The Learning Agents!

“Learning that flows across subjects so they all link together”

The ViTaL Development & Research Programme

Report No. 4
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by Tim Small
21st May 2007
The Learning Agents!

What part do the language, concepts, principles, assessment and practice of learning power play in a large English secondary school in which the Key Stage 3 curriculum has been radically re-fashioned to shift the learner’s role from that of ‘receptor’ to that of active ‘agent’ and to counter-balance emphasis on knowledge, skills and understanding with a primary focus on the process of learning itself?

This is the Report of an ELLI Research and Development Project undertaken in partnership with St John’s School and Community College, Marlborough between June 2005 and October 2006.

Acknowledgements:

The author would like to express his grateful thanks to: Dr Patrick Hazlewood, the Head Teacher at St John’s for his initial interest in the ELLI programme and for seeing its potential relevance to the School and its students; Kathy Pollard, who led the project within the school and made everything happen; the tutors who became such excellent ‘Champions’ of the work and not least the students themselves, for their welcome and hospitality on all the research visits, their engagement with the ideas and the many creative and imaginative ways they all found to apply them.

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1 Introduction

As this project was being planned in 2005, St John’s was already one of the leading exponents of the Opening Minds Curriculum, working in partnership with the RSA. It was also embarking on a project focusing on personalised learning and other variables known to be important to a learner centred culture, such as quality of relationships and emotional literacy.

The ‘alternative curriculum’, which had been running at KS3 for 4 years, was based on the five competencies of:

- learning to learn
- citizenship
- relating to people
- managing situations
- managing information

This work had enabled the school to advance its practice in several ways in line with the principles of Effective Lifelong Learning and the ELLI project. It had:

- developed a competencies-based approach to curriculum design, objective-setting and assessment for learning
- refined and practised its philosophy of developing students’ capacity to learn how to learn and manage their own learning
- explored new ways of sequencing and presenting the content of the KS3 curriculum to respond to individual needs and interests
- sought to improve continuity and progression from KS2 to KS3, through thematic integration of curriculum content, in collaboration with Primary feeder schools

St John’s had also become a partner in a planned RSA Personalised Learning: Responsibility, Diversity and Assessment project: a series of closed working seminars, followed up by a piece of empirical research leading towards an RSA publication. This project was to be chaired by the Director of the ELLI Research Programme and set out to investigate radical approaches to curriculum design and assessment based on personalised, context-driven enquiry projects.

These developments enabled the school to offer a uniquely appropriate context for the advancement of the ELLI research agenda.

2 Methodology

The project’s broad aims, therefore, were to:

- explore the ways in which the dynamic assessment of learning power can assist and illuminate teacher- self- and peer-assessment the context of a competencies-based curriculum
- investigate how the dynamic assessment of learning power relates to policy and practice in:
  - personalising learning and learning pathways
  - primary-Secondary transfer, continuity and progression
differentiating the curriculum to cater for all individual needs
developing confidence, responsibility and independence

- explore how ELLI can be used to enhance and monitor progression of individuals through independent learning pathways
- investigate the strategic potential of ELLI as a core component of a Personalised Learning curriculum.

These were formulated into a set of six research questions (RQs), which informed the methodology, data collection and analysis:

1. How does the use of the ELLI Learning Power assessment tool contribute to learners’ understanding of themselves and their progression in a competencies-based curriculum?
2. How do ELLI Learning Power concepts affect teacher-, self- and peer-assessment practices in this context?
3. How do ELLI Learning Profiles and the Seven Dimensions of Learning Power inform and relate to:
   i. choice and decision-making in personalised learning?
   ii. differentiation of objectives, tasks, support and assessment?
   iii. management of progression and continuity between stages and phases of education, particularly from KS2 to KS3 and from KS4 to KS5?
   iv. development and assessment of confidence, responsibility and independence?
4. How does ELLI inform or affect teachers’ and school managers’ strategic decisions in planning and delivering a competencies-based, personalised curriculum?
5. What part can the dynamic assessment of learning power play in a radical shift of emphasis in curriculum design and delivery, in which
   i. the position of the student changes from that of a receptor to that of an active agent?
   ii. an emphasis on knowledge, skills and understanding is counter-balanced by a primary focus on the process of learning itself?
6. How do learning power profiles in these contexts compare with those for similar populations in more conventional curriculum contexts?

The research was designed as a collaborative action enquiry led by a core group of teaching staff, ‘ELLI Champions’, supported and co-ordinated by a senior teacher. It was adapted in response to early developments and the loss of a partner primary Head Teacher to another post and became focused on the Year 7 Cohort. 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 a core group of school leaders in a morning seminar in the Spring of 2005. In June, ten 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 the Year 7 cohort in October and November of 2005.

The School Project Leader, Kathy Pollard, supplemented the Champions’ training, gave briefings to other staff and produced materials to support the Champions and students (see Appendix 1). These materials included: self-assessment tools using concept-lines, a mapping document to show relationships of the Seven Dimensions with the core competencies of the Opening Minds Curriculum; laminated bookmarks showing personal learning strategies written by the ELLI R&D Team; reference pages in students’ personal planners. Student support materials were distributed and explained through the tutorial programme.

Although the Champions were able to use the strategies and ideas in their teaching, the emphasis was on using the tutorial system to teach students about the Seven Dimensions, with interventions designed to give them the capacity and responsibility for developing their learning power: tutors explaining the ideas, discussing with students the interpretation of their individual profiles, encouraging them to reflect, orally and in writing and discuss and decide on their own strategies for developing their learning dispositions. There was little systematic take-up of the ELLI concepts in subject areas.

