What is this document all about?
This is a digestion and dissemination of our approaches to promote discoverability of open educational resources on the internet as part of the SCOOTER project.

SCOOTER (Sickle Cell Open – Online Topics and Educational Resources) was funded by Higher Education Funding Council for England (HEFCE) as part of their Open Educational Resource (OER) programme and was managed by the Joint Information Systems Committee (JISC) and Higher Education Academy (HEA). Running between September 2010 to August 2011, the goal of the OER programme was to release high quality educational materials for institutions and individuals to share and build upon. This is part of a growing global move to share resources and practices to create innovation and collaboration in education.

How to use this document?
We hope this document will help guide you through some vital steps so that you can optimise your own websites to gain visitors. If you have any specific questions then please contact the authors.

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SCOOTER Project, De Montfort University. http://www.sicklecellanaemia.org

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Abbreviations:

SEO (Search Engine Optimisation)
OER (Open Educational Resources)
SCOOTER (Sickle Cell Open – Online Topics and Educational Resources)
APPENDIX

1 INTRODUCING THE SCOOTER PROJECT

2 WHAT IS SEO?

3 HOW DOES SEO WORK?

4 WHAT CAN SEO ACHIEVE?

5 OUR 7 STEP APPROACH

6 RECOMMENDATIONS FOR RESOURCE DISCOVERABILITY

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1 INTRODUCING THE SCOOTER PROJECT

The SCOOTER Project (Sickle Cell Open – Online Topics and Educational Resources) was funded by the JISC / HEA Open Educational Resource (OER) Programme Phase 2 (September 2010 to August 2011), with the aim of releasing open educational materials on the subject of blood disorders, namely sickle cell disease and thalassaemia. Our goal was to provide teaching resources on this important subject and to raise awareness of sickle cell in general. The rationale behind the importance of the project has been described.¹

Another aim for the project was to promote the website and resources as widely as possible globally, and for this we used SEO (search engine optimisation) techniques that are the mainstay of internet marketing. We adapted these techniques to an educational venture, and although the ultimate goals are different – discoverability rather than commercial gain, the principles were transferable.

Throughout this guide to SEO, the approaches and performance of the SCOOTER website² are compared to that of a previous project that was not optimised – the Virtual Analytical Laboratory or VAL³, an open educational resource containing laboratory skills teaching materials that was funded by the Open Educational Resource Programme Pilot Phase in collaboration with the HEA Centre for Bioscience.⁴

2 WHAT IS SEO?

The aim of this document is not to provide a lengthy understanding of SEO, but to provide practical step-by-step guidance on the SEO approaches we employed for SCOOTER. More in depth information on SEO tools and techniques are available.⁵ ⁶

Any website can be considered to have two customers; Google who will rank the site based on its algorithms and traffic estimates, and the general public who require a useable, accessible and flexible interface, able to operate across computer and mobile devices. Therefore whilst website design and aesthetics is important to the user – equally so is SEO. You would not want to own a fancy shop hidden on the backstreets of a town – you would want it placed in a prime spot on the high street to maximise visibility and numbers of customers?

A website can receive traffic from three sources and SEO techniques can champion all three:

- **ORGANIC TRAFFIC** – visitors who have found the site via Google, Bing or Yahoo search engines
- **DIRECT TRAFFIC** – visitors who enter the URL or web address directly into the browser
- **REFERRALS** – visitors who enter from referring websites that contain the URL – known as a back-link

SEO is important because it is well established that 60% of search engine traffic visit the first three
websites that rank on page one of the returned search results. A site ranking at the top of page two e.g. in position 11 overall, will obtain less than 1% of the traffic for a particular keyword.  

Eye tracking studies that monitor how people use search engines also confirm the criticality of being on the first page. Therefore it is imperative that a website strives to achieve the top spot or at least be in the top three of Google.

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3 HOW DOES SEO WORK?

There are several search engines available - Google, Bing, Yahoo, AOL, Ask and others. Google takes about 83% of global internet traffic. For the SCOOTER project, 93% of all organic searches were conducted through Google compared to other search engines available.

Therefore using Google services as a basis for optimising websites makes sense, and having an understanding of how Google ranks websites is also important. Google analyses web traffic via a complex series of algorithms, and these regularly change. The analytical process involves "spiders" that crawl round websites looking for keywords and authority. You can encourage spiders to visit by indexing your site and regularly updating content. Clearly, Google wants to achieve a good user experience, so will rank highly good quality websites that are up to date and are authoritative. SEO approaches can be tailored to achieve these goals.

