



Evaluating and Improving Online Intelligence Courses

Alexandra Luce

Justice Institute of British Columbia, alexandra.luce@utoronto.ca

Follow this and additional works at: <http://scholarcommons.usf.edu/jss>
pp. 1-9

Recommended Citation

Luce, Alexandra. "Evaluating and Improving Online Intelligence Courses." *Journal of Strategic Security* 6, no. 3 (2013): 1-9.

DOI: <http://dx.doi.org/10.5038/1944-0472.6.3.1>

Available at: <http://scholarcommons.usf.edu/jss/vol6/iss3/1>

This Article is brought to you for free and open access by the USF Libraries at Scholar Commons. It has been accepted for inclusion in *Journal of Strategic Security* by an authorized administrator of Scholar Commons. For more information, please contact scholarcommons@usf.edu.

Evaluating and Improving Online Intelligence Courses

Author Biography

Dr. Alexandra Luce is a Research Associate and Adjunct Instructor in the Intelligence Analysis program at the Justice Institute of British Columbia (JIBC). She also works as a freelance course developer. She has a PhD in history from the University of Cambridge and has developed and taught courses in intelligence, national security, and history at Ryerson University, the University of Toronto, Mercyhurst College, and the Justice Institute of British Columbia. Alexandra welcomes your comments and questions and can be reached at: dr_luce@yahoo.com.

Abstract

Civilian, military and government institutions offer a wide range of courses on intelligence and are increasingly doing so online. While evaluation and improvement are critical to ensuring quality training and education, there is little research about how to evaluate and improve online intelligence courses. Based on the author's experience developing and teaching such courses, this article offers four suggestions to those involved in online intelligence training and education: (1) conduct a key assumptions check; (2) ensure the course presentation embodies the principles of intelligence communication; (3) encourage creative freedom; and (4) build in mechanisms for feedback throughout the course.

Introduction

This article grew out of two questions that the author often asked herself in her work as a developer and teacher of intelligence courses in an asynchronous online environment: How do you know whether what you are doing is any good? And what can you do to give your students the best learning experience possible? Evaluation is critical to obtaining informed answers to both questions, and it is an important area of study in relation to intelligence courses as well as to courses offered online.

As the Intelligence Community (IC) has grown in the U.S. and abroad, so has the debate about the knowledge and skills intelligence and security analysts need, as well as the best ways to acquire them. James Breckenridge, the Executive Director of Mercyhurst University's Institute for Intelligence Studies, has called for the IC to establish an analytic doctrine to guide training, and to evaluate that training on five levels.¹ Intelligence scholar and former analyst Stephen Marrin argues that evaluation is vital if intelligence is to become a profession rather than just a craft; in his words, "intelligence educators should prove that their intelligence and training programs produce a better intelligence analyst if they want their programs to be mandated as part of a professionalization process."² While over a hundred civilian institutions are providing some form of intelligence education or training³ – and many of these are delivering it online – there is little in the literature specific to evaluating online intelligence courses. In fact, although online courses have existed for well over a decade and there is now significant research on the computer-mediated communications such courses involve, there are still significant research gaps about online course evaluation, as well as course design and effective online teaching.⁴

This article argues that the field of intelligence studies itself offers various tools that may prove helpful to instructors and developers of courses about intelligence theory and practice. These tools include, but are not limited to, the use of structured analytic techniques and the application of principles of effective intelligence communication. This article will briefly provide some background on evaluating online courses, then offer four suggestions to help in evaluating and improving online courses whose focus is intelligence.

¹ James G. Breckenridge, "Designing Effective Teaching and Learning Environments for a New Generation of Analysts," *International Journal of Intelligence and CounterIntelligence* 23:2 (2010): 316.

² Stephen Marrin, "Training and Educating U.S. Intelligence Analysts," *International Journal of Intelligence and CounterIntelligence* 22:1 (2009): 141. Marrin considers intelligence analysis "a craft because it requires mastery of a skill set that can be acquired only through practical experience, and a profession because much of the substantive knowledge that practitioners require can be transferred to new practitioners through a structured personnel process that includes an educational component." *Ibid*, 139.

