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in mathematics & statistics support

gathering student feedback on mathematics and statistics support provision

a guide for those running mathematics support centres

This document has been developed by **sigma** through the National HE STEM Programme and forms part of a series of resources to share good practice and enable the wider uptake of mathematics support within higher education.

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## Appendices

Section 1:
Foreword

Students are the primary stakeholders in our mathematics support activities. Improving their university experience and their understanding of the mathematics and statistics they need for success in their courses is an important objective for all those who work in support centres. So gathering feedback from the students who use mathematics support is an ongoing and important element of a centre's work. The **sigma** mathematics and statistics network is a free association of staff and institutions providing mathematics support, working together to share experiences and resources. To this end, **sigma** organised a one-day workshop on 11th February 2011 to bring together many of those staff interested in evaluation and measurement of success in mathematics support provision.

An outcome of that day was a decision to pool experiences of gathering student feedback and a small Working Group was established. Dr David Green, who for many years chaired the Management Committee of the Loughborough University Mathematics Learning Support Centre, was invited to coordinate the Working Group, collate the findings and produce a Guide.

This publication is the culmination of the collective effort of the many individuals who offered suggestions and advice and who provided samples of the measuring instruments used in their own institutions. We would particularly like to acknowledge contributions from staff of the following universities: Brunel, Cardiff, Coventry, Glamorgan, Harper Adams University College, Lincoln, London Metropolitan, Loughborough, Middlesex, Portsmouth, Sheffield, Sheffield Hallam, University Campus Suffolk, University of the West of England, York. At the end of the Guide several sample feedback questionnaires have been made available. In addition there is a link to examples of an Interview Protocol, a Focus Group Protocol and an Impact Evaluation Plan.

A full list of contributors is given in Section 14.

Additional sample questionnaires and individual questions and comments are most welcome and should be sent to the **sigma** network, c/o Tony Croft, Mathematics Education Centre, Loughborough University, (a.c.croft@lboro.ac.uk) preferably in electronic form. If appropriate, they will be added to the questionnaires and individual questions we already hold on the website http://sigma-network.ac.uk/ .
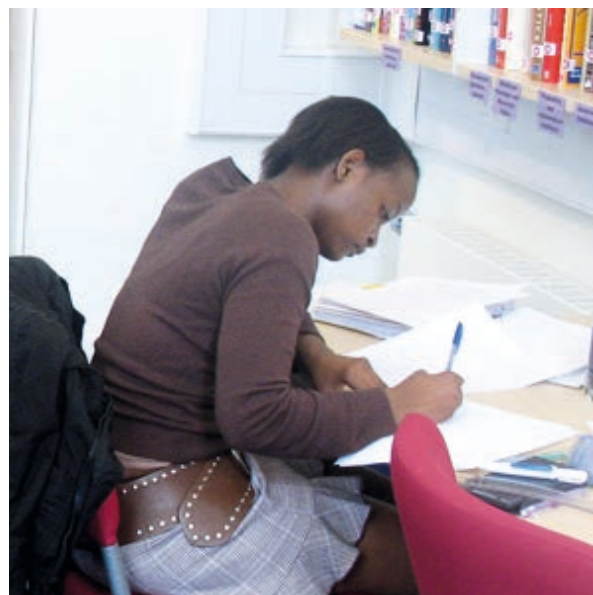
Section 2:
Introduction

The reasons for gathering student feedback are many and various. These can be viewed from several perspectives: the student, the support centre, the institution, the nation.

Most central and most closely aligned to the ethos of support centres is the need to ensure that students are indeed being supported. This can be simply in terms of their ability to cope with the mathematical and statistical demands placed on them by their programmes of study. The 'bottom line' is ensuring that they do not fail and can progress to the next stage. However, that is far from the whole story – relatively few students are at risk of failing but just about all students can enhance their performance. This it is not simply in terms of any explicitly mathematical and statistical modules – mathematics and statistics can be embedded (even hidden) in many other modules which the student studies. Another aspect that can be easily overlooked is the student's confidence rather than the student's academic performance. Many students benefit from the reassurance that a support centre can provide – immeasurable this may be but the evidence that it is considered important is readily found. Related to this, but subtly different, is the satisfaction that a student can derive from his or her studies *per se* – the aim of every university programme. Although academics may find it hard to come to terms with, after graduating, few students make extensive use of much of the academic knowledge they gained at university, but basic competence, well-honed study skills and confidence rank highly. These are all aspects of a support centre's work.

From the support centre's perspective there is, then, a need to ensure that valued and valuable support is provided. As well as that, is the constant need to strive to maintain and enhance the quality of the provision in the ever-changing environment.

From the institution's perspective having a satisfied student body is important, as is, of course, good academic performance and, ultimately, graduate employment. These affect the running of the institution on a day-to-day basis and its external reputation, particularly through League Tables and external awards. Finance is another important factor and low failure rates can contribute to improved finances.

From a national perspective numeracy (at whatever level one wishes to categorise it) is important for the economy, and continues to be an issue of concern. This is evidenced, for example, in employers' numeracy tests. The support centre clearly has a role to play in this.

So far in this Introduction we have avoided the issue of 'value for money' as this may seem alien to the support centre ethos, and so somewhat contentious. But to ignore it is to be like the proverbial ostrich. It is a factor important to decision makers in institutions and nationally.

Demonstrating value for money is not straightforward, being context driven. It has both qualitative and quantitative aspects. Qualitative aspects of value for money relate to *usefulness* and *worth*, whereas quantitative aspects relate to *material* or *monetary benefit*. Value for money is about obtaining the maximum benefit over time with the resources available - encapsulated in the expression: 'economy, efficiency, effectiveness' (*Use of Resources*, Audit Commission, 2009).

When investigating the impact of a service to students, such as mathematics and statistics support, there is the danger of confusing *impact* with *student satisfaction*. Whilst satisfaction may well be a desirable (and indeed beneficial) outcome, it is a by-product and not the main purpose, which is to effect real positive change. And evaluating change means measuring 'before and after' – which may be practically impossible – or using 'experiment and control' – which means comparing those receiving the support with a comparable group not receiving the support. That too is a real challenge. The unquantifiable multitude of factors and the limited timescale of the support provision only add to the difficulties. It is not surprising, then, that student satisfaction is often taken as the main measure of impact for mathematics support. This is undoubtedly the right place to start, but, in a balanced holistic approach to value for money the customer perspective is but one facet, others being student's learning and growth, the institution's internal business process, and finance (see the report by AMOSSHE, 2011, for a full discussion of these issues).

Value for money is complex and even calculating the loss to an institution of non-continuation of a student is not simple, as it can involve:

- Tuition fee income
- HEFCE grant income
- Loss of student spend (profit) within the institution
- Saved cost of services provided to student
- Whether the student is 'replaced' by additional recruitment the next academic year or the place is 'lost' for the duration of the cohort.

Reputational measures may be important but cannot be quantified for a single student. They include:

- External awards and recognition
- National Student Survey results
- League Tables

This Guide concentrates on exploring the factors to consider in the development of a useful evaluation tool that can be shared across the mathematics support community, primarily based on student feedback, and just touches on more objective approaches. The hope is that developments will follow, leading to the community getting to grips more fully with 'value for money' issues in the future.

Section 3:
Aspects of gathering feedback....

When deciding upon undertaking the gathering of student feedback on mathematics and statistics support provision it would be wise to consider all the aspects below:

- WHY gather feedback
- WHOM to ask
- HOW to gather feedback
- WHAT information to gather
- WHEN to gather feedback
- WHERE to gather feedback

Section 4:
Why gather feedback

What are the drivers for gathering student feedback? There are various drivers, which interrelate. The following have been proposed as particularly relevant to mathematics support centres:

(a) Institutional perspective

- external: (e.g. Access Agreements and OFFA regulation)
- external: National Student Survey (progressively more important)
- internal: curriculum review processes
- internal: retention issues - troublesome modules and programmes
- internal: retention issues - 'at risk' students

(b) Student perspective

satisfaction

improved/enhanced learning experience

improved confidence

improved grades

(c) Support centre perspective

- need to monitor and enhance service and adapt to change

- need to demonstrate impact – measurability – to justify funding.

