



integral
Mathematics Resources for Education and Industry

Summary of MEI Online Resources Teachers and Student Survey

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www.integralmaths.org

*in•te•gral in 'tī-grəl, in-tēg' rəl
adjective

1. Possessing everything essential; entire.

MEI
mei.org.uk

Introduction

Until the 2008-09 academic year the MEI Online Resources were held in a bespoke online learning environment, which had been created a number of years previously. Following improvements in websites and virtual learning environments (VLEs), the resources for the 2009-10 academic year were transferred to a new, more modern VLE.

MEI Online Resources site 2009-2010

The screenshot shows the MEI Online Resources website interface. At the top, the logo 'MEI' is displayed next to the text 'Mathematics in Education and Industry' and 'Innovators in Mathematics Education'. A user is logged in as 'Richard Lissaman (M)'. The main content area is titled 'MEI Core 1' and features a 'Basic Algebra 1: Introduction' section. This section includes a 'Before you start...' note, a 'Study Plan' link, and links to 'Notes and examples', 'Crucial points', and 'Additional exercise'. A sidebar on the left contains navigation menus for 'Activities', 'Search Forums', 'Administration', and 'My courses'. A right sidebar includes an 'Error reporting' section, a 'Calendar' for September 2010, and an 'Events Key'.

Having made this update, we wanted to gain a better understanding of how users engaged with the Online Resources. Our aim is to produce high quality resources that have a positive impact on the teaching and learning of mathematics.

MEI continually seeks to engage with teachers and students and so, at the end of the first term of the 2009 -10 academic year, an online survey was produced to obtain feedback on the MEI Online Resources from our users. We were pleased to receive responses from over 60 teachers and 240 students.

For the 2010 – 11 academic year, informed by the results of this survey, we have made major changes to the online resources.

Site re-launch

Based upon the feedback received from the survey in September 2010, the MEI Online Resources site was again upgraded. The site was re-launched as **Integral – Mathematics Resources for Education and Industry**.

Integral Mathematics Resources site 2010



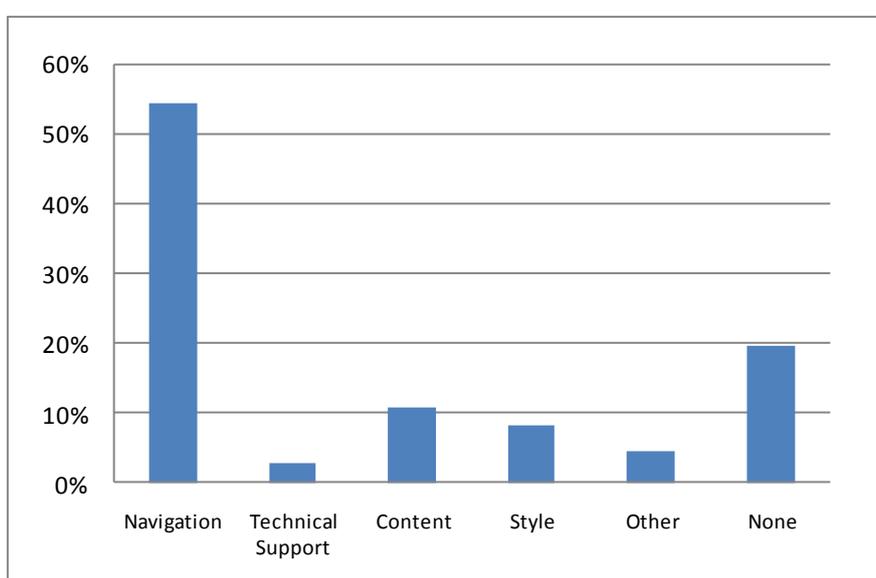
The following pages give a brief summary of responses to key questions posed in the 2009 –10 survey. We have made a point to mention, and provide feedback on, comments from users that cited weaknesses with the 2009 - 10 website and these are answered in the context of how we have tried to address them in the new Integral Mathematics Resources site.

Response to the 2009–10 online resources website survey

Summary - Teachers

63 teachers responded to the survey.

- **If you used the old resources site then how does the new site compare?**
46% indicated the site had been improved and a further 16% thought it had been Greatly Improved. 10% thought it was not as good and the remaining 28% indicated the question wasn't applicable to them.
- **Please indicate which aspects of the site you would like to see changed.**
The chart below indicates what percentage of the 63 respondents chose each option.