A key intervention was the introduction and resourcing of a staff-based mentoring system which involved all the students having regular, extended conversations with an adult trained in the ELLI concepts. These would happen on average every five-to-six weeks through the year, taking around 15 minutes each time and providing an ideal context both for referring to and developing the diagnostic application of the ELLI profile to each student, supporting him or her in devising or choosing strategies for building strengths in identified learning power dimensions.

The Year 7 cohort completed their post-intervention ELLI Profiles in June and July 2006.

Qualitative and narrative evidence was collected in the following ways:

- During a first visit in December 2005, comments were recorded verbatim from:
  - the school project leader (Kathy Pollard)
  - seven tutors, one on his own and the rest in pairs
  - two focus groups, with pairs of students representing each of five Year 7 Tutor Groups, 2 in one, 3 in the other

- In March 2006, the school project leader collated and forwarded responses to a questionnaire administered by her to Year 7 students working in pairs or threes, with no teacher support or intervention (see Appendix 2)
During a second visit in July 2006, comments were recorded verbatim from:
- two focus groups each containing seven Year 7 students who had completed their second ELLI profiles
- four tutors plus the school project leader, from semi-structured interviews (see Appendix 3), following a report to them of the results of the data analysis

Quantitative data was:
- generated by administering the ELLI-online questionnaire to the cohort of 199 Year 7 Students for the first time in November 2005 and for the second time in June/July 2006, post-interventions;
- analysed and reported on by a member of the ELLI Research Team using SPSS analytical software at the University of Bristol.

3 Selection of evidence

3.1 Summary of evidence base:
3.1.1 Qualitative and narrative data (RQ’s 1-5):
- Students involved in focus groups: 24 (10 in December 2005, 14 in July 2006)
- Tutors involved in focus groups and semi-structured interviews: 7
- Student written feedback in response to questionnaire March 2006
- Tutors interviewed face-to-face: 5
- Leaders/managers interviewed face-to-face or by telephone: 1
- Written evidence and reflections submitted by leaders: 1

3.1.2 Quantitative data (RQ 6)
Analysis of the ELLI Profile data for the entire cohort of 199 Year 7 students, including:
- Whole year group means on Seven Dimensions, pre- and post-interventions;
- Tutor Group means and significant variations, pre-interventions
- Pre-post differences reaching statistical significance in the whole cohort
- Significant or near significant variations between genders in pre- and post-intervention differences.
- Significant variations between tutor groups in pre- and post-intervention differences.

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:
  - 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

4 Findings and evidence

4.1 (RQ1) How does the use of the ELLI Learning Power assessment tool contribute to learners’ understanding of themselves and their progression in a competencies-based curriculum?

4.1.1 Many of the students reported that working with their ELLI profiles had helped them to know how to make and monitor improvements in their learning.

Comments included:

- I used to depend on my friend. Now I don’t sit with her. My Learning Relationships score made me decide to work more on my own (Dec 7U/L/B)
- It helped me to try and improve my Resilience, to see the point (Dec 7U/L/B)
- (reacting to fellow student’s suggestion that we should ‘take it to other schools’): it would help them get higher marks in Year 6! (Dec 7U/L/B)
- I really enjoyed it (the questionnaire) – I am more aware of what I could do better as a learner because I do things on my own a lot (Dec 7U/L/B)
- It was really clever how the questions sorted (me) out (Dec 7R/E)
- It’s good on Creativity; in Sports Day, the hurdles race, I thought of a different technique… It could be anything, not just hurdling! (July Group 1)
- The shape (profile)! I liked the shape! I could work on the shape! (July Group 2)
- The ‘Star Profile’ was easy to understand: you could see how you’d changed from the first one to the second one (July Group 2)
- My first (profile) was not so good: felt bad! The second one is much better: feels good! (July Group 2)
- In the first one, some (Dimensions) went ‘in’; in the second, some now go ‘out’ (July Group 2)
- You look back at it. I wasn’t very good at Creativity so I got into a group and made things up (July Group 2)
- I wouldn’t really have known my good bits and bad bits but once I’d done the questionnaire… (July group 2)
- My first (profile) was quite small, not very good, so I got a couple of tasks – I think for Critical Curiosity and Creativity… I went back and talked to my tutor in Mentoring… gave me some targets
- I wasn’t very good at planning. I’ve got better at it. It’s (ELLI) helped me to understand my work. Now, if I didn’t plan, it would just go wrong. (July Group 2)
- In the questionnaire administered by the school in March 2006, 64% of the sample said that their ELLI profiles agreed with their own impressions, 27% said they agreed, but with some differences (see Appendix 4)
• Strategic awareness helps us figure out what resources we need (group feedback - Appendix 2)
• I used to give up but now I will keep on trying (a disaffected boy student - see Appendix 2)
• I now try to plan my time and create timetables but they don’t always work (see Appendix 2)
• In music I found it really hard so I used my resilience to stick at it (see Appendix 2)
• It helps you realise your weaknesses and improve (see Appendix 2)

4.1.2 Some students commented in particular on how working with ELLI had helped them to make connections in their learning, between different learning dimensions, across subjects, or between school and home.

