It Takes Courage to be an Independent Learner – Scaffolding and Unscaffolding the Enquiry Based Learning Process

Robert A. George
The Alice Smith School
No.3 Jalan Equine, Taman Equine, 43300 Seri Kembangan, Selangor
Malaysia
rgeorge.ep@alice-smith.edu.my

Abstract
In developing independent learners the complex associated information literacy skills needs to inculcated in our learners. In this process the information literacy skills are usually broken down into key components to facilitate their acquisition in manageable steps. As learners mature this scaffolding of information literacy skills needs to be removed to enable agile learners. To ensure that this unscaffolding of the process is supported, educators need to effectively build these information literacy skills into the planned assessment for learning to all relevant assignments. To provide the necessary time for one-to-one assessment the author this paper believes that educators need to move in the direction of the flipped classroom.

Relating to The Conference Theme

It is encouraging to see the world's leading international schools increasingly recognising the central role of the teacher librarian and the school library, in leading the inclusion of those enquiry based independent learning skills that are at the core of developing sentient young learners, and thus provide them with the necessary toolkit to facilitate them as the lifelong learners that are so often discussed. Therefore the mechanisms to best deliver effective independent learners are directly pertinent to the Bali 2013 theme of **enhancing student's life skills through the school library** and subsequently will be ever useful whether in serious academic endeavour or simply in having good judgement in everyday decisions.
It was in 1983 that Irving stated that "study skills are those which are associated with the acquisition and use of information in the pursuit of knowledge. Most of the skills are related to ways of thinking" (Irving, 1983) and Kuhlthau in 1989 whose seminal work argued that information literacy, a combination of information skills and computer literacy, should be a key element of any school library media program. (Kuhlthau, 1989) Since these earliest thoughts that brought Information Literacy to be a term referring to a broad swathe of skills required by any independent learner, these have now been accepted as hugely important. With these skills requiring complex cognitive thinking they are inevitably a challenge to develop. It is this complexity that inevitably makes educators deconstruct the process of; task definition, information seeking strategies, location and access of information, use of information, synthesis and evaluation, and then one by one scaffolding them into place emphasising the importance of each step in the process. Most educators find this approach an effective way forward in developing the skill of our learners but it is 'what happens next' that is the main focus of this paper. The author believes that we too often do not consider that without deconstructing the important learning scaffolding that we have put in place, that the learners' information literacy skills can be too formulaic, and that we only develop agile

independent learners if we remove the information literacy process scaffolding. Then subsequently actively support our learners in research projects where no information literacy support processes are apparent with the exception of the information literacy skill objectives being very clear to the learner as part of a criteria referenced grading/marking process. This paper also asserts that wherever possible the grading/marking feedback to the learner should be individual, face to face and verbal as written only feedback is so often only skimmed over by the learner. Thus if we are diligent in unscaffolding the process, only then will we have added the required independent learning skills to the learner's life skills set.

What is an Independent Learner?

The concept of students needing to be Independent Learners is embedded into curriculum documentation to varying degrees, from those of the International Baccalaureate Organisation (IBO) where it is clearly a primary tenet upon which the curriculum is built to many more didactic approaches where independent learning struggles to find a place.

Defining Independent Learning

The UK's Higher Education academy makes the point that 'independent learning can mean different things to different people, in different disciplines and in different cultures. Therefore, it is important that this pivotal concept is explained to students so that they know what is required of them within their new context and discipline'. (The Higher Education Academy, 2013)

Their website also cites Philip Candy's text 'Self-direction for lifelong learning' as seminal in defining independent learning/study. In Candy's text he quotes Forster (1972, p ii) to give a historical definition (Candy, 1991, p. 13):

1. 'Independent study is a process, a method and a philosophy of education:
   in which a student acquires knowledge by his or her own efforts and develops the ability for inquiry and critical evaluation;
2. it includes freedom of choice in determining those objectives, within the limits of a given project or program and with the aid of a faculty adviser;
3. it requires freedom of process to carry out the objectives;
4. it places increased educational responsibility on the student for the achieving of objectives and for the value of the goals'.

To avoid any potential misunderstanding it is worth mentioning that there is a consensus in the literature that independent learning does not involve pupils merely working alone. Instead, the important role teachers can play in enabling and supporting independent learning is stressed (Meyer, Haywood, Sachdev, & Faraday, 2008, p. 2). Equally it needs to be emphasised that Independent Learning can be achieved when the student is working as part of a group as it is autonomy in guiding the learning process by the learners themselves with the teacher acting as a point of reference that defines independent learning.