³ Stephen H. Campbell, "A Survey of the U.S. Market for Intelligence Education," *International Journal of Intelligence and CounterIntelligence* 24:2 (2011): 309.

⁴ Specific research gaps include, among others: the use of learning analytics; how to evaluate new models of education, like MOOCs; the relationship between course design, instructional/teaching strategy, and student satisfaction; and electronic feedback in educational environments. *NMC Horizon Report: 2013 Higher Education Edition* (The New Media Consortium, 2013), available at: <http://www.nmc.org/pdf/2013-horizon-report-HE.pdf> : 10, 24; Karen L. Milheim, "Towards a Better Experience: Examining Student Needs in the Online Classroom through Maslow's Hierarchy of Needs Model," *Journal of Online Learning and Teaching* 8:2 (2012), available at: http://jolt.merlot.org/vol8no2/milheim_0612.htm ; and David S. Stein, Constance E. Wanstreet, Paula Slagle, Lynn A. Trinko and Michelle Lutz, "From 'hello' to higher order thinking," *Internet and Higher Education* 16 (2013): 78.

Evaluating Online Courses

There are various kinds of evaluations that can be applied to online courses, including front-end evaluations that consider the course design and how well the course is likely to be taught; and back-end or summative evaluations that measure learning outcomes and the course benefits to students.⁵ Whatever the evaluation method, its purpose is to identify areas for action – to identify ways to improve methods, processes, materials, and student outcomes.⁶ However, evaluations of online courses and online programs are often performed as an afterthought. More commonly, evaluations ask too many questions, or pose questions that are too generic to provide useful feedback.⁷

One of the key questions, clearly, is what to evaluate? Paring the answers down to a few words, the ones that come up most frequently are effectiveness, impact, and quality, as in: How effective was an online course in achieving the intended learning outcomes? What was the course's impact on the students? And what was the overall quality of the course?

There is significant debate about what quality education and quality training mean, both in traditional classroom settings and especially in online courses.⁸ Perhaps the clearest definition comes from the Encyclopedia of Distance Education, which identifies instructional design and instructor engagement as the most significant factors in a quality online course.⁹ In other words, a good course results from a robust course design plus a motivated, engaging teacher.

Four Suggestions for Online Intelligence Courses

Civilian, military, and government institutions offer a wide range of courses on intelligence, from introductory courses in theory and practice to more advanced and specialized courses in topics such as collection, analytic techniques, analytic writing, counterintelligence, deception, and ethics.¹⁰ The following suggestions are broad enough that they are applicable to all. Those interested in evaluating and improving online intelligence courses may find it useful to consider each suggestion in conjunction with the questions: “To what extent does our course (or instructor) do this?” and “How might we do this better?”

⁵ Lesley Blicher, “Evaluating Quality in the Online Classroom,” *Encyclopedia of Distance Education, Second Edition* (Information Science Reference, 2009): 965; and Som Naidu, “Evaluating Distance Education,” *Encyclopedia of Distance Education, Second Edition* (Information Science Reference, 2009): 950.

⁶ Melody M. Thompson, “Evaluating Online Courses and Programs,” *Journal of Computing in Higher Education* 15:2 (2004): 70.

⁷ *Ibid.*, 64, 72.

⁸ The advent of massive open online courses (MOOCs) has introduced new dimensions to this debate. See, for example, Judith S. Eaton, “MOOCs and Accreditation: Focus on the Quality of “Direct-to-Students” Education,” *Inside Accreditation* 9:1 (2012), http://www.chea.org/ia/IA_2012.10.31.html

⁹ James E. Novitzki, “Necessities for Effective Asynchronous Learning,” *Encyclopedia of Distance Education, Second Edition* (Information Science Reference, 2009): 1471. This definition appears earlier, including in Alfred P. Rovai, “A Practical Framework for Evaluating Online Distance Education Programs,” *Internet and Higher Education* 6:2 (2003): 110. Michigan State University provides links to various rubrics and checklists for use in evaluating online courses – see <http://fod.msu.edu/oir/evaluating-online-courses>.

