

The RDF Fellowship 2012

“Yes we can! Exploring study strategies for effective learning and teaching at AS level in Science and Maths”



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The Research Project



Why are students
under-achieving
in Science and Maths
at AS level?



Enrolment of weaker students who find the transition from GCSE to AS level too hard

Poor achievement stats for college

Students have poor study skills

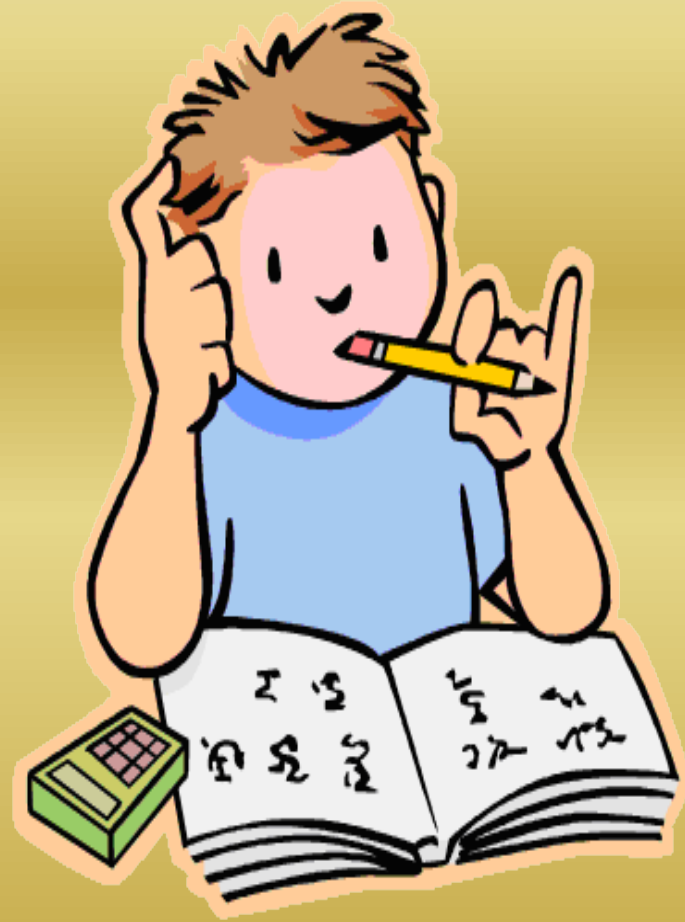
Lack of active participation in class

Little independent study carried out by the students

ISSUES

Aims of the project

The aim of this action research project is to help many of the Maths and Science students at the College to make the jump from GCSE to 'A' level learning by developing high-level learning skills, for example, reflecting, questioning, note-taking, summarising and practising. To start with, students need to establish structured learning patterns, then develop the way they study.



The Research

One-to-one interviews were carried out with a group of under-achieving students to establish their learning patterns.

When do you study?



How do you study ?



Here are some comments students have made in the interviews with me:

"I keep being told to do independent study, but if I don't understand anything, how can I study?"

"When I tell the teacher that I don't understand I am told to look in the bookor...do questions from the book."

"I don't have my own room at home – I have to sleep on the couch because we have a cousin staying with us."

"My revision pattern is to look through the book and maybe try a couple of questions"

"I don't really do much outside lessons"

"If I don't understand something, I usually ask my friend in the library"

"My friend/older brother/older sister/cousin helps me."



Summary of findings

**Passive learning
in class, often
just copying
from the board**

**Poor practical skills in
Science, but afraid to
ask in case they look
foolish**

**Being unable to stick to a regular
study pattern or making a start**

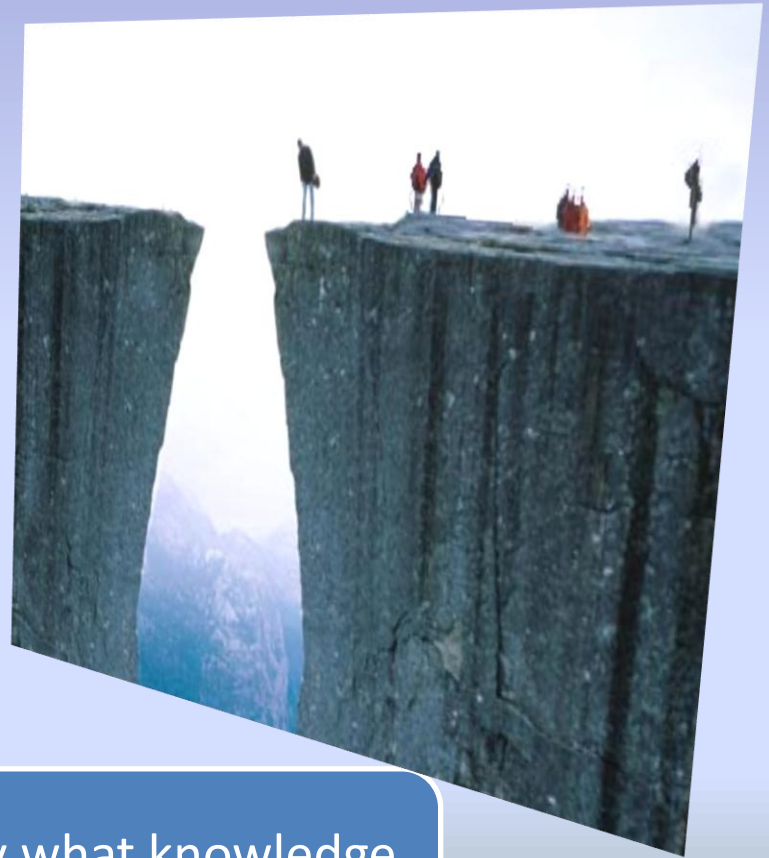
**Not being organised with notes,
files, equipment required such as
text-book, calculator, etc.**

**Priority given to low-level learning
such as looking through the book,
watching video tutorials etc, but not
moving on from these tasks.**

**Students not doing any work outside the classroom for various reasons – in
some cases, simply because they had not done it during school throughout
their GCSE course and therefore did not realise that it was important**

At the start of the year we have noticed this:

- There is a gap between what teachers expect from students and what students think they should be doing.
- Bridging the gap by going over GCSE work in the first week has not been fully effective.



So, it is important to first identify what knowledge the majority of students are coming to us with.

What can the teachers do?



Starting with the GCSE higher tier papers and mark schemes, teachers look at the range of marks needed for a grade B. Based on this, they are asked to do this:

“What skills do you identify that students will need at the start of the AS course?”

1. Write a 2-week programme to prepare students for the AS course in your subject.
2. How can you incorporate study skills in your subject?



For policy makers and
senior managers

For teachers:

Recommendations

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graph LR; R[Recommendations] --- T1[Teachers to rethink the starting point of the AS course with an effective Induction programme]; R --- T2[A rigorous IAG process at enrolment linking to future realistic aspirations.]; R --- T3[Incorporating study skills in all lessons – less jargon but explaining teacher expectations]; T1 --- G1[Setting up "Summer schools" to bridge the gap]; T2 --- G2[Pilot a "Foundation Year" for A level study]; T3 --- G3[Allow 3rd year study for students repeating their A levels];
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Teachers to rethink the starting point of the AS course with an effective Induction programme

**Setting up
"Summer schools"
to bridge the gap**

A rigorous IAG process at enrolment linking to future realistic aspirations.

**Pilot a
"Foundation Year"
for A level study**

Incorporating study skills in all lessons – less jargon but explaining teacher expectations

**Allow 3rd year study
for students
repeating their A
levels**

References and Literature

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