

A Gateway to Teaching Advanced Mathematics



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to
Teaching Advanced Mathematics**

This report was compiled and published in June 2008 by Mathematics in Education and Industry (MEI) in association with the National Centre for Excellence in the Teaching of Mathematics (NCETM).

ISBN: 978 0 948 186 21 9

Contact MEI to order more copies or for further information about this report.

MEI, Monckton House, Epsom Court, White Horse Business Park,
Trowbridge, Wiltshire, BA14 0XG

Tel: 01225 776 776

email office@mei.org.uk

or visit www.mei.org.uk

For further information about the 'Teaching Advanced Mathematics' course contact Bernard Murphy at bernard.murphy@mei.org.uk or visit www.mei.org.uk/tam.shtml.

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Typeset in 12pt Times New Roman.

Printed and bound in Great Britain by Westbury Print, Westbury, Wiltshire.

A Gateway to Teaching Advanced Mathematics

The impact of the ‘Teaching Advanced Mathematics’ course on the professional lives of participants

“I have regained the enthusiasm for teaching that I had when I started out over a decade ago.”

“This course made me feel clever again!”

“This was probably the one course I have ever taken which has related fully and practically to my career. I am convinced that the TAM course has made me the effective teacher I am at this level.”

“The TAM course gave me the confidence and preparation I needed to get into A Level teaching and I haven’t looked back. ... I now feel too that I can teach myself a concept/topic and deliver a good lesson on it After being quite nervous at first, I have loved it and feel a real sense of achievement.”

Mathematics in Education and Industry (MEI) is an independent curriculum development body for mathematics. An important feature of MEI’s work is promoting inspirational teaching through training and motivating teachers.

The National Centre for Excellence in the Teaching of Mathematics (NCETM) aims

- to raise the professional status of all those engaged in the teaching of mathematics;
- to improve institutional performance, including raising standards, by supporting targeted workforce development in order that the mathematical potential of learners be fully realised.

The ‘Teaching Advanced Mathematics’ course is currently a pilot programme funded by the Gatsby Charitable Foundation.

Contents

Executive summary	5
Foreword	6
The ‘Teaching Advanced Mathematics’ course	7
The course participants	8
Sources of information	8
The on-line survey	9
Comment from the external evaluators	9
Career development	10
Promotion to positions of responsibility	10
Current mathematics teaching	10
Further professional development	11
The course design	12
Subject knowledge	12
Pedagogy	12
Mentoring	13
Web resources	14
Benefits to participants	14
Confidence	14
Improvements to teaching at all levels	15
Benefits to departments	15
Conclusion	16
Appendix A	
The on-line survey (April and May 2008) and responses	17
Appendix B	
Information about participants who did not respond to the survey	30
Appendix C	
A selection of feedback gathered by CEM, the independent evaluators, from teachers one year after completing the course	32

Executive summary

The ‘Teaching Advanced Mathematics’ (TAM) programme of professional development, now in its fifth year, is designed and run by Mathematics in Education and Industry (MEI) and delivered through four universities. It provides non-specialist teachers with the skills and knowledge to teach mathematics to A level and thereby helps to tackle the national shortage of suitably qualified and skilled mathematics teachers. To date, 103 teachers have completed the course with a further 63 teachers currently enrolled.

In April 2008, the views of participants who completed the course in 2005, 2006 and 2007 were sought by means of an on-line survey. Once the results of the survey started coming in, it was clear that they were conveying important messages. The feedback provided evidence that the TAM course:

- raises participants’ confidence in their teaching;
- gives participants a greater understanding of mathematics;
- stimulates career development;
- encourages a positive stance to continuing with personal learning.

There is also evidence that the TAM course design is highly effective in supporting non-specialist teachers of mathematics to upgrade their skills and move to teach more advanced mathematical topics. The notable features making the TAM programme so effective include:

- central management, allowing high-quality resources to be developed and shared by providers and giving participants access to a wealth of expertise;
- study days, spread over the course, focusing on subject knowledge and pedagogy;
- individual mentoring provided by experienced teachers and lecturers;
- school/college visits by course tutors to observe lessons and provide detailed feedback;
- extensive on-line support with high-quality teaching and learning resources;
- continued website support following course completion.

In view of the significance of the findings, MEI asked the National Centre for Excellence in the Teaching of Mathematics (NCETM) if they would be prepared to help in preparing the report and publicising it.

The NCETM takes as a starting point that effective continuing professional development (CPD) has three interrelated strands:

- broadening and deepening mathematics content knowledge;
- developing mathematics-specific pedagogy, which includes appreciating how learners engage with mathematics and likely obstacles to progression;
- embedding effective mathematics pedagogy in practice.

Thus the Centre seeks to promote CPD opportunities for teachers that impinge on all three strands in ways that are cumulative and sustained over the career of a teacher. The NCETM believes that the TAM course is an excellent example of CPD that incorporates the first two strands and promotes the third through developing communities of teachers which can then be further supported through the NCETM.

We are therefore delighted that this is a joint MEI and NCETM publication, which not only provides some insight into continuing professional development for mathematics teachers but also we hope will feed into advice about how to move teaching into a Masters level profession for teachers of all subjects.

Foreword

Many of those taking the TAM course have said complimentary things about it, both at the time and after completion. Their remarks raised the question of whether TAM is as effective as they said; perhaps the comments had come from a small sample who reacted particularly well to the course.

To find out, we decided to conduct a survey of those who had completed the TAM course. The response rate has been very high, almost all of those with whom we have not lost contact; this report actually contains information from 100 out of the 103 teachers who have completed the course.

The key question for the survey was what ex-TAM teachers are doing now and, as the report describes, by far the majority of them are successful AS and A level teachers.

The survey also asked about what continuing professional development the teachers are engaged in. This question is important in its own right but it has particular significance at the moment because of moves to make teaching into a Masters level profession.

The survey invited teachers to comment on the course. Clearly TAM has made a huge difference to their professional lives. Their comments, which are reproduced in full, are 100% positive. However, reading through them (and please do so) what becomes clear is that the design of this course, with its various elements, ensures that it meets the needs of its participants exceptionally well. Many respondents say that it is the best professional development they have ever been involved in.

This raises two important questions about the TAM methodology.

- [Can it be used to help teachers cross other boundaries within mathematics?](#)
- [Can it be transferred to other subjects?](#)

Five years ago TAM was a blank sheet of paper and our thanks are due to all those who have worked hard to create such a valuable course. In particular, I would like, on behalf of MEI, to record our appreciation of the vision and leadership shown by Bernard Murphy, the Programme Leader. There can be few other courses that have been received with such universal acclaim.

I would also like to thank the Gatsby Charitable Foundation for their support, without which TAM would not have happened.

Roger Porkess
Chief Executive, MEI
June 2008

The 'Teaching Advanced Mathematics' course

The TAM course provides a route by which teachers, including non-specialists, who are currently teaching GCSE Mathematics can improve their knowledge of the subject and its pedagogy to the point where they can teach AS and A level with confidence.

The course was designed in 2003 by MEI and the University of Warwick with funding from the Gatsby Charitable Foundation.

Since 2004, the course has been offered by the University of Warwick. Manchester Metropolitan University joined the programme in 2005, followed by London South Bank University and the University of Chichester in 2006. Successful completion of the course leads to a Postgraduate Certificate in A level Mathematics Pedagogy. In this time, 103 teachers have completed the course giving them the skills to teach A level Mathematics. Currently, a further 63 teachers are engaged in the 2007–08 course.

