Audit of mathematics learning support in Ireland in 2015 – the key findings

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MLS beginnings

- First UK initiative - 1990s
- On the island of Ireland:
  - First MLS initiative - 1998 (Northern Ireland)
  - First institute of technology to provide MLS - 1999
  - First Mathematics Learning Support Centre (MLSC) - 2001
  - The Irish Mathematics Learning Support Network (IMLSN) - 2009
Reason for commission

- IMLSN aims:
  - Act as an informative community of practice
  - Provide training and support to members through the sharing of ideas and best practice
  - Provide a mechanism for the provision of opportunities for collaborative research and development in the area of MLS

>You can’t be a big dreamer if you don’t know where you are going. You can’t know where you are going unless you first know where you are.

Israelmore Ayivor
The project

The survey

• In 2008 Gill et al [1] conducted a complete audit of the number and type of MLS in the Republic of Ireland
• The IMLSN felt a comprehensive up-to-date picture of MLS was required
• A special interest group (SIG) was formed in November 2014 to carry out this task
• An online survey, consisting of 55 questions, was conducted in April 2015
• The survey was divided into six categories:
  1. Availability and practical operation of MLS
  2. Staffing and tutors
  3. Types of support available
  4. Users of the service
  5. Reporting and evaluation of MLS activities
  6. Challenges and developments
Methodology

- A pilot survey was conducted
- Relevant contacts were identified at 32 higher level institutions (HEIs)
- These were then contacted by email and asked to complete the survey
- Reassurances of anonymity were given
- Respondents were encouraged to complete the survey in two sitting
- Follow-up calls, where needed, were made to encourage participation
The survey was completed by 31 HEIs

Figure 5: Classification of institutions that responded to the survey
Development timeline

Figure 6: Timeline showing when MLS was first established in the institutions surveyed
26 HEIs (84%) provide some form of MLS
Lack of funding cited as the main barrier where there is no MLS
65% of those 26 institutions provide MLS through a MLSC

Figure 7: Profile of students accessing MLS
The results

Location

- 77% of MLS offerings have a dedicated space
- 32% have an exclusive space

Figure 8: Location of MLS provision
The results

Location

Figure 9: Our MLSC is appropriately located
Availability

Figure 10: Number of hours per week the MLS provision is open

- 24% available for 5 hours or less
- 64% available for 20 hours or less
Availability by institution type

- In universities, MLS service hours range from “a few” to 48 hours per week with a mean value of 22.1 hours
- In institutes of technology, opening times range from three hours to 55 hours per week and the mean is 18.8 hours
- There was no evidence of support available at weekends in any institution
- In 60% of institutions the MLS service is closed during the examination period
Stability

- Seven (41%) of the 17 institutions having a MLSC described as permanent

Figure 11: MLSC permanent or subject to review (n=17)
Stability

- Permanent MLSCs are more prevalent in universities

Figure 12: Status of MLSC by institution type (n=16)
Type of support: in-person support

- 88% of MLS offerings provide some form of drop-in facility
- Two of the centres do not offer drop-in facilities
- 64% provide special workshops for particular topics/modules

Figure 13: Provision of workshops during the year (n=15)
The results

Level and type of support

Type of support: in-person support

Figure 14: Those who request/ initiate the workshops
Type of support: online

- 52% of MLS providers do not currently offer some form of online support (n=25)
- 69% of those that don’t currently provide online support plan to do so in the future (n=13)

![Figure 15: Forms of online support on offer](image-url)

Figure 15: Forms of online support on offer
Type of support - popular/effective

- There was a strong belief that one-to-one support was the most effective support

Figure 16: Forms of maths support most frequently used by students
The results

Users of the service

User profile

- Mean estimated percentage for first year undergraduates was 55% (max 100%)
- Mean estimated percentage for second year undergraduates was 22% (max 41%)
- Mean estimated percentage for third year undergraduates was 10% (max 35%)
- Mean estimated percentage for fourth year undergraduates was 4% (max 18%)
- Mean estimated percentage for postgraduates was 3% (max 30%)
- MLS pervades almost every discipline with engineering, science and business (in that order) being the most prevalent
- Highlights that MLS tutors need to be capable of dealing with the maths as applied in a wide range of contexts
User profile

<table>
<thead>
<tr>
<th>status</th>
<th>0-10%</th>
<th>11-25%</th>
<th>26-50%</th>
<th>51-75%</th>
<th>76-100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>traditional</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>non-traditional</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>disability</td>
<td>6</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>international</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 1: Status of MLS users by percentage bands within institutions

- Survey results for student academic stage, subject area and status profile highlight the diversity of those requiring MLS in third-level education
Problem topics

Figure 17: Topics which cause most difficulty (n=22)
Duration of student visits

Figure 18: Average duration of a student visit
## Student engagement with MLS

<table>
<thead>
<tr>
<th>slow/busy times in MLS</th>
<th>Number of institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>slow to start</td>
<td>8</td>
</tr>
<tr>
<td>busy near mid-term exams / CA</td>
<td>9</td>
</tr>
<tr>
<td>busy end of semester</td>
<td>7</td>
</tr>
<tr>
<td>slow end of semester</td>
<td>2</td>
</tr>
<tr>
<td>busy near exam time</td>
<td>7</td>
</tr>
<tr>
<td>busy summer / repeat exams</td>
<td>2</td>
</tr>
</tbody>
</table>
Figure 19: Percentage of institutions having a given number of staff (n=25)
Manager/ Coordinator

