</tr>
<tr>
<td>Pair 4</td>
<td>.462</td>
<td>.000</td>
</tr>
<tr>
<td>Pair 5</td>
<td>.350</td>
<td>.000</td>
</tr>
<tr>
<td>Pair 6</td>
<td>.482</td>
<td>.000</td>
</tr>
<tr>
<td>Pair 7</td>
<td>.489</td>
<td>.000</td>
</tr>
</tbody>
</table>

Table 7: Stage 2 Summary of Pre-post comparison statistics

Table 8: Test for significance of Stage 2 pre-post comparisons
(significance is at levels below 0.05 in last column)

Commentary on analysis of Stage 2 pre-post comparative data:

“This cohort of students made statistically significant change in all the seven dimensions of learning power. In comparison with the last (Stage 1) cohort from KYUEM, the change in learning power of this cohort is much more pronounced. In the last cohort, there was no statistically significant change in LEARNING RELATION; the mean differences between pre- and post-tests in this cohort are much larger than those of the last cohort of students.”
### 4.2.6 Comparisons between the genders in the Stage 2 cohort (taking average Learning Power scores across pre- and post-intervention tests)

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changing and Learning</td>
<td>female</td>
<td>82</td>
<td>79.1667</td>
<td>12.81329</td>
</tr>
<tr>
<td></td>
<td>male</td>
<td>91</td>
<td>81.3645</td>
<td>12.04961</td>
</tr>
<tr>
<td>Curiosity</td>
<td>female</td>
<td>82</td>
<td>65.7182</td>
<td>12.72811</td>
</tr>
<tr>
<td></td>
<td>male</td>
<td>91</td>
<td>73.3618</td>
<td>9.78651</td>
</tr>
<tr>
<td>Meaning Making</td>
<td>female</td>
<td>82</td>
<td>79.8490</td>
<td>10.57007</td>
</tr>
<tr>
<td></td>
<td>male</td>
<td>91</td>
<td>80.9524</td>
<td>11.00860</td>
</tr>
<tr>
<td>Creativity</td>
<td>female</td>
<td>82</td>
<td>64.8984</td>
<td>14.79477</td>
</tr>
<tr>
<td></td>
<td>male</td>
<td>91</td>
<td>69.5238</td>
<td>13.30155</td>
</tr>
<tr>
<td>Strategic Awareness</td>
<td>female</td>
<td>82</td>
<td>66.5416</td>
<td>11.55974</td>
</tr>
<tr>
<td></td>
<td>male</td>
<td>91</td>
<td>71.0059</td>
<td>11.46665</td>
</tr>
<tr>
<td>Learning Relations</td>
<td>female</td>
<td>82</td>
<td>59.6714</td>
<td>14.87168</td>
</tr>
<tr>
<td></td>
<td>male</td>
<td>91</td>
<td>60.8974</td>
<td>11.86111</td>
</tr>
<tr>
<td>Resilience</td>
<td>female</td>
<td>82</td>
<td>57.6279</td>
<td>10.84633</td>
</tr>
<tr>
<td></td>
<td>male</td>
<td>91</td>
<td>59.2329</td>
<td>13.18745</td>
</tr>
</tbody>
</table>

#### Table 9: Comparison between the average (of pre- and post- intervention) mean scores on the seven dimensions of Stage 2 girls and boys

<table>
<thead>
<tr>
<th>Gender</th>
<th>F</th>
<th>Sig.</th>
<th>df</th>
<th>t</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>Std. Error Difference</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meaning Making</td>
<td>.002</td>
<td>.364</td>
<td>171</td>
<td>-4.582</td>
<td>.017</td>
<td>-4.452</td>
<td>.000</td>
<td>-7.54367</td>
</tr>
<tr>
<td>Strategic Awareness</td>
<td>.002</td>
<td>.364</td>
<td>171</td>
<td>-4.383</td>
<td>.017</td>
<td>151.574</td>
<td>1.503</td>
<td>-11.03275</td>
</tr>
<tr>
<td>Creativity</td>
<td>.002</td>
<td>.364</td>
<td>171</td>
<td>-4.383</td>
<td>.017</td>
<td>151.574</td>
<td>1.503</td>
<td>-11.03275</td>
</tr>
<tr>
<td>Learning Relations</td>
<td>.002</td>
<td>.364</td>
<td>171</td>
<td>-4.383</td>
<td>.017</td>
<td>151.574</td>
<td>1.503</td>
<td>-11.03275</td>
</tr>
<tr>
<td>Resilience</td>
<td>.002</td>
<td>.364</td>
<td>171</td>
<td>-4.383</td>
<td>.017</td>
<td>151.574</td>
<td>1.503</td>
<td>-11.03275</td>
</tr>
</tbody>
</table>