Section 5:
Whom to ask

The normal assumption is that it will be students who will be asked about their experiences and opinions, whether through questionnaires (paper-based or electronic), focus groups, interviews (face-to-face, by mobile phone, etc.). However, it should be remembered that academic staff outside the centre may well have much to offer: of value for improving the service and of value in justifying the service. So feedback from targeted academics (and maybe the Students Union) should be considered. Feedback from students who have not used the centre, to identify why they did not, can also provide useful insight.

Section 6:
How to gather feedback

An important question to address is will the evaluation take the form of a questionnaire. If so, what format will the questionnaire take? ⋯ and, if not, what are the alternatives? Although it will be assumed in this Guide that a questionnaire will be used, various other forms such as interviews and focus groups should not be ruled out without consideration. This Guide concentrates on the questionnaire approach, which has the benefit of generating more obviously quantitative output, but a mixture of methods has much to offer. Qualitative data gathered in focus groups and interviews can give much richer data than questionnaires and may therefore provide deeper understanding of some of the issues.

If a questionnaire is to be used, then its format needs consideration. The standard 5-point Likert-type scale is often used for most questions in such questionnaires. (Of course it does not have to be a scale of five.) One must decide if the possible answers are to be overtly labeled (and subsequently coded) 1 to 5 (say) with linked verbal descriptions (typically, 5: strongly agree, ⋯ 1: strongly disagree, or 5: every day, ⋯ 1: never, etc.). Or, is it better to have the labels without any numeric value displayed? If some sort of quantification is to be performed then (most likely) a weighting will need to be applied - but that does not mean it should be visible to the student answering the questions. (The reader is warned that there is considerable debate and disagreement about treating Likert scale data as interval data and then calculating quantities like the mean and standard deviation). An alternative is to use unfamiliar symbols, as exemplified by a questionnaire used in Brunel University's Information Systems Computing & Mathematics programme (slightly modified below). Although this is not concerned with support, being a module feedback form, it illustrates the idea.

Answer the following questions by circling the appropriate symbol

⌘	♌	♍	♎	♏
Definitely Agree	Mostly Agree	Neither Agree nor Disagree	Mostly Disagree	Definitely Disagree

1. The lectures are of a high standard.   ⌘   ♌   ♍   ♎   ♏

2. The lectures are well explained.   ⌘   ♌   ♍   ♎   ♏

3. Staff are enthusiastic about what they teach.   ⌘   ♌   ♍   ♎   ♏

4. I find this module interesting.   ⌘   ♌   ♍   ♎   ♏

You may not agree with these particular symbols and may prefer something a little more suggestive of the strength of response but without resorting to numbers. For example, something like this:

☺☺	☺	😐	☹	☹☹
Definitely Agree	Mostly Agree	Neither Agree nor Disagree	Mostly Disagree	Definitely Disagree

or like this:

👍👍	👍	?	👎	👎👎
Definitely Agree	Mostly Agree	Neither Agree nor Disagree	Mostly Disagree	Definitely Disagree

Section 7:
What information should be gathered

A questionnaire will include various components, such as: demographic data, feedback on how the support centre was known about and used, types of help sought and received, users' experiences of the support, perceived benefits, attitudes to the centre or to mathematics, and suggestions for improvement.

Section 7.1:
Personal objective data (demographic data)

	Data item	Comment
1	Date	Useful for relating the feedback to start of term, start of new topics, exam period, etc.
2	Name	Should be optional, may be better not asked for at all
3	Student ID	This has the merit that one can investigate or check 'demographic' variables given access to the institutions database (needs advanced investigation and decision). Needs to be optional.
4	Gender	An obvious one but maybe not worth including, unless there is some special reason. Needs thinking about.
5	Faculty/School/ Department	Students often don't know for sure what to put for this, without guidance (maybe a list). It is a problem for joint/combined honours students in particular.
6	Course / Programme	Students usually know what to put here but often use abbreviations or incomplete titles, which can be ambiguous. One way round this is to supply an exhaustive list. This however, could be very long!
7a	Year of study	Just asking for 'Year' often results in the current calendar year being entered not the study year, but even 'Year of study' is not completely foolproof. Supplying a list may be better- such as: Foundation Year Undergraduate Year 1 Undergraduate Year 2 Undergraduate Year 3 (but not final) Undergraduate Final Year Postgraduate Taught programme Postgraduate Research
7b	Level	This may be more appropriate than 'Year of study' at some institutions.
8	Pre-university qualifications	In addition, some centres ask for (or in other ways have access to) students' pre-university achievements (e.g. whether they have an A level in mathematics, and if so what grade, their GCSE mathematics grade, etc.)
9	Mobile phone number	This could be useful for conducting an interview later in the year. Clearly needs to be optional.
10	Email address	This could be useful for sending out a follow-up questionnaire later in the year. Clearly needs to be optional.

In support of item 8, one support provider wrote "*At my University pre-entry data is becoming available as well as marks at the University. We have access to lots of categorical data ...*" and another wrote: "*We are now looking at entry grades of those visiting the Centre - biased of course but it's a start.*" Many of the above issues raised are resolved if the Students' ID number is known so that the data can be directly accessed from the university records.

Section 7.2:
Personal subjective data

Students' attitudes towards mathematics are known to be very important, and some support centres seek information about this. For example, students are asked to record their level of agreement with a series of statements, including:

1	When I have difficulties with maths, I know I can handle them.
2	I find maths confusing.
3	At school I found maths difficult.

You may wish to ascertain how the student learned about the support being offered. This can be achieved by asking a direct open-ended question but possibly more information can be obtained by providing a tick-list of likely sources of information. For example:

Source of information	Tick all relevant
Poster	
Institutional email	
Lecturer	
Personal tutor	
Hall tutor	
Library staff	
Students Union help desk	
Website	
Display screen notice	
Flyer	
Fellow student	
Induction visit	
Other (please state)	

An alternative to encouraging multiple 'ticks' is to ask which was MOST IMPORTANT, or to ask for a ranking.

Section 7.3:

Operational data

7.3.1: Personal interaction

If the support centre operates various modes of active 'teaching' support then a question clarifying which mode has been accessed may need to be included. (Again, students could be asked to rank the order of importance of each mode.) For example:

Support received	Tick all appropriate
One-to-one mathematics help by a tutor	
One-to-one mathematics help by a student ambassador	
One-to-one statistics help by a tutor	
One-to-one statistics help by a student ambassador	
Small group teaching on a specific topic	
Introductory session on 'how to study mathematics'	
Help from peers.	

The last item above should not be overlooked and merits careful consideration. One support provider wrote: "What about peer learning? This is important at [University A]" and at [University B] there was a staggering amount of peer learning through their Maths Café. Another reported that one Centre encouraged students to work in groups and this spilled over into further years with enhanced group working, skill level and increased activity.

The casual observer will see that, even where not planned for or encouraged, peer learning always takes place. One question for a centre to ask itself is whether active steps should be taken to promote peer learning. In some centres peer support is key and actively encouraged.

7.3.2: Resources

If the support centre provides a range of resources then a question clarifying this may need to be included. (Again, students could be asked to rank items in order of importance.) For example:

Sources consulted	Tick all appropriate
Reference books	
Hand-outs on topics	
Computer-based teaching resources	
Computer-based practice tests	
Software packages (e.g. Minitab, Matlab, Maple, SPSS)	
Past examination papers (with solutions?)	

7.3.3: Reasons for visiting

It has been found that providing a support space can be attractive to students who don't actually need support but are seeking a good (usually meaning quiet!) place to study. This may be elicited in a questionnaire either through an open-ended question or a tick-list. (Students could be asked to rank in order of importance.) For example:

Why do you visit the Maths Skills Centre?	Tick all appropriate
To get help on a specific question	
For the working environment	
To get help on a general area of maths	
To meet up with my friends	
Other (please explain)	

It is reported by one university that being 'a quiet place to study' is always a very popular attribute cited when asked what they like about the centre.