Figure 20: Status of the role of manager/ coordinator of MLS (n=25)
Manager/ coordinator

<table>
<thead>
<tr>
<th>Nature of managerial role</th>
<th>Uni</th>
<th>IoT</th>
<th>FHE</th>
<th>CELA</th>
</tr>
</thead>
<tbody>
<tr>
<td>full time</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>part of lecturing/ admin duties</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>part of contract, separate from lecturing/ admin duties</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>voluntary</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>no manager</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 2: Nature of managerial role by institution type (n=25)
Staffing sources

Figure 21: Percentage of institutions procuring staff from various categories (n=25)
## Staffing

Table 3: Percentage of institutions, by institution type, procuring staff from various categories (n=25)
Tutor training

Figure 22: Training programme for tutors (n=25)

- Since this survey three universities facilitated full-day tutor training programmes
- Based on four workshops developed by an IMLSN special interest group on MLS tutor training
- Attended by 42 participants from six institutions
Staff issues

Securing and retaining good tutors is a key issue

When asked how their MLS could be improved, 54% of respondents referred to tutoring staff in various ways:

- more tutors
- permanent tutoring staff
- tutor training

In fact, only two (out of 25 respondents) listed "more funding" ahead of "tutors" as the priority for improvement.

Several suggested that tutors be given permanent contracts and a better salary so as to "encourage the good tutors to stay longer and see it [MLS] as a viable career."

A recent UK report by Tolley and MacKenzie [2] noted that senior management from several UK HEIs suggested the need for appropriate MLS training, leading to some kind of professionally accredited status.
<table>
<thead>
<tr>
<th>Characteristic of service</th>
<th>2008</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLS offered through a MLSC</td>
<td>38%</td>
<td>65%</td>
</tr>
<tr>
<td>Permanent MLSC</td>
<td>36%</td>
<td>41%</td>
</tr>
<tr>
<td>Opening hours ≤ 10</td>
<td>38%</td>
<td>36%</td>
</tr>
<tr>
<td>Opening hours 10-20</td>
<td>31%</td>
<td>28%</td>
</tr>
<tr>
<td>Opening hours &gt; 20</td>
<td>31%</td>
<td>36%</td>
</tr>
<tr>
<td>MLS offered to all students</td>
<td>54%</td>
<td>72%</td>
</tr>
<tr>
<td>MLS offering drop-in service</td>
<td>62%</td>
<td>88%</td>
</tr>
<tr>
<td>MLS offering online support</td>
<td>77%</td>
<td>46%</td>
</tr>
<tr>
<td>MLS funded from various sources within the institution</td>
<td>54%</td>
<td>92%</td>
</tr>
<tr>
<td>MLS funded from external sources</td>
<td>38%</td>
<td>4%</td>
</tr>
<tr>
<td>No additional funding</td>
<td>8%</td>
<td>4%</td>
</tr>
<tr>
<td>Maintain attendance/ usage records</td>
<td>85%</td>
<td>80%</td>
</tr>
<tr>
<td>MLS staffed by institutional staff</td>
<td>46%</td>
<td>72%</td>
</tr>
<tr>
<td>MLS staffed by postgraduate students</td>
<td>38%</td>
<td>56%</td>
</tr>
<tr>
<td>Characteristic of service</td>
<td>IR 2015</td>
<td>UK 2012</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>Institutions offering MLS</td>
<td>84%</td>
<td>85%</td>
</tr>
<tr>
<td>MLS offering drop-in service</td>
<td>88%</td>
<td>82%</td>
</tr>
<tr>
<td>MLS offering workshops</td>
<td>64%</td>
<td>6%</td>
</tr>
<tr>
<td>MLS offering appointments</td>
<td>44%</td>
<td>8%</td>
</tr>
<tr>
<td>MLS staffed by postgraduate students</td>
<td>56%</td>
<td>11%</td>
</tr>
<tr>
<td>Staff have MLS publications</td>
<td>34%</td>
<td>31%</td>
</tr>
<tr>
<td>MLS based in Maths Dept</td>
<td>32%</td>
<td>N/A</td>
</tr>
<tr>
<td>MLS based centrally</td>
<td>41%</td>
<td>N/A</td>
</tr>
<tr>
<td>MLS funded centrally</td>
<td>54%</td>
<td>N/A</td>
</tr>
<tr>
<td>MLS funded by Maths Dept</td>
<td>17%</td>
<td>N/A</td>
</tr>
</tbody>
</table>
84% HEIs on the island of Ireland provide some form of MLS

The nature, scale and range of MLS offerings differ significantly across the institutions surveyed

41% of centres are subject to annual review

One-to-one is the type of support most favoured by students

One-to-one is also viewed by practitioners as the most effective support

Many practitioners feel that the profile of MLS needs to be raised

When asked what MLS practitioners most needed from the IMLSN, the following quote epitomises several responses:

*Keep raising the profile of MLS and the centres. Keep pressure on institutions and government to recognise the need to properly support us*
THANK YOU

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References