Independent Learning in Schools

In analysing literature most authors concur that acquiring the skills associated with independent learning is challenging and to quote just two:

> Most students need help to learn how to become independent
> learners. Throughout all grades, subjects, and readiness levels,
> teachers should systematically aid students in developing curiosity,
> pursuing topics that interest them, identifying intriguing questions,
> develop plans to find out more about those questions, managing time,
> setting goals and criteria for work, assessing progress according to
> those goals and criteria, presenting new understandings to audiences
> who can appreciate them – and beginning the cycle again.
> Independent study is a tailor made opportunity to help students

develop talent and interest areas, as long as teachers understand that the independents study needs to meet students at their current readiness for independence and move them toward greater independence a little at a time. Independent study allows emphasis on student readiness, interest, and learning profile. (Tomlinson, 1999, p. 92)

UK and international literature indicated that pupils do not become effective independent learners by themselves. It suggested that pupils need to learn how to learn which can and should be promoted by teachers (British Educational Research Association, 2010).

Independent Learning and the IBO
One of the main foundation documents of IBO is the 'Learner Profile' and in the schematic representation of this Learner Profile inquiry is placed at the top of the desired attributes:
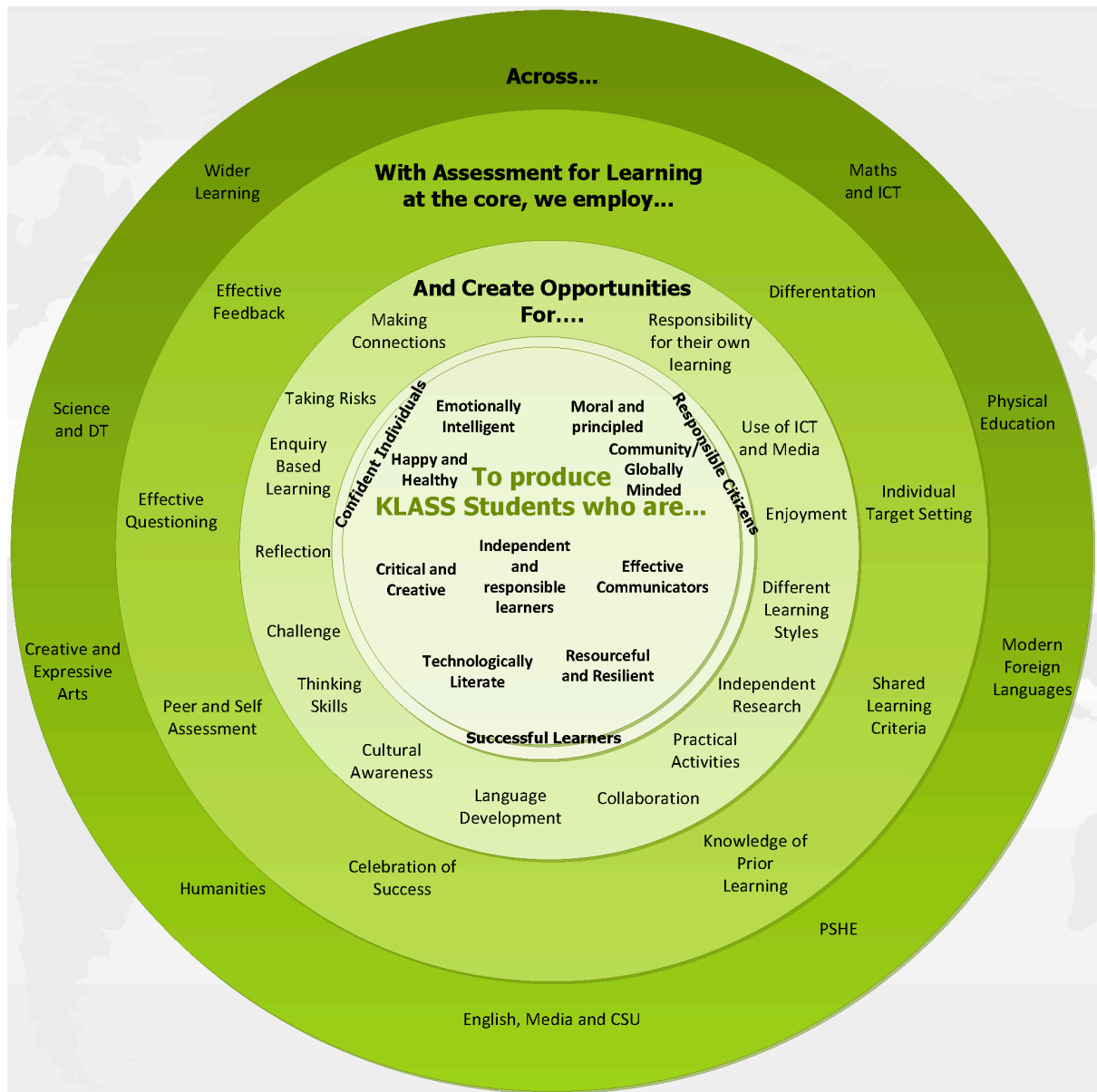
Inquirers
They develop their natural curiosity. They acquire the skills necessary to conduct inquiry and research and show independence in learning. They actively enjoy learning and this love of learning will be sustained throughout their lives. (International Baccalaureate Organization, 2008, p. 5)