The course structure involves tuition, assignments, continual email support, fortnightly on-line lessons in a virtual classroom, purpose-designed web-based materials, school visits from course tutors and regular university-based study days. This allows individual teachers to progress at rates appropriate to them whilst being provided with a constant source of support and inspiration.

Course participants feel intellectually reinvigorated through the support they receive while learning the content of various A level Mathematics modules and being introduced to effective teaching methods. In addition, the course provides many of them with a new direction in their teaching careers and is a gateway to further professional development.

Participants benefit from the three-pronged support of MEI, the university and their school or college.

MEI's role is to coordinate the programme and to provide participants with all the support they need in terms of acquiring subject knowledge, understanding its place within the wider framework of mathematics and experiencing a range of ways of teaching it effectively.

The university introduces participants to the research underpinning the teaching and learning of A level Mathematics. The university-based study days allow MEI and the university to model good practice, discuss the major issues related to teaching at this level and provide a range of other face-to-face support. The university designs the course assessment and accredits the work at postgraduate level; on successful completion participants receive a Postgraduate Certificate which carries 60 CAT points, one-third of a Masters degree. The university also provides further options for participants to continue their studies at Masters level.

Schools and colleges support the participants by providing them with the teaching experience required in order to be able to put into practice the skills they are gaining from the course and by releasing them for the university-based days. Where possible, more experienced colleagues provide regular face-to-face support.

This report gives a summary of feedback from participants, between ten months and three years after completing the course. Respondents gave their views on the course, their subsequent professional development and the impact that the course has had, and continues to have, on their teaching.

The course participants

The course is offered by MEI in collaboration with four universities: Warwick, Manchester Metropolitan, London South Bank and Chichester.

Between 2004 and 2007, 103 teachers completed the course and 63 are currently enrolled. The breakdown is given in the table below.

	Completed			Current
	2004–05	2005–06	2006–07	2007–08
University of Warwick	16	19	17	16
Manchester Metropolitan University		16	10	18
London South Bank University			13	16
University of Chichester			12	13

Very few of these participants have a degree in mathematics and a significant number have been trained in other subjects.

A requirement of the course is that participants have GCSE Mathematics teaching experience; less than 10% had taught any mathematics beyond GCSE level prior to starting the course.

Sources of information

The information and feedback on which this report is based comes largely from three sources.

- In April and May of 2008, those teachers who had completed the course in 2005, 2006 or 2007 were invited to complete a short on-line survey. Both the survey and the responses can be found in Appendix A. A remarkably high percentage of the teachers who have completed the course filled in the survey.
- It may be the case that the course providers no longer have email or postal contact with some of the remaining teachers. Information from some of them was received in the year after they completed the course and this is included in Appendix B.
- The TAM course has been externally evaluated by the Curriculum, Evaluation and Management Centre (CEM) at Durham University. Whilst on the course, and a year after completion, participants have been interviewed by CEM and have completed questionnaires. Quotes from participants have been included in the interim reports produced by CEM; a selection of these, all from teachers one year after completion of the course, is included in Appendix C.

Of those participants who did not respond to the survey, it is likely that several replied to the questionnaires from CEM. The comments quoted in the interim reports are generally similar to the positive responses to the survey. In addition, the commitment and enthusiasm shown by these teachers whilst on the course, and the progress they made, enable the course providers to claim, with confidence, that the views of the respondents to the on-line survey are representative of all the course participants.

The on-line survey

75 of the 103 teachers who have completed the TAM course filled in the survey. Inevitably the course leader has lost contact with some of the 28 remaining teachers; consequently, 75 replies represents a very high response rate. Taken together with feedback received from the remaining participants in the year after completing the course and feedback obtained by the external evaluators, the views in this report represent those of over 95% of all the participants. The following table shows the responses received to the on-line survey from each cohort.

	2004–05	2005–06	2006–07
University of Warwick	9/16	14/19	15/17
Manchester Metropolitan University		10/16	6/10
London South Bank University			12/13
University of Chichester			9/12

Knowing the demands on teachers' time, the survey was kept very short, whilst giving teachers the freedom to comment on what they felt was important. The participants were asked to give details of any professional development courses undertaken since completing the TAM course and to comment on their teaching experiences since TAM.

A number of common themes were evident in the responses to the open questions including:

- the impact on participants' career development;
- a desire to undertake further professional development;
- the notable features of the course;
- the benefits of the course to participants and their schools and colleges.

Comment from the external evaluators

Two of the TAM cohorts were asked, approximately one year after completing the course, to complete a questionnaire about their views on the course and its influence on their A level teaching. All the respondents rated the TAM course as good or excellent.

They felt they had benefited from the course particularly in the development of their confidence to teach mathematics at A level. Through the TAM course they had increased their subject knowledge and developed their teaching skills. The opportunity to meet with like-minded teachers, under the guidance of expert tutors to share teaching ideas, concerns and subject misunderstandings was clearly valued. Participants also valued the lesson observations and ensuing feedback and the general encouragement given to them by the tutors. The support available and being directed to appropriate teaching resources was also very much appreciated.

At each stage of the evaluation, participants also fed back their views concerning how improvements might be made to the course design, particularly those relating to aspects that they found to be demanding. This feedback was shared with course leaders through the interim reports and improvements were made to the TAM course as a result.

Career development

Many teachers enrol on the TAM course to enhance their career prospects. They believe that they are not being considered for positions of responsibility because of their lack of qualifications in mathematics and teaching experience beyond GCSE. Others enrol on the course to be intellectually stimulated. All participants say that they regularly share their new skills with colleagues.

Promotion to positions of responsibility

Twelve teachers mention that since completing the course they have taken on roles of responsibility or been promoted. Many of these are specifically related to A level Mathematics; one participant has become a local Mathematics consultant and four have become assistant head teachers.

Due to the experience of TAM, I now have a promotion for the 2008/2009 year as 2nd in charge of the department and in charge of Key Stage 5.

I am now teaching half my timetable as A level teaching. I have changed schools to a school with a sixth form - my previous school did not have one – and am now Subject coordinator for KS5.

I am currently teaching both AS and A2 Mathematics and since beginning the TAM course I have been appointed as Course Leader for the MEI A2 course within our college.

Current mathematics teaching

Of the 75 teachers who completed the survey,

- 60 are still teaching A level Mathematics;
- 4 are teaching the Level 3 FSMQ in Additional Mathematics;
- 11 say that they are no longer teaching beyond GCSE. Of these
 - 3 are in their schools' leadership teams,
 - 2 have just taken on new positions in 11–16 schools,
 - 1 has taken on the head of department role.

Of the 103 teachers who have completed the course, one has retired and one left teaching to become a church youth worker. The course leaders are not aware of any of the other course participants leaving the profession.

I am now teaching A level Maths and Further Maths this year. The course completely changed my approach to T&L of A level and other key stages.

I am teaching Year 12 FM (Core1-4) at the moment and will be teaching the Year 13 C3 and C4 next year. I am also responsible for developing resources for A Level Maths courses and putting them on the VLE.

Further professional development

On course enrolment, approximately half of the participants say that it is their intention to submit work for the University's Postgraduate Certificate whilst others report that they joined the course for the support with learning and teaching A level Mathematics rather than the additional qualification. Those participants who successfully complete the course but choose not to submit university assignments receive a Certificate of Course Participation from MEI.

Of the 103 course completers, 66 received the Postgraduate Certificate and a further 4 are currently in the process of submitting their assignments.

It is evident from the responses to the survey that many teachers have undertaken further professional development since completing the TAM course. It would appear that all of them engage in reflecting on their own development and the teaching and learning in their departments. In addition, many teachers have undertaken further subject specific courses.