Some students find it very reassuring that a member of staff is available if necessary.

Performance benefit data

Finding out what perceived benefits visiting a centre brings is clearly important – getting much closer to 'impact' than just asking why the student came or what resources were used. For example:

Benefit type	Benefit
General	Do you feel that the support and guidance you received noticeably helped your work?
Affective	Do you feel that your confidence in your work improved after your visit?
Specific	Has the support and guidance you received helped you stay on your programme?

One support provider wrote: "After visiting our Centre students have reported a huge increase in confidence although not much in ability". This increase in confidence might be unhelpful if misplaced, but on balance this is surely a good sign.

A very similar set of questions to those above were used at York University which has recently set up a support centre. Their questions and the responses obtained - shown below - are very interesting.

Benefit type	Benefit	Response profile	
Attainment	Do you think your maths attainment has been improved by visiting the Maths Skills Centre?	Yes, lots Yes, a little Maybe No It's got worse Not sure	62% 33% 0% 5% 0% 0%
Confidence	Has your confidence in maths been improved by visiting the Maths Skills Centre?	Yes, lots Yes, a little Maybe No It's got worse Not sure	52% 28% 10% 10% 0% 0%
Retention	(a) Have you considered leaving your course because of the maths requirements?	Yes Maybe No Yes, but not because of maths Not sure	15% (3) 15% (3) 70% (14) 0% 0%
	(b) If 'yes' or 'maybe', has the Maths Skills Centre helped you stay at the University?	Yes Maybe No I might still leave Not sure	50% (3) 50% (3) 0% 0% 0%

Section 7.5:
Topic and type of work data

7.5.1:

It may well be beneficial to find out what mathematics and statistics topics students sought help with. This could be obtained through an open-ended question, or a tick list of topics could be supplied. This could be a long list or a short list - each has its advantages and disadvantages, of course. Some centres have tried to get tutors to record the kinds of topics they are asked about, but the pressure of the situation can easily prevent this being done in any systematic way, but it may be worth trying.

7.5.2:

Another aspect is to ask what type of work the support is for:

Support sought for …	Tick all appropriate
Understanding my lecture notes	
Working through my problem sheet	
An assessed assignment	
An undergraduate dissertation	
Problems on past examination papers	
Preparing for written examinations	
Preparing for an employer's recruitment test	
My research	
Other …	

The first three of these, in particular, may throw up significant problems that could be brought to the attention of departments or lecturers.

Section 7.6:
Comparative data

7.6.1:

Comparing the provision and efficacy of help provided in the support centre with that obtained elsewhere by students can provide useful data – 'ammunition' - in the battle for funding! One university support centre has taken the interesting step of asking questions designed to find out what help and support mechanisms students use and how successful they are. The excerpts below indicate the approach, which might be seen as potentially providing some measure of added value otherwise unobtainable.

Consider some recent times you have been stuck on a piece of mathematics. Which of the following sources of help have you used, and how useful have they been?					
SUPPORT OUTSIDE CENTRE	**Used?**	**How useful?**			
Help from:	(tick)	Always	Often	Sometimes	Never
Lecturer (office hours, hints, etc.)					
My lecture notes					
Textbooks					
Other (please state)					
SUPPORT INSIDE CENTRE	**Used?**	**How useful?**			
Help from:	(tick)	Always	Often	Sometimes	Never
Maths Centre Staff					
Textbooks					
Help Sheets					
Computer-based resources					
Other (please state)					

7.6.2:

It is always difficult (yet important) to measure the real effect of a support centre. An approach adopted at one university was to include the following (subjective) 'before and after' pairs of questions. Students submitted their responses on a sliding scale 0-100.

ABILITY		Answer by entering a number from 0 (least) to 100 (most)
Q1.	Prior to attending maths support, how would you have rated your mathematical/statistical ability?	
Q2.	After visiting maths support, how would you now rate your mathematical/ statistical ability?	
CONFIDENCE		
Q3	Referring to a typical visit, how confident did you feel tackling the original problem (which led you to attend maths support) **prior** to attending the support service ?	
Q4	Referring to that typical visit, how confident did you feel about tackling your problem **after** attending maths support ?	

7.6.3:

A further survey used by this university included the following 'crunch' question:

Q.5	Would you have considered dropping out of university if the Maths Support Service had not been on offer?	Yes No

This is a question that many would not think (or be bold enough) to ask ⋯ but if it were asked the results might surprise (as York found – reported in section 7.4, where 30% of students answered 'yes' or 'maybe').

Section 8:
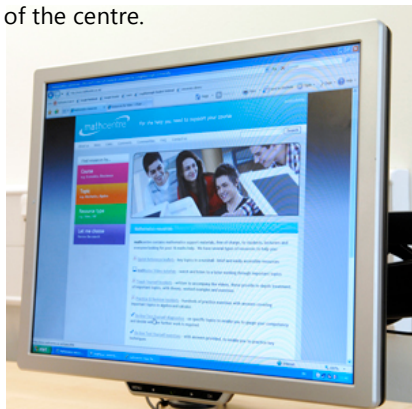# When to gather feedback

It is common to carry out evaluation at the support centre when the students visit. It is relatively straightforward and targets the 'customers'. If adequate contact information about visitors is known then electronic follow-up later will be feasible. Of course, it misses all those who do not visit at the time of the evaluation (if ever), which could be important.

Some support centres make evaluation sheets available at all times, although that may not pick up as many positive responses as could (and should) be achieved.

Some support centres only collect feedback towards the end of the semester – prior to and during the examination period – when they are most busy, and ask all attending students to complete forms (once). This has the advantages of concentrating the effort of centre reception staff and of getting a wide coverage of students. The disadvantage is that early visitors are missed (who may have stopped attending through failure to get adequate help, or conversely though having all their problems solved!). A possible way round this is to ask all attenders to supply their email address (or mobile phone number) and contact them all (or, more likely, an appropriate sample) towards the end of term. This overcomes the problems already mentioned, but emailing (more so than phoning one suspects) raises the problem of non-response or biased response. Asking students to answer questionnaires at the same time as many academics are issuing module or programme questionnaires can lead to 'questionnaire fatigue', but it is probably a small risk.

An alternative is to set out to collect data throughout the term. The problem then is that to collect from all students would produce far too much data, and it would need to be either selective (on what basis?, decided by whom?) or optional. This also raises the issue of whether repeat visit students should complete further forms.

As mentioned earlier, it is also important to consider gathering feedback from non-users to ascertain their views of the centre.

Section 9:
Where to gather feedback

If there are dedicated student web pages (for a programme, department, school, faculty or maybe students union or other group such as engineering society) then it may be possible and helpful to have a questionnaire there. This could be particularly useful if one wants to find out what opening times suit students – especially to get the opinions of those who cannot come along and fill in a form saying the current opening times aren't suitable! One relatively new support centre reported that ⋯   *"the survey was made available to the students via their student web page. The survey was visible from the third week of the teaching year (October) until the final week of their exam period (May). It has been kept short deliberately so as to encourage the students to complete it themselves and encourage others to do so. ⋯ the survey has been used to help us decide whether we are providing help in the form, place and time which the majority of students find useful."*

One support provider wrote:

"We originally started with paper forms and recently made the questionnaires available online but we tend to get more responses when the questionnaires are presented there and then rather than for students to complete later online."

Another provider wrote:

"I have attached the survey ⋯ used for the evaluation of the Maths Help this year … We have mainly been concerned with ensuring that it was operating at the best times ⋯ and in the areas which students found convenient and acceptable."

"The survey was made available to the students via their student web page, where many other surveys appear, with a comment that they should complete this one if they have attended Maths Help. It is advertised within the Maths Help area and at intervals during the year I send emails to those who have attended with a link to the survey. When I email the students I create a distribution list of attendees and send the message to myself with a Bcc to the distribution list so that the students' emails are not visible to those who receive the message."

"Last year we were able to persuade the Learning Centre staff to make a bigger area available for us as a result of the responses we received, and this year we are considering changing the venue for one of our evening sessions."