Comments included:
• It’s morphed a bit – when you’re doing ICT, a writing task (linking with) History – a famous writer – it really helps to link things together like English and History (July Group 1)
• I was doing an English project and I got most of my ideas from my Science book and a Science website (July Group 1)
• It’s good that all the Seven Dimensions link together in some way (July Group 2)
• (It helps with) things out of school as well (July Group 2)
• You can use the skills you learn out of school… make links (July Group 2)
• The Seven Dimensions are helpful because they flow across subjects and they all link together (July Group 2)
• I’m much better at organisation skills, homework and planning time at the stables (see Appendix 2)
• I find I now relate to other things I know (see Appendix 2)
• Linked history and science by meaning making (see Appendix 2)
• In a questionnaire administered by the school, 76% of respondents said that they had found the ELLI profiles and dimensions useful out of school, 15% specifying with homework and 11% using them with parents (see Appendix 4)
• It gives you life skills, helps connect lessons together (see Appendix 2).

4.1.3 Some students said or implied strongly that working with ELLI had made them reflect on their relationships and their own and each others’ behaviour.

Comments included:
• Everybody’s changed quite a lot (July Group 1)
• It’s not that people have changed, it’s their way of learning: for instance, at the start of the year one person put their hand up, now everyone does (July Group 1)
• It doesn’t change behaviour; there are still naughty people (July Group 1)
• It teaches you to block out bad behaviour – withdraw attention from it. That should reduce it! (July Group 1)
• When I did ELLI-online, I found I’d got worse at Resilience. It might be true! (July Group 1)
• I always change my mind half-way through (July Group 1)
• I would never be able to do that (plan work) – it’s just me! (July Group 1)
• I get to the point when I’ve collected as many good ideas as I’m going to get (July Group 1)
• Do we get on better? Some, Yes! Some, a little bit! One shy person… resilience built up… made more friends (July Group 1)
• Most of the group said these changes were ‘down to ELLI’; others said they were ‘aided by ELLI’: (ELLI) makes you see what’s going on! (July Group 1)
• You can talk about it to your friends…it helps you to have more to talk about (July Group 2)
• In science I got stuck on phases of the moon so I asked friends and two of my teachers to help (see Appendix 2)

4.2 (RQ2) How do ELLI Learning Power concepts affect teacher-, self- and peer-assessment practices in this context?

4.2.1 Tutors reported that the ELLI Dimensions, especially represented as ‘concept-lines’, were adapted (by them) and integrated by students into their self- and peer-assessment practices, helping them to demonstrate reflective self-awareness, (though one group ‘struggled with them’ at first).

Comments included:
• The concept-line chart (of the Seven Dimensions) was changed around so it flowed from left-to-right (Project leader Dec 2005)
• The group found the opposite poles more difficult to understand (Tutor Dec 2005)
• They generally see the truth in their profiles – broadly agreed – ‘flat areas turned out not to be useful… Some weaknesses and strengths were very well recognised (Tutor Dec 2005).
• Two very bright student, really into self- and peer-assessment, talking about each others’ strengths in the Dimensions…really liked the animals (Tutor Dec 2005)
• (A remark about ELLI) was prompted by a girl saying, ‘Beth is strong at Critical Curiosity’ (Tutor Dec 2005)
• I thought it might be a bit ‘dry’… there’s so much self-assessment and process-orientation, with the 5 competencies, but it turned out good! (Tutor Dec 2005)
• They struggled (with the yellow concept lines sheet) …no one wanted to be on the left! They assessed themselves wishfully; some a lot! (Tutor Dec 2005)
• We started by introducing the 7 Dimensions … they ‘guestimated’ themselves on concept lines with a friend. Then they did the profiles (Project Leader July 2006)
• We only got so far in discussion; what worked was activities – posters, quizzes… they understood (the concepts) better when linked with their own experience (Tutor July 2006)
• The second time they did the questionnaire was probably more accurate – and so their profiles might shrink! The first time was not as meaningful – not explained… logistical problems…not prepared properly…they have so much self-evaluation anyway! (Tutor July 2006)
• Those who go ‘down’ (in their scores) may have become more self-aware, more self-critical (Tutor July 2006)
• They had done self-assessment on the yellow sheets…there was a high correlation with the 1st profile. They needed to refer to the animals to remember the 7 Dimensions (Tutor July 2006)
4.3 (RQ3) How do ELLI Learning Profiles and the Seven Dimensions of Learning Power inform and relate to:
   i. choice and decision-making in personalised learning?
   ii. differentiation of objectives, tasks, support and assessment?
   iii. management of progression and continuity between stages and phases of education, particularly from KS2 to KS3 and from KS4 to KS5? (Evidence was not elicited to answer this question in full)
   iv. development and assessment of confidence, responsibility and independence? (See also RQ 5 below)

4.3.1 Almost all the tutors placed a high value on the mentoring conversations as a context for guidance and target-setting using the ELLI profiles to inform and differentiate their advice, though their success depended upon the promptness and enthusiasm with which such conversations were followed through and sustained.

Comments included:
- In mentoring, we came up with targets – in school and out of school. E.g., Resilience: talk with parents for five minutes at the end of the day about ‘What I was stuck with’ (Tutor Dec 2005)
- Mentoring is key! (Tutor July 2006)
- Mentoring is crucial! (Tutor July 2006)
- All but three (students) increased in the Dimensions they focussed on in mentoring (Tutor July 2006)
- I used ELLI in Mentoring – it informed it in a more general way. It was useful – extremely – but I didn’t set ‘hard targets’ related to ELLI (Tutor July 2006)
- Releasing the feedback (profiles) through mentoring could be a drawback – there was a longer delay for some; but it was good to use in mentoring
- It was good to set targets together; they are more likely to see the point and relevance (Tutor July 2006)
- In the second round of mentoring I asked ‘Have you been thinking about ELLI?’ - ‘No!’ - I hadn’t made it clear that it is on-going and relates to everything! I got them to get different teachers to initial their targets. The more enthusiastic I got about it, the more enthusiastic they got. I started tentative, then got really enthusiastic! (Tutor July 2006)
- If I didn’t keep this alive, it would die. Sustainability is a key idea. (Tutor July 2006)

4.3.2 Especially in the context of the mentoring conversations, students appeared to find their ELLI profiles particularly helpful in prompting choices and focussing their target-setting.

