Working in partnership to embed Information & Digital Literacy Skills into TeenTech events and Awards to empower pupils, teachers and librarians.

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Abstract

This paper discusses the partnership that Cilip's Information Literacy Group (ILG) in the UK has been developing over the last 18 months with TeenTech, an award winning, industry led initiative that focuses on helping teenagers understand the career opportunities available within Science, Education and Technology. It focuses on the role of the ILG's School Representative as co-ordinator of a team of school librarians and university specialists who were tasked with; supporting the group's new Information Literacy Award creating resources and opportunities to encourage teacher and pupil use of libraries, and with supporting pupil development of information and digital literacy skills within the area of science, engineering and technology across all of the award categories.

Keywords: Information Literacy, Digital skills, School Librarian, STEM, TeenTech

Cilip's Information Literacy Group (ILG) in the UK has been developing a partnership over the last 18 months with TeenTech, an award winning, industry led initiative that focuses on helping teenagers understand the career opportunities available within Science, Education andTechnology.

Background to the project

TeenTech is a Community Interest Company that was founded in 2008. It runs annual TeenTech Awards and also supporting events that are open to all schools. The primary aim is to provide opportunities for pupils to develop innovative ideas around science, technology and engineering (STEM). The Awards are offered in partnership with Industry, Universities and Education so provide a wide range of scope and input for learning, creativity and development.

TeenTech runs lively initiatives with a supporting Award scheme to help young teenagers see the wide range of career possibilities in Science, Engineering and

Technology. We work collaboratively with companies, Universities, business organisations and education business partnerships to build sustainable and imaginative programmes focussing on regions of greater social need in the UK and Europe. (TeenTech, 2016)

TeenTech encourages participation by hosting discovery events that enable pupils to, meet professionals working within STEM industries, have a hands-on experience with equipment and also the opportunity to talk to experts about their work. The events are designed to provide a practical application for science and engineering skills.

The TeenTech Awards is a competition that offers pupils the opportunity to put their ideas and STEM skills in to practice. TeenTech has partnered up with businesses in order to offer a range of awards across several categories. Each category is sponsored by a leader within the industry and the topics include:

Energy, Transport, Health, Education, Wearable Technology, Music, Media & Entertainment, Environment, Safety and Security, Retail and Finance, Design and Construction and the Future of Food. (TeenTech, 2016)

Each category sets an open challenge to allow the pupils the freedom to be truly innovative, inventive and creative, for example, in the category of Wearable Technology the instructions include, 'This category is as open as you wish to make it! You could consider smart bags, glasses, clothing, artificial limbs, exoskeletons…' (Wearable Technology, 2016)

The culmination of the Awards is the final judging day that is held at the Royal Society in London in June. Each group is judged by a representative from the sponsoring body alongside a celebrity guest judge who is linked to science and technology. The patron of the Awards is HRH the Duke of York KG and the winners in each category are hosted by the Duke of York at Buckingham Palace every year. There is also a practical benefit for the winning teams as some of the successful innovations are put into production or supported by the sponsor of the category.

All contenders in the TeenTech Awards are automatically considered for the Consumer Innovation Award. The category sponsor Maplin will then work with you to make your idea real, so the product can be sold in their stores with all profits going to the winning school team. After a year, you can sell your product anywhere. (Philbin, 2016)

The TeenTech Awards therefore provide an excellent opportunity for raising the profile and importance of undertaking research using school and university libraries along with

emphasising the information literacy skills that are needed to navigate the academic, professional and business resources that are vital for creating commercially viable innovations. Linking with TeenTech tied in with the aims and objectives of the ILG.