Section 10:
Ethical Approval

The need for ethical approval should not be overlooked. Depending on the data being sought and the means being used to obtain it, this may be entirely straightforward or it may be contentious. The recommendation is to seek approval or advice as early as possible, as it could take some time to acquire and might require modification of one's plans. Below is part of a report of one support provider's experience:

> "*I did have to go through some hoops to win ethical approval to compile research on the evaluation process so as to collect data from users and non-users. The University's Ethics Committee were most anxious and pedantic about how and why I would get data from non-users.*"

On the other hand, some centres experience little difficulty in gathering feedback data on support centre usage – this is treated as a normal part of the teaching evaluation process.

Aspects of ethical approval are:

- Confidentiality
- Informed consent
- Openness and integrity
- Protection from harm (mental and emotional as well as physical)
- Compliance with existing protocols

Section 11:
Retention

11.1 Retention matters

Most would agree with one support centre member of staff who said "*…[an evaluation] model is needed with reference to real hard outcomes (i.e. retention on course)*", and another who said "*We need helpful papers with models of statistical approaches we could follow … for supporting a bid for funding that requires quantitative measures as a compulsory item.*"

Some may see improving retention as the 'holy grail' for support centres. The reality is that this is most likely to be a small part of a support centre's valuable work. Nevertheless, evidence that a centre improves retention is a powerful weapon.

Retention *per se* is relatively easy to quantify. However, students 'drop out' for various reasons and may return later. And proving irrefutably that support has prevented drop-out (usually through averting failure) is very difficult to achieve.

One small but important group for which this may be more achievable is comprised of those students who fail and then are subsequently provided with support in order to pass their resits. The following report from one university support centre staff member is suggestive:

> "[*At my] university, … 7 engineering students were sound technically but failing level 4 due to poor maths. A summer intervention of 4 weeks was provided (funded by lifelong learning network). Result was that all passed and the exam was accepted by the exam board as it had the same content as the usual cohort, but was tested at different stages as well as the end of 4 weeks.*"

More generally, comparing the resit performances of failing students who do and who do not take up support before resitting should be fairly straightforward, and could provide acceptable evidence of the value of the support. Undoubtedly, such a group will be seen as important by the institution and department.

The responses obtained at York to a question on retention (see section 7.4) indicate that some compelling data on the value of a support centre may be obtained directly from the students themselves.

It may seem attractive to seek to compare performance with other institutions but in practice this is fraught with difficulties, not least being the secrecy with which such data are (or would be!) held, and the difficulty of comparing like with like. There is also a danger of a 'league table' mentality developing. More promising is year-on-year data within the institution.

11.2 Retention research papers

11.2.1 Generally, seeking definitive proof of positive impact takes one into the realms of educational research. There are a small number of papers on this subject, a few of which are mentioned below, for the interested reader to follow up. These, and several other relevant papers, are available at:

> http://www.mathcentre.ac.uk/topics/measuring-effectivess/measuring-the-effectiveness-of-support-centres/

11.2.2 A paper by Dowling and Nolan (2006) reports upon efforts to measure the effectiveness of the Maths Learning Centre at Dublin City University. It provides a model of measuring effectiveness that compares

the pass rates of 'at risk' students who did or did not visit the mathematics support centre. The model shows that in each of the two years studied the centre made a direct contribution to the success of approximately 11 students.

11.2.3 A paper by Cuthbert and MacGillivray (2007) discusses initiatives to improve retention rates on engineering degree programmes at Queensland University of Technology in Australia. The Mathematics Access Centre at QUT offered optional extra support and examination workshops. The paper reports that students accessing these were nearly twice as likely to complete the course as the whole cohort, and half as likely to discontinue engineering.

11.2.4 A paper by Pell and Croft (2008) describes and analyses data from a cohort of engineering students. Some made good use of a mathematics learning support centre; others didn't. Many frequent users were quite competent and simply wanting to do better. The authors conclude that in their particular study mathematics support improved the pass rate by about 3%.

11.2.5 A paper by Lee, Harrison, Pell and Robinson (2008) presents statistical regression models which aim to predict overall first year mechanical engineering students' performance. Data was collected on overall first year mark against 14 variables. The regression models produced showed the effect of almost one grade boundary improvement of students visiting the mathematics learning support centre.

11.2.6 A paper by Mac an Bhaird, Morgan & O'Shea (2009) presents an analysis of first year students' grades in the academic year 2007-2008. *"We compared the grades of students who attended the MSC and those who did not. To compare students of similar abilities, we split the groups (First Arts and First Science) up into smaller groups depending on their grades (Leaving Cert) at the end of second level. There was a significant difference in all sub groups. We then expanded by comparing the grades of students depending on the results of their proficiency tests. Again there was a significant difference. All students seem to benefit from support but this is particularly true for 'at risk' students."*

11.2.7 A recent significant paper by MacGillivray and Croft (2010) *"provides a framework for those working in learning support to think about how their efforts can be evaluated."* This is well worth studying as it provides a comprehensive survey of recent qualitative and quantitative evaluation in the mathematics and statistics support area.

Section 12:
A Minimal Questionnaire

There now follows a suggested minimal set of questions.

		Suggested scale
	(Demographic data as deemed appropriate)	
Q1	Do you feel that the support and guidance you received noticeably helped your work?	Answer Yes or No or use 5-point scale
Q2	Has the support and guidance you received helped you stay on your programme?	Answer Yes or No or use 5-point scale
Q3	Do you feel that your confidence in your work improved after your visit?	Answer Yes or No or use 5-point scale
Q4	Would you visit the Support Centre again?	Answer Yes or No
Q5	How did you find out about the Support Centre? [PROVIDE LIST]	Tick all appropriate or ask for ranking
Q6	What support facilities have you used? [PROVIDE LIST]	Tick all appropriate or ask for ranking
Q7	What support facilities do you consider most valuable, and why?	Open format
Q8	What do you most like about the support provision?	Open format
Q9	How could the support provision be improved?	Open format
Q10	Have you ever left the Support Centre with your question(s) unanswered? (if so, why?)	Open format

Section 13
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Section 14:
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Martin Greenhow	Tim Swift
Julie Kevill	Christine Venney

APPENDIX 1: QUESTION BANK

A: DEMOGRAPHIC DATA	
A1	Date
A2	Name
A3	Student ID
A4	Sex
A5	Faculty/School/Department
A6	Course / Programme
A7a	Year of study: Foundation Year Undergraduate Year 1 Undergraduate Year 2 Undergraduate Year 3 (but not final) Undergraduate Final Year Postgraduate Taught programme Postgraduate Research
A7b	Level (1, 2, 3, 4)
A8	Pre-university qualifications
A9	Mobile phone number
A10	Email address

B: SOURCE OF KNOWLEDGE ABOUT THE SUPPORT CENTRE		Tick all appropriate
B1	Poster	
B2	Institutional email	
B3	Lecturer	
B4	Personal tutor	
B5	Hall tutor	
B6	Library staff	
B7	Students Union help desk	
B8	Support Centre website	
B9	University's VLE	
B10	Other website (please specify)	
B11	Display screen notice	
B12	Flyer	
B13	Fellow student	
B14	Induction visit	
B15	At the Freshers' Fair	
B16	Other (please specify)	

C: REASON FOR VISITING CENTRE		Tick all appropriate
C1	To get help on a specific question	
C2	To get help on a general area of maths	
C3	To have a quiet place to work with help on hand if needed	
C4	To have a quiet place to work	
C5	For the working environment	
C6	To meet up with my friends	
C7	To meet up with my friends to work together	
C8	To get help on understanding my lecture notes	
C9	To get help on working through my problem sheet	
C10	To get help on an assessed assignment	
C11	To get help on my undergraduate dissertation	
C12	To get help with problems on past examination papers	
C13	To get help with revision for written examinations	
C14	To get help on my research	
C15	To get help with an Employer's Numeracy Test	
C16	Other (please specify)	