#### Table 10: Test for statistical significance of Stage 2 gender comparisons (significance is at levels below 0.05 in last column)

Commentary on data analysis of Stage 2 Gender comparisons:

“Only in CURIOSITY, CREATIVITY, and STRATEGIC AWARENESS were there significant differences between the girls and the boys. In Curiosity, the boys scored about 7 points more than the girls; in the other two dimensions, the boys scored just under 5 points more than the girls... It also seems that the boys’ change from pre- to post- was above the average change.”

26
4.3 (RQ3) **What are the differences between findings in KYUEM and findings for similar groups in UK?**

The ELLI database contains fairly recent (2004-5) data for Year 12 students in two schools with large sixth forms in the south of England, both of which achieve, in examinations at post-16 levels, higher than the average for schools in the UK. The dataset is for 392 students in the two schools combined.

The following table shows the average (of pre- and post- test) mean scores in all seven dimensions of this cohort of 392 UK students:

<table>
<thead>
<tr>
<th>Statistics</th>
<th>changing and learning</th>
<th>critical curiosity</th>
<th>meaning making</th>
<th>creativity</th>
<th>strategic awareness</th>
<th>learning relationship</th>
<th>resilience</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>392</td>
<td>392</td>
<td>392</td>
<td>392</td>
<td>392</td>
<td>392</td>
<td>392</td>
</tr>
<tr>
<td>Mean</td>
<td>65.6250</td>
<td>52.1353</td>
<td>68.7561</td>
<td>47.6446</td>
<td>51.1578</td>
<td>55.9595</td>
<td>59.1437</td>
</tr>
<tr>
<td>Std. Error of Mean</td>
<td>.93047</td>
<td>.82243</td>
<td>.83214</td>
<td>.80563</td>
<td>.77721</td>
<td>.79469</td>
<td>.68253</td>
</tr>
<tr>
<td>Minimum</td>
<td>.00</td>
<td>7.41</td>
<td>.00</td>
<td>3.33</td>
<td>10.26</td>
<td>13.89</td>
<td>7.84</td>
</tr>
<tr>
<td>Maximum</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>96.67</td>
<td>100.00</td>
<td>94.44</td>
<td>96.08</td>
</tr>
</tbody>
</table>

*Table 11: means of average learning power scores (including pre- and post- tests) on all seven dimensions of 392 UK Year 12 students in 2004-5*

The following tables show the same data for the Stage 1 cohort at KYUEM (the average of pre- and post- test mean scores) in each of the seven dimensions one by one, in the upper part of each table, together with comparative analyses in the lower part, to show where there were statistically significant differences between the KYUEM and UK samples.

<table>
<thead>
<tr>
<th>One-Sample Statistics</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>changing and learning</td>
<td>184</td>
<td>82.0199</td>
<td>13.96513</td>
<td>1.02952</td>
</tr>
</tbody>
</table>

**One-Sample Test**

<table>
<thead>
<tr>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>changing and learning</td>
<td>15.925</td>
<td>183</td>
<td>.000</td>
<td>16.39493</td>
<td>14.3637</td>
</tr>
</tbody>
</table>

*Table 12: average mean scores for KYUEM Stage 2 in Changing & Learning (above) and test for significant difference from UK (Test Value) data. (significance is at levels below 0.05 in the third column)*
### Table 13: average mean scores for KYUEM Stage 2 in **Critical Curiosity** (above) and test for significant difference from UK (Test Value) data.