It is clear to see that the navigation was a major concern, with relatively fewer indicating that they would like to see change in the content and style. As a result, navigation and style were the major areas we focused upon in the move to the Integral environment in September 2010.

- **How frequently do you use the Online Resources?**
60% indicated that they use them weekly, and a further 20% said they used the site daily.
- **Where do you usually access the Online Resources?**
There was an equal split between home and work.

- **Have you sought support from MEI in using the Online Resources? How would you rate the support you received?**

Of those teachers who had sought support from MEI with respect to the Online Resources, 50% rated the support given as Good and a further 40% as Excellent.

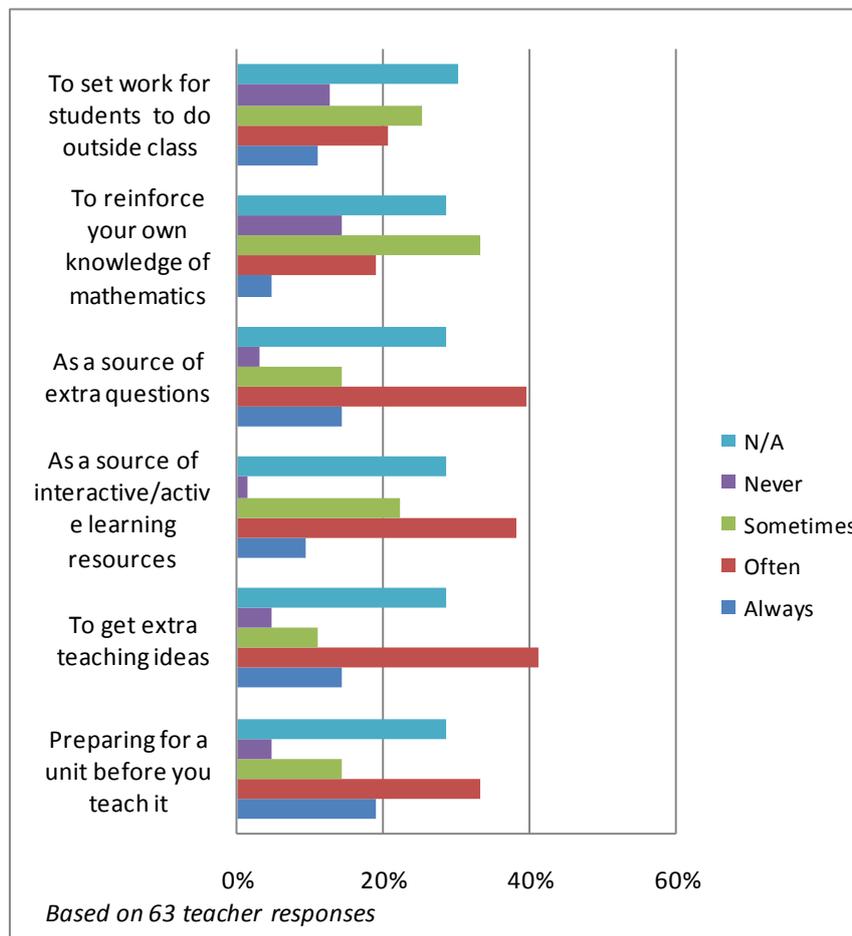
- **How useful would you find an Online Demonstration of the Resources?**

Responses were as follows: Useful (1.5%), Extremely Useful (9.5%), Essential (41%), Not Useful (48%).

As a result, online demonstration clips of the Integral resources are currently being developed.

- **How often do you use the resources for the following?**

The chart below shows the responses to the sub-questions:



A high percentage of the teachers responding used the resources as a source of extra questions, to get extra teaching ideas, to prepare for a unit before they teach it, or as a source of interactive resources. Fewer use it as a way of setting work for students outside of class, although this is one area that can be a useful strategy for promoting independent learning skills, through the use of individual student accounts.

- **Please rate the value of the following resources:**
 - Notes/Study Plans/Glossaries
 - Additional Exercises
 - Worked Solutions to Textbook Questions
 - Interactive/Active Learning Resources
 - Multiple Choice Tests/Chapter Assessments
 - The forums
 - The messaging system
 - The Calendar
 - The Tutor Area

Over 80% of respondents cited the forums/messaging system and calendar as being non-applicable to them. These mechanisms (forums/messaging and calendars) can be very useful aids to students' learning by enabling teachers to send messages to groups or individuals, promote group discussions on specific subjects, and populate the calendar with important study dates. We encourage teachers to make more use of them.