- 13 teachers are now working towards a Masters in Mathematics Education and another 4 intend to start soon.
- 3 teachers have completed units from the Open University Mathematics Degree courses.
- MEI offers two-day courses in the three applied modules and 4 teachers have attended one or more of these.
- 3 teachers are doing the MEI 'Teaching Further Mathematics' (TFM) course and another 3 intend to start shortly.

There is clear evidence in the feedback from participants to show that the TAM course provides a path to further professional development.

It is the Government's intention that teaching will become a Masters level profession. The design of the TAM course along with the support it offers teachers and the intellectual stimulus it provides would seem to be a very effective first step along that route.

The course design

Amongst the comments received, many teachers were very complimentary about the course design. Features that were often mentioned were the resulting improvements in their subject knowledge, the focus on pedagogy on course days, the mentoring they received both on the course and since completion and the value of the web resources.

Subject knowledge

On enrolment, all participants are aware of the limits of their own mathematical knowledge.

They report that, in their teaching of Higher Tier GCSE Mathematics, they are unaware of the reasons why various topics are taught, the interconnections between them and how to extend their most able students.

From the first introductory course day these issues are addressed. Subsequently almost all participants report that they have a much deeper understanding of the subject which they are then able to pass on to their students.

In the years following the course, with continued access to on-line support, participants' subject knowledge continues to broaden and deepen.

The course allowed space and time for me to ask how?, why? and to get answers that allowed me to pull together many mathematical concepts for the first time.

The course has also shown where some ideas at GCSE go at A level and being that much more knowledgeable has improved my GCSE teaching.

It would appear that the styles of learning encouraged during the TAM course enable the participants to continue to acquire new knowledge and skills.

I now feel much more confident of teaching at A level and although I am still an inexperienced A level teacher I know that if I had to teach any part of the Pure Maths modules, with some hard work it would be much easier having done the course.

I now feel too that I can teach myself a concept/topic and deliver a good lesson on it.

Pedagogy

Throughout the course, it is the intention of the leaders to model good practice on study days and to maintain an appropriate balance between improving the subject knowledge of participants and addressing issues of A level Mathematics pedagogy. Teachers gain first-hand experience of effective teaching techniques and receive practical resources and ideas to use in their teaching. They spend time reflecting on how to implement these in the classroom and discussing the related research. In subsequent years, as they teach topics for the second and third time, they become increasingly confident in employing these techniques and gain a deeper understanding of issues such as the use of questioning to promote deeper mathematical thinking and the effective use of ICT.

If I hadn't done this course I would more than likely have been a textbook based teacher doing a lot of demonstration then practising. Instead I feel I have been able to teach in a far more inclusive, innovative and interactive way promoting understanding rather than methods.

The TAM course reinvigorated my teaching ambitions and practice. I found the whole experience demanding but very positive. ...I have been able to deliver in-set training based on the work done on the TAM course. The impact of the TAM course proved both practical and stimulating.

Mentoring

Course participants benefit from the support of the MEI and university course leaders and, in most cases, experienced colleagues. For those who are able to attend other MEI CPD courses, they have the opportunity to meet A level examiners and experienced practitioners. All participants are visited twice by the course leaders to observe them teaching A level or Additional Mathematics. This provides them with detailed feedback on their teaching and suggestions for how they might improve their practice.

The MEI course leader receives regular requests for help with specific questions, support which gives teachers the confidence to tackle unfamiliar problems in the classroom.

The course gave me confidence to teach Additional Maths and beyond in that it gave me ideas of different approaches/resources and possible sticking points which I would not have been able to glean from textbooks.... It was ideal to have someone I could turn to and the materials on the website were a life-saver.

The variety of discussion and the opportunity to listen to the ideas/experience of others on the course encouraged a more reflective style. I found the course extremely valuable and the teaching, advice and support given was excellent. This has definitely allowed me to move forwards within my own career.

The course prepared me for teaching A level and the support received was excellent.

Regular on-line sessions have recently become available in a virtual classroom and many participants have taken advantage of them. These interactive sessions usually take the form of an overview of a specific topic, focusing on the more demanding aspects and teaching ideas and end with a collective attempt at examination questions.

Web resources

Participants have access to a vast resource bank of web-based materials to support their learning and subsequent teaching of A level Mathematics. This includes:

- detailed lesson plans,
- interactive ICT resources with specific suggestions for use,
- explanations of effective questioning techniques,
- active learning resources,
- ideas for extension work,
- discussion of common errors,
- interesting points raised by textbook questions,
- setting the content in a wider mathematical context.

Teachers have free access to these whilst on the course and in the following two years, thereby supporting them through their first teaching of several new modules. They can continue to access the website in subsequent years through subscription.

I definitely appreciated the numerous worksheets and activities that were provided by the tutors and the MEI website. That was a huge factor in gaining the necessary confidence.

I am teaching A level maths now to Year 13 students. I would not have had the confidence to do this without TAM. One of the best features was the use of the MEI website and resources which I still use and refer to regularly.

I have found the resources provided by the TAM team invaluable and my students have not only enjoyed most of the activities I also feel the discussions they have provoked have greatly enhanced their understanding of the topics.

Benefits to participants

All participants reflected on the way the course benefited them personally. In this way they are continuing to analyse how they are developing as teachers and this reflection is contributing to their own professional development.

The majority commented on an increase in their confidence. Many describe how their teaching has improved across all key stages. Participants are keen to share the ideas they gain from the course with their colleagues and many feel they have consequently acquired a higher status within the department.

Confidence

The most common reaction from participants following the introductory course day is the feeling of relief that they are not the only ones lacking confidence in their subject knowledge. Throughout the course, participants admit to being nervous when teaching previously unfamiliar topics but grow in confidence as a result of the support they receive from the course leaders and from each other.

In the year after the course, when they are teaching some material for the second time, they frequently report how their confidence continues to grow. They have a deeper understanding of what it means to do mathematics and consequently they are prepared to take time to think about questions rather than feeling they should be able to answer all questions immediately. Through understanding the links between A level topics, they have the confidence to work alongside their students, enabling them to form a joined-up view of mathematics.

Since the course, I have found an inner confidence as I have a more in-depth understanding of the ideas I need to put across to my students. I only recently really realised the impact the self-analysis we had to do during the course has had on my professional development as a teacher.

The main impact the course has had is in making me more confident. I used to be one step ahead of the students and would generally give them questions I'd done so there were no surprises. Now I feel more confident to deal with questions as they arrive - even if I don't know the answers!

Improvements to teaching at all levels

Many of the teaching approaches advocated on the course are transferable to other key stages. Participants report improvements in their own practice at Key Stages 3 and 4, a greater enjoyment in their teaching in general and the ability to present a more joined up view of mathematics to their students. This continues beyond the course and many participants take on an active teaching and learning role in their schools and colleges.

The TAM course has changed my teaching – not only at A level, but right across the board.

I am teaching additional mathematics now and helping the school to enhance its G&T programme. The course was excellent in preparing me for teaching beyond GCSE – I couldn't have done it without the course. It has had a significant impact on my teaching.

The course was a door opener to teaching A level maths and has given me the confidence to do so. It showed me a variety of ways in which to teach A level maths. I think I am more confident with my maths teaching at all levels.

Benefits to departments

From the start of the course participants are encouraged to share the ideas and resources with their colleagues. This has resulted in more dynamic teaching across departments and raises the status of participants.

A number of staff in my school have watched me teach using these resources and have consequently changed the way in which they teach.