(significance is at levels below 0.05 in the third column)

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>critical curiosity</strong></td>
<td>184</td>
<td>71.5076</td>
<td>12.62951</td>
<td>.93106</td>
</tr>
</tbody>
</table>

#### One-Sample Test

<table>
<thead>
<tr>
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<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>critical curiosity</strong></td>
<td>20.807</td>
<td>183</td>
<td>.000</td>
<td>19.37235</td>
<td>17.5354</td>
<td>21.2093</td>
</tr>
</tbody>
</table>

### Table 14: average mean scores for KYUEM Stage 2 in **Meaning Making** (above) and test for significant difference from UK (Test Value) data.

(significance is at levels below 0.05 in the third column)

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>meaning making</strong></td>
<td>184</td>
<td>81.8711</td>
<td>10.78611</td>
<td>.79516</td>
</tr>
</tbody>
</table>

#### One-Sample Test

<table>
<thead>
<tr>
<th></th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>meaning making</strong></td>
<td>16.493</td>
<td>183</td>
<td>.000</td>
<td>13.11502</td>
<td>11.5462</td>
<td>14.6839</td>
</tr>
</tbody>
</table>

### Table 15: average mean scores for KYUEM Stage 2 in **Creativity** (above) and test for significant difference from UK (Test Value) data.

(significance is at levels below 0.05 in the third column)

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>creativity</strong></td>
<td>184</td>
<td>69.0399</td>
<td>13.98506</td>
<td>1.03099</td>
</tr>
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</table>

#### One-Sample Test

<table>
<thead>
<tr>
<th></th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>creativity</strong></td>
<td>20.752</td>
<td>183</td>
<td>.000</td>
<td>21.39526</td>
<td>19.3611</td>
<td>23.4294</td>
</tr>
</tbody>
</table>
Table 16: average mean scores for KYUEM Stage 2 in **Strategic Awareness** (above) and test for significant difference from UK (Test Value) data. (significance is at levels below 0.05 in the third column)

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>strategic awareness</td>
<td>184</td>
<td>72.0875</td>
<td>12.39899</td>
<td>.91407</td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>strategic awareness</td>
<td>22.897</td>
<td>183</td>
<td>.000</td>
<td>20.92971</td>
<td>19.1263</td>
<td>22.7332</td>
</tr>
</tbody>
</table>

Table 17: average mean scores for KYUEM Stage 2 in **Learning Relationships** (above) and test for significant difference from UK (Test Value) data. (significance is at levels below 0.05 in the third column)

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>learning relationship</td>
<td>184</td>
<td>61.8056</td>
<td>13.39435</td>
<td>.98744</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>learning relationship</td>
<td>5.920</td>
<td>183</td>
<td>.000</td>
<td>5.84606</td>
<td>3.8976</td>
<td>7.7943</td>
</tr>
</tbody>
</table>

Table 18: average mean scores for KYUEM Stage 2 in **Resilience** (above) and test for significant difference from UK (Test Value) data. (significance is at levels below 0.05 in the third column)

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>resilience</td>
<td>184</td>
<td>58.5731</td>
<td>12.32440</td>
<td>.90857</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>resilience</td>
<td>-.628</td>
<td>183</td>
<td>.531</td>
<td>-.57060</td>
<td>-2.3632</td>
<td>1.2220</td>
</tr>
</tbody>
</table>
Commentary on comparative data analysis of KYUEM and UK samples:

The one-sample tests demonstrated that the KYUEM students had statistically significantly higher learning power, in all dimensions except for RESILIENCE, than the Year 12 students from UK. The UK students had higher RESILIENCE than the KYUEM students, and the difference was approaching significance level.

5. Conclusions

KYUEM is an exceptional educational setting, by almost any standards. Some of these findings reflect that. The students are generally more academically gifted than any other sample in the ELLI database. Their experience at the College is of a broad, full-time, residential, education, even though their academic studies may have, for most, the highest priority. It is therefore interesting, but by no means straightforward, to try and distinguish what the data is telling us about KYUEM and its students and what it might have to say about the efficacy and impact of the ELLI project as they experienced it.