For further reading on the complexities of the algorithm are available on-line.

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4 WHAT CAN SEO ACHIEVE?

- SCOOTER was launched on 15th November 2010 so at the time of writing this report (August 2011) is still a relative baby! In this time it has received 3,496 “visits” which does include multiple visits by the SCOOTER team and others involved in UKOER, so the measure of “absolute unique visitors” of 2,427 gives a better indication of the reach of SCOOTER; it is receiving around 25 visits per day.

- On average people view 3.46 pages each visit and remain on the site to obtain or download information for around 3 minutes.

- Visitors access SCOOTER from 83 countries around the world with UK, USA, India, Australia, Canada, Nigeria and Brazil in the top seven.

- Nearly 30% of unique visitors are returning more than once.

- Mobile users are viewing the site using Android products, the iPAd and iPhone

- Of all visitors to SCOOTER, 52% arrive from search engines (organic traffic); 27% are from referring sites (sites containing the URL or a so called back-link) and 20% is direct traffic (visitors who know the URL so will include the SCOOTER team).
In order to understand what SEO can achieve for an education website, the impact of our SEO strategy was evaluated by comparing two websites, one SEO-based and one not. A narrated presentation of this work is available on-line, and a 2011 abstract is available from a UK Bioscience Conference.

The impact of SEO can be shown by comparing SCOOTER to a similar educational non-optimised site which did not use the 7 SEO steps that we describe in the next section 5 Our 7 Step Approach. The Virtual Analytical Laboratory (VAL) was launched in October 2008, and Table 1 compares the first 10 weeks of activity of each site using Google Analytics. Google Analytics is a free on-line service that tracks website visitor activity.

<table>
<thead>
<tr>
<th>SEO Technique</th>
<th>VAL</th>
<th>SCOOTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keyword brainstorm / analysis (Steps 1 -3)</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Back-linking (Step 5)</td>
<td>Random occurrence</td>
<td>Active strategy</td>
</tr>
<tr>
<td>Website optimization, new content creation (Step 4)</td>
<td>Irregular</td>
<td>Weekly</td>
</tr>
<tr>
<td>Social networking (Step 5)</td>
<td>No online networking</td>
<td>Twitter, Posterous, Facebook, Ezine, Other.</td>
</tr>
</tbody>
</table>

Table 2 shows how each website performed after the first 10 weeks of launch. The most significant difference is that VAL obtained no organic traffic or referrals. VAL was not keyword optimised and there was no back linking strategy. Its total number of visits was therefore much reduced.
O U R 7 S T E P A P P R O A C H

The starting point to SEO is to consider whether your site needs to be optimised for a local or global audience. We chose a strategy that would allow us to initially focus our tests on a UK audience to build our authority locally geographically. We targeted the UK spelling of “anaemia” within our main theme word and hosted the website on a UK based server. So as not to limit the audience potential growth to UK only, we chose the .org suffix rather than .co.uk.

Because we have initially chosen to host the website on UK servers this does not exclude our website from appearing in global searches; its appearance will just take longer than if we had initially focused on US spelled keywords and US hosting.

STEP 1 BRAINSTORM KEYWORDS

The first step in SEO is to establish a set of keywords for your website. What is the main purpose of your website? Who is your target audience? We brainstormed with our SCOOTER team a set of keywords that included the medical subjects of sickle cell disease and thalassaemia, and also

<table>
<thead>
<tr>
<th>Analytics Measure</th>
<th>VAL</th>
<th>SCOOTER</th>
<th>VAL</th>
<th>SCOOTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time frame</td>
<td>10 week timeframe</td>
<td>7 month timeframe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct traffic</td>
<td>92%</td>
<td>34%</td>
<td>39%</td>
<td>19%</td>
</tr>
<tr>
<td>Organic traffic</td>
<td>8%</td>
<td>27%</td>
<td>55%</td>
<td>53%</td>
</tr>
<tr>
<td>Referrals</td>
<td>0%</td>
<td>39%</td>
<td>6%</td>
<td>28%</td>
</tr>
<tr>
<td>Number of visits</td>
<td>150</td>
<td>365</td>
<td>999</td>
<td>2283</td>
</tr>
<tr>
<td>Av. Page views per visit</td>
<td>1.47</td>
<td>3.66</td>
<td>2.35</td>
<td>4.95</td>
</tr>
<tr>
<td>Av. Time on site</td>
<td>32 s</td>
<td>3 mins 35 s</td>
<td>1 min 16s</td>
<td>3 mins 45s</td>
</tr>
</tbody>
</table>
combined open educational resources and teaching materials. Ideally, the keywords should be focused and based around a single theme, not multiple themes as in this case. The idea is not to confuse the search engines. The use of too many (>10) unrelated keywords results in Google spiders not knowing what your site is about and consequently not knowing where to place your site in the search results.