Independent Learning at The Alice Smith School
The author here refers to his current school as a case study for an international school following a full British curriculum. Unlike IBO schools there seems to be no core document from the UK's Department for Education (D*f*E) that is effectively the touchstone to pedagogically draw independent learning to the core of the curriculum. (The most recent document located by the author was the 2008 Independent Learning – literature review (Meyer et al., 2008) but this is educationally an ancillary document. Perhaps it is both this lack of a pedagogical document driving the ethos of independent learning, and the way that British education is usually scheduled so that subjects are always taught in discrete timetable blocks, that leads to independent learning and the information literacy skills being less well embedded pedagogically.

The Alice Smith School has thus with a working party from its whole school community is developing its own learner profile which is succinctly described in the graphic below (Lee, 2013) which has its structural origins in the UK's Qualifications and Curriculum Authority (QCA) document 'A big picture of the curriculum' (Qualifications and Curriculum Authority, 2008):

This illustrating that in this model a British curriculum school has boldly stated that having 'Independent and responsible learners' is at the very centre of their learner profile.

Core Skills for Independent Learning
Most information professionals would consider the core skill for independent learning to be Information Literacy but in associated literature the required skill set can also be found broken down in detail to cognitive, metacognitive and affective skills.

This paper will proceed assuming that the skill set being considered to be those recognised as Information Literacy.

Information Literacy and Independent Learning
The UK's Chartered Institute of Library and Information Professionals (CILIP) have a very succinct definition of Information Literacy:

> Information literacy is knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner
> (Chartered Institute of Library and Information Professionals, 2011).

and more broadly resulting from the collaborative work by the International Federation of Library Associations (IFLA) and National Forum on Information Literacy was the UNESCO's Alexandria Proclamation of 2005. This says that information literacy and lifelong learning:

> Information literacy enables people to interpret and make informed judgments as users of information sources, as well as to become producers of information in their own right. Information literate people are able to access information about their health, their environment, their education and work, empowering them to make critical decisions about their lives, e.g. in taking more responsibility for their own health and education.
>
> In a digital world, information literacy requires users to have the skills to use information and communication technologies and their applications to access and create information. For example, the ability to navigate in cyberspace and negotiate hypertext multimedia documents requires both the technical skills to use the Internet as well as the literacy skills to interpret the information.
>
> (United Nations Educational, Scientific and Cultural Organisation, 2012)

The School Librarian and Developing the Independent Learner

From the author's experience it would be reasonable to assert that in schools with either qualified librarians or teacher-librarians the most common mode of operation is for the librarian to be a nodal point for the inclusion of the Information Literacy skills in the academic research process, whereby they are directly involved in both the delivery of these skills to learners and in the in-service training of teaching colleagues with respect to best practice in the inclusion of these skills into the curriculum. It also often falls to the librarian to be the in-house expert in the digital technologies associated with these information literacy skills.