Certainly, some interesting characteristics emerge, of this unusual population. Firstly, from the quantifiable data, in both stages and both pre- and post-intervention assessments, there was a consistent pattern in the mean scores across the seven dimensions. Amongst a set of profiles significantly higher in almost every dimension than those of the same-aged students assessed in the UK, Meaning Making and Changing and Learning are invariably the strongest, by a clear margin; Strategic Awareness, Critical Curiosity and Creativity were lower, though still high compared to the UK counterparts; Learning Relationships scored lower again and Resilience was always lowest: the only dimension in which the Malaysian sample were outscored by the UK one. The same pattern was evident in the KYUEM staff group. This has been influential in the emergence of a hypothesis linking high academic performance with a certain kind of fragility and dependence. Reading the narrative accounts strengthens and sharpens the hypothesis and invites a conclusion that many of these high-performing students have got where they are at least partly by having a strong sense of direction and purpose, working diligently on their own, following instructions, conforming to examination requirements and relying upon a natural talent for assimilating and applying diverse knowledge. Some of their comments about the impact of examinations on their development are revealing: it seems as if the assessment system provides a demanding but ‘safe’ haven for concentrating minds and efforts, possibly impeding the development of resilience in two ways: increasing anxiety by raising the stakes of their learning ‘game’ and providing rewards through accustomed success with a well-tried formula. They may not have struggled much with the experience of failure and have had little reason for questioning or adapting their own learning methods and routines. If they are at risk, it may be after the transition to even more demanding but less structured and supportive contexts at university and beyond.

It is even more interesting, though more difficult, to identify the impact that the ELLI programme had on these students, as distinct from factors inherent in them and their College environment. There are important clues in the differences between the two cohorts, Stage 1 and Stage 2. Both large enough samples to be broadly representative of the KYUEM population as a whole, they ‘met’ the project at significantly different stages both of its development and their time at the College. The ‘Stage 1’ cohort were in their eighth month of residence, while ‘Stage 2’ had been there only six weeks before.
completing their first ELLI profiles. As is clear in the Interim Report of June 2005, (Appendix 2) there were issues of management and momentum with the Stage 1 group that were addressed before Stage 2 began. These issues led the College to re-frame Stage 1 as a ‘pilot’ and regard the advent of the ‘new juniors’ (Stage 2 group) that summer as an opportunity to ‘do ELLI properly’. Most of the tutors had by then been trained for two full days. Oversight and co-ordination at a senior level were in place. Commitment to communicate and promote the principles and strategies of the ELLI project was clearer and wider across the staff. The pre-test, being so close to the start of their time at the College, was likely to offer a better ‘base-line’ by which to measure any gains, post-intervention. There was already a suspicion that the broad educational life and teaching at KYUEM might be a significant factor in building learning power. Perhaps the very high initial scores in some of the seven dimensions of the first group had been brought about by seven or more months of this and the improvement was happening irrespective of the ELLI assessments and interventions.

This is where the data from the ELLI profiles is so illuminating. The differences between pre-intervention and post-intervention scores generally and, within that, the comparison between Stage 1 and Stage 2, represent the most significant findings from the quantitative data. The total gain in mean scores in all seven dimensions by **Stage 1** students was 28.9313, an **average rise of 4.13%** in learning power across the seven dimensions. The gains were statistically significant in six out of the seven dimensions: an extremely encouraging result in its own right. However, it was well exceeded by the Stage 2 cohort. The total gain in mean scores by **Stage 2** students was 55.649, an **average of 7.95%**. The gains were statistically significant in all seven dimensions. As the expert data analyst commented, ‘the change in learning power of this cohort is much more pronounced’. Such a significant pre-post difference in one year is quite exceptional.

The quantitative data alone does not prove that these gains were caused by the research-led interventions. Again, it is when we interpret the statistics in the light of the narrative feedback that we get a better sense of the factors in this pronounced increase in learning power. Firstly, the face validity of the ELLI profiles was strong, which implies a fair degree of trust in them, on the part of the students. Secondly, just over half of the 109 narratives include generalised positive comments about the ELLI programme. Others praised it more specifically or implied acceptance in referring specifically to other factors. The very few exceptions to this could be said to increase its validity, demonstrating that there was nothing to stop them from commenting negatively. Thirdly, shedding light from a personal perspective on the statistical findings, no less than 85% of the Stage 1 students refer in their narrative accounts explicitly to the gains they have made. In many cases, they make cogent links between the changes in their profiles and contrasts between past and present learning patterns, such as, in one case (Example 16 above) reflecting how working on **Creativity** has brought a new-found ability to “think outside the box”.