Background to CILIP ILG

The Information Literacy Group (ILG, 2013) is a special interest group that is part of Cilip (Chartered Institute of Library and Information Professionals) the professional body for library, information and knowledge management workers in the UK. The Information Literacy Group aims to be inclusive and has representatives from across the different sectors of the library profession. The group aims to:

- Share good practice in information literacy teaching and research
- Provide a network and a voice for information literacy work in the library profession
- Undertake research and innovation initiatives
- Work across the library sectors
- Reach out beyond the library sector (ILG, 2013)

One of the key focuses for the group over the past year has been both advocacy and the creation of partnerships. As a reflection of this commitment the group has recently appointed an Advocacy and Outreach officer to provide a co-ordinated approach to links with outside agencies. Over the past two years the group has developed links with workplaces, trade unions, policy makers and other professional groups and organisations. Collaboration with TeenTech provides another link that enables the group to engage in activities that allows closer work with schools. The importance of the this project was recognised in the early stages and in order to support the Information Literacy Award, a sub-group was created which utilised my role as School Representative on the committee and my expertise in the sector.

The Information Literacy Landscape in the UK

Within the Information Literacy landscape in the UK there is currently a strong government focus on digital literacy and digital skills. The Task Force on Digital Skills produced the Digital Skills for Tomorrow's World report in July 2014 (UK Digital Skills Taskforce, 2014) that confirmed the need for life-long learning and improved digital skills. This is an aspect that has been emphasized by the House of Lords Report on Digital Skills in June 2015 (House of Lords, 2015). However, the Digital Literacy campaign being reported in The Guardian Newspaper reports that these skills are being translated in schools quite narrowly and focusing on coding skills and data manipulation, rather than being under the umbrella of

Information Literacy (Guardian, 2016). Digital literacy has also been identified by the Quality Assurance Agency (QAA) as a focus for the 2015-16 reviews of universities (Quality Assurance Agency, 2015). In addition the Jisc review has indicated that, "developing learners who can learn and thrive in a digital society is a key role for universities and colleges" (Jisc, 2015). Interestingly Jisc, which is a not-for-profit organisation that provides digital services and solutions for the UK Higher and Further education and skills sectors, view Information Literacy as a sub-set of digital capabilities/skills rather than the larger container term. In addition digital skills are also a focus for the Department of Culture, Media and Sport who are approaching it from the angle of tackling digital exclusion.

The ILG are hoping to arrange a meeting with the relevant people at DCMS and the digital exclusion team. These initiatives and reports clearly show that the overlap and relationship between IL and digital skills is not always apparent to government and policy makers. There is therefore, within the UK, a need to make explicit the link between IL and Digital Skills. This is where the partnership with TeenTech provides an illustration of this skills link.

ILG TeenTech Award

The Information Literacy TeenTech Award was introduced in the summer of 2015, when it was first awarded. This was in many ways a trial run as teams were invited to apply at the end of their innovation process rather than at the start of the competition. This meant for the first year all the projects that had been submitted were considered by ILG. This provided the team with an insight into how the competition worked and how different teams completed a project.

To manage the requirements of the TeenTech partnership, I co-ordinated a team of school librarians, university librarians and academics that formed the sub-group. The group created a statement outlining the focus of the award and the skills that teams would need to show in relation to their gathering and use of information. The information was posted onto the TeenTech website as an official category (ILG, 2016).

A set of criteria that could be applied to the finished projects was adapted from the rubrics used at Dixons Allerton Academy created by Darren Flynn, who works as the Information Literacy Lead at the school and who was a member of the sub-group. The judging criteria is based around evaluating the following objectives:

1. Range of sources used
2. Critical evaluation of sources
3. Referencing and Bibliography
4. Management of the research process

5. Analysis and synthesis of research

Within each objective there is a range of marks that can be awarded to reflect the level of competence, skill and fulfilment of the criteria from Novice to Apprentice and finally Mastery. To ensure fairness the policy of double marking was introduced with the marks between the two being averaged. The groups that scored the top marks from the initial projects were those who were then judged during the final. From this group the winning team was chosen.

The first winners of the award were a team from Birkdale School in Sheffield who had entered a project to develop clothing that could change colour into the Wearable Technology category.