¹⁰ See Campbell, “A Survey of the U.S. Market,” 312 for a list of major American providers of intelligence education and training. Providers outside the U.S. include, among others: Brunel University and Aberystwyth University (United Kingdom); the Universidad Rey Juan Carlos and Universidad Carlos III (Spain); the Justice Institute of British Columbia (Canada); and the Escuela Nacional de Inteligencia (Argentina).

1. Before a course begins, the developer and the instructor should write down and, as far as possible, evaluate their key assumptions about the course and the students. During and after the course, they should reassess these assumptions and modify the course accordingly.

CIA veterans Richards J. Heuer Jr. and Randolph Pherson identify a Key Assumptions Check as one of the seven structured techniques every analyst should master. It requires analysts to “list and question the most important working assumptions underlying their analysis”¹¹ and can, with minor modifications, profitably be applied to course design and instruction. After brainstorming the most important working assumptions about a course (and possibly its students), course developers and instructors should consider five questions about each. The first four can be asked exactly as in *Structured Analytic Techniques for Intelligence Analysis*:

“Why am I confident that this assumption is correct?
In what circumstances might this assumption be untrue?
Could it have been true in the past but no longer be true today?
How much confidence do I have that this assumption is valid?”¹²

The fifth question can be modified slightly so that it applies to course design and instruction:

“If this assumption turns out to be invalid, how much impact would this have on the course, the students, the instructor, and/or the institution?”¹³

Identifying faulty assumptions before the course starts can save students and instructors both time and frustration. Additionally, completing a key assumptions check can identify information gaps and questions instructors should seek to answer at various points during the course.

Question five is particularly useful because it forces individuals to consider the consequences of being wrong and may prompt them to make more astute decisions. Last year the author designed and taught a new course for a group of students she had instructed in the two previous semesters. Because they had proven very bright and hardworking, and managed their time well individually in the previous courses, the assumption was they would have no problems working together on a major group project in the new course. The assumption was wrong. They had great difficulty overcoming their conflicting schedules and, unsurprisingly, became discouraged. Had the author seriously considered the consequences of a faulty assumption about the students’ need for guidance, she could have consulted with them earlier and included additional guidance on collaboration.

Since the person developing a course will not always be the one teaching it, it is especially useful for the developer to make their thinking explicit from the start and to identify where in a course problems are likely to arise. It does take more time at the start, but it pays off in the long run

¹¹ Heuer, Richards J. and Randolph H. Pherson, *Structured Analytic Techniques for Intelligence Analysis* (Washington, D.C.: CQ Press, 2011): 185.

¹² Ibid.

¹³ Ibid. The original question addresses the impact on analysis.

because developers and instructors have thought more deeply and are thus better able to adapt when needed.¹⁴

2. *Be it in Blackboard or any other learning management system, the presentation of the course should reflect the principles of effective intelligence communication.*

In *Communicating with Decisionmakers: Best Practices for Intelligence Professionals*, Kristan Wheaton and Jennifer Wozny argue that intelligence analysts “should ensure their intelligence products include all necessary data (holistic), are easy to use (user-friendly) and are relevant to the decisionmaker.”¹⁵ Similarly, former analysts Katherine and Randolph Pherson state: “Presenting a message that gets your customers’ attention, interest, and trust is all about conveying the message up front with clarity, precision, and brevity.”¹⁶ If intelligence educators aim to teach students to craft intelligence products that are clear, concise, user friendly, and present the bottom line up front (BLUF), then the course presentation needs to reflect these values.