In short, a clear majority of KYUEM students appeared to find the ELLI feedback useful and were prepared to be influenced by it. Still more interestingly, many students chose to attribute the gains they made in their learning power to particular factors. These were not exclusive of each other and many responses included more than one of them. A sizeable minority (21% of the total) actually attributed their gains explicitly to aspects of ELLI, in comments like: “**ELLI really does help me...**”, “...it works!” and “**Thanks to the ELLI profile...**”, implying that the assessments and interventions of the research might well have had a significant influence upon the measurable outcomes.
By far the most frequent attribution of gains in the narratives (at 53%) is to decisions and strategies the students had adopted for themselves. A strong sense of ‘agency’ had already been there in the narrative responses to their first profiles, with phrases like: “I will work on that...”, “I do not intend to better myself at this...”, “I need to let my mind float free and have a broader view...”. When it came to reporting on the differences in the second profiles, it was as if this agency had been given rein. The 53% included comments such as: “I’ve changed my attitude toward learning...”, “My deliberate intervention to have more discussions...”, “I plan more carefully nowadays...”, “the changes are due to my personal efforts to improve my learning capacity.” The theme is carried forward in aspiration, with 23% expressing intentions to take further steps to improve. This strong theme in the narrative feedback not only underlines the strength of these learners in Changing and Learning, in which they scored so highly, but also justifies the overall strategy of placing responsibility for the interventions upon them with their tutors’ support, rather than foregrounding the role of pedagogy. It is also, of course, in keeping with the philosophy of empowerment that underlies the programme. (We should note that the qualitative and narrative reports containing these attributions were all from Stage 1 students. It would have been interesting to see whether they were matched or exceeded by the Stage 2 cohort, whose statistical gains were so much more significant, but whose narrative accounts were not available for the conclusion of the project.)

The large percentage of responses (30%) that attributed the gains to the teaching, life, relationships and learning environment at the College, lends weight to the suspicion that these students’ learning power was developing strongly before they encountered ELLI. It is worth linking this with the significant number, nearly a quarter, who report wider personal gains, rather than simply academic ones, especially greater confidence and enjoyment. It is heartening to read such phrases and comments as: “the type of person I am...”, “it makes me become someone else...full of confidence...enjoy(ing) learning new things”, “it makes us know ourselves better...”, and “I will become a first-class lifelong learner”. Once again, they echo the underlying philosophy of learning power as a ‘unifying energy’ that integrates personal and formal aspects of learning.

It seems appropriate to conclude with an aspect of the project that speaks very clearly both about the nature of these learners and about the impact of ELLI upon them. These exceptionally able students ‘took on’ the ideas eagerly, accurately and productively. We can argue fruitlessly about how far it is possible to attribute outcomes to interventions, but we can surely see that the clarity with which the students articulate their awareness of themselves as learners owes something to the language and concepts they have adopted from the project. The gains might have happened without this awareness of ELLI, but they would not have been so visible without it, nor so well apprehended and ‘owned’ by the learners, nor so able to be incorporated and built-upon in planned, strategic development. As in other ELLI Research & Development projects, hearing the ‘voices’ of learners in their narrative accounts gives the whole analysis a powerful and undeniable authenticity. This kind of action enquiry enlists students and staff as co-researchers: learners, practitioners and researchers co-creating knowledge. It is also in line with other projects so far completed that the students at KYUEM show a high degree of reflective self-awareness, using the language and concepts the project has given them to enhance and express a new, apparently deeper understanding of themselves as learners on a journey. In almost every educational setting so far to have adopted ELLI, people report the development of this ‘new language for learning’ as having the single most significant
impact on their learning community. As the community of KYUEM, in its unique, specialised, isolated, positive and productive setting, wrestles with key questions about how to add value, whether the learning culture could be less passive or dependent, how best to prepare its students for the challenge of Western university life, it can reflect at least on the way in which the students themselves have taken up the cause at the heart of such questions: how to know myself better as a learner and take responsibility for my own future, including, when necessary, the challenge of starting to learn ‘outside the box’.