> This project displayed a high level of research skills and the ability to synthesise really well some of the complex scientific information the team had found. The team had also used the information they had found to inform every stage of the research process, and clearly demonstrated how this had affected their decision making. (Secker, 2015)

The project developed by this team had stood out from an information literacy standpoint as they had used current academic research alongside an analysis of the market to inform and guide their work. Their project had benefitted from them having access to scientific journals and databases and this had made a big difference to the path that they had decided to follow.

This experience was extremely useful as it showed that teams were undertaking different levels of research; some teams only used one or two newspaper articles for example whilst others integrated current scientific ideas and developments.

This lead to the focus on outputs from the group to support the Award:

1. Creating resource sheets that would take the groups from the initial ideas stage right through to product development and demonstrate how, when and what type of research to undertake at each stage. The resource sheets were aimed at supporting entries from across all of the categories of the competition not just for the IL Award.
2. Providing a list of school librarians who could help answer enquiries
3. Creation of a list of universities that would offer the teams access to their databases so that teams could undertake more academic research. As the CEO of the Awards, Maggie Phillbin supported the call for greater access, so it was called 'Maggie's List.

Progress

Over the Summer of 2015 a set of 10 resource sheets were designed to encourage TeenTech teams to use their library for activities such as, searching for information, evaluating sources and managing copyright and intellectual property (see the examples in Picture 1). The aim was to break down the research process into easy, distinct and manageable steps. The sheets were designed to be eye catching and logical so that a pupil undertaking the processes could understand the ideas and apply them. Some of the sheets have tips whereas others provide examples of how to carry out managing your project by using the design thinking approach, for example.

The sheets have been published under a creative commons license which means that they are free to download and be used by anyone. This was an important factor in the development as the group wanted to ensure that any resources would be open access. The sheets are now available on both the TeenTech website and the Information literacy website. They were also emailed to all the organisers of the awards in school (ILG Teen Tech, 2016). A promotional flyer (Picture 1) was also designed to explain why the set had been developed and how they could be used. This tied in with the aim of both supporting TeenTech but also encouraging use by other library or education professionals.

Picture 1: An example of five of the research sheets

Picture 2: The promotional flyer for the research sheets

An important part of these sheets was to remind pupils and teachers of the central role that Librarians can play to support this process so the sheets always remind the reader to: 'ask your librarian or teacher for help and support'. An email link was provided on the sheets so that a point of contact was available to field questions.

This year, in June 2016, a questionnaire has been sent to all schools that have entered TeenTech to gain some feedback and responses to the impact of the sheets. Analysis of the feedback will then be used to inform the next stages of development.

Through advocacy and outreach by members of the ILG committee the list of universities that have agreed to support TeenTech has been growing gradually over the year and the current list is displayed on the Information Literacy website under the heading of Institutional support for TeenTech participants (ILG, 2016). Each university has outlined its offer that school teams can use and most importantly there is a link with an information professional at each establishment who can provide support and guide pupils towards to most appropriate resources and help pupils use them effectively.

This year, in February, the sub-group has also participated in an Innovation Day that was run by the National Grid and held at their headquarters in Warwick. Alongside the activities based around energy and the use of new technologies, ILG ran two 20 minute slots focusing on how to approach primary and secondary research with pupils from two different schools. The experience was useful as we gained an insight into how these types of days run and also the importance of the timing of our input in relation to the competition. The event also provided the opportunity to talk to teachers and ask them about whether they worked with their librarian. The responses indicated that more awareness-raising with staff needs to take place.

Challenges
Over the past year the sub-group has become aware of a number of different challenges in relation to integrating IL skills into TeenTech projects. Co-ordinating the group has been time consuming as so far, all of the consultation and ideas gathering has been undertaken

electronically rather than face-to-face. An awareness of time commitments have been important as all of the members are volunteers and who are also working full-time. Using school holiday time to complete tasks has been useful. Fortunately, all of the members have been committed to the vision of supporting research and sharing their skills. New members are being added to the group to ensure expertise across a range of areas.