Comments included:
- It makes me really want to improve! (Dec 2005 Group 2 - boy)
- Measuring it doesn’t build it. It’s what you do about it! (…a girl replies!)
- It helps you focus on what you need to improve (July Group 1)
- It helps you set targets – it’s a step-by-step guide, because it’s hard to achieve everything (July Group 1)
• It spaces out your targets (July Group 1)
• ELLI helps you to concentrate and focus on what you are doing (July Group 1)
• If you have one bad thing (Dimension) … that’s the thing you could choose … make targets, get better at it (July Group 2)
• It’s helpful! I wasn’t very organised … went to mentoring … (talked about) things like packing my bag the night before (July Group 2)
• We discuss our strengths and weaknesses and work out how to improve. (see Appendix 2)
• Yes it helped (see Appendix 2)
• Used it to assess ourselves and evaluate targets (see Appendix 2)
• Learned how we can perform better for the next session. (see Appendix 2)
• It’s helped us make new targets to help us improve our standard of work (see Appendix 2)
• The dimensions help with creation of new targets based on our own profile shapes. (see Appendix 2)
• (My mentor) explained the profiles which was very useful (see Appendix 2)
• They (mentoring sessions) were the starting point for talking about our profiles. (see Appendix 2)
• (We) talked about it with mentors and (had) written targets to improve our weaker points. (see Appendix 2)
• Used strategic awareness to talk about our learning (see Appendix 2)
• Showed us what we needed to improve on (see Appendix 2)
• Useful and helpful with our work and education (see Appendix 2)
• Helped us understand the profile and final picture (see Appendix 2)
• One-to-one talks made the intentions clearer (see Appendix 2)
• 88% of students reported that they had discussed their ELLI profiles or Dimensions in mentoring and found it helpful (see Appendix 4)

4.4 (RQ4) How does ELLI inform or affect teachers’ and school managers’ strategic decisions in planning and delivering a competencies-based, personalised curriculum?

4.4.1 Some significant school-wide and classroom teaching and leadership strategies were inspired or prompted by the introduction of ELLI into the existing ‘Alternative Curriculum’ at St John’s.

These included:
• The introduction and resourcing of mentoring conversations for every student, with an adult professional, lasting about 15 minutes and scheduled, on average, once every five-to-six weeks
• Where mentoring was most effective, agreeing one or more Dimension to work on, the mentor taking notes of actions/targets agreed, dates for completion and review as well as time to talk in depth about what the Seven Dimensions of learning power ‘actually mean’
• re-design of students’ personal planners to include pages of explanation of the ELLI Dimensions, space for journaling and the student’s own profile
• learning activities designed to promote particular dimensions of learning power, such as: ‘buddying opposites’; more team work for Learning Relationships;
• production of bookmarks with ‘tips and strategies’ for students for each Learning Power dimension and made available through mentoring
• production of a chart for teachers setting out graphically the relationships between the 5 Competencies and the 7 Dimensions
• the incorporation of ELLI Profiling data into the school’s value-added tracking system, alongside prior attainment, Teacher NC Assessment, Cognitive Ability Tests, Multiple Intelligence surveys, Pupil Attitude to Self and School and St John’s self-esteem surveys, narrative pen portraits from primary feeder schools and positive and negative referrals data
• arranging for the project leader to be fully trained as an ELLI Consultant and take on the responsibility of training and briefing the whole staff
• incorporating ELLI profiling and mentoring support into the School’s annual learning and guidance processes for Year 7 and opening it to other Year Groups
• an ELLI-trained tutor (reported by students in July Group 2) focussing on the 5 Competencies and the 7 Dimensions in Science teaching, said by the students to be helpful and relevant in ‘over a quarter’ of the subject.

4.4.2 There was a recognition amongst the staff using ELLI (as ‘Champions’) that more needed to be done to promote the concepts and practices to the rest of the staff, to improve take-up of the ideas through pedagogy across the curriculum. This was regarded as a challenge, in the face of heavy curricular commitments in every subject, particularly at Key Stage 4.

4.5 (RQ5) What part can the dynamic assessment of learning power play in a radical shift of emphasis in curriculum design and delivery, in which:
   i) the position of the student changes from that of a receptor to that of an active agent?
   ii) an emphasis on knowledge, skills and understanding is counter-balanced by a primary focus on the process of learning itself?

4.5.1 Many of the students’ comments indicate a developing sense of their own agency as learners, a willingness to take decisions and responsibility for themselves and an tendency to reflect upon learning processes, sometimes (respectfully) critiquing teachers’ practices.