The days we met were all beneficial and allowed me to return to school full of ideas and enthusiasm (which I could take not only into my classroom, but also share with my colleagues).

The TAM course has not only benefited me but I was able to share more innovative ways of delivering A level work with my colleagues who taught in a very traditional way.

Conclusion

Those involved with the design of the TAM course and its implementation across the four universities are confident that the course is very effective in doing what it set out to do: to allow teachers of GCSE Mathematics to make the step up to teaching A level Mathematics and to do this with confidence. At the heart of this success is the vision and coordination provided by a central management team, allowing participants and universities to benefit from a wealth of expertise, shared experiences and resources.

Whilst on the course these teachers, and their colleagues, have been very positive about the impact it has had on them. The survey coupled with other feedback received from the participants and the external course evaluators now gives a clear indication that the benefits of the course continue to grow in the subsequent years.

The course gives participants renewed enthusiasm for their teaching and new directions in their careers. It allows them the space to reflect on their professional practice and, crucially, it gives them focused support with their subject knowledge, all of which is directly relevant to their teaching. The course has set many of them on a route of continuing, subject-specific professional development.

In many schools and colleges where teachers have taken TAM, mathematics departments have become more dynamic.

TAM is providing the country with a source of new A level Mathematics teachers.

This report started by asking these two questions about the TAM methodology:

- Can it be used to help teachers cross other boundaries within mathematics?
- Can it be transferred to other subjects?

The five key features underpinning the methodology are:

- an appropriate balance between subject knowledge and pedagogy;
- mentoring support to meet individuals' needs;
- lesson observations and detailed targets from respected course leaders;
- extensive on-line support with high-quality teaching and learning resources;
- on-going support beyond the end of the course.

In the light of the views of those who have taken part, and with courses designed to meet these criteria, it is the belief of those closely involved with the TAM course that the answer to both of the questions is 'Yes'.

Appendix A

The on-line survey (April and May 2008) and responses

In addition to providing their name, email address, university and year of course, the teachers were invited to respond to the following two points.

- If you have undertaken any professional development courses since completing the TAM course, please give details.
- Please include two or three sentences about your teaching experience since TAM.

For example:

Are you teaching A level Mathematics now?

How did the course prepare you for teaching beyond GCSE?

What impact do you now think the TAM course has had on your teaching?

The unedited responses are given below and on the following pages.

University of Warwick 2004–05

Further PD courses	Teaching experience since TAM
None ,but lam applying for an MA [maths education] with Chichester in september.	I teach additional maths to our abled pupil.ove the years my understanding of mthematical concept have deepened.we have also seen an increase in the number of pupils studying maths beyond GCSE
	I am continuing to teach A Level and I'm really enjoying that part of my timetable. The TAM course helped me to gain confidence in understanding the material and also it gave me the oppotunity to meet other people in a similiar predicament. The course widened my view ie I was able to get a better overall picture of the A level content. I definitely appreciated the numerous worksheets and activities that were provided by the tutors and the MEI website. That was a huge factor in gaining the necessary confidence.
	I an currently teaching two A level classes. The course gave me the confidence to move beyond GCSE which I had been teaching for over twenty years! I thoroughly enjoyed the course which really did inspire me to take up the challenge of A level teaching. Having a qualification felt good too!
	Yes I am teaching A level Maths now.I'm loving it and am so grateful for the course which gave me the confidence to teach at A level. [Added later] I am teaching Cores 1,2,3 and 4. The course gave me the confidence to teach the A level. I'm all for helping the weaker candidates achieve success. Some of my second set pupils got an A grade at A level and were delighted!!

Further PD courses	Teaching experience since TAM
<p>Following completion of the TAM course I began teaching A-level Further Maths for the first time and my students are now in their second year of the course. I immediately enrolled on the TFM CPD course but the pace of this was too fast for me so I have continued to be supported on an 'as and when' basis by colleagues from the original course in particular Bernard Murphy's support has been invaluable. I have also called upon the Further Maths network to support me in particular Steve Wall (Suffolk Further Maths network).</p>	<p>I am teaching A-level Maths and Further Maths now. My knowledge is constantly expanding. The TAM course improved my knowledge, self-confidence and the quality of my teaching - in terms of more varied and interesting lessons. It raised my awareness of questioning techniques and differentiation. I love teaching A-level Maths now.</p>
	<p>The course gave me confidence in my ability to cope with the subject at A level and to teach at the appropriate level. Unfortunately, I have not had the opportunity to teach A level Maths for the last 2 years, and now have only 1 session of GCSE Maths as my timetable is dominated by ICT. I do hope that I shall get the opportunity to go back to the Maths, my preferred subject, and that I will not have lost the benefits I gained from the TAM course.</p>
<p>I recently completed TEEP Level 1. (Teacher Effectiveness Enhancement Programme)</p>	<p>I took 3/4 of a year off on maternity leave after completing the TAM course. When I returned, I taught C1 and C2 (06/07 and 07/08). Next academic year I will be teaching C3 and C4 also. The Tam course increased both my knowledge and, just as importantly, my confidence in teaching beyond GCSE.</p>
<p>None relating to A level as yet. Study Plus maths.</p>	<p>I am teaching the core units and I am very happy to be doing so. I hope my enthusiasm and interest is clear to the students. The course was a door opener to teaching A level maths and has given me the confidence to do so. It showed me of a variety of ways in which to teach A level maths. I think I am more confident with my maths teaching at all levels.</p>
	<p>I am not currently teaching A level staffing changes have meant we now have more suitable teachers. At Gcse I have had more confidence which has improved the quality of my teaching and enabled me to encourage more pupils to consider maths A level</p>

University of Warwick 2005–06

Further PD courses	Teaching experience since TAM
	I have moved schools to an 11-16 school after teaching AS and A2 for two years. I will be offering AS Maths next year to both our topsets next academic year. I will pass on the TAM resources and the teaching and learning ideas onto those who will be teaching the AS maths over the coming year. This will make the Maths much richer and more enjoyable and improve results.
	I feel that it has made more aware of how to stretch the most able at GCSE, i am able to give advice also as what they need to study at A level
MEI teaching decision maths (two day course)	Since completing TAM I have been teaching C1 & C2 pure for two years. As yet I have not taught an option. I am pleased to have now been given both LVI and UVI teaching for next year (C1 - C4) TAM certainly gave me the confidence to tackle A level teaching and the techniques I have learned have developed my styles of teaching which are now much more towards a problem solving approach. Thanks
	I am confidently teaching A level maths now. I have improved the A level maths in my school by using the resources provided on the course, the example lesson and the help sheets. I have since been able to assist other members of staff with A level questions and also am looking at how we can bridge the gap between GCSE and A level (we are going for the additional maths free standing module). The course has made me confident to teach both lower and upper sixth maths, and I would thoroughly recommend the course to fellow teachers.
	I am teaching A level maths now to year 13 students. I would not have had the confidence to do this without TAM. One of the best features was the use of the MEI website and resources which I still use and refer to regularly. This course made me feel clever again!
G & T leading teachers course (2 days-nov 07 & feb 08) Becoming an Advanced skills teacher (March 08)	I am currently teaching additional maths(FSMQ....OCR/MEI)and now have the confidence/knowledge to teach A level maths when our school begin offering these courses in 2010. I am now using ICT in my teaching more regularly & the online/interactive resources supplied by MEI have been invaluable to the pupils(we subscribed to these). My questioning skills have also improved.
Now doing MST209 unit of the Open University Maths degree.	I taught A level Statistics for 2 years as a result of the TAM course. The course prepared me very well - and it showed in the improvement in the school's subsequent results. Since I have now changed school I am not currently teaching A level, but hope to do so again soon.
	Taught a couple of hours a week during the course, but not this year. Thought the course was extremely helpful for teaching A-level.
In house training on Reality Based Learning.	I have taught A level on part time basis. Next year I hope to teach vocational courses.