Developing Information Literate Learners

Each educational institution and each individual educator involved in the delivery of the information literacy skillset will have individualised their approach based on the model of Information Literacy they have either chosen themselves or have been guided towards by their curriculum or curriculum leadership team. These breakdown the process to varying degree from Herring's PLUS model with only four components to CILIP's model that contains eight competencies with the most well recognised globally being The Big Six. The many different models are efficiently collated and commented upon at the Shambles website (Smith, 2013).

Whichever Information Literacy models an academic institution choses to employ the intention is to provide an appropriate level of structure for learners in inculcating this foundation component of independent learning. Martin makes the point that will be ever true in the iterative process of developing learners' core skills that 'Information literacy is an evolving concept and, as such, professionals will continue to adapt frameworks to meet the needs of today's information users' (Martin, 2013).

Secker and Coonan's A New Curriculum for Information Literacy lists attributes of their curriculum that efficiently embrace what the author of this paper believes we are attempting to achieve in this respect:

> Curriculum attributes:

- Holistic: supporting the whole process of study and research rather than just teaching traditional library skills
- Modular: consisting of ongoing classes to meet the developing needs of students during their whole undergraduate career, not just one-shot sessions.

- Embedded: forming a salient part of academic teaching, or run closely alongside it over the course of the academic year, and with activities and problems directly related to students' subject context
- Active and assessed: containing a significant element of active and reflective learning, including peer assessment elements
- Flexible: for use and adaptation in all UK Higher Education Institutes, and designed specifically for flexible implementation
- Transformative: grounded in a broad reading of 'information literacy' which sees IL not as a set of competencies but as a fundamental attribute of the discerning scholar, and as a crucial social and personal element in the digital age
(Secker & Coonan, 2011)

Scaffolding the Information Literacy Process for Learners

Once it is accepted that the core skills of independent learning need to be explicitly included in an educational institutions programmes of study then standard pedagogical approaches to learning and teaching guide their inclusion. As with any complex process this will involve breaking down the process into more discrete components and taking the Big Six as an example these would be:

- Task Definition
  - o Define the problem
  - o Identify the information requirements of the problem
- Information Seeking Strategies
  - o Determine the range of possible sources
  - o Evaluate the different possible sources to determine priorities
- Location and Access
  - o Locate sources
  - o Find information within the sources
- Use of information
  - o Engage (read, hear, view, touch) the information in the source
  - o Extract information from the source
- Synthesis
  - o Organize information from multiple sources
  - o Create a product or performance
- Evaluation
  - o Judge the product or performance
  - o Judge the information-solving process

An excellent example of scaffolding the process can be found at the Cambridge Rindge & Latin School online research guide (Samuels, 2012). If an individual information professional was to analyse this guide they would undoubtedly feel the need to tweak the content but for the purpose of this paper it is a perfect example based on the Big Six that deconstructs the process and recognises the often non-linear nature of research.

An institution wanting a more detailed deconstruct in developing a curriculum provision specific to supporting independent learning skills would find Secker and Coonan's work thought provoking but this guidance is targeted at university level provision. (Secker & Coonan, 2013, p. Appendix 1)

Unscaffolding the Information Literacy Process for Learners

This paper asserts that often less attention is paid to unscaffolding the deconstructed support processes that educators have put in place to develop an understanding of the information literacy process in independent learning.

Where educational institutions have developed the information literacy skills of their younger learners using discrete assignments, it would be normal practice to expect more mature learners to apply these skills in more extended research assignments with progressively less support in the research process. These skills are often being honed to culminate with formal assessments like the IB's extended essay or the likes of the Extended Project Qualification offered by the UK's examination boards.

Facilitating Confident and Agile Information Literate Young Researchers
One of the great benefits of independent research projects is that students have often had significant freedom in setting the research question and the boundaries defining their area of interest and this in itself gives them more ownership of the associated research and reporting endeavours. As a group of students work on independent self-directed assignments most educators engage with individual learners during timetabled interface sessions to assess progress. In doing this they can locate best practice in the learners' work to illustrate and support the desired information literacy learning outcomes part of as continuous formative assessment. This would ideally take place in a plenary session where students have been working on their assignments and in the modern world this plenary could just as easily be held in cyberspace as in the classroom. Thus with the desired learning outcomes highlighted in formative assessment the educator can then bring to the learner's attention how this applies to the grading/mark scheme of any summative assessment. This sets the scene for a later one-to-one meeting between learner and educator to debrief on the summative assessment grading and with this approach the assessment can have an ipsative element making the grading process not feel too judgemental.
This process of concentrating on information literacy based learning outcomes and relating to the mark/grading scheme thus providing the support for learners to be guided to adhere to the steps of the research process even when the accepted information literacy structure have been no more than implicit in the production of the product.