These included:
• I have clear targets and I can set myself ones now (see Appendix 2)
• Sometimes (the bookmarks are helpful) but I prefer to think up my own ways to help ourselves (sic) (Appendix 2)
• It’s just about you and no-one else just about your own learning (Appendix 2)
• Even if teachers don’t tell you to, you can still use it to help with your work (July Group 2)
• I plan my work more, rather than rushing into it (July Group 1)
• I used to leave homework till the last minute, now I do a piece every day and plan ahead (July Group 1)
• Now I plan everything! (July Group 1)
• I’m always asking my (subject x) teacher if I can do it in a different way but she’ll say “OK, but why don’t you do this?” so you end up, what she wants, you do anyway. Our (subject x) teacher doesn’t allow us to be creative! English is completely the opposite! (July Group 1)

4.6 (RQ6) How do learning power profiles in these contexts compare with those for similar populations in more conventional curriculum contexts?
(Evidence in this section 4 is selected from the data analyst’s report included in full as Appendix 5)

4.6.1 Whole year group means on Seven Dimensions, pre- and post-interventions

4.6.1.1 Characteristics of the cohort, pre-interventions

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Fig.1: Year Group means on 7 Dimensions – pre-interventions

Initially, in November 2005, the 199 students’ mean scores on the seven Dimensions ranged from 65.5% in Learning Relationships, the highest scoring Dimension, to 51.8% in Critical Curiosity, their lowest scoring Dimension.

4.6.1.2 Characteristics of the cohort, post-interventions

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Fig.2: Year Group means on 7 Dimensions – post-interventions

By the following June/July the matched students’ mean scores on the seven Dimensions ranged from 68.1% in Changing & Learning, now the highest scoring Dimension, to 53.9% in Critical Curiosity which remained their lowest scoring Dimension.
4.6.2 Tutor Group means and significant variations, pre-interventions

When Scheffe Test analysis was applied to the pre-intervention data across all eight groups and all seven dimensions, variations between the eight tutor groups were not found to be statistically significant. However, looking more closely at the table below, showing mean scores of all eight groups in each of the seven dimensions, we can see a large difference between the means of one particular tutor group (No. 1243) and all the others in two dimensions: Changing & Learning and Meaning Making highlighted in yellow below. These two dimensions are amongst those found in the earlier ELLI Research to have the strongest relationship with achievement in National Curriculum core subjects.

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**Fig.3:** Tutor Group means on all 7 Dimensions – pre-interventions (Tutor Groups identified by numbers, 1239-1247 in left hand column)

It would appear that the Tutor Group 1243 students’ reporting of their learning power in both Changing & Learning and Meaning Making at the outset of the project was significantly higher than that of students in the other seven groups. In Changing & Learning, their mean score was nearly 8 points higher than that of the second highest group; in Meaning Making, their mean was nearly 3 points higher than the (different) second placed group and over 7 points higher than the third placed group.

### 4.6.3 Pre-to-post differences reaching statistical significance in the whole cohort

The table in Figure 4 below shows the mean scores of the whole cohort in both the pre-intervention (Oct-Nov 2005) and post-intervention (Jun-July 2006) surveys. It can be seen clearly that the mean scores went up in all seven dimensions. This would appear to invite comparison with findings from earlier ELLI Research which showed a general decline in Learning Power as reported by students at Key Stage 3 compared with those at Key Stage 2 (which this cohort had only recently been when first surveyed).
### Paired Samples Statistics

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**Fig. 4:** Whole cohort means on all 7 Dimensions, pre- and post-interventions

These differences can be seen graphically in the following histograms, showing the distribution of scores across the cohort, for all seven dimensions in both tests, the pre-intervention (Autumn 2005) charts on the left and post-intervention (Summer 2006) charts on the right:

**Fig. 5:** Distribution and means, pre- and post-interventions, for Changing & Learning (up by 3.6014)

**Fig. 6:** Distribution and means, pre- and post-interventions, for Critical Curiosity (up by 2.1589)
Fig. 7: Distribution and means, pre- and post-interventions, for Meaning Making (up by 5.4559)

Fig. 8: Distribution and means, pre- and post-interventions, for Creativity (up by 3.0654)

Fig. 9: Distribution and means, pre- and post-interventions, for Strategic Awareness (up by 2.1775)
When these data were tested for statistical significance, it was found that the gains between the pre- and post-intervention scores were statistically significant in three out of the seven dimensions: Changing and Learning, Meaning Making and Creativity (see Figure 12, below).

Paired Samples Test

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Fig. 12: Pre- and post-intervention differences on all 7 Dimensions (statistical significance at or below 0.05)
These data suggest that the St John’s Year 7 students reversed the tendency for decline in Learning Power at this age and stage suggested by the earlier ELLI Research and made gains which reached statistically significant levels in their reported levels of Changing and Learning, Meaning Making and Creativity. The positive change was greatest, and most significant, in Meaning Making.

4.6.4 Significant or near significant variations between genders in pre- and post-intervention differences.

4.6.4.1 Boys
As with the whole sample, the boys improved their scores in all seven dimensions, (shown in this table in Figure 13 below):

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Fig.13: Pre- and post-intervention mean scores on all 7 Dimensions: boys only

When these data were tested for statistical significance, in just two dimensions their gains were found to reach statistically significant degrees: those of Meaning Making and Creativity.