Further PD courses	Teaching experience since TAM
<p>Member of IfL hence at least 30 hrs p.a. training must be undertaken. I have taken part in a "Dyslexia in Mathematics" course as well as many to do with Functional Skills but no higher level maths courses</p>	<p>I teach AS Pure Maths as I have done since taking the TAM. This was probably the one course I have ever taken which has related fully and practically to my career. I am convinced that the TAM course has made the effective teacher I am at this level. I am extending to Statistics next year (even though i prefer mechanics. i have been asked to prepare myself to teach a2 pure also. I reckon that doing TAM meant i had the confidence to face a class of good students who might be better than me.</p>
<p>Knowing nothing about decision maths I took an Open University level 3 module in Graphs, Networks and Design(MT 365), finishing October 07. I already hold an MA from Open University otherwise I would have continued with a further MA module. Whilst I was doing the TAM course I did the OU course Statistics in Society to give me a broad background for teaching A Level.</p>	<p>The course gave me confidence to teach Additional Maths and beyond in that it gave me ideas of different approaches/resources and possible sticking points which I would not have been able to glean from textbooks. The school where I work relies very heavily on textbook led lessons so it was refreshing to see that good practice methods used lower in the school could also be employed at this level. The school offered no support or guidance so it was ideal to have someone I could turn to and the materials on the website were a life-saver as I knew that they were much better than I could produce at that stage. I would urge the DfCSF to fund this course as it appears tht so many A level teachers are still teaching in the way they were taught and not encouraging students to think for themselves and develop ideas and expect them to learn techniques solely for passing the exams (and helping thier statistics) i.e. they are unwilling to try methods that might, in their eyes, reduce pass rates. Many students (at least where I am) are expecting to be spoon-fed and not put real effort into learning. I enjoyed the course, the chance to do research for the essays is something most teachers do not get the push to do. Some of the decision Maths I have used with younger students to help develop logical thinking.</p>
	<p>Currently teaching A-level. This would not have been possible, had I not completed the TAM course. Not only has th course impacted on my teaching but alo on other members of the department, e.g. activities for tasks rather than the usual exercises.</p>
<p>Currently enrolled on Masters course at Warwick University in Education Management and Innovation. I am in the middle of my first year</p>	<p>I am teaching A level now. I have delivered C1,c2,c3,c4 stats 1 and decision 1. The course was invaluable to my teaching and I would like to still be able to access the resources from the MEI website. If I had not attended this course I would not have the self confidence to deliver any aspects of A level. The TAM course has not only benifited me but I was able to share more inivative ways of delivering A level work than my colleagues who taught in a very traditional way</p>
<p>In-house inset including 'How to deliver a Grade 1 lesson' I was 'guinea-pig' for a colleague doing subject learning coach. Course development update courses.</p>	<p>I am now teaching A2 / AS / S1 / D1. The TAM course was very effective in preparing me for teaching beyond GCSE. The course structure and plan organised the workload efficiently. Visits to Warwick were timed appropriately throughout the course and the lines of communication were always open for exchange of ideas and help as required. The resources available were so useful in planning lessons and in learning the post-GCSE content. The TAM course reinvigorated my teaching ambitions and practice. I found the whole experience demanding but very positive and would recommend this type of course to colleagues who wish to teach beyond GCSE but require further training. All of my observed lessons have been graded 'good' by colleagues and inspectors. I have been able to deliver in-set training based on the work done on the TAM course. The impact of the Tam course proved both practical and stimulating.</p>

University of Warwick 2006–07

Further PD courses	Teaching experience since TAM
I have continued to upgrade the TAM qualification and will finish the second year of three towards a full MSc (Maths Education) from Warwick.	As a result of the course, I have been confident to increase my teaching load of AS/A2 maths. While I am not teaching any applied modules, this is merely a matter of time. The continued assignments into aspects of Maths teaching (for me, it is Formative Assessment) has allowed me to be reflective of my own teaching and this is leading to small but significant changes. I would not have had the confidence to attempt teaching AS (especially A2) modules without the resources and course provided by TAM.
	I did the TAM course whilst teaching A level Maths for the first time and it prepared me very well. If I hadn't done this course I would more than likely have been a textbook based teacher doing alot of demonstration then practising. Instead I feel I have been able to teach in a far more inclusive, innovative and interactive way promoting understanding rather than methods.
	The course helped me hugely! I am now teaching C1, C2 and D1 with ever increasing confidence. The days we met were all beneficial and allowed me return to school full of ideas and enthusiam (which I could take not only into my classroom, but also share with my colleagues). I am starting a new job in September and will take my experience with me. (Also will introduce the school to Decision with some confidence!) I appreciated the opportunity to complete modules of the Masters, though as a single working mum lacked the time to commit properly. Maybe in the future...
Following my successful completion of the TAM course, I am now taking the MSc Mathematics in Education course in Warwick.	The TAM course has prepared me adequately with the requisite tools (questioning techniques and effective subject knowledge and pedagogy) to deliver A'Level Mathematics lessons effectively. I have consequently developed and built on my understanding of delivering the subject.
am continuing to take the MSc in maths education at warwick.	I am not teaching A level this year but i hope to next year. TAM has improved my confidence and my skills at KS4 and 5. Since starting the course i have gained promotion as Head of Maths and I am certain that the TAM course helped me to get the job.
	I have taught AS maths again this year, repeating the same modules as the previous year, when I was on the TAM course, that is core 1 and 2. I have used the resourses provided by the TAM team invaluable and my students have not only enjoyed most of the activities I also feel the discussions they have provoked and greatly enhanced their understanding of topics.
None, although I only finished in the Autumn term.	I am teaching A-level maths now. The course was excellent, and had a positive impact on my A-level teaching in the following ways: 1) It increased my confidence to teach A-level 2) it raised my awareness of the A-level syllabus and the similarities and differences to the teaching of Pre-16 maths. 3)It improved my career prospects in that I was given the opportunity to teach A-level, an opportunity that wouldn't otherwise have been there. I would recommend the course to others. I am planning to continue CPD in the area of maths education post-16.