All too often there are opportunities lost from the huge amount of effort that goes into the summative assessment grading. The issues are usually related to time constrains with the feedback being in written format and missing the huge opportunity gains of constructively critical verbal academic counselling. Shirley Clarke of the University of London's Institute of Education summarises both the findings of the LEARN Project and her own findings in regarding student perceptions of assessment as follows: (Clarke, 2005, p. 68)
From Learn Project
- Students were often confused by effort and attainment grades
- Students sometimes felt that their effort was not recognised by teachers
- Students preferred feedback that was prompt and delivered orally
- Students were often unable to use feedback effectively
From Clarke's own findings
- Students believe that the purpose of marking is for the teacher to find out what they have got right or wrong, rather than for their own benefit
- Students are rarely given time to read marking comments
- Students often cannot read or understand the teachers' handwriting or comments
- Students are rarely given time to make any improvement on their work because of the teacher's feeling of pressure to get on with coverage
- Many teachers worry that giving pupils 'time' to make any improvements on their work at the start of the lesson means a 'bitty' and informal or chaotic start.

In assessing Information Literacy and Independent learning skills students need to be empowered by their teachers in the assessment process by developing their ability to become thoughtful, self-monitoring and self-regulating learners. 'When teachers focus on assessment as learning they use classroom assessment as the vehicle for helping pupils develop, practise and become comfortable with reflection and with critical analysis of their own learning. Viewed this way, self-assessment and meaningful learning are inextricably linked.' (Earl & Katz, 2008).

The author of this paper believes that the research and Information Literacy processes and their facets have become well defined and that in most cases we scaffold knowledge acquisition of these skills effectively, however, that our Achilles heel is that for our more mature learners where we intentionally give freedom in approach to a research assignment is that we often fail to grasp the opportunity to use assessment for learning as a key tool in embedding the enquiry based learning skill set.

What Do We Mean by Unscaffolding the Information Literacy Process?
Firstly to reiterate that best practice in assessment for learning is at the heart of ensuring that our learners have the Information Literacy processes made part of the fabric of their everyday academic thinking. It has been implied that this is only likely to be achieved if the assessment process at every opportunity includes criterion referenced inclusion of the information literacy process and that the assessment process includes face to face verbal feedback that always includes an analysis of any written feedback from the teacher in any summative assessment process.

This raises the usual big question – where can we find the time to do this? This is indeed a challenge but if we accept Virtual Learning Environments and associated technologies are offering a paradigm shift in the way we interface with our learners then perhaps this time can be found without the need for this inclusion to demand greater curricular space. Conceptually it could be argued that for these types of mechanisms to gain traction we have to look towards some of the precepts of flipped school operations (Bergmann & Sams, 2012). Overmyer summarises the flipped classroom as follows:

> "The flipped classroom model encompasses any use of using Internet technology to leverage the learning in your classroom, so you can spend more time interacting with students instead of lecturing. This is most commonly being done using teacher created videos (aka vodcasting) that students view outside of class time.
> It is called the flipped class because the whole classroom/homework paradigm is "flipped". What used to be classwork (the "lecture") is done at home via teacher-created videos and what used to be homework (assigned problems) is now done in class." (Overmyer, 2013)

Conclusion
With independent learning nearly universally being stated at the core of educational pedagogies, 'tooling-up' our learners to be equipped to realise this has brought to the forefront in education significant discussion and jargon. The term that is has shown durability is Information Literacy and it looks as if this term will stand the test of time and stand to represent the skillset at the heart of delivering independent learners.

With the information literacy skillset being complex, as we develop these skills with learners it is inevitably broken down into discrete building blocks so that learners are scaffolded in progressively developing all strands of the process. As learners mature we needs to be mindful of supporting them in the removal of this scaffolding to enable lifelong agile learners who naturally have a responsible and informed approach in all aspects of needing, using, and synthesising information.

