

# Critical Thinking

## Critical Thinking adds value



CAMBRIDGE ASSESSMENT

Research at Cambridge Assessment has found that there is a significant advantage to Critical Thinking (CT) candidates in their other subjects. Further research also investigated how CT is delivered in schools and found that despite a number of challenges and obstacles, teachers were convinced of the value of CT.

Researchers at Cambridge Assessment compared A level outcomes for two groups of more than 2000 UK students (the groups were matched for previous GCSE attainment). One group had gained a grade A or B in Critical Thinking AS level, while the other group had not taken CT. A comparison of the two groups' overall mean A level score showed that the CT group's A level performance was higher than the non-CT group. There was also a significant advantage to CT candidates in a number of A level subjects as shown in the table below.

| Subject    | Mean A level Score             |                            |
|------------|--------------------------------|----------------------------|
|            | Non-Critical Thinking Students | Critical Thinking Students |
| Biology    | 8.76                           | 9.17                       |
| Chemistry  | 8.96                           | 9.35                       |
| Physics    | 8.94                           | 9.33                       |
| Maths      | 9.02                           | 9.32                       |
| Geography  | 8.64                           | 9.17                       |
| Economics  | 8.98                           | 9.46                       |
| Psychology | 8.01                           | 8.55                       |
| English    | 8.91                           | 9.24                       |

To calculate mean A level score A=10, B=8, C=6, D=4, E=2, U=0.

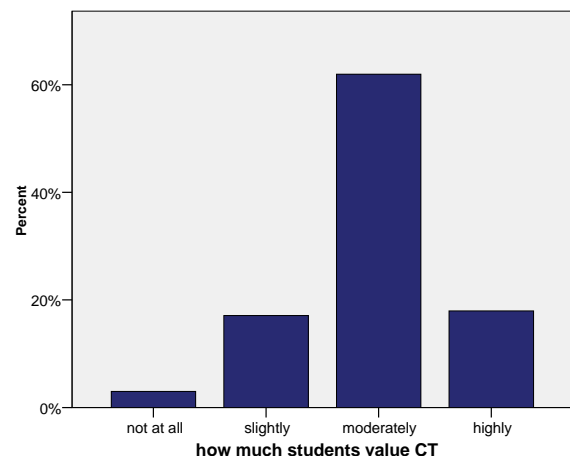
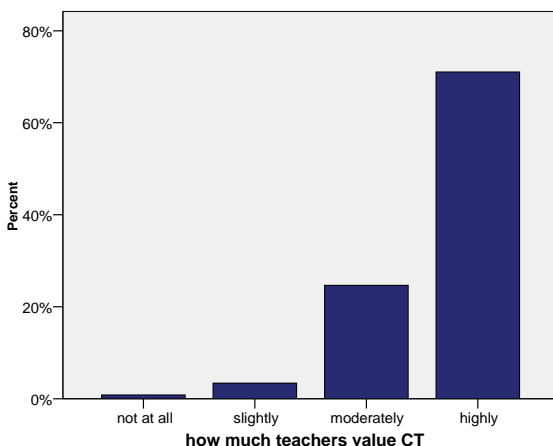
Cambridge Assessment also explored how Critical Thinking is delivered in schools. The research found that there are numerous obstacles and challenges when introducing CT. These include:

- perception of difficulty amongst students
- teaching priorities
- restricted teaching time and other timetabling issues
- resources and training.

However, many teachers were convinced of the benefits of teaching Critical Thinking in relation to:

- the importance of the skills for effective everyday decision making
- transferability of skills to enhance the performance in other subjects
- student-centred and interactive teaching and learning
- collateral benefits to teachers in terms of the enrichment of their teaching and understanding how their students think.

The graphs below show the value attached to CT by teachers and students, as reported by teachers.



## Teacher comments

As part of the research study, comments were collected from teachers about their experience and perceptions of CT. Many of the comments indicate that CT is believed to be capable of considerably enhancing education.

*"It's refreshing to be able to encourage children to actually use their brains rather than just worry about memorising information and 'getting the right answer'. It's exciting to see them grow in confidence and skills."*

*"Excellent preparation for the analytical skills required in many HE courses."*

*"I would LOVE to teach CT properly but I am not given the time on the timetable, the teacher-resources or the support I require in school either to teach my own classes properly or to co-ordinate the delivery of it school-wide."*

*"It is massively important to draw out learning and thinking into a non-disciplinary approach. So much learning [in general] is content driven and students quickly reach a ceiling which they cannot move beyond."*

*"Students enjoyed the course. While many found it intellectually challenging and may come out with low grades there was a real sense of achievement for completing the year. All students felt it helped them in other subject areas."*

*"Students seem to value the subject as being different; they enjoy the immediacy of its challenges; they enjoy the way it enhances their ability to win arguments; they like the fact that there are no essays to write and not too much homework; they appreciate the way it helps them in other subjects; they think it's 'cool'."*

## The future for Critical Thinking

As time goes on, teacher experience and expertise in the subject will accumulate, a greater range of resources will be available and this should have a positive impact upon teaching and learning. A key matter for the future success of Critical Thinking AS level is for it to gain greater acceptance with universities. Currently, its acceptance as part of a main offer is very patchy and this is a source of frustration for teachers who do see its value. If universities were to more widely acknowledge its value and endorse its status, the future for Critical Thinking would be much more secure.

## Context of research

Since 2006 Cambridge Assessment has undertaken a programme of research focussed on Critical Thinking. The work began with the development of the definition and taxonomy. Cambridge Assessment drew upon the expertise of leading figures in the field in order to derive this definition. Research was conducted into the impact of CT in schools and this included teachers' experiences and perceptions. Interestingly, in an additional study there was evidence to suggest that taking CT AS level is associated with higher achievement in other A levels. The Critical Thinking research programme will culminate with the publication of a glossary of terms. This will provide a source of reference for commonly used terms in the CT domain, for use by students, teachers, academics and professionals.

## Further information

Full details of the Critical Thinking work by Cambridge Assessment are available at:

[www.cambridgeassessment.org.uk](http://www.cambridgeassessment.org.uk)

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