Further PD courses	Teaching experience since TAM
I continued the TAM course into the MSc in Mathematics Education.	I am teaching A Level Mathematics now, and the course has extended my appreciation of the student viewpoint of A level Mathematics and the different ways that students can learn. My lessons are now more varied and interactive, less dependent on the chalk-talk style used previously. Students can now learn as much from each other as they could from me.
Studying for MSc with Warwick	I am now teaching half my timetable as A level teaching. I have changed schools to a school with a sixth form - my previous school did not have one and am now Subject coordinator for KS5. The TAM course has given me confidence in my A level teaching, and confidence to try new methods of teaching different topics. I also have the confidence to write schemes of work, and help other teachers at this level.
Continuing to take the MSc course at Warwick.	I am now teaching the IB Diploma course at all levels. The TAM course was excellent preparation for the A'Level Maths and Further Maths teaching I undertook at my previous school before changing to this school. I have also found it useful for teaching the IB which broadly overlaps with the A level syllabus. The TAM course has had a positive effect on my teaching at all ability levels, not just post 16. It improved my subject knowledge and updated my teaching skills. I have also regained the enthusiasm for teaching that I had when I started out over a decade ago. It benefitted me, my colleagues(as I share resources and ideas with them) and the students I teach.
	Teaching A Level and further maths. The subject knowledge and teaching methods learnt on the TAM course have been invaluable and my teaching has definitely improved. I still need to be more consistent and ensure I make more use of "activity" lesson and less chalk and talk - but time to prepare (as ever) the problem.
Currently on the TFM course	I am now teaching A-level Maths and Further Maths this year. The course completely changed my approach to T&L of A-level and other key stages. The experience, particularly relating to questioning was a key factor in getting a 2nd in dept job in 2007 and I have recently been appointed as an AST in Maths at another school this year. I think this course is suited to anyone teaching A-level, and not just those new to the content - I would even argue that staff who have been teaching A-level for a long time would benefit more!
Currently doing Researching Mathematics Learning at Warwick.	No, but I taught a bit of core maths for less than a term, on an informal basis, and I taught M1. I would not have been able to do this without doing the TAM course, as it gave me both subject knowledge, confidence and great support. Due to my personal circumstances I have not been able to take full advantage of the very positive benefits of the TAM course for teaching A Level, although I am still hopeful I will be able to use this in the future. I feel that it has also helped me with my confidence in teaching GCSE, too. Overall, I would say that the course was great preparation for teaching A Level and has helped me to develop as a generally more confident teacher.
Doing MSc at Warwick and Developing Leaders Course with the SSAT/Warwick	I am teaching Year 12 FM (Core1-4) at the moment and will be teaching the Year 13 C3 and C4 next year. I am also responsible for developing resources for A Level Maths courses and putting them on the VLE. As assistant head of sixth form now, I also have a better understanding of good teaching and learning methods at KS5. It really helped by standard of teaching and my confidence and was really intellectually stimulating. Thanks!

Further PD courses	Teaching experience since TAM
<p>Since the course I have undertaken a management training course which covered line-managing staff and undertaking professional development reviews. Unfortunately I didn't receive the PGCE qualification at the time due to personal circumstances, however I do intend to complete and gain the qualification in the future and have agreed with Warwick to attempt do this next year circumstances allowing.</p>	<p>I am currently teaching both AS and A2 Mathematics and since beginning the TAM course I have been appointed as Course Leader for the MEI A2 course within our college. The TAM course certainly increased my confidence to explore within the materials and extend my own understanding of many topics. It allowed me to develop a more experimental approach within my teaching and develop the ability to build practical and interactive resources for use in the classroom. The variety of discussion and the opportunity to listen to the ideas/experience of others on the course encouraged a more reflective style. I found the course extremely valuable and the teaching, advice and support given was excellent, this has definitely allowed me to move forwards within my own career.</p>

Manchester Metropolitan University 2005–06

Further PD courses	Teaching experience since TAM
	<p>I currently teach AS/A2 Mathematics and Additional Mathematics in an 11-18 comprehensive school. The course provided excellent preparation and support for my teaching beyond GCSE, increasing my knowledge and confidence in all areas of the syllabus. I would recommend it to A Level teachers at any stage of their career.</p>
<p>Completed my Post-Grad Diploma in Educational Management at Bolton, Started an NCSL course as part of the school's SLT.</p>	<p>Not teaching A-Level now but did last year (the year after I finished the course) and may do in the future. Couldn't have taught A-level (or at least no where near as successfully) without the TAM course. The course gave me refreshers of key topics I hadn't seen in ages, access to the fantastic MEI resources, lots of ideas about how to approach topics (rather than just teaching from a textbook), opportunities to practise tachig topics at MMU and the chance to work with others in similar positions.</p>
<p>currently doing masters with Ou</p>	<p>Still teaching Additional Maths</p>
<p>Interactive teaching for Statistics</p>	<p>Teaching AS Level currently (Core2 and Stats1. Using many of the resources as the feedback from my students has been positive.</p>
<p>NCSL Leadership Pathways current</p>	<p>Director of Maths at an Academy from 11-18 leading a new A Level Maths course</p>
<p>Post grad cert in mentoring Masters in education</p>	<p>I am currently teaching A level and enjoy it. The course prepared me for teaching A level and the support recieved was excellent. I use the resourses from the MEI website to plan many lessons which helps me to deliver more interesting lessons that get away from the textbook. I am not looking forward to losing access to the website and I am considering the TFM course.</p>

Further PD courses	Teaching experience since TAM
TAM sessions on D1 at Manchester University 2007	<p>Yes, I am teaching some A-Level Math's and enjoying it. Having young active minds in front of me, some of whom will develop into much more able Mathematicians than myself, is testing, hard work but totally satisfying. I came into Teaching after 40 years in Engineering and without a Degree in Mathematics. Whilst my knowledge and 'Life-Skills' were accepted and seen as definite benefits when teaching at Level 2 and below, there were always 'reasons' why I could not be allowed to teach at A-Level. The TAM course changed that in several ways. Firstly I now have the endorsement of an independant body of my capability to deliver A-Level Math's. Secondly, and more importantly, it assured me that my knowledge and understanding of the subject is sound and secure - that student's would not be disadvantaged by my inadequacies. Mixing with people who have been teaching for many years, ones who are recently qualified with a Math's Degree, and not feeling overawed or out of place gave me confidence and prepared me to move beyond GCSE. The impact that it has had is one of re-inforcing my belief that 'you have to fall off a bike to realise trhat it hurts as opposed to someone telling you that it will' - that which is learnt by your own endeavours is more secure than any instruction. To teach A-Level students in my own style and not be diverted by more 'experienced' colleagues to do it 'the way I do it is'</p>
	<p>I am trying to get into an 11-18 school but have so far been unsuccessful. I plan to teach Additional maths to my top set Yr 10 this next Academic year. The course was superb (mathematically) and although I have not had the opportunity to teach A-level since completing the course, I have used some of the materials in tutoring A level students and some of the overlap topics to my GCSE pupils. The TAM course has had a positive effect so far but unless I find a school willing to take me on it may be lost!</p>
TAM Teacahing Decision Mathematics (2-day Course), Manchester Uni	<p>The course was excellent. The standard of delivery was largely excellent, and the resources were also of a very high standard. The course made me aware that you can use innovative ways of teaching A-level, just as you can at GCSE. When I have time, I still incorporate these ideas into my teaching. I am currently teaching Y12 and Y13 (Decision and Stats respectively) at [School]. Next year I will be teaching A-level at [School].</p>
	<p>Course prepared me well for teaching advanced maths. Unfortunately I haven't had a top set since my yr 11 left in June 07 so I haven't taught it again (not in a school with A Level). The class did not do very well in the Add Maths exam, but the number of A* at GCSE dramatically increased which was our reason for trying it. The course provided good ideas for teaching. I used to think that I could only do "fun" activities with lower ability pupils, but all the matching activities and posters (e.g. Susan Wall ideas) were great. I have now used these ideas in all my teaching. The course has also given me some confidence with teaching maths beyond GCSE which I had little / no experience of.</p>

