



Teaching Independence

Embedding metacognition-enhancing strategies in classroom practice to
develop sixth form students' self-regulation



Rationale and Research Questions

- This project aimed to help sixth-form students acquire the knowledge, skills and habits associated with successful independent study.
 - These “self-regulation” attributes are essential for success at A Level and in higher education, but they are rarely the focus of classroom activities, teacher training or curriculum design.
 - Recent changes in many secondary schools, reducing or removing GCSE study leave and replacing it with structured revision, may result in students with poor independent study skills experiencing success and enrolling on higher courses.
1. What is the impact of embedded metacognitive training in A-level teaching on positive study behaviours?
 1. What is the impact of metacognitive training in A-level teaching on metacognitive awareness?
 1. What value, if any, do students and teachers perceive in embedded metacognitive training activities?



Metacognition and Self-Regulation

- Metacognition can be defined as “thinking about how thinking works” (Flavell, 1979).
 - It is often subdivided into “knowledge about cognition” and “self-directed regulation of cognition (Schraw & Dennison, 1994).
 - Knowledge about cognition involves understanding personal strengths/weaknesses.
 - Self-regulation involves evaluation of study behaviours and exercising self-control to implement solutions.
- Self-regulated learning requires motivation, cognition and metacognition (Schraw et al., 2006).
 - Schools explicitly focus on the first two of these, but the third is often omitted as it is difficult to “teach” in a classroom setting (Baird & White, 1996).



Classroom Activities

Reflective Journals - the “Learning Log”

Weekly Learning Log Questions

<u>Weekly Template</u>
Prompt - Process-based reflection Item 1 - Thinking about success Item 2 - Reflection on contributory factors Item 3 - Methods for future success Item 4 - Stating commitment for next week

Week 1

Think about a successful response in last week's test.

1. What is the top thing that made it successful?
2. What did the thing you have identified add to the response?
3. If you could change one thing, what would it be?
4. What will you do this week to make sure it changes?

- Weekly template for teachers
- Prompt for students before beginning
- Items designed to facilitate reflection and process-based planning
- Students make a commitment they can review next time

Classroom Activities

Assessment Wrappers - Self-Assessment

Text analysis codes

Code	Meaning	Strategies you could try
K	Didn't know it	Try and find another way of revising/guide/friend/ and catch up with any missed work.
Q	Didn't read question	Underline the important words in the question.
U	Didn't understand question	Check command words sheet/mark scheme and then re-phrase in your own words.
M	Maths/Stats process error	Practise setting out and doing calculations and checking answers RE-DO them if wrong.
KT	Didn't use key terms	Use your book/notes/organiser for this topic to test yourself each day, until perfect.
D	Didn't interpret data/source correctly	Look at the data twice. Highlight key points. Read <u>question before item</u> ; search for relevant information.
EX	Didn't expand on/develop argument	Plan answers carefully. Evaluation paragraphs should follow Point, Evidence, Expand, Link - Plan evidence in pairs and re-write.

- Students answer questions about their work frequency and strategies, then mark their work using the codes
- Corrections are made using suggested strategies
- Students then prompted to review utility of strategies and list three tips for themselves



Results - Questionnaire Measures

- The number and frequency of adaptive study behaviours increased for all prior-attainment bands
 - Only 6th form students included - *no "true" LPA students?*
- Study behaviours became more proactive/interactive and less repetitive/rote-learning
- Metacognitive awareness increased in all prior-attainment bands
 - All subgroups reported increased Regulation of Cognition
 - Only HPA students decreased on a subscale - Knowledge of Cognition - *due to better accuracy/reduced overconfidence?*



Results - Interviews

Students (N = 18)

- Value placed on participation
- ASE indicators were a common theme
- Many items from MAIT-18 were present in interview scripts

Teachers (N = 2)

- Positives outweigh negatives
- Suitability for age group supported
- Design of materials supported
- Students noticeably benefited
- Programme design elements to improve



Conclusions and Application

- Efficacy of metacognitive training to improve self-regulation with sixth form students was supported
- Students and teachers valued and found benefits in the programme both academically and intrinsically
- As curriculum becomes more knowledge-focused and domain-specific, students can benefit from acquiring attributes that generalise
- Methods adapted for use with LPA students in 6th form - the group who made the most significant improvements in this investigation



Some Suggested Benefits of Improved Metacognition and Self-Regulation

- Improved **problem-solving abilities** (Bain, 2004; Hattie, 2009)
- More adaptive and **effective study choices** (Dang et al., 2018)
- Better organisation and **goal-directed focus** (Ambrose et al., 2010)
- Academic **achievement** (Miller, 2015)
- Improved **confidence and effectiveness** at school (Chew, 2008)
- More **accurate self-appraisal** (Miller & Geraci, 2011)
- Higher academic **self-efficacy** (Komarraju & Nadler, 2013)
- Improved **well-being** relating to academic activities (Guntern et al., 2017)