- **Do you use the User Management Interface?
(i.e. the place where you add students and groups for units etc)**

Only 14% of the 63 teachers who responded indicated that they were responsible for and had used the User Management Interface. 60% of those teachers then went on to indicate that they thought the style of the UMI was Adequate or Poor. Similarly 70% thought that the navigation of the User Management Interface was Adequate or Poor.

We have tried to improve the User Management Interface on the new Integral website.

Teacher comments

- ✓ Everything on the site is excellent!
- ✓ So much better than the old system. Easy to administer and maintain licences, groupings etc
- ✓ The multi-choice questions encourage students to tackle problems in a variety of different ways
- ✓ Encourages the tenacity required in Mathematics to engage with the material and to (seriously attempt to) sort out their own problems.
- ✓ The interactive and active resources have allowed me to change the style of lesson, and have made the students less passive.
- ✓ They promote questioning in my classroom by giving me some ideas of how to get the students to discover some of the rules for themselves. They also enable students to find different ways to solve problems by making it less prescriptive eg: the hexagon problems, students can use their own techniques. This then allows me to question their understanding.
- ✓ To summarise: 1) The resources are a significant improvement over the old resources; 2) The fora have proved extremely useful, proving the students with a written record of their learning; 3) Student tracking is very easy and works very well. A few slight tweaks would be nice as mentioned above. Otherwise fantastic.
- ✓ The resources are excellent - the powerpoints are very useful for making decision maths methods clear. When teaching topics that are less familiar, or in the case of some decision maths units, new to me, they have been very helpful in helping me to gain a clearer understanding before I begin discussing topics with the students. The range of resources provided helps me to plan varied and interesting lessons. Thank-you!!
- ✓ My students and I ENJOY using them

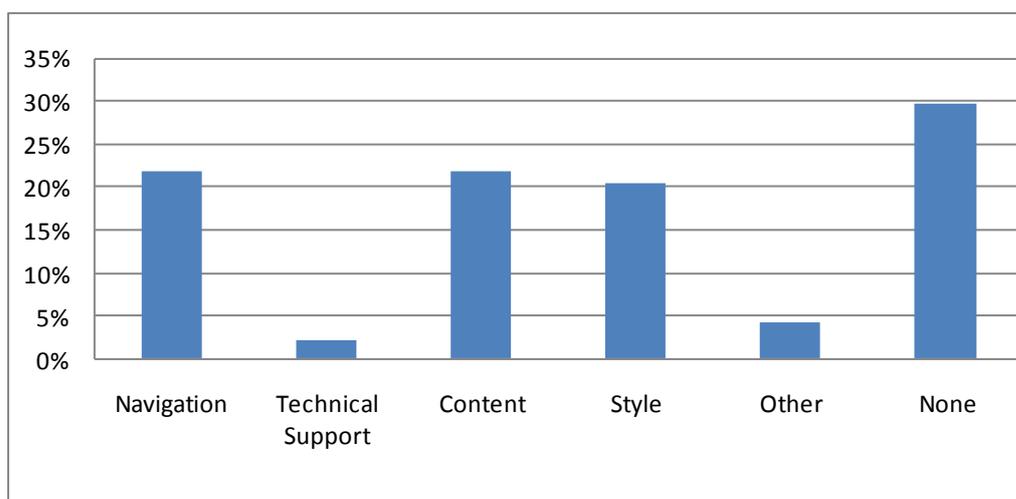
Teacher concerns

- ⇒ Site is far too slow, especially loading grades.
In early 2010, at considerable expense, we invested in a new server. This should help with this issue.
- ⇒ I preferred the old style where you could see all the resources for a particular chapter rather than having to reload new pages for each section. This is particularly frustrating on school computers which take an age to load each page.
An entire course can be shown in one (very long) page - this is explained in the existing documentation (Please see the Help pages).
- ⇒ If certain links don't work who could I go to for help?
There is a "Report an error" link in the menu, which can be used to report broken links.
- ⇒ I found it much more difficult to set up for students. I liked it when they could add the modules they wanted, rather than me having to assign them all!
This is an overhead that is inherent with the VLE system we are using. However, we hope that with continued improvements to the User Management Interface you will find this is less of a burden.
- ⇒ The navigation between the online resources is a bit complicated. Also the homepage is a bit 'bitty' and would be better if there was less on it, with one navigation bar down the side.
We hope the new navigation and look of the **Integral** site is much better in this respect.
- ⇒ There seem to be lots of forums, and only some of them seem used e.g. FP1
We agree that a lot of forums are not being used, and this is something we would like to encourage. They can be used as effective mechanisms for engaging with students, and the forums in the Tutor Area can also be used for discussions with other teachers.