D: TYPE OF SUPPORT RECEIVED		Tick all appropriate
D1	One-to-one help for mathematics by a tutor	
D2	One-to-one help for mathematics by a student ambassador	
D3	One-to-one help for statistics by a tutor	
D4	One-to-one help for statistics by a student ambassador	
D5	Small group teaching on a specific topic	
D6	Introductory session on 'how to study mathematics'	
D7	Help from peers.	
D8	Other (please specify)	

E: CONFIDENCE and COMPETENCE		
	Indicate how strongly you agree or disagree with these statements:	**Suggested scale**
E1	I am sure that I can learn mathematics	SA to SD
E2	I am sure of myself when I do maths	SA to SD
E3	I'm not the type to do well in maths	SA to SD
E4	I know I can do well in maths	SA to SD
E5	Compared to other modules, the maths ones are more difficult	SA to SD
E6	When I have difficulties with maths, I know I can handle them	SA to SD
E7	I do not have a mathematical mind	SA to SD
E8	It takes me longer to understand maths than the average person on my course	SA to SD
E9	I enjoy trying to solve new maths problems	SA to SD
E10	I find maths frightening	SA to SD
E11	I find maths interesting	SA to SD
E12	I find maths confusing	SA to SD
E13	I find maths difficult	SA to SD
E14	I usually find maths difficult	SA to SD
E15	At school I found maths difficult.	SA to SD
	Answer these questions	**Suggested scale**
E16	Did attending the support centre build your confidence?	A lot, A bit, Not at all
E17	Do you feel that your confidence in your work improved after your visit?	A lot, A bit, Not at all
E18	Do you think your maths attainment has been improved by visiting the Centre?	A lot, A bit, Not at all
E19a.	Prior to attending maths support, how would you have rated your mathematical/statistical ability?	Enter a number from 0 (least) to 100 (most)
E19b	After visiting maths support, how would you now rate your mathematical/ statistical ability?	
E20a	Referring to a typical visit, how confident did you feel tackling the original problem (which led you to attend maths support) **prior** to attending the support service?	Enter a number from 0 (least) to 100 (most)
E20b	Referring to a typical visit, how confident did you feel tackling your problem **after** attending maths support	

F: LEARNING STYLES		**Suggested scale**
F1	Was attending the maths support centre a good learning experience?	A lot, A bit, Not at all
F2	Has attending the maths support centre enriched your learning style?	A lot, A bit, Not at all

G: SOURCES CONSULTED		**Tick all appropriate**
G1	Reference books	
G2	Hand-outs on topics	
G3	Computer-based teaching resources	
G4	Computer-based practice tests	
G5	Online resources	
G6	Software packages (e.g. Minitab, Matlab, Maple, SPSS)	
G7	Past examination papers (with solutions?)	
G8	Other (please specify)	

H: IMPROVED COMPETENCE		**Yes /No or use a 5-point scale**
H1	Do you feel that the support and guidance you received noticeably helped your work?	
H2	Do you think your maths attainment has been improved by visiting the support centre?	
H3	In retrospect, do you think that you would have done better had you attended the Centre (more)?	

I: RETENTION		**Yes /No or use a 5-point scale**
I1	Has the support and guidance you received helped you stay on your programme?	
I2	Do you think the support and guidance you received has helped (will help) you pass your maths modules?	
I3	Do you think the support and guidance you received has helped (will help) you pass maths-related modules?	
I4a	Have you considered leaving your course because of the maths requirements? …	
I4b	If 'yes' or 'maybe' then has visiting the Centre helped you stay on course?	

J: TOPICS SUPPORTED		
J1	What did you request help with?	Open-ended
J2	What did you request help with? Choose from the list of topics …	Tick items

K: COMPARING INSIDE AND OUTSIDE CENTRE SUPPORT PROVISION

Consider some recent times you have been stuck on a piece of mathematics. Which of the following sources of help have you used, and how useful have they been?

SUPPORT FROM OUTSIDE CENTRE	Used?	How useful?			
	(tick)	Always	Often	Some-times	Never
Lecturer (office hours, hints, etc.)					
My lecture notes					
Textbooks					
Module website or VLE					
Other websites (specify)					
Other (please specify)					
SUPPORT FROM CENTRE	Used?	How useful?			
	(tick)	Always	Often	Some-times	Never
Maths Centre Staff					
Textbooks					
HELM workbooks					
Help Sheets					
Fact & Formulae leaflets					
Other (please specify)					

L: GENERAL REACTION TO VISITING THE CENTRE		Yes /No or use a 5-point scale
L1	Was it enjoyable?	
L2	Was it interesting?	
L3	Was it valuable?	
L4	Did you find it satisfying?	
L5	Did you ever leave the Centre with your questions unanswered due to too long a queue?	
L6	Did you ever leave the Centre with your questions unanswered due to the tutor being unable to help?	
L7	Did you ever leave the Centre with your questions unanswered due to you not understanding the help given by the tutor?	

M: SUPPORT CENTRE WEBSITE		
M1	What uses have you made of the Support Centre website?	Open-ended
M2	What enhancements to the website would you find valuable?	Open-ended
M3	Which of the following website facilities have you used? [list]	Tick items

N: SUPPORT CENTRE FACILITIES		
N1	The Support Centre staff are friendly and welcoming	SA to SD
N2	The Support Centre is open at convenient times	SA to SD
N3	The Support Centre is conveniently located	SA to SD
N4	The Support Centre teaching staff are available at convenient times	SA to SD
N5	The materials available are useful	Always to Never
N6	The tutoring staff are helpful	Always to Never
N7	I use the Support Centre more than once a week	Tick the one appropriate
	I use the Support Centre about once a week	
	I use the Support Centre about once every two weeks	
	I use the Support Centre occasionally	

O: REASONS FOR NOT ATTENDING CENTRE		Tick those appropriate
O1	I have no real concerns about the material being presented in lectures	
O2	Tutorials provide all the necessary support to lectures	
O3	Lack of time	
O4	Unable to attend at times Centre is open due to other course commitments	
O5	Do not like the environment (please specify)	
O6	The admin staff are unfriendly	
O7	The admin staff are unhelpful	
O8	The tutors are unfriendly	
09	The tutors are unhelpful	
10	The tutors try but are unable to help me	
11	I was unaware of the provision	

APPENDIX 2: MINIMAL QUESTIONNAIRE

There now follows a suggested minimal set of questions.

		Suggested scale
	(Demographic data as deemed appropriate)	
Q1	Do you feel that the support and guidance you received noticeably helped your work?	Answer Yes or No or use 5-point scale
Q2	Has the support and guidance you received helped you stay on your programme?	Answer Yes or No or use 5-point scale
Q3	Do you feel that your confidence in your work improved after your visit?	Answer Yes or No or use 5-point scale
Q4	Would you visit the Support Centre again?	Answer Yes or No
Q5	How did you find out about the Support Centre? [PROVIDE LIST]	Tick all appropriate or ask for ranking
Q6	What support facilities have you used? [PROVIDE LIST]	Tick all appropriate or ask for ranking
Q7	What support facilities do you consider most valuable, and why?	Open format
Q8	What do you most like about the support provision?	Open format
Q9	How could the support provision be improved?	Open format
Q10	Have you ever left the Support Centre with your question(s) unanswered? (if so, why?)	Open format

APPENDIX 3:
SAMPLE SUPPORT CENTRE QUESTIONNAIRES

Sample questionnaires have been kindly provided by the following ten universities:

Bath

Lincoln

London Metropolitan

Loughborough

Manchester

Middlesex

Sheffield

Sheffield Hallam

UWE

York

Note:

The University of York's Maths Skills Centre provided two questionnaires (labeled Term 1 and Term 2). The questionnaires were designed in the context of a support centre that had recently opened for the first time. For Term 1's questionnaire there were two overarching purposes:

(a) to gather information about why 'early adopters' of the service were using it, i.e. to assess the impact of the marketing campaign, and

(b) to gather information about how the centre could improve in the near future. The questionnaire also contained a question based loosely on Fogarty et al.'s (2001) mathematics confidence questionnaire.

The data collected for this question was insufficient to meaningfully compare students or cohorts based on this questionnaire alone, but it is anticipated that over time the responses to this question will allow the Centre to keep track of the mathematical confidence of undergraduate students.