Particularly with our more mature learners we need to be aware of how we support them as our information literacy support is progressively withdrawn. This does not need a new pedagogical approach but it does require awareness that supporting this removal of scaffolding is desirable. This is best considered as to be a strand of our assessment for learning in these assignments, where in both formative and summative assessment, the information literacy skills are discrete and clear in the assessment criteria provided for our learners. Furthermore the learner should be engaged in self and peer assessment of these skills in formative assessment and time consuming as it may be those responsible for summative assessment need to consider one-to-one verbal discussion of the final grading/marking process.

This approach to assessment is more time consuming than traditional approaches and thus this time needs to be created creatively and this paper suggests that a mechanism with considerable potential in this respect is that of the flipped classroom where using digital technologies multimedia instruction is moved into the 'out of school' pre-class preparation so that the educator can spend more time supporting the learners working independently.

References

Bergmann, J., & Sams, A. (2012). *Flip Your Classroom: Reach Every Student in Every Class Every Day.* International Society for Technology in Education.

British Educational Research Association. (2010). *Independent Learning: the key to personalised learning.* Retrieved from British Educational Research Association: http://www.bera.ac.uk/bera2010/pdf/BERA2010_0603.pdf

Candy, P. (1991). *Self-direction for lifelong learning: a comprehensive guide to theory and practice.* San Francisco: Jossey Bass.

Chartered Institute of Library and Information Professionals. (2011). *Information literacy: definition*. Retrieved from CILIP: http://www.cilip.org.uk/get-involved/advocacy/information-literacy/Pages/definition.aspx

Clarke, S. (2005). *Formative Assessment in the Secondary Classroom.* Abingdon: Hodder Education.

Earl, L., & Katz, S. (2008). Getting to the core of learning: using self assessment for self-monitoring and self-regulation. In S. Swaffield, *Unlocking Assessment: understanding for reflection and application* (pp. 90-104). Abingdon: Routledge.

International Baccalaureate Organization. (2008). Cardiff: International Baccalaureate.

Irving, A. (1983). *Educating information users in schools.* British Library Research and Development Department.

Kuhlthau, C. (1989). Information Search Process: A Summary of Research and Implications for School Library Media Programs. *School Library Media Quarterly, 18*(5), 19-25.

Lee, N. (2013, June). EP Curriculum Big Picture. Kuala Lumpur: The Alice Smith School.

Martin, J. L. (2013). *Learning from Recent British Information Literacy Models: A Report to ACRL's Information Literacy Competency Standards for Higher Education Task Force.* Mankato: Minnesota State University.

Meyer, B., Haywood, N., Sachdev, D., & Faraday, S. (2008). *Independent Learning: literature review.* London: Department for Children, Schools and Families.

Overmyer, J. (2013). *The Flipped Classroom*. Retrieved from University of Northern Colerado: http://flippedclassroom.com/index.php

Qualifications and Curriculum Authority. (2008). *A big picture of the curriculum.* London: QCA.

Samuels, H. (2012, October). *Cambridge Rindge & Latin School*. Retrieved from CRLS Research Guide: http://www.crlsresearchguide.org/

Secker, J., & Coonan, E. (2011). *A New Curriculum for Information Literacy: curriculum and supporting documents.* Cambridge: Arcadia Project, Cambridge University Library.

Secker, J., & Coonan, E. (2013). *Rethinking Information Literacy: a practical framework for supporting learning.* London: Facet.

Smith, C. (2013). *Info Literacy Models*. Retrieved from Shambles: http://www.shambles.net/pages/learning/infolit/infolitmod/

The Higher Education Academy. (2013). *Independent Learning*. Retrieved from The Higher Education Academy: http://www.heacademy.ac.uk/resources/detail/internationalisation/ISL_Independent_Learning

Tomlinson, C. (1999). *The Differentiated Classroom: responding to the needs of all learners.* New Jessey: Pearson Education.

United Nations Educational, Scientific and Cultural Organisation. (2012). *Communication and Information*. Retrieved from UNESCO: http://www.unesco.org/new/en/communication-and-information/access-to-knowledge/information-literacy/

Biographical note
Robert George is Head of Libraries at the Alice Smith School in Kuala Lumpur, Malaysia which is a British curriculum international school in the age range 3-18 years old. He is originally from the UK and was for many years a physics teacher before seeing the light and realigning his career with a Maters in Library and Information Studies at Victoria University in Wellington, New Zealand. Between his master's degree and his present position Robert has worked as Teacher librarian at; Tanglin Trust School in Singapore, The Regent's School in Thailand, and Dubai British School in the UAE.