Summary - Students

244 students responded to the survey.

- **If you used the old resources site then how does the new site compare?**
29% indicated the site had been Improved and a further 15% thought it had been Greatly Improved. 3% thought it was not as good and the remaining 53% indicated the question wasn't applicable to them.
- **Please indicate which aspects of the site you would like to see changed.**
The chart below indicates what percentage of the 244 respondents chose each option.



It is clear to see that the navigation, Content and Style were equally of concern with around 20% of respondents choosing each of those options. It was interesting to see that the most common response though was 'None'.

- **How frequently do you use the Online Resources?**
66% indicated that they use them weekly, and a further 15% said they used the site Daily.
- **Have you sought support from MEI in using the Online Resources? How would you rate the support you received?**
The majority (72%) of those that used the resources access them from home, as opposed to at school/college.

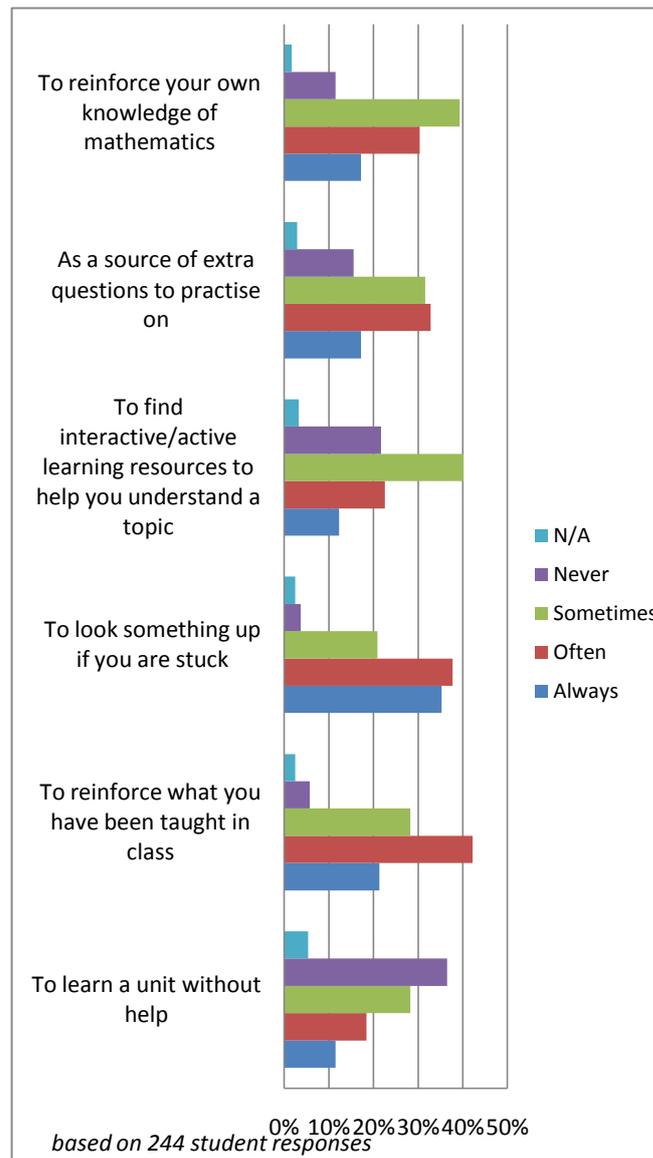
If students sought support from MEI with respect to the Online Resources, then 67% of those who responded rated the support given as Excellent, with a further 25% as Good.

- **How useful would you find an Online Demonstration of the Resources?**

Responses indicated that a much greater percentage of students, in total (65%), would find them Useful (46%), Extremely Useful (13%), or Essential (6%), than would find them Not Useful (35%).