Manchester Metropolitan University 2005–06

Further PD courses	Teaching experience since TAM
<p>I have completed the MEI courses on all the applied modules, not just the one I did as part of the TAM course. I am currently looking into completing my Masters at MMU.</p>	<p>This year I have taught the C1 & C2 modules. I feel that the course prepared me very well for teaching these modules as it gave me confidence that I could do the subject at this level. Doing the TAM course has also made me a better teacher of top sets at GCSE level as I now use techniques that I would not have thought of using before.</p>
	<p>I've been teaching Core 1 and 2 since sept and have just started to teach S1. The resources on the TAM website have been very helpful and my confidence has grown as a result of the course. As a result of being on the course enabled me to have a Yr 12 group.</p>
<p>I am still completing the course work and hoping to receive the post graduate qualification when I have completed the course. I started teaching at College of Further and Higher Education.</p>	<p>I am teaching BTEC National Diploma/Certificate courses which include level 3 Mathematics. I found the course very useful; it prepared me for the teaching I am currently doing.</p>
	<p>I am teaching additional mathematics now and helping the school to enhance its G&T programme. The course was excellent in preparing me for teaching beyond GCSE - I couldn't have done it without the course. It has had a significant impact on my teaching.</p>
<p>Masters in Maths Education. (I am using the TAM units, but have not submitted all the modules yet for assessment.)</p>	<p>I am going to be teaching A-Level mathematics from September. I would not have been able to do this without the experience I gained from undertaking the TAM course. It not only refreshed my memory of A-Level mathematics, but also gave me the confidence and understanding that I was lacking on the majority of A-level topics. The ideas and pedagogy behind the teaching and learning of A-level mathematics on the TAM course has had a positive impact on all levels of my teaching. The philosophy behind using misconceptions, assessment and the EFFECTIVE use of ICT has encouraged me to explore my own teaching in key stage 3 and 4 further. I found the use of resources, and the range of ICT support available to be excellent. A thoroughly enjoyable and learning experience.</p>
<p>Hoping to continue and do the further maths course at some point</p>	<p>I have taught (AQA) M1 M2 completely for the first time and have found it difficult. Without having done the TAM course I would have found it impossible. I also taught C3 and C4 for the first time and was able to use some of the resources from the tam website and my subject knowledge was much better thanks to having recently done the TAM course. The course has given me confidence and resources to attempt to try different teaching strategies.</p>

London South Bank University 2006–07

Further PD courses	Teaching experience since TAM
	<p>Course was excellent and gave a good insight into what is required to teach A level. I have taken my AS class (which was a requirement of the course) through to A2 in Stats and have also done some C4 teaching. I now feel much more confident of teaching at A level and although I am still an inexperienced A level teacher I know that if I had to teach any part of the Pure Maths, with some hard work it would be much easier having done the course. The course has shown that teaching A level is not as problematic as I thought it would be. The course has also shown where some ideas at GCSE go at A level and being that much more knowledgeable has improved my GCSE teaching, which for me has been excellent as I take the top GCSE set and have therefore been able to extend them more than I used to.</p>
	<p>not teaching a level the course was useful for gaining confidence and practice in post 16 maths more confidence than before and greater understanding of some aspects of maths [added later] not teaching a level was useful for the post gcse i did teach was very useful as an x science teacher to have worked to the tam level in having confidence and understanding at A* gcse and [end]</p>
	<p>I am teaching ALevel Stats now- and these students who are now writing S2. I had some great results for S1! The TAM course gave me the confidence and preparation I needed to get into ALevel teaching and I haven't looked back. Hopefully I will get my first Pure ALevel class (from my present top GCSE group) to teach on my own next year. The TAM course has also helped me with teaching the IGCSE course, where there is quite a lot of overlap in my opinion with some of the Alevel taught in the first year, and it has been great to have extra confidence and background knowledge to bring to these lessons. I now feel too that I can teach myself a concept/topic and deliver a good lesson on it - that what I've had to do for the Stats. After being quite nervous at first, I have loved it and feel a real sense of achievement.</p>
	<p>It was an excellent opportunity to have been in the course as it gave me a wider experience to pass on knowledge to the younger generation. Indeed I am teaching A level where I am benefiting from excellent discussion but I also extend the experience to GCSE where every lesson is built up from discussion. The course has seriously changed my teaching style and has a beneficial aspect to the kids.</p>
	<p>I am currently teaching C3, C4 and M1 and I must say that the course has sharpened my skills for presenting concepts and for helping pupils make vital connections. I am getting better at it though. Planning still takes a lot of my time - I guess I am getting used to the syllabus.</p>
	<p>I am teaching Pure and Mechanics AS. I think the TAM course had a big impact on my teaching, making my lessons more effective and my teaching styles more varied.</p>

Further PD courses	Teaching experience since TAM
	I am teaching A level maths. The resources are shared with all A'level teachers and have been used to update our SOW, which previously only had textbook references.I use some of the activities and tailor them to suit KS3 and KS4. I have greater confidence in teaching my express year 10 group. I have greater enjoyment of mathematics. I would really like to do the MA if possible.
	I had moved jobs in Jan to another 11 -16 school as an Assistant Head teacher at [School]. I enjoyed the TAM course very much and I am keen to keep up my post 16 maths as I plan to move to an 11 -18 school within the next couple of years. I am currently working my way through FP1.
	I continue to A level Mathematics. The TAM course has contributed to my whole department as I am sharing the innovative teaching and learning methods with my colleagues. Since the course, I have found an inner confidence as I have a more indepth understanding of the ideas I need to put across to my students. I only recently really realised the impact the self-analysis we had to do during the course has had on my professional development as a teacher. Having gained so much from TAM I am now looking to enrol in the Teaching Further Mathematics course.
not in maths- but have done in Education and School leadership(NPQH)	I have not taught AS since completing the course as I teach in an 11-16 school, although whilst I was doing the TAM course, I taught some C1 chapters and th whole of S1 to a yr 11 early entry group. the course was very helpful in preparing me for teaching at this level s it gave the opportunity to engage with the content, consider some of the issues and ideas and resources for teaching- not only AS, but also GCSE. It has supported my GCSE teaching in that I am now more familiar with the next stage and can extend the thinking of my more able students better than prior to being on the TAM course.
I haven't undertaken anything at the moment, but plan to continue work on a Masters degree in a few years.	I am now teaching A level C1, C2 and have taught some Mechanics. Due to the experience of TAM, I now have a promotion for the 2008/2009 year as 2nd in charge of the department and in charge of Key Stage 5. I will be teaching more A level groups and will be looking to teach A level Statistics next academic year. This course has not only allowed me to teach advanced Mathematics, but has greatly improved my GCSE teaching. I found the course thoroughly helpful and was especially impressed with the work of Bernard Murphy, his teaching is inspirational.
	I have taught C1 & C2 this year and will be doing so again next year. Many of the activities and ideas from the course have proved very useful. I have found the interactive resources helpful to use as starters and for revision. I also now feel completely confident about teaching A* topics at higher level GCSE.