For Term 2's questionnaire the focus was more on the impact of the Maths Support. Students were asked which forms of support they had used, and to rate the effectiveness of each. As a result of the **sigma** meeting on evaluation (February 2011), a question was included on the second page which looked at the perceived impact of Maths Support on students' confidence, attainment and retention. The responses to this question were carefully chosen to give varying degrees of options, rather than a simple "yes/no" or a Likert-style scale.

In addition, the University of York's Skills Centre provided an Impact Evaluation Plan, an Interview Protocol and a Focus Group Protocol. For copyright reasons they are not reproduced here, but they have been published in the Value and Impact Toolkit developed by AMOSSHE and available at: http://www.vip.amosshe.org/

Reference:
Fogarty, Cretchley, Harman, Ellerton, & Konki (2001). Validation of a Questionnaire to Measure Mathematics Confidence, Computer Confidence, and Attitudes Towards the Use of Technology for Learning Mathematics. Mathematics Education Research Journal, 13(2), 154-160.

Sample Questionnaire:
York (term 1)

Maths Skills Centre Feedback Sheet:

Name: ID:
(optional)   (optional)
Male   Female   Today's date _____   Time: _____
Year of study: Foundation / Year 1 / Year 2 / Year 3 / Year 4 / Masters / PhD
Programme (course): _____   Department: _____
Prior to university, I studied maths to: GCSE(O-Level) / A-Level / Further Maths A-Level

Consider some recent times you have been stuck on a piece of mathematics. Which of the following sources of help have you used, and on the scale given, how useful have they been?

e.g.   Copying my friend's answer: ☑   ———✕——————————————————————————

Outside the Maths Skills Centre:

	used? (tick)	how useful?			
		always	often	sometime	never
My lecture notes		_____			
Lecturer (office hours, hints etc)		_____			
Textbooks		_____			
Module VLE / website		_____			
Other websites*		_____			
Friends		_____			
Other*		_____			

Inside the Maths Skills Centre:

	used? (tick)	how useful?			
		always	often	sometime	never
Maths Centre Staff		_____			
Textbooks		_____			
HELM workbooks		_____			
MathTutor quick help sheets		_____			
Fact & Formulae leaflets		_____			
Other*		_____			

* Please state   Please turn over

These statements explore your feelings towards mathematics more generally. Please choose the scale item which best indicates your view for each statement:

	strongly agree	agree	neutral	disagree	strongly disagree
Compared to other modules on my course, the maths ones are more difficult	☐	☐	☐	☐	☐
When I have difficulties with maths, I know I can handle them	☐	☐	☐	☐	☐
I do not have a mathematical mind	☐	☐	☐	☐	☐
It takes me longer to understand maths than the average person on my course	☐	☐	☐	☐	☐
I enjoy trying to solve new maths problems	☐	☐	☐	☐	☐
I find maths frightening	☐	☐	☐	☐	☐
I find maths interesting	☐	☐	☐	☐	☐
I have never been very excited about maths	☐	☐	☐	☐	☐
I find maths confusing	☐	☐	☐	☐	☐
I find maths difficult	☐	☐	☐	☐	☐
At school I found maths difficult	☐	☐	☐	☐	☐

You are encouraged to write constructive comments in the spaces below:

What do you like about the Maths Skills Centre?

How could the Maths Skills Centre be improved?

Any other comments?

If you would like a personal response to any of the points you raise, please say so and make sure that your student ID number has been entered overleaf.
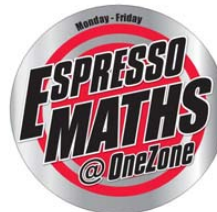
Sample Questionnaire:
York (term 2)

MATHS SKILLS CENTRE

Maths Skills Centre Feedback Sheet:

Name:	ID:
(optional)	(optional)

Male   Female   Today's date _____   Time: _____

Year of study: Foundation / Year 1 / Year 2 / Year 3 / Year 4 / Masters / PhD

Programme (course): _____   Department: _____

Prior to university, I studied maths to: GCSE(O-Level) / A-Level / Further Maths A-Level

Consider some recent times you have been stuck on a piece of mathematics. Which of the following sources of help have you used, and on the scale given, how useful have they been?

e.g.   Copying my friend's answer: ☑   —————✕————————————————————

Outside the Maths Skills Centre:

	used? (tick)	how useful?			
		always	often	sometime	never
My lecture notes		_____			
Lecturer (office hours, hints etc)		_____			
Textbooks		_____			
Module VLE / website		_____			
Other websites*		_____			
Friends		_____			
Other*		_____			

Inside the Maths Skills Centre:

	used? (tick)	how useful?			
		always	often	sometime	never
Maths Centre Staff		_____			
Textbooks		_____			
HELM workbooks		_____			
MathTutor quick help sheets		_____			
Fact & Formulae leaflets		_____			
Other*		_____			

* Please state   Please turn over

York Term 2

Why do you visit the Maths Skills Centre? Please tick all that apply:

To get help on a specific question	☐
For the working environment / space	☐
To get help on general areas of maths	☐
To work on maths with my friends	☐
To use the Centre's materials	☐

The following three questions are deliberately provocative. Please answer them honestly!

Has your confidence in maths has been improved by visiting the Maths Skills Centre?
yes, lots ☐   yes, a little ☐   maybe ☐   no ☐   it's got worse ☐   not sure ☐

Do you think your maths attainment has been improved by visiting the Maths Skills Centre?
yes, lots ☐   yes, a little ☐   maybe ☐   no ☐   it's got worse ☐   not sure ☐

Have you considered leaving your course because of the maths requirements?
yes ☐   maybe ☐   no ☐   yes, but not because of the maths ☐   not sure ☐

If "yes" or "maybe", has the Maths Skills Centre helped you stay at the university?
yes ☐   maybe ☐   no ☐   I still might leave ☐   not sure ☐

You are encouraged to write constructive comments in the spaces below:

What do you like about the Maths Skills Centre?

How could the Maths Skills Centre be improved?

Any other comments?

If you would like a personal response to any of the points you raise, please say so and make sure that your student ID number has been entered.

Maths Attitudes Sheet:

Student username: _____

These statements explore your feelings towards mathematics. Please choose the scale item which best indicates your view for each statement.

	strongly agree	agree	neutral	disagree	strongly disagree
Compared to other modules on my course, the maths ones are more difficult	☐	☐	☐	☐	☐
When I have difficulties with maths, I know I can handle them	☐	☐	☐	☐	☐
I do not have a mathematical mind	☐	☐	☐	☐	☐
It takes me longer to understand maths than the average person on my course	☐	☐	☐	☐	☐
I enjoy trying to solve new maths problems	☐	☐	☐	☐	☐
I find maths frightening	☐	☐	☐	☐	☐
I find maths interesting	☐	☐	☐	☐	☐
I have never been very excited about maths	☐	☐	☐	☐	☐
I find maths confusing	☐	☐	☐	☐	☐
I find maths difficult	☐	☐	☐	☐	☐
At school I found maths difficult	☐	☐	☐	☐	☐

If you would like a personal response to any of the points you raise, please say so and make sure that your student ID number has been entered.

UWE

Questionnaire

First of all, thank you for using *espressoMaths*!

In order that we might develop the service, we would be very grateful if you could respond to the following questions.

Please return your completed questionnaire to tim.swift@uwe.ac.uk by 2011 July 31.

1. From a personal point of view, do you regard *espressoMaths* as a useful UWE service?

   …………………………………………………………………………………
   …………………………………………………………………………………

2. Is the location of *espressoMaths* convenient for you?

   …………………………………………………………………………………
   …………………………………………………………………………………

3. If you used *espressoMaths* during 2009-2010, but not during 2010-2011, then is there any particular reason why not?

   …………………………………………………………………………………
   …………………………………………………………………………………

4. Please suggest any ways in which *espressoMaths* might be improved.

   …………………………………………………………………………………
   …………………………………………………………………………………
   …………………………………………………………………………………

5. Please state the name of your programme, and which year you were in during 2010-2011.

   …………………………………………………………………………………

Please return your completed questionnaire to tim.swift@uwe.ac.uk by 2011 July 31.
Many thanks for your time.