- **How often do you use the resources for the following?**

The chart below shows the responses to the sub-questions:



It is clear that a high percentage of the students responding Often or Always use the resources to look something up if they are stuck, to reinforce what they have been taught in class and as a source of extra questions. Fewer use it as a way to learn a unit without help.

- **Please rate the value of the following resources:**
 - Notes/Study Plans/Glossaries
 - Additional Exercises
 - Worked Solutions to Textbook Questions
 - Interactive/Active Learning Resources
 - Multiple Choice Tests/Chapter Assessments
 - The forums
 - The messaging system
 - The Calendar
 - The Tutor Area

Over 50% of respondents cited the forums/messaging system and (39%) calendar as being non-applicable to them. Students really liked the materials, including Notes/study plans/glossaries, Additional Exercises, Worked Solutions to Textbook Questions and the Multiple Choice tests/Chapter Assessments, with over 75% in each case citing the value of these as Good or Excellent.

- **Do you think the Online Resources have helped you to develop your study skills?**

Two-thirds (67%) of the students indicated that they think the Online Resources have helped them to develop their study skills, with comments:

- ✓ *Independent and Self-directed Learning*
- ✓ *Independent study skills*
- ✓ *Time management*
- ✓ *Self Study, being able to have work marked and get feed back straight away (multi choice tests)*
- ✓ *Initiative, organisation and ability to ask for help when stuck*
- ✓ *I have learned how to work independently with minimal support from teachers.*
- ✓ *I have also learned the importance of organising my notes and plan my study*
- ✓ *Ability to pick apart questions with a different view point to that of which my teacher in school would use*

Student comments

- ✓ It's a fantastic site, which is far better than sheets as it enables you check straight away which areas you find more difficult.
- ✓ The study plans have given me specific targets to reach in my studying.
- ✓ The resources have helped me to do regular work as you could track your progress in the multiple choice questions.
- ✓ Developed general maths knowledge through the notes and examples for each topic. Great for checking up on things I don't quite understand or have missed in lessons.
- ✓ I have learnt to become more creative in my maths, especially when looking ahead to further topics, as the resources allow you to explore new maths, without feeling out of your depth.
- ✓ The interactive learning is also very helpful as it allows you to study in a different way; this is especially good when you want a change from the textbook.
- ✓ I have been able to help myself through a problem by looking at the hints rather than just going to a teacher for help.
- ✓ Brilliant error reporting system - my error was seen to quickly and I got a response.
- ✓ I actually believe that it has made me a more independent mathematician, as I enjoy exploring through the maths content which during lesson time is still yet to be covered.

Student concerns

- ⇒ I think that the units should be grouped into chapters, and then have all the resources together as it is quite confusing having different parts of a chapter separate.
Not all schools use the same textbook, so the content of one chapter may not fit well with another textbook.

- ⇒ Multiple choice questions take ages to do as you have to open questions up and work through then answer them in questionnaire. They should not be full length questions just short snippets to make sure we understand the topic we do enough full length questions in our books
It is intended that students should print the tests out and work on the questions away from the computer, going back to enter their solutions the next time they are logged in.

We are considering developing some shorter quizzes in certain topics (as well as the existing tests), where the questions are displayed in the quiz itself rather than a separate pdf.

- ⇒ Chapter assessments are not always adequately worded and this causes confusion. The same applies for the multiple choices. I would prefer it if they were more like the exam papers.
Many chapter assessments are old exam questions. However, these are often from old-style papers.

- ⇒ Introduction of forums hasn't made a significant impact; unsure as to whether they cover all MEI users or just users from same school/college but have never used and have not seen much activity in them
It does say in every forum that users can only see posts from people in the same group. We do wish to encourage their use by students and teachers.

Conclusion

In response to the feedback from our user survey, we have made some major changes to our online mathematics resources site.

One of the most obvious changes is the contemporary new look of the site, which has been renamed **integral** and given a new web address: www.integralmaths.org

To address the navigation problems reported by some users, we have changed the interface to give clearer and more intuitive access to the resources and other features.

All of the high quality resources and basic structure have been retained, with over 20,000 pages designed to support teachers and students. These resources include study plans, interactive exercises, tests, worked solutions and features such as forums, messaging and student tracking. We are constantly developing more resources and adding these to the site.

Another survey will be conducted in the spring of 2011, to evaluate whether the developments to the site have met the needs and wishes of teachers and students.