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<td>Pair 1  post chnglng - pre chnglng</td>
<td>66.9326 21.14735 2.18118</td>
<td>62.3227 22.68962 2.34028</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 2  post curiosity - pre curiosity</td>
<td>52.9157 18.67810 1.92650</td>
<td>51.1820 18.26560 1.88395</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 3  post meaningmaking - pre meaningmaking</td>
<td>63.5258 18.79704 1.93877</td>
<td>57.6494 17.29618 1.78396</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 4  post creativity - pre creativity</td>
<td>60.3191 17.63881 1.81930</td>
<td>56.2057 17.28668 1.78299</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 5  post strategic - pre strategic</td>
<td>55.3737 19.10054 1.97007</td>
<td>53.6825 18.58842 1.91725</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 6  post lngrelation - pre lngrelation</td>
<td>66.1348 16.36159 1.68757</td>
<td>62.6773 15.05862 1.55318</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 7  post resilience - pre resilience</td>
<td>58.8002 15.33027 1.58120</td>
<td>54.7768 13.80151 1.42352</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fig.14: Pre- and post-intervention differences on all 7 Dimensions: boys only (statistical significance at or below 0.05)
4.6.4.2 Girls

In the pre-intervention surveys, the girls had reported themselves to be significantly higher in *Learning Relationships* (with a mean score of 68.0423) than the boys (62.6773). It was the only statistically significant variation between the genders, in either pre- or post-intervention scores. Interestingly, this (LR) was the only dimension in which a drop was reported, pre-to-post-intervention, by the girls alone (down to 66.6931 – as seen in the table in Figure 15, below), though this was not enough to reach statistical significance, nor to prevent the overall rise across the Year Group, reported above.

When the data were tested, the only dimension in which the girls’ changes were found to reach a statistically significant degree was that of *Meaning Making* (shown in Figure 16):

### Paired Samples Statistics

<table>
<thead>
<tr>
<th>Pair</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>post chnging</td>
<td>69.1270</td>
<td>105</td>
<td>20.70227</td>
</tr>
<tr>
<td></td>
<td>pre chnging</td>
<td>66.4286</td>
<td>105</td>
<td>20.16416</td>
</tr>
<tr>
<td>Pair 2</td>
<td>post curiosity</td>
<td>54.8501</td>
<td>105</td>
<td>17.63636</td>
</tr>
<tr>
<td></td>
<td>pre curiosity</td>
<td>52.3104</td>
<td>105</td>
<td>15.76958</td>
</tr>
<tr>
<td>Pair 3</td>
<td>post meaningmaking</td>
<td>65.9410</td>
<td>105</td>
<td>19.88521</td>
</tr>
<tr>
<td></td>
<td>pre meaningmaking</td>
<td>60.8617</td>
<td>105</td>
<td>17.39614</td>
</tr>
<tr>
<td>Pair 4</td>
<td>post creativity</td>
<td>61.0159</td>
<td>105</td>
<td>18.50227</td>
</tr>
<tr>
<td></td>
<td>pre creativity</td>
<td>58.8889</td>
<td>105</td>
<td>16.41259</td>
</tr>
<tr>
<td>Pair 5</td>
<td>post strategic</td>
<td>57.1917</td>
<td>105</td>
<td>17.85026</td>
</tr>
<tr>
<td></td>
<td>pre strategic</td>
<td>54.5788</td>
<td>105</td>
<td>16.22349</td>
</tr>
<tr>
<td>Pair 6</td>
<td>post Ingrelation</td>
<td>66.6931</td>
<td>105</td>
<td>16.67332</td>
</tr>
<tr>
<td></td>
<td>pre Ingrelation</td>
<td>68.0423</td>
<td>105</td>
<td>13.14303</td>
</tr>
<tr>
<td>Pair 7</td>
<td>post resilience</td>
<td>57.8338</td>
<td>105</td>
<td>15.41557</td>
</tr>
<tr>
<td></td>
<td>pre resilience</td>
<td>56.6947</td>
<td>105</td>
<td>13.62578</td>
</tr>
</tbody>
</table>

**Fig.15: Pre- and post-intervention mean scores on all 7 Dimensions: girls only**

When the data were tested, the only dimension in which the girls’ changes were found to reach a statistically significant degree was that of *Meaning Making* (shown in Figure 16):

### Paired Samples Test

**Fig.16: Pre- and post-intervention differences on all 7 Dimensions: girls only**

(statistical significance at or below 0.05)

*Meaning Making* is therefore the only dimension in which the pre-to-post intervention gains reached statistical significance for both the genders separately and the cohort as a whole. This reflects findings in the wider ELLI data set.
4.6.5 Significant variations between tutor groups in pre- and post-intervention differences.

The eight tutor groups are numbered to preserve anonymity. A key can be found in Appendix 5 page 36, followed by pre- and post-intervention mean score tables and paired sample tests showing which pre-to-post differences reached statistically significant degrees in each tutor group. The table in figure 17 below sets out what these data reveal about where significant change occurred in the learning power of the eight tutor groups between pre- and post-intervention surveys:

<table>
<thead>
<tr>
<th>Tutor Group</th>
<th>Statistically significant gains reported in the following dimensions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1239:</td>
<td>Resilience</td>
</tr>
<tr>
<td>1240:</td>
<td>Meaning Making (MM)</td>
</tr>
<tr>
<td>1241:</td>
<td>None (from a higher pre-intervention baseline)</td>
</tr>
<tr>
<td>1242:</td>
<td>Ch &amp; Learning; Curiosity; Meaning Making</td>
</tr>
<tr>
<td>1243:</td>
<td>Ch &amp; Learning; Creativity; MM; Strategic Aw.</td>
</tr>
<tr>
<td>1244:</td>
<td>Meaning Making</td>
</tr>
<tr>
<td>1246:</td>
<td>Ch &amp; Learning (enough to explain whole cohort change)</td>
</tr>
<tr>
<td>1247:</td>
<td>None</td>
</tr>
</tbody>
</table>

Fig.17: Tutor group variations in Dimensions where significant change was reported

Data is not available to form any hypotheses explaining these variations but the school may know of differences in the particular strategies and approaches adopted by the eight tutors. Several empirical studies in education, including earlier ELLI research, have found that the commitment, judgement and self-efficacy of the teacher has a significant impact upon students’ motivation, achievement, learning power and learning outcomes.