Sample Questionnaire:
Loughborough

Loughborough University

MATHEMATICS LEARNING SUPPORT CENTRE FEEDBACK (CP)

Mathematics Education Centre MEC

Please spend a few moments completing this questionnaire. The results will be used to improve the quality of service offered by the Support Centre.

Name: _____ ID: _____

Male: ☐ Female: ☐ Date: _____ Time: _____

Year of Study (ring one): Foundation / Year 1 / Year 2 / Year 3 / Year 4 / Masters / PhD

Programme (Course): _____ Dept: _____

For statements 1 to 5, please write a number in the box which best indicates your view using the scale below: (Write N/A in the box in the statement does not apply to you).

1 Strongly Disagree   **2** Disagree   **3** Neutral   **4** Agree   **5** Strongly Agree

(1) I usually find mathematics difficult. ☐

(2) The Support Centre staff are friendly and welcoming. ☐

(3) The Support Centre is open at convenient times. ☐

(4) The Support Centre is conveniently located. ☐

(5) The Support Centre teaching staff are available at convenient times. ☐

For questions 6 and 7 please ring one response:

(6) The materials available are useful: Always / Usually / Sometimes / Never/ Not Applicable

(7) The teaching staff are helpful: Always / Usually / Sometimes / Never/ Not Applicable

For statements 8 and 9 please tick ALL the relevant boxes:

(8) I learned about the Support Centre from:

(a) The Support Centre's Web-site ☐

(b) The Support Centre's leaflets/posters ☐

(c) My mathematics lecturer ☐

(d) A member of staff in my department ☐

(e) A friend ☐

(f) Other (please explain): _____

_____

Please Turn Over

(9)   I use the Support Centre:

    (a) More than once a week   ☐

    (b) Once a week   ☐

    (c) Once every two weeks   ☐

    (d) Occasionally   ☐

(10) I use the facilities below: **(Tick the relevant boxes):**

	Never	Sometimes	Frequently
(a) One-to-one help - Mathematics	☐	☐	☐
(b) One-to-one help - Statistics	☐	☐	☐
(c) Hand-outs	☐	☐	☐
(d) Books (for reference purposes)	☐	☐	☐
(e) Computer-based practice tests	☐	☐	☐
(f) Mathematics/Statistics software packages e.g. Maple, Matlab, SPSS	☐	☐	☐
(g) Emailing facilities	☐	☐	☐
(h) A room for quiet study	☐	☐	☐
(i) Other - please specify in the final comment box below	☐	☐	☐

(11) You are encouraged to write constructive comments in the spaces below:

What do you like about the Support Centre?

How could the Support Centre be improved?

Any other comments?

If you would like a personal response to any of the points you raise, please say so and make sure that your student ID number has been entered overleaf.

- Thank you for your help -   **Feb 2011**

Manchester

Manchester Mathematics Resource Centre

Visitor Arrival Form

Visitor Number   _____   Date   _____

Can you please fill in the details below. This will enable your enquiry to be dealt with more efficiently and also contribute to records for the centre.

General Area of Enquiry (e.g. Statistics, differential equations) _____

Please state which of the following the enquiry is relevant to :-

A maths module given by the School of Mathematics to students in another School _____

A maths module delivered by another school   _____

Another module delivered by another school   _____

A project, dissertation, thesis etc. _____

School/Faculty you are in (please circle)

Humanities	Life Sciences	Medical Sciences		
MACE	Physics	Chemistry	EEE	Foundation
CEAS	Materials	Comp Sci	SEAES	

Please circle your year/category of study.
Foundation   1st Year   2nd Year   3rd Year   4th Year   MSc   PhD   Staff   Other

Is this your first visit to the Resource Centre ?   Yes   No

How did you find out about the resource Centre   _____

+++

Brief description of enquiry

Manchester Mathematics Resource Centre

Comments form

The Manchester Mathematics Resource Centre has ambitious plans for the future. Please state which of the following you would consider most appropriate (feel free to mention more than one)

Longer opening hours	_____
More personnel	_____
Computers or extra software to demonstrate problems	_____
More texts etc.	_____
Classes given on various basic maths topics	_____
Other (please specify)	_____

Any other comments?

Sample Questionnaire:
Middlesex

LEARNER DEVELOPMENT UNIT – Numeracy Support Feedback Form

Dear Student, we would really appreciate your comments about the numeracy support you received this year. We will use your ideas to improve the service. Alternatively you can email numeracy@mdx.ac.uk with your suggestions. Many thanks.

WHAT PROGRAMME ARE YOU ON?

PLEASE COULD YOU RATE THE FOLLOWING WITH A MARK OUT OF 10 (10 out of 10 means excellent)
A mark of X means you did not receive any support.

Timetabled Lectures	
Large group workshops	
Small group workshops	
1-1 Tutorials	
Help sheets/ Worksheets	
Website resources	
YouTube videos	
OASIS materials	

PLEASE FEEL FREE TO ADD ANY COMMENTS OR SUGGESTIONS IN THE BOX BELOW

Lincoln

Questionnaire and covering letter used at the University of Lincoln

May 2011

"Dear student

We have emailed you using your exam ID or your enrolment ID and we have been very careful to only email students who gave their consent to us when they visited the Maths. and Statistics Support Centre (MSSC), based in the GCW Library.

University staff normally collect data and evaluate their services, reporting the findings to relevant stakeholders. We believe that you visited the MSSC at least once in the current academic year and so we invite you to participate for a few minutes in your own personal evaluation of the help, support and guidance you received.

No member of staff will know who returned a response, and so we guarantee that all your responses will be confidential and anonymous.

We are grateful for your time."

The questionnaire below was transferred into Viewpoint software and administered to students by Registry.

After 2 weeks then data collection process was closed down.

See also the entry for sigma-based centres which includes the computer generated statistical analysis of responses to this questionnaire.

Maths. and Statistics Support Centre – Evaluation Questionnaire 2010/11

The University of Lincoln is committed to improving its support for students. We believe that you recently made use of the Maths. & Statistics Support Centre (MSSC) in the Library. By completing this questionnaire, your evaluation will enable the staff to improve the service that it can offer you and future students.

Data will be managed according to the University's Academic Archiving Policy ensuring that all documents and case record data are stored and destroyed in accordance with the policy. Anonymity and confidentiality will be preserved.

Findings from the questionnaire will be summarised and forwarded to the Vice-Chancellor and to other stakeholders including the sigma organisation who have partially funded the work.

Ethical approval has been gained from the Faculty of Health, Life and Social Science to compile this data collection and analysis. University Registry is responsible for the distribution of the questionnaire.

Please follow the instructions below.

Section 1 – Personal Information

1. Please tick the *one box* below which best describes the Faculty / School / Department with which you are associated:

☐   Biological Sciences (Riseholme programmes)

☐   Business & Law

☐   HLSS – Health & Social Care

☐   HLSS – Natural and Applied Sciences

☐   HLSS – Psychology

☐   HLSS – Social Sciences

☐   HLSS – Sports, Coaching & Exercise Science

☐   Media, Humanities & Technology

☐   Other (please state)   _____

2. Please tick the *one box* below that indicates your academic status :

☐   Undergraduate (1st or 2nd level)

☐   Undergraduate (Final level)

☐   Postgraduate (By research)

☐   Postgraduate (By taught programme)

3. Please tick the boxes below to indicate for what reasons you came into the Support Centre:

☐ Support for an assignment

☐ Support for an exam

☐ Support for a dissertation

☐ Support for research

☐ Just curious

4. How did you find out about the Mathematics and Statistics Support Centre?

☐ Advertising in the Library   ☐ Directed by Academic staff

☐ Poster in another building   ☐ Directed by Library staff

☐ Received a Flyer   ☐ Word of mouth

☐ All Student / All Staff Email   ☐ The Support Centre's web-site

Section 2 – Benefits of the Support Centre

Please answer the following questions as they apply to you :

	Yes	No
Do you feel that the support and guidance you received noticeably helped your work?	☐	☐
Has the support and guidance you received help you stay on your programme?	☐	☐
Do you feel that your confidence in your work improved after your visit?	☐	☐
Would you visit the Support Centre again?	☐	☐

If the answer to any of the above responses is No, would you be kind enough to explain and clarify the reasons here :

....