Instructional designers play a significant role in the presentation of online courses. Depending on their knowledge, skills, and personal preferences, they may set up a course in a way that is highly intuitive, streamlined, and easy to use. Alternatively, they may be more comfortable using a text-heavy format that they have used for many other courses. For example, these designers may repeat the same ten lines of instructions for each week’s discussion question; or, every single week, include the same one page write-up about the project with two sentences at the very end specifying what students have to do for the project this particular week. To fit the needs of intelligence students, course developers can strip down the instructional designer language. Better yet, they can engage in conversation with the instructional designer so they understand the importance of clarity and concision, and tailor the course presentation accordingly. It might be useful for instructional designers, course developers, and instructors alike to review or at least ponder the title of Intelligence Community Directive Number 208: “Write for Maximum Utility.”¹⁷

The same idea applies to the course navigation. After logging in, why should students have to click three times to get to the current week’s module? Why not set things up so they see the modules as soon as they log in – or have a button in the main menu that takes them to that week’s module? These may seem like small points, but the more thoughtful the course layout, the less frustrated students will be, and the better they will absorb some of the key ideas about writing and presenting effectively.

¹⁴ Premortem analysis and structured self-critique may also be valuable tools for course design and instruction.

¹⁵ Wheaton, Kristan and Jennifer Wozny, *Communicating with Decisionmakers: Best Practices for Intelligence Professionals* (Erie, PA: Mercyhurst College Institute for Intelligence Studies Press, 2005): 19. Wheaton and Wozny’s fourteen maxims for intelligence analysts (outlined on pp.3-19) may also, with minor modifications, serve as useful maxims for course design and instruction.

¹⁶ Pherson, Katherine Hibbs and Randolph H. Pherson, *Critical Thinking for Strategic Intelligence* (Thousand Oaks, CA: CQ Press, 2013), 211. The forthcoming *Analytic Writing Guide* by Louis M. Kaiser and Randolph Pherson explores intelligence writing in greater depth.

¹⁷ Office of the Director of National Intelligence, “Intelligence Community Directive Number 208: Write for Maximum Utility,” (December 2008), available at: http://www.dni.gov/files/documents/ICD/icd_208.pdf

3. If educators aim to promote creativity, they should design courses that give students creative license and should always be open to doing things in different ways.

Very often instructors want students' products, whether written or oral, to meet very specific criteria: a five minute briefing, or a two-page current intelligence summary. While it makes sense to have students learn and practise conventions for intelligence writing and briefing, there is much that can be gained from including at least one assignment in the course where instructors *do not* specify the format. If the students of today are to be the successful intelligence analysts, collectors, and managers of tomorrow, they need to be trained from the classroom to think freely, to make decisions on their own, and to justify them clearly to others. Allowing presentations in alternate formats is one small way in which they can be encouraged along this path. Give them some tools and tutorials, and let them choose how they want to present their work – for example, as a written paper, a podcast, or a video.¹⁸ Students given this creative freedom have created engaging products, learned new skills, and started thinking more deeply about the benefits, limitations, and challenges of using various media.¹⁹

For students and educators alike, it can be very comfortable to get into a routine. However, when educators push themselves to try new things, not only do they learn, they also send a message that they care about staying current with the times and about improving themselves and their courses. Be it new technology or new pedagogy, educators should always be open to new ideas and different approaches. Even *contemplating* doing something new can result in useful developments. The author is indebted to Melanie Meyers, an instructional designer at the Justice Institute of British Columbia, for suggesting a new course be offered through Curatr, a social learning platform. Curatr presents content in levels somewhat like a video game and emphasizes “interaction at every opportunity.”²⁰ Although the course was ultimately presented in Blackboard, exploring Curatr led the author to think more deeply about what was possible within an online course, particularly in terms of student interaction and feedback, and it inspired the “exit questions” described below.

4. Course developers and instructors should build in mechanisms for feedback throughout the course – because the more they know, the more they can do based on that knowledge.

There are numerous ways instructors and developers can build in opportunities for feedback. The author has found three particularly useful: asking students how they learn best; including a weekly exit question; and having students write a course reflection. Each of these requires little instructor time, yet provides the instructor with valuable feedback and enriches students' learning.