Providing schools with the resource sheets to help them with the research process is only the first step in integrating IL skills. The next step is to embed these skills into the innovation process. This will mean greater contact with teachers, groups and schools.

The number of universities that are aware of the project and are willing to support groups also needs to be expanded to ensure a wide and consistent reach across the country. At present, because the initiative is new, the demand for the services offered by universities has not really been tested.

Taking school groups out to access services that are only supplied on site can also present a barrier for some schools. There is no one fixed way of running the competition; some schools run it as a voluntary club whilst others may run it as a compulsory activity. In some schools the competition may be facilitated by teachers whereas in others pupils who have previously entered may be used as support for new younger pupils. The time devoted to the activity may vary so finding a time to take pupils to a university, where they will require adult supervision, can be difficult to arrange.

Future Developments

The experience of the past year has shown that the sub-group needs to continue to develop the work that has been started to introduce research as a key element in the development of a TeenTech project. This means continued advocacy, outreach and promotion to participating schools. This will require perhaps a different role for the members of the group who may be needed to run or support sessions or to liaise directly with schools or universities in their area.

To raise awareness of Information Literacy skills the group plans to run their own innovation session directed specifically towards helping teams understand how and where to find relevant information. The group is currently aiming to hold at least one session at a university as this will help to establish a connection between the teams and their host. Holding a session will hopefully encourage teams to enter the category and be used a means of engaging with teachers/

The group also wants to contact schools and encourage them to use their school and public library to support them with accessing databases and other relevant resources. In this way the skills that the information professional has can be linked to the development process. Possible actions to pursue this include running webinars, using listservs and online places that are populated by teachers and librarians.

Advocacy and awareness-raising of the award has taken place during this year as representatives from the sub-group have spoken at Cilip national conferences and SCONUL conferences (Society of College, National and University Libraries) to librarians from schools, public and university libraries to encourage them to get involved and build a network of support for pupils to use. Targeted follow-up work now needs to be undertaken so that these links can be strengthened. This will include promotion of the free research resources created by ILG to public libraries and also promotion to schools the resources that can be accessed for free through the public library network.

In response to the 2016 projects and the feedback from the survey the sub-group will need to reappraise the Award criteria. Acknowledgement of the advice that groups receive from mentors and contacts from university or business needs to be integrated into the rubric. The development of a checklist that can be shared with all participants will also help to guide the integration of research into the project process and help teams to understand the criteria for the Information Literacy Award.

Conclusion

The creation of the Information Literacy TeenTech Award has provided an opportunity for ILG to engage with schools to promote Information Literacy skills within schools.The project has enabled engagement with industry leaders and also individual teams in schools. Most importantly it has demonstrated the importance of the key skills that librarians have to guide and support the research process that is vital to the successful development of a TeenTech innovation. Raising awareness of Information Literacy skills and having the support of the CEO of TeenTech has also helped to embed the concept of copyright and non-disclosure within the wider skill set of research and development. Development of the resources has also created guidance that can be used wholly or as separate parts for any aspect of a research task. The sheets can be used by librarians to engage both teachers and pupils with IL skills. In addition, the establishment of IL as a cross-category Award reflects the universal nature of these skills. ILG aims to continue sponsoring the Award and to produce resources, hold events and provide opportunities that empower librarians, teachers and pupils through the teaching and application of information literacy skills to support innovation.

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Biography

Rebecca Jones is the Learning Enrichment & Support Co-Ordinator and Librarian at Malvern St James, a girls' boarding school in the UK. Her role incorporates the management of Library services Learning Support, EAL and More Able pupils. She also teaches the Extended Project Qualification, A-Level Communication and Culture and Information Literacy. She is passionate about Information Literacy and believes that fostering curiosity both inside and outside of the curriculum is vitally important. She is committee member for both the Cilip School Library Group and Information Literacy Group. She co-ordinates the TeenTech

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