....

....

....

Section 3 – Provision in the Support Centre

Consider the following statements about what the Maths. & Statistics Support Centre is trying to achieve. Please mark your level of agreement to each statement in the relevant box provided:

	Agree strongly	Agree slightly	Neither agree nor disagree	Disagree slightly	Disagree strongly
The service offers advice on constructing and analysing a dataset in a statistical package such as Excel or SPSS/PASW.	☐	☐	☐	☐	☐
The service offers advice on structuring an assignment, especially its numerical contribution.	☐	☐	☐	☐	☐
The service offers advice on preparing for an exam of a numerical nature.	☐	☐	☐	☐	☐
The service offers advice on structuring a piece of work in terms of tables, graphs and outputs from SPSS/PASW.	☐	☐	☐	☐	☐
The service offers advice on planning and delivering a presentation that includes numerical outputs.	☐	☐	☐	☐	☐
The service offers advice on other relevant resources of a mathematical and statistical nature.	☐	☐	☐	☐	☐
The service offers advice on referencing mathematics and statistics work.	☐	☐	☐	☐	☐

Thank you for completing this questionnaire. Follow any remaining instructions to exit from this software.

London Metropolitan

Draft Questionnaire to evaluate the Maths & Stats Support Clinic (*to be anonymous or not*?)
According to our records you visited the Maths & Stats Support Clinic in the last academic year. We would like to improve the service. Please take a few minutes to help us evaluate the service that we are trying to provide to you.

1.   Did you have any problems finding and accessing the clinic?

2.   How did you hear about the service?

3.   How satisfied were you with the time and the help you were given?

4.   How much of a difference do you think the help you got made to your future study?

5.   Would you recommend the service to anyone else?

6.   Do you have any further comments to pass on to the staff that run and organise the clinic?

Thanks for your time.

SHEFFIELD UNIVERSITY - MASH Feedback 2010/11

Thank you for visiting the Maths and Statistics Help drop-in Centre.

We are developing MASH services all the time and would appreciate your feedback. Therefore please take a few minutes to complete and pop through the feedback box. All responses are anonymous and will be treated with confidentiality.

1. How did you find out about the centre? Please circle

a. Poster	d. Email	g Tutor
b. Publicity Material	e. Word of mouth	h. Other staff
c. Plasma Screen Notice	f. Fellow Student	i. Other

2. How many times have you used the services? Please circle

a. 1   **b.** 2-5 times   **c.** 6-10 times   **d.** 10 or more times

3. What help did you come for mainly? Please circle

a. Maths   **b.** Statistics   **c.** Maths and Statistics

Please rate usefulness out of 5 (1=lowest, …. 5 =highest).

4.   One-to-one help

5.   Working within self-help groups

6.   Exam revision and preparation

7.   Self-study with help available if needed

8.   Web-based resources

9.   Paper-based resources

10. Do you prefer to drop-in for help or to book an appointment in advance?

a. Drop-in   **b.** Booked Appointment

11. When did you make use of maths support mainly?

a. Start of Semester   **b**. Middle of Semester   **c.** Towards the End of Semester

12. Please highlight anything you found particularly helpful.

13. Please highlight anything you felt was missing from the support available in the drop-in centre and could be added to the service.

14. Please highlight anything you were not happy with at the centre

THANK YOU FOR COMPLETING THIS FEEDBACK FORM – YOUR COMMENTS ARE IMPORTANT TO US.

Sample Questionnaire:
Sheffield Hallam

SHEFFIELD HALLAM UNIVERSITY - Maths help

Please help us to make sure we are providing the best Maths Help we can, by taking 2 or 3 minutes of your time to fill in this questionnaire.

Maths Help is a drop-in service open to all students, where a member of the mathematics department is available to provide help with all kinds of mathematics problems, from the simple to the complicated.

Maths Help currently runs every weekday between 11.30am and 1.30pm on Level 2 of the Adsetts Centre (Thursdays 11.30am - 12.30pm and 2.30pm - 3.30pm) and on Monday and Tuesday evenings between 6pm and 8pm in the Learning Centre at Collegiate.

We are reviewing the way we run it, and need to know your opinions to help us to make the service as useful as possible.

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1. How did you learn about Maths Help? (check as many as apply)

Lecturers
Induction talks
Other students
Posters
Emails
TV screens
shuspace

2. Which of the following is your preferred location for Maths Help?

In an open space as at present
In a dedicated space/room
In a classroom
Some sessions in each of the above
No particular preference
no answer

3. How long, on average, did you wait to receive attention in Maths Help?

less than 15mins
15–30mins
30–60mins
more than 60mins
no answer

4. Did you ever leave Maths Help with your question unanswered:

a) due to too long a queue?

yes

no

no answer

b) due to tutor being unable to help with your topic?

yes

no

no answer

c) didn't understand the lecturer

yes

no

no answer

5. For what purpose are you most likely to use Maths Help?

Regular assistance

Help with coursework

Exam / test revision

Irregular use / as need arises

6. Maths Help operates as a drop-in session on Level 2 Adsetts, 11:30am - 1:30pm every Monday – Friday, and in the Learning Centre at Collegiate 6 - 8pm every Monday and Tuesday.

a) Do you think you will attend Maths Help at City Campus later this year if you need some additional support with your maths?

yes

no

no answer

b) Do you think you will attend Maths Help at Collegiate Crescent later this year if you need some additional support with your maths?

yes

no

no answer

If you answer 'no' to these questions please go to Q7; if 'yes', please go to Q8.

7. Why will you not visit Maths Help again this year? (check as many as apply)

▌▌ [Do not feel need for extra help](#)
▌▌ [Unsuitable environment](#)
▌▌ [Unsuitable time](#)
▌▌ [Insufficient time available](#)
▌▌ [Obtain support elsewhere](#)
▌▌ [Only have a Maths module in Semester 1](#)

8. When would you prefer Maths Help to run?

▌▌ [Morning (9am - 11.30am)](#)
▌▌ [Lunch-time (11.30am - 2pm)](#)
▌▌ [Afternoon (2pm - 5pm)](#)
▌▌ [Evening (5pm - 8pm)](#)
▌▌ *no answer*

9. If you were to need any support in the future which type(s) of support would you prefer (check as many as apply)

▌▌ [Topic worksheets](#)
▌▌ [Interactive software](#)
▌▌ [Online material available over the web](#)
▌▌ [One-to-one tuition](#)
▌▌ [Group tuition](#)

Further comments

Please tell us...

a) What you like about Maths Help:

b) What you don't like about Maths Help:

c) Any additional comments about the provision of Maths Help at SHU:

If you would like to be contacted about any of the issues you have raised in the questionnaire, or if you would be happy to be contacted in the future to discuss Maths Help and similar forms of support, please provide your contact details (Full confidentiality will be maintained).

Name:

Student ID:

Email:

The Mathematics Group thanks you for your time.

The National HE STEM Programme

Working across the higher education sector with a particular focus upon the disciplines of Chemistry, Engineering, Mathematics and Physics, the National HE STEM Programme supports higher education institutions in encouraging the exploration of new approaches to recruiting students and delivering programmes of study. It enables the transfer of best practice across the higher education STEM sector, facilitates its wider adoption and encourages innovation. Through collaboration and shared working, the Programme focuses upon sustainable activities to achieve long-term impact within the higher education sector. As part of this philosophy The National HE STEM Programme actively disseminates project outcomes and evidence based good practice to HEIs beyond those involved in the project.

The **sigma** Network

sigma was a HEFCE-funded Centre for Excellence in Teaching and Learning (CETL) – a collaborative initiative between Loughborough and Coventry Universities.

At the end of sigma funding in 2010, the **sigma network** was supported by The HE STEM Programme to continue to share and enhance the work of sigma at universities in England and Wales.