Asking students the question, “How do you learn best?” is simple but essential to adapting or customizing teaching to particular students. As James Breckenridge observes,

¹⁸ Useful free tools include Screencast-O-Matic, Screenr, and Jing for screencasting; Audacity for audio recording; and Windows Movie Maker for video. Easy-to-follow tutorials are available on the websites for these programs and/or on YouTube.

¹⁹ Student work for INTL 502: Advanced Analytical Techniques, the third core course in JIBC's graduate certificate program in intelligence analysis.

²⁰ “Overview,” Curatr, available at: <http://curatr.co.uk/>

“Teaching styles, content modalities, and other variables are not absolutely good or bad, but better or worse for some purposes, some content, and some learners. The goal is to provide a mix of methodologies, and the flexibility and know-how to use any and all of them, in an effort to create an optimal learning environment for the variety of learners’ needs.”²¹

Individuals learn differently, and knowing from the start of the course how each student learns can make a world of difference. If a student asks about a difficult concept and the instructor knows he or she is a visual learner, then perhaps using a graphic or a video to explain it will be more effective than two paragraphs of text. If instructors host an introductory session on Skype, Adobe Connect, or something similar, they can ask students about their learning styles then; or on the discussion board when participants are introducing themselves.

Including a short, open-ended question for students to answer on the discussion board at the end of each module can enrich students’ learning and provide instructors with ongoing feedback that can identify areas for follow-up or modification.²² Thus far the author has used two types of exit questions:

1. A question that gets student thinking a little more, or a little differently, about that week’s material. For an introductory course on intelligence, it could be something as simple as, “Share one question you have about intelligence.” This single exit question has served as a springboard for many diverse and thoughtful conversations – about intelligence sharing; ethics and intelligence; Canadian vs. American definitions and perceptions of intelligence; as well as other topics not explicitly covered in the main weekly discussion forum.²³ Exit questions such as these have not only expanded the range of ideas and sources for students to explore; they have also been effective in building the class community.
2. A question that gives the instructor feedback about the students’ experience in the course. For example: “What was the easiest part of this week’s assignment? What did you find the hardest?” or, “Which aspect of intelligence writing do you think you’ll find the most difficult?” Answers to these types of questions provide a bellwether and can indicate to instructors whether they should include additional materials or instruction, or make other course modifications.

Finally, instructors may find it useful to have students write a course reflection at the mid-point of the course or after the end of the course.²⁴ For example, in the final week of a course on

²¹ Breckenridge, “Designing Effective Teaching and Learning,” 316.

²² The exit question is a variation of the “exit ticket” or “ticket out the door” technique often used in classrooms, whereby students must reflect and complete a short written assignment at the end of a lesson or the end of a day. For more, see Benson, Barbara, *How to Meet Standards, Motivate Students, and Still Enjoy Teaching!: Four Practices that Improve Student Learning* (Thousand Oaks, CA: Corwin Press, 2009), 65.

²³ ESM 341: Introduction to Intelligence Analysis discussion board, spring term 2013. The course is a new liberal elective in JIBC’s Bachelor’s degree in Emergency and Security Management.

²⁴ Writing of his experience in a traditional university classroom, William Timpson notes, “In nearly twenty years of using the midsemester student feedback process, I have seen no downside.” He argues that collecting student input “can resolve problems, boost morale, encourage collegial support and assistance, and provide valuable material for

advanced analytic techniques, students are asked to “Discuss the three most important things you’ve learned in this course; and identify at least two things related to intelligence analysis which you feel it’s important to learn more about, and discuss where or how you might do so.”²⁵ While these instructions did not mention the course workload, the assignments, or the activities, the students provided detailed, thoughtful comments on them as part of their reflections. Moreover, placing this activity on the discussion board (rather than as part of the anonymous course evaluation) allowed the students to pick up and build on each other’s ideas.