It would also ultimately take longer and more effort for a website to rank highly for a mixed number of words which has proven to be the case for the SCOOTER website. Tasks such as writing blog articles have had to be spread across our multiple keywords and not just focus on one theme such as sickle cell.

**STEP 2 KEYWORD ANALYSIS**

Once a selection of keywords were identified, we used dedicated analysis software to select those which would gain the most traffic and which did not already experience high competition from existing websites. Market Samurai is regarded as one of the best software options for SEO purposes, however free approaches can be used to identify traffic volumes and competition, such as the Google keywords tool.

In brief, Market Samurai can present data such as:

- Country specific or global search volumes for keywords
- How many clicks a website ranking in first position on the returned search results for a specific keyword could potentially receive
- Monthly traffic trends
- The competition that exists
  - Number of web pages that contain the targeted keyword, both globally and country specifically
  - The top ten websites ranking for the keyword and their strength in terms of on-page and off-page SEO

This data allows us to analyse the potential for a website to rank for targeted keywords, the amount of work required to build search engine strength and an approximation on the time required to rank. Essentially the keywords are chosen based on a trade-off between potential traffic volumes and levels of competition.

Two important indices are SEOT (SEO Traffic) – this is the maximum potential monthly visits (clicks) that a website ranking on the first spot on Google for a chosen keyword could potentially receive. NOTE – this is only the traffic for the FIRST SPOT! Research indicates that traffic decreases dramatically outside of the top three.

SEOLC (SEO Local Competition) – this is the total number of web pages (not just websites) from the UK that mention a specific keyword terms in the same (phrase) word order in the Google index.
From our initial analysis, the UK spelling of “anaemia” obtained more daily hits than the US spelling “anemia”. Interestingly the US spelling of “thalassemia” was more popular than the UK spelling “thalassaemia”. We wanted to reflect the purpose of the website so also evaluated “teaching resources” as a phrase, and this was a highly competitive choice with over 1.6 million competing pages. Whilst this keyword obtained a nice volume of potential traffic (56,700 monthly) the competitive nature of the keyword would make achieving a page one ranking, more of a long-term goal. The use of “open educational resources” was also appropriate, but since the concept is relatively new, the volumes of traffic were low (202).

Ultimately we chose “sickle cell anaemia” as our main KEYWORD and five mixed but related keywords as CATEGORY KEYWORDS.

<table>
<thead>
<tr>
<th>Table 3: Keyword Analysis (July 2011)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Keyword</strong></td>
</tr>
<tr>
<td>Sickle Cell Anaemia</td>
</tr>
<tr>
<td>Sickle Cell Disease</td>
</tr>
<tr>
<td>Blood Disorders</td>
</tr>
<tr>
<td>Thalassemia</td>
</tr>
<tr>
<td>Teaching Resources</td>
</tr>
<tr>
<td>Open Education</td>
</tr>
<tr>
<td>Open Educational resources</td>
</tr>
</tbody>
</table>

SEOT = SEO Traffic; SEOLC = SEO Local Competition. (Refer to the glossaries for further definitions). 7 glossary

**STEP 3 MAP KEYWORDS TO PAGES**

A website needs to be designed with two customers in mind, Google and the human users! Google’s algorithm by which it ranks websites is complex, but one thing it will look for is a reasonable density of keywords in strategic points throughout a website. Google wants to give users a good experience, and by assessing the keywords it is assuming that the material is what the user is looking for. It is important not to SPAM Google and use tricks like embedding popular words or hiding keywords to drive traffic, since this will result in a site being dropped from the rankings.

Keywords need to be mapped within pages in a variety of ways:
1. **URL** – the website address should contain the main keyword within the highest level, e.g. www.sicklecellanaemia.org would be better than www.DMU.ac.uk/sicklecellanaemia.