5. Conclusions

St John’s offered a very special context for this enquiry. The competencies-based ‘Opening Minds’ curriculum pioneered at Key Stage 3, the School’s intentional positioning of itself at the leading-edge of the ‘personalised learning’ agenda and its particular interest in ‘independent learning pathways’ were all indicative of an affinity with the principles and applications of the ELLI programme and a collective (even if not unanimous) confidence in significant educational change and its management. One of the most important conclusions from this study must be about the difference made by clear, principled and practical leadership in the school. Other enquiries have illuminated issues of change and shown how the effectiveness and impact of this kind of intervention reflects the degree of strategic support, resourcing and priority it is given by the school’s leadership. This ELLI project was understood, promoted, driven, supported and followed through by the school’s leadership and the staff most actively involved. However difficult it may be to attribute
effects to particular causes in action enquiries where so many factors and variables are at work, we can be sure that this quality of leadership played a key part in the success of this project and its outcomes.

One of the first questions in everyone’s minds at the outset was whether this unique setting and unusual degree of curriculum adaptation to support learner autonomy would be reflected in significantly different self-reporting on the Seven Dimensions of learning power. The short answer is, ‘Yes!’ The Year 7 cohort of nearly 200 students made significant gains in three out of the seven dimensions. With the same caveat about attribution of effects to causes, the data shows the learning power scores of this cohort increased significantly during their first year in secondary school, when earlier research has indicated a general decline in those scores between Key Stage 2 and key Stage 3. It seems that St. John’s has ‘bucked the trend’!

Within that picture, there are variations. While two tutor groups made no significant gains (one of these having much the highest baseline of any group), half of the groups made significant gains in one dimension and two groups made significant gains in three or more Dimensions. Given that the groups were formed using ‘balancing’ criteria for approximate homogeneity, this variability is likely to reflect differences between the tutors and, if so, echoes a common finding in education research, including earlier ELLI research: that, teachers have amongst the most significant influences on outcomes. In other words, unsurprisingly, the strategies, skills, commitment and self-efficacy of the teacher are seen to be critical factors in the development of the students’ learning power.

It is also in common with other enquiries in the ELLI programme so far, that some of the most striking and eloquent evidence is heard in the voices of the learners themselves. Reading the verbatim comments in the ‘Findings and Evidence’ section above, for instance, makes it clear that there was very wide acceptance of the validity and usefulness of the ELLI profiles and that these were widely used as a basis for strategic decision-making. Comments like:

- It was really clever how the questions sorted me out!
- I liked the shape (profile)! I could really work on the shape!

suggest not only that these learners could ‘see’ themselves and their potential for self-improvement in their profiles, but that they had been introduced to and guided in responding to the questionnaire in a way that optimised their willingness to use its outputs to their own advantage.

One of the most striking and welcome responses in the focus group meetings was their observations that working with ELLI had helped them to see links across domains and ‘connect lessons together’: learning at school and at home; learning in different subjects; skills and strategies used in different situations. This particular finding is well-supported by the School’s profile data on Meaning Making, in which the mean score for the whole cohort rose by five-and-a-half percent in the year, easily the highest of the seven dimensions. It is likely to be an outcome of one of the key aims of the School’s Year 7 curriculum: to create links between curriculum areas, break down subject boundaries and improve cohesion of curriculum content. It clearly reflects the emphasis given to mind-mapping as a learning tool, often suggested as the initial task for new units of work in the
competencies curriculum at St John’s. It also underlines the research definition of learning power as a ‘form of consciousness …with a temporal and lateral connectivity’.

In terms of their ‘consciousness’, these Year 7 students share with those in the other studies the distinction of appearing, in their use of the ‘ELLI language’, to have grown in their reflective self-awareness, being able to articulate reflections on their own and each other’s behaviour, in terms of the dimensions, with a maturity that would commonly be associated with much older students:

*It’s not that people have changed; it’s their way of learning…*

sometimes attributing such insights directly to their work with ELLI, which, one said:

*…makes you see what’s going on.*

Nowhere was this level of reflection on process more profound than in the small group of Year 11 students when evaluating their ‘personalised enquiry’ projects, including such comments as:

*I have discovered how to learn as an individual, rather than as the rest of the students in the room are being taught.*

A sharp critique of the more conventional classroom experience – to which things would appear largely to revert at Key Stage 4 in the face of examination pressures – is evident in remarks such as these, provoked perhaps by new awareness of possibilities ‘opened up’ by their personalised learning projects and the difference between this approach and what they had come to accept as the norm:

*In a classroom, every student is taught as if they were the same person; outside of it you can choose which ways your mind will best process the task.*

*We’re all programmed in a way that makes our experience invisible.*

There is a tension being exposed, made explicit and delicately managed at St John’s, between the aspirations and ideals of the learner-centred approach and the harsh realities of curriculum content, testing and examinations driven by the accountability agenda. The Key Stage 3 experiment, for all its evident success, may not yet have shifted the balance significantly at Key Stage 4. These Year 11 students have spotted the anomaly. Their earlier experience of the ‘Opening Minds’ curriculum, combined with the research-led focus on process in their enquiry projects, together gave them a higher perspective from which they could view these very tensions and difficulties. Their observations from this perspective in conversation suggest that they saw in the more personalised approach a ‘better’ way, since it helped them to grow in awareness of both themselves and their learning and resolve the dichotomy for themselves:

*It’s (about) understanding – because you can pass exams without understanding*  
*It’s self growth and achievement….*  
*Our personal experience is important….the way we learn almost exclusively cuts out important things, which are non measurable things….*  
*If we could learn to tell our stories…*
Learning to tell your own story would make it easier to do all the other things you have to do – learn subjects, get grades etc…

Jon and Demelza, Year 11

It is as if they sense the possibility of a different paradigm for formal education.