Further PD courses	Teaching experience since TAM
<p>Curently attending a four day course on APP.</p>	<p>i am continuing to teach A level Maths- last year was my first year. The TAM course has changed my teaching - not only at A level, but right across the board. The course came at the right time for me as I knew I wanted to change my style of teaching but was not sure how. I use the TAM resources all the time and have adapted many of them for use lower down the school. A number of staff in my school have watched me teach using these resources and have consequently changed the way in which they teach. Results in our school have shown some improvement as well, I think because of the more interactive lessons. Our school is now taking part in Lesson Study as a direct result of my having attended the TAM course. (I wouldn't shut up about it so my HOD decided to humour me by starting the study properly!)</p>
<p>Tony Gardner Summer School.</p>	<p>Now teahcing in a 11-18 school - teaching A-level, mostly the applied modules mainly stats in yr 12. Next year teaching yr 12s and 13s including mechanics. Course reminded me of the A-level work and good pointers on the important parts to teach. Some great ideas from the course and the MEI website to enrich the teaching of Higher GCSE and A-level.</p>
	<p>Tam course was extremely good preparation for teaching A level maths, and I feel it has also had a positive impact on teaching my higher GCSE groups too. Unfortunately I was only teaching Mechanics whilst completing the course so all the input on the Core modules I've had to tuck away and use more recently, but still all invaluable stuff.</p>
<p>Teaching students with English as an additional language</p>	<p>Now working overseas in a school that required an A level teacher. Time-tabled to teach first year of A level in 2008/9. Would not have had the confidence to do this without the TAM course. Have used many of the bridging units between GCSE and A level over the last two years and plan to use the MEI website more extensively next academic year. Thanks, it was a great course that gave me more opportunities in the workplace.</p>
	<p>I am teaching A level maths now Dq and C3. The course has made me feel more confident in my own Mathematical skills and also has encouraged me to use a more problem solving approach, facilitated by the introduction to Susan Wall resources.</p>
	<p>I am now teaching C1 and C2 for the second time and finding it so much easier. I do more practical activities, the students like the jigsaws but not doing posters. The main impact the course has had is in making me more confident. I used to be one step ahead of the students and would generally give them questions I'd done so there were no supprises. Now I feel more confident to deal with questions as they arrive - even if I don't know the answers!</p>

Further PD courses	Teaching experience since TAM
<p>No long term courses. Some single day with NCETM and local college network.</p>	<p>I am teaching C1,2,3,4 and M1,2. As I was teaching AS for the first time when I was on the course it made me study the syllabus earlier than I would have done. The discussions and examples helped me to understand the topics better and the way the sessions were structured suggested ways that could be used or adapted in the classroom. The course has improved my confidence and has increased my attention to how lessons may be varied.</p>
<p>Started Masters in Mathematics Education, Chichester Uni, Sept 2007.</p>	<p>I'm currently teaching C1 & S1. I was already teaching A level but I found it helped me develop a deeper understanding and I am now more confident.</p>
	<p>Still teaching C1 C2 S1 S2 and will progress to C3 C4 next year. Would really like to teach further maths at some stage. TAM course has been invaluable in terms of building confidence, getting me to think creatively about how to teach concepts. Working with others on maths problems gave me some insight into the range of responses I might meet with my students. The course allowed space and time for me to ask how?, why? and to get answers that allowed me to pull together many mathematical concepts for the first time - fab!! This can only be good for the students as now I can field those difficult questions they ask. I also think that my teaching of higher GCSE has improved as I teach with the next progression in mind. Finally, the TAM part of the website has ensured that I have plenty of interesting material to intergrate into my lessons. The best course I have ever done.</p>

Appendix B

Information about the participants who did not respond to the survey

This is based on the most recent communication or information from these participants.

University of Warwick 2004–05 (16 participants)

- 1–9 Replied to the survey.
- 10 *“Currently teaching two S1 classes and one C1/C2 class at [School] as well as S1 at [School]. This is going well due to TAM. The MEI website is fantastic, and my Edexcel students are also benefiting from some of the activities/interactive sites etc.” ... “I am now living in New Zealand, where I am currently teaching at a secondary school. ... I am still using the MEI materials and have impressed my colleagues with some of my stunning activities!”*
- 11 *“I’ve recently been appointed as secondary mathematics consultant for [Town].”*
- 12 *“The 3 girls did very well in their Core 1 in January. I am looking forward to excellent results from Core 2 ... I continue to find the MEI website useful as I teach A level proper, now.”*
- 13 Still teaching A level at the same school.
- 14–16 No information.

University of Warwick 2005–06 (19 participants)

- 1–14 Replied to the survey.
- 15 *“There is no way that a one or two-day course could have anything like the same impact. This is proper career development, not just a refresher... One of the great things is that a tutor actually comes out to your school and watches you teach A level. That way they can assess the areas you need to work on.”*
‘Course of the Week’ in the Times Educational Supplement
- 16 *“I have just about settled in this first term in my new role as Assistant Head teacher...”*
- 17 Continues to teach A level and recommends the course to colleagues.
- 18 Returned to country of origin.
- 19 Still teaching A level at the same school.

University of Warwick 2006–07 (17 participants)

- 1–15 Replied to the survey.
- 16 Continues to teach A level Mathematics part-time.
- 17 Started teaching Further Mathematics modules in her school soon after completing the course.

Manchester Metropolitan University 2005–06 (16 participants)

- 1–10 Replied to the survey.
- 11 *“I am sure I will speak to you again but once again thank you for all your organisation, promptings, generous support and ideas. It is really confidence-boosting to know that yourself and the organisation you work for are supporting teachers in this way.”*
- 12 Promoted to Head of Department in the same school.
- 13 Took up a post as a church youth worker in the year following the course.
- 14 Retired one year after completing the course.
- 15 Moved from an 11–16 school in Manchester to an 11–18 school in Devon.
- 16 Two promotions since completing the course. Now Head of Mathematics and teaching A level.

Manchester Metropolitan University 2006–07 (10 participants)

- 1–6 Replied to the survey.
- 7 *“Definitely enhanced how I think about lesson delivery and pupil interaction at all levels.”* The number of students taking Additional Maths at his 11–16 school is increasing each year.
- 8 Now teaching at an 11–18 school in Belfast.
- 9 Still teaching A level Mathematics at the same school.
- 10 Still teaching Additional Mathematics at the same school.

London South Bank University 2006–07 (13 participants)

- 1–12 Replied to the survey.
- 13 On the school’s leadership team.

University of Chichester 2006–07 (12 participants)

- 1–9 Replied to the survey.
- 10 *“I think your course is absolutely brilliant. It has changed my style of teaching dramatically and I come away completely enthused about the maths.”*
- 11 Moved schools. Still teaching A level.
- 12 Still teaching A level at same school.

Appendix C

A selection of feedback gathered by CEM, the independent evaluators, from teachers one year after completing the course

None of the quotes included in the interim reports are attributed to individual participants.

Did you benefit from the TAM course in the way you'd hoped? Please comment.

Yes – I feel very refreshed. I feel more confident. I take risks and challenges that I never took before. My department has now got a new vision. Additional mathematics and statistics is now part of the school curriculum. More and more students are doing maths or maths related subjects beyond GCSE. Our G and T pupils are members of NAGTY – all evidence came from Mathematics/Additional maths. Our school has just received the NACE Challenge Award. Additional maths featured in the evidence.

I was forced to study the syllabus in detail, which gave me confidence in my subject knowledge. Speaking to others in the same situation as myself helped to solve problems. The tutorial days made me feel I am a 'Mathematician'.

To what extent has TAM prepared you for self-development

Acquiring new knowledge has made it easy for me to explore mathematics further. e.g. I now enjoy reading new development or research materials on Mathematics. I now endeavour to experiment and use creative methods of teaching. I take more risks than I used to.

Inspiring me to teach in the way the course was delivered so I can inspire my students!

Is there anything else you would like to say about the on-going benefits to you following the TAM course?

The most reassuring thing is knowing that someone at TAM is there to ask if you get really stuck.

I've been rescued from just teaching GCSE. I've met students that are more interested in Maths. I feel more confident in myself. My brain is constantly exercised!!

It has enabled me to feel that I can be a genuine Maths teacher up to A level, in spite of the fact that I hold a Science Degree. Thank you for that!

I really enjoyed the course and the research elements of it. It has encouraged me to continue with CPD.

I have every confidence in calling myself a Maths Teacher (as opposed to Tutor) now.

To contact MEI:
email *office@mei.org.uk*
or visit *www.mei.org.uk*

ISBN: 978 0 948 186 21 9