2. **HTML HEAD META DATA** – website description and website keywords need to reflect the relevant words. Our website description is “Sickle Cell Anaemia Open Education and Teaching Resources covering the Blood Disorders (or Sickle Cell Disease) and Thalassemia (or Cooley's Disease)”. 

3. **HEADER TAGS** – these are the often bold headings and subheadings on a website. In HTML code these are designated H1, H2, H3 etc.

4. **IMAGES and OTHER ASSETS** – if a photograph is inserted into a page, for accessibility reasons a short description must be included enabling screen readers to navigate. This is called an ALT tag, and keywords can be inserted here for Google to read.

5. **Internal links to other pages on the website should use the corresponding keyword as the anchor text, e.g., if a page is optimised for “Blood Disorders” the links from other pages should include this keyword, so when you click on “Learn more about Blood Disorders here”, you are redirected to that page. This helps the search engines to understand what the page is about. This technique is the same from links back to your website from other websites, and this is referred to as back-linking.”

### STEP 4 WEBSITE CREATION AND OPTIMISATION

All of the steps above can be incorporated manually into a website for example using Adobe Dreamweaver. However, because an additional important component to SEO is to create regular new content, using a Blog concept is a widely used strategy for commercial websites. This can take the form of a regular blog, latest news or product review pages. Web services such as WordPress Direct offer a solution with a wide range of flexibility to build a blog, but with the additional advantage of including a customisable approach, and plug-ins to facilitate the SEO process. The service is essentially a WISIWIG, and rather than looking at the HTML code, keywords are automatically inserted for best on-page SEO.

Our approach for the SCOOTER Project was to use a WordPress Direct blog concept to drive the ranking, and produce manually developed HTML pages to house the OER content (Figure 1).
Figure 1: Schematic Diagram of the SCOOTER Website.

The aim of these guidelines is to provide a SEO perspective, but clearly there are additional considerations that needed to be taken into account to satisfy the other important customer - the human user! The website was designed to good usability principles, designed to be accessible (W3 tested) and also the WordPress service produces an interoperable site – that is, a site that is able to operate across a growing number of platforms and devices (e.g. PC, Macintosh, iPad, iPhone, Android).

An essential step in SEO is the provision of regular unique content, and the WordPress platform facilitates this. Regular published blog articles with the targeted keywords included in the title of the article and in the text is the mainstay of a website’s growth. So how did SCOOTER fare in the Google rankings? Table 4 shows how SCOOTER ranked for the main keyword “sickle cell anaemia” over time. Even after a few days of being optimised for “sickle cell anaemia” it was rapidly indexed by Google at position 64. SCOOTER has now maintained a position on the first page of GOOGLE (around 9-10th spot) for several months, not bad, considering in SEO terms, SCOOTER is still a baby, and there is tough competition from The BBC and The NHS!
Table 4: Google Search Results Ranking (July 2011)

<table>
<thead>
<tr>
<th>Main Keyword</th>
<th>Nov-10</th>
<th>Dec-10</th>
<th>Jan-11</th>
<th>Feb-11</th>
<th>Mar-11</th>
<th>Apr-11</th>
<th>May-11</th>
<th>Jun-11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sickle Cell Anaemia</td>
<td>64</td>
<td>43</td>
<td>17</td>
<td>12</td>
<td>11</td>
<td>10</td>
<td>9</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category keywords</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sickle Cell Disease</td>
<td>NR</td>
<td>NR</td>
<td>212</td>
<td>46</td>
<td>26</td>
<td>26</td>
<td>25</td>
<td>156</td>
</tr>
<tr>
<td>Blood Disorders</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
</tr>
<tr>
<td>Thalassemia</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
</tr>
<tr>
<td>Teaching Resources</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>449</td>
<td>446</td>
<td>220</td>
</tr>
<tr>
<td>Open Education</td>
<td>NR</td>
<td>NR</td>
<td>375</td>
<td>123</td>
<td>143</td>
<td>60</td>
<td>90</td>
<td>48</td>
</tr>
</tbody>
</table>

*NR = No Ranking

**STEP 5 BACK-LINKING**

A back-link is your URL placed on another website or web service that is then hyperlinked to your main theme keyword or category keywords. When a user clicks on the hyperlink they are then redirected to your website. The importance of a regular back-linking campaign cannot be overstressed because back-links are the key to Google seeing your website as authoritative. A site with few back links will not gain ranking. There are several steps to consider.