Returning to the Year 7 cohort, which was the main focus of this R&D project, one of most encouraging findings was the wealth of innovative and creative practice that went to make up the interventions between the two ELLI surveys. In a school already well known for curriculum re-design and innovatory delivery at Key Stage 3, it is perhaps unsurprising, but no less exciting to see a number of new ideas and adaptations to practice in learning and teaching inspired by the ideas and opportunities of working with the ELLI Dimensions. These amounted to a whole ‘infrastructure’ of support: the laminated bookmarks with ELLI ‘tips’ on them on each Dimension; the explanatory and journaling pages in personal planners; ‘buddying’ arrangements for peer-coaching in different dimensions; adaptations to student tracking systems; mapping with other personal and survey data; mentoring conversations every five-to-six weeks.

The most important single one of these interventions – the most costly in terms of resource and representing significant commitment on behalf of the School – was the mentoring system. The findings strongly support the validity of this investment. The school’s own survey found that no less than 88% of the students had discussed their ELLI profiles in mentoring and found it helpful. The voices of the students are also clear:

It (talking about my ELLI profile) makes me want to improve!
The mentoring sessions were a starting point...

The survey concluded that mentoring was most effective when the mentor made notes of agreed actions and time was taken to talk in depth about what the Seven Dimensions of learning power actually mean.

This represented a strategic commitment by the School to one of the principles at the heart of the growing body of empirical evidence about learning power: that it is best nurtured and developed in the context of a mentoring-style learning relationship, characterised by trust, affirmation and challenge. The learner is known and listened to, encouraged to take responsibility and supported in ‘taking on’ the concepts, goal-setting and self-efficacy made possible by an accessible representation of her own learning potential. It is in the ‘alchemy’ of this kind of conversation that self-diagnosis is converted into strategy.

It was perhaps an inevitable by-product of all this ‘ELLI-related’ activity and innovation that the issue arose of the need to avoid any sense of division between staff, with some closely involved and others feeling ‘left-out’ of the picture. Another tension that needs managing, by any school contemplating using a tool like ELLI as an agent for change, is that between the desire, on one hand, to be inclusive and coherent in policy implementation and the recognition, on the other hand, that you cannot ‘fight on all fronts at the same time’ and many staff are simply too busy, or feel too accountable and committed to currently ‘effective’ practice to have much time or space to try seeing and doing things differently. What is not always fully appreciated is how perceptive students can be about differences between staff, as illustrated by the comparison made by one Year 7 student between the levels of autonomy she was given by two of her teachers:
I'm always asking my (subject x) teacher if I can do it in a different way but she'll say “OK, but why don’t you do this?” so you end up, what she wants, you do anyway. Our (subject x) teacher doesn't allow us to be creative! English is completely the opposite! (July Group 1)

The remark shows nicely how an ELLI project can ‘lift the lid’ on perceptions and illuminate issues, partly by ‘turning the volume up’ a little on the student voice. A school needs to be ready to handle what could, in some cultures and by some people, be found threatening and unacceptably subversive. That in turn raises the ‘chicken-and-egg’ question about whether a school’s values need to be developed and clarified before it can expect something like ELLI to make much difference. The ‘Opening Minds’ development had gone a long way towards doing this at St John’s, though attitudes towards it still varied. It will always be a challenge in a large secondary school to get everyone ‘on board’ with generic change and develop the kind of cohesion and clarity of purpose that the ELLI framework has helped to achieve more quickly, for example, in some primary school settings.

The Research Question that best embodied the values of the School and its story of curriculum and cultural development was No. 5: trying to explore empirically the theoretical and philosophical relationships between the St John’s approach to learning and the research and practice associated with the ELLI Programme. They both have twin aims:

- to develop a sense of agency and self-efficacy in learners and
- to raise awareness of and reflection upon the processes, rather than just the content and outcomes of learning.

As well as illuminating the issues and tensions involved in such an enterprise, the evidence is clear that the experience of learning for a year at St John’s, including the ELLI project, furthered these aims for both the year 7 and Year 11 students. When students talk freely about how they have changed, from ‘always leaving homework till the last minute’ to ‘doing a piece every day and planning ahead’ and to ‘planning work more now’ rather than ‘rushing into it’, when they say they ‘set their own targets now’ and use their ELLI profiles to help them ‘even if the teacher doesn’t tell you to’, it is abundantly clear that they have started to take responsibility for themselves and develop in their strategic awareness. They appear to have connected the personal with the technical aspects of learning. They know what it means to feel trusted and to develop trust in their own capacity to learn. They have a language with which to represent their sense of their own agency and distinguish it from the institutional pressures and systems that are there to ‘make sure’ they perform:

> when I was a child…I was always much keener to do something if I knew I would get a reward at the end of it…..the performance was important and not the process…and that’s the way the education system works…it’s very results driven… It’s a bit of a trust thing….they don’t trust you to do it in your own way….its a trust thing…
> It all ties together – its about self awareness more than anything else …..self awareness is not even touched upon in the education system…

Demelza and Jon (Year 11)

It is rare to find such eloquent young ambassadors for a new paradigm: ‘learning agents’ who promote change and represent the potential positive energy of a young generation engaged by personalised learning in a school with a vision for it.