It is important to note that even when students are satisfied with a course, there will still be ways that it can – and should – be improved. It is gratifying to read comments like “I cannot remember a course where I learned so much.” and “If I had the time and money I would actually like to take this course again!”, as they suggest – at least from the students’ point of view – that the course was worthwhile.²⁶ Even more valuable, though, was the constructive criticism the students provided. Their ideas and suggestions were essential in making the course more robust for the next term.

Such feedback mechanisms help instructors and designers better understand students’ learning styles as well as the particular challenges they faced with various aspects of the course, what they perceived to be most valuable, and what they felt needed improvement. All of this information can be used to fine-tune course design, presentation, materials, and pedagogical approaches. Using subjective, qualitative student feedback in conjunction with statistical analysis regarding the course information and skills that students retain over time will provide deeper insight into overall course impacts.

The Path Ahead

In an article about building capacity for Intelligence Studies in higher education, Martin Rudner stressed that

“academic programs in Intelligence and Security Studies must be able to sustain their trustworthiness apropos all the key stakeholders, most notably their students and faculty colleagues, civil society and interested public, and their subjects of study, the combined Intelligence and Security Community.”²⁷

To earn and sustain such trust, those involved in offering intelligence education and training – both within and beyond academia, in the classroom, in the field, and online – must be committed to continuous evaluation and improvement.

As part of the wider discussion about what online intelligence courses should accomplish, and how they can best accomplish it, course developers, instructors, and administrators involved with

the scholarship of teaching.” William M. Timpson, “Improve Your Teaching and Your Students’ Learning,” *Academe* 95:1 (2009): 34, 35.

²⁵ INTL 502: Advanced Analytical Techniques.

²⁶ INTL 502 discussion board, winter term 2013. The author was honoured to have taught such a dedicated and talented cohort of students.

²⁷ Martin Rudner, “Intelligence Studies in Higher Education: Capacity-Building to Meet Societal Demand,” *International Journal of Intelligence and CounterIntelligence* 22:1 (2009): 118.

intelligence courses, particularly those offered online, can reflect on the four ideas presented in this article:

1. Conduct a key assumptions check;
2. Ensure the course presentation embodies the principles of intelligence communication;
3. Encourage creative freedom; and
4. Build in mechanisms for feedback throughout the course.

Much work remains to be done, including identifying additional course aspects to evaluate; designing effective evaluation mechanisms for individual courses as well as for whole programs; and crafting a body of best practices specific to designing and teaching intelligence courses online. The best results will likely be achieved through (1) collaboration amongst individuals and organizations working on intelligence; and (2) interdisciplinary dialogue and research.

Intelligence studies have a rich variety of resources on which to draw. Rob Johnston's ethnographic study of the U.S. intelligence community, Defence Research and Development Canada's interviews with Canadian managers of intelligence analysts, and similar works shed light on the capabilities and needs of intelligence analysts and organizations, and highlight areas for additional research.²⁸ Members of the International Association for Intelligence Education (IAFIE), the International Association of Law Enforcement Intelligence Analysts (IALEIA), the International Association of Crime Analysts (IACA), and Strategic and Competitive Intelligence Professionals (SCIP) can offer content expertise as well as feedback on the effectiveness of the training and education they have received or provided. Associations of former intelligence officers in the United States, Australia, and other countries may also offer constructive perspectives.

While much of value can be gleaned from within the intelligence studies community, it will be essential to make strong connections to, and draw lessons from, a variety of other disciplines, including training, education, and quality and process improvement. The following areas are especially relevant:

Online learning and instructional design: Those wanting to explore online learning have access to a wide range of resources. The past decade has seen the creation of numerous journals devoted to the subject, some of which are available free online, and as of May 2013, Routledge's series on Open & Distance Education and eLearning included almost 300 books.²⁹ Intelligence course developers and instructors may also find it useful to explore courses that have been recognized for excellence through programs like the

²⁸ Johnston, Rob, *Analytic