1) A back-link must be inserted in a particular way and not just placed as the URL on the page:

    NOT [http://www.sicklecellanaemia.org](http://www.sicklecellanaemia.org)

The link should be written as the keyword (anchor text), with the hyperlink embedded, and certainly not as SCOOTER as this will mean nothing to Google.

Sickle Cell Anaemia OR Open Educational Resources NOT SCOOTER

These are active hyperlinks that will direct the user to your website. In HTML code this would be:
2) A back-linking strategy should be a steady process. Do not go out and get 50 back-links in one day. Aim for a few a day to build your authority in Google’s eyes gradually. Set aside a regular daily spot to obtain some back-links.

3) Obtain back-links from other high ranking, relevant, high authority websites. Off-line marketing including press releases and conference presentations are excellent means of achieving this. Build this into the back-link strategy. An important term here is Page Rank (PR). Google will assign every website a PR as an indicator of the quantity and quality of links. Therefore, obtaining back-links from high PR sites is the ultimate goal. Table 5 shows where SCOOTER has back-links from, and which sites are high PR.

4) Use social networking to obtain back-links. Social networking tools are an essential part of SEO, and gains are directly linked to time invested. The strategy we used for SCOOTER has been described. Essentially the URL of your website and new blog content can be disseminated via Twitter, Facebook and other social networking applications. An essential tool is Posterous.com, a one-stop-shop for social networking. Several tutorials are available to show you how to set up and use Posterous.

Figure 2 illustrates our social networking strategy for disseminating OER and promoting discoverability.
Figure 2: Social Network for SCOOTER Project.

Essentially our WordPress Blog and HTML pages were daily disseminated via a series of social network applications. A single submission to Posterous, once set up, would circulate information to Twitter, Facebook and other areas (shown in the yellow inner circle). In addition to this, Tweets were re-tweeted to different communities, and OERs as well as being placed on the website were also disseminated through other services including SlideShare for presentations and YouTube for video.

Additional useful information regarding how to social network and manage time has been published by Russell Stannard at the University of Westminster who has demonstrated that 15 minutes of activity each day can produce an effective on-line marketing approach. Clearly, the more time invested, the more success will be achieved, and large organisations today will out-source to teams of people to manage social networking including maintaining a Facebook and Twitter presence.

It is important to monitor your website back-link activity. Market Samurai can track numbers and sources of back-links, and a steady growth should be achieved rather than sudden movements. SCOOTER has achieved several back-links from high authority websites many that are actively arranged, but other back-links will occur serendipitously, for example, back-links have occurred on Wikipedia.org and Answers.com.

Including the anchor text in the hyperlink is important, although some sites such as Ezine are restricted by the input field of their content management system could not input the keyword “sickle cell anaemia” and only the URL. In this case when Google spiders follow the link from Ezine they are seeing our website subject as the URL and not our keyword.
### Table 5: Market Samurai Back-link Report (July 2011)

<table>
<thead>
<tr>
<th>Page Rank</th>
<th>Back-link URL</th>
<th>Anchor Text</th>
<th>Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td><a href="http://en.wikipedia.org/wiki/Sickle-cell_disease">http://en.wikipedia.org/wiki/Sickle-cell_disease</a></td>
<td>sickle cell anaemia oer project</td>
<td>Unknown</td>
</tr>
<tr>
<td>4</td>
<td><a href="http://www.answers.com/topic/sickle-cell-anaemia">http://www.answers.com/topic/sickle-cell-anaemia</a></td>
<td>sickle cell anaemia oer project</td>
<td>Unknown</td>
</tr>
<tr>
<td>1</td>
<td><a href="http://hlsweb.dmu.ac.uk/ahs/elearning/RITA/index.html">http://hlsweb.dmu.ac.uk/ahs/elearning/RITA/index.html</a></td>
<td>sickle cell anaemia</td>
<td>Viv</td>
</tr>
<tr>
<td>0</td>
<td><a href="http://groups.medbiq.org/medbiq/pages/">http://groups.medbiq.org/medbiq/pages/</a></td>
<td><a href="http://www.sicklecellanaemia.org/">http://www.sicklecellanaemia.org/</a></td>
<td>Unknown</td>
</tr>
<tr>
<td>0</td>
<td><a href="http://hlsweb.dmu.ac.uk/ahs/elearning/RITA/oer_research.html">http://hlsweb.dmu.ac.uk/ahs/elearning/RITA/oer_research.html</a></td>
<td>teaching resources</td>
<td>Viv</td>
</tr>
<tr>
<td>0</td>
<td><a href="http://identi.ca/sicklecellanaemia">http://identi.ca/sicklecellanaemia</a></td>
<td><a href="http://www.sicklecellanaemia.org">http://www.sicklecellanaemia.org</a></td>
<td>Viv</td>
</tr>
<tr>
<td>0</td>
<td><a href="http://media.education.gov.uk/assets/">http://media.education.gov.uk/assets/</a></td>
<td></td>
<td>Unknown</td>
</tr>
</tbody>
</table>

Back-links can also be achieved by completing web profiles on services such as Google, Posterous and YouTube, since these can contain a back-link. Contributing to on-line magazine services such as Ezine\(^2\) are a source of back-links. Websites can also be submitted to directories but this can cost although is widely adopted commercially.

**STEP 6 EVALUATION**

After all this consideration and consistent work, the end result is a successful website that achieves its goals, be they commercial or for promoting the discovery of open educational resources on the internet. However, a website ranking will constantly change due to the vast competition from other websites, changing trends in keywords, and changes Google may make to its algorithm.

Therefore, a site’s performance needs to be regularly analysed, possibly on a monthly basis. However, short-term blips should not be acted upon, it is the mid-to-longer term stability of the site and overall growth that is important. The following are useful points for consideration in evaluating the performance of the eyes of both Google and the human users.

- Are my numbers of back-links steadily growing? (Market Samurai)
• Are my numbers of visitors steadily growing over time? (Google Analytics)

• Which keywords (search terms) are successful, which aren’t, and are there new opportunities? (MS, GA)

• Are my visitors finding the site useful? (GA, other feedback approaches?)

So, for SCOOTER, in response to the SEO activities, increasing numbers of back-links and elevation in the Google rankings driven by fresh content, the essential question is, has this increased the discoverability of our OERs? Google Analytics is the tool to use to interrogate website traffic and in marketing parlance it is important to consider the “reach” and “impact” of the website as we have previously described. 22

### REACH

How to monitor reach? This term reflects how widely our website has penetrated the global market. The Google Analytic indices representing this are “total number of visits” (number of browser sessions not number of people) and “unique visitors” (separate browser sessions).

The “average time on site” and “numbers of pages viewed” provide an indication of the nature of the visit. Reach can also be broken down into country, and also by technology used for example what type of browser and device.

### IMPACT

Impact is more difficult to determine and interpret. Clearly, a goal of all open education resource initiatives is not just to make resources discoverable, but to gain an indication of their usefulness and whether they are re-used and re-purposed. Google Analytics offers some indices that are useful to give an indication of possible impact. The “returning visitor” metric represents how many users regularly return to the site, and we can further break down the characteristics of this user group to see whether they remain on the site longer and view more pages for example.

“Page popularity” shows the numbers of visits per web page and is a useful indicator of the impact of individual OERs. Our most popular OER with 124 page hits was a genetics animation, followed by a set of guidelines for schools to help children with sickle cell that received 45 hits (at the time of this publication).

The number of visitors viewing a web page or time on the page is not a direct measure of impact, and other methods of evaluation are required.

• Numbers of downloads: coding within the HTML can provide an indication of whether resources have been viewed or downloaded.

• On-line surveys: surveys built into the project have harvested individual user information and feedback for the website overall and individual resources.

• A website forum has also been set up to facilitate dialogue and gain further feedback.

• Indices from other social networking sites, e.g. Facebook, YouTube, Vimeo, Posterous. A wealth of data and potential comments can be harvested from across the network.
- Successful strategies for obtaining feedback can be facilitated through asking users to sign up to a newsletter to build up a list of user contact details, of course, with their permission to do so.

**STEP 7 REFINING**

Once regular evaluations are carried out, a picture can be established as to how a website is performing, and importantly, how the keywords are performing. Words that no longer yield traffic can be substituted for those with greater potential, and these can be further analysed in Market Samurai. Popular search terms are listed in Google Analytics and using a word cloud is an interesting way of seeing which new phrases the visitors are using (Figure 3).

![Figure 3: Word cloud of popular search terms.](image)

It is important not to ignore off-line marketing campaigns. These will account for many of the users who visit the site DIRECTLY by being aware of the URL. On Google Analytics, you can record marketing events, e.g. a press releases and conference attendance by annotating the main visitor timeline (Figure 4).
These guidelines provide an overview of SEO activities used to promote the discoverability of an education website. In this report we compare the successes of SCOOTER, an optimized site, to that of a non-optimised website. This provides a level of evidence on which to base further decisions regarding SEO strategies. A summary of our SEO activities and time commitment is provided in Table 6. Clearly, the more time invested, the greater the reward.

### Table 6: SEO Activities and Time Commitment

<table>
<thead>
<tr>
<th>SEO Technique</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keyword brainstorm / analysis (Steps 1 -3)</td>
<td>Bi-annual, 1 days work</td>
</tr>
<tr>
<td>Website optimization, new content creation (Step 4)</td>
<td>Weekly, 1 hour</td>
</tr>
<tr>
<td>Back-linking (Step 5)</td>
<td>Weekly, 1 hour</td>
</tr>
<tr>
<td>Social networking (Step 5)</td>
<td>Daily (Twitter, Posterous), 15 minutes</td>
</tr>
<tr>
<td>Evaluation and Refinement (Steps 6-7)</td>
<td>Monthly, 2 hours</td>
</tr>
</tbody>
</table>
Here are our main recommendations based on our experiences:

- **Plan.** Before launching a new site and implementing SEO, plan carefully prior to starting. What is the design of the site? Will it use a Blog (and be confined within a template structure)? How will this interface with other HTML pages to give a consistent look and feel?

- **Research your keywords and phrases before starting.** Either use a commercially available tool like Market Samurai or use the Google keyword tool yourself. Alternatively pay for an SEO company to provide you with initial recommendations.

- **Be prepared to provide weekly blog articles.** What resources do you have to achieve this? Set aside Monday morning for blog writing if it is only you. If there are no financial limitations, these activities can be out-sourced.

- **Be consistent with targeting one keyword or category keyword per blog article.** Try to write at least 500 words per article. Always write high quality unique articles and include images and video to better illustrate your points.

- **Have an internal linking strategy by ensuring you link to other pages on your website using the correct anchor text that best describes that page content.** This helps spread authority throughout your website.

- **Have a clear strategy for social networking and back-linking.** How are you going to achieve steady growth? Use Posterous most definitely and maintain a secure spreadsheet with all your social network usernames and passwords. What social networking tools are you going to use – Twitter, blogs, Facebook most certainly. Set all these up before you start.

- **Be consistent with your main theme keyword or phrase – set up your social network to contain your keyword whenever possible.** Become an active user of internet forums that are related to your keyword. Engage in forum discussions in a natural and helpful way.

- **What resources do you have to support the project?** If a site is to be managed by a small team of academics and or technologists, then be realistic as to what level of social networking is achievable. We achieved 15 minutes most days. Ideally, budget for the management of this task and then pay to outsource the social networking activity.

- **Twitter is a very powerful tool.** Identify relevant communities and streams to “re-tweet” into as this drives traffic to your site. Tweet good quality news about your topic regularly to obtain other followers. It is better to have many followers than to follow many other people. The more followers you have the more authority you are considered to have.

- **Consider video marketing strategies and dissemination via YouTube for example.** Consider directory submissions and press releases to help obtain back-links to speed up the ranking process.

- **Monitor progress monthly using Market Samurai and Google Analytics.** Respond as your website changes and grows. Stay up to date with changes to the search engine algorithm via on-line communities, and implement solutions recommended by the community.

- **Monitor your competition.** If other websites are out-ranking you in the search results, they may have more high authority back-links than you. Keep a sustained back-link strategy to sustain your ranking position.
7 GLOSSARY

Market Samurai have an excellent glossary of SEO acronyms and terminology
http://www.marketsamurai.com/glossary.php

SEO Moz also have an excellent resource
http://www.seomoz.org/blog/smwc-and-other-essential-seo-jargon

8 FURTHER READING


3 Virtual Analytical Laboratory.VAL Website. http://hisweb.dmu.ac.uk/ahs/elearning/RTA/index.html

4 HEA Bioscience Centre “Laboratory Fieldwork Manual”. http://www.bioscience.heacademy.ac.uk/resources/oer/projectpartners_VAL.aspx


6 SEO Moz – Learn SEO. http://www.seomoz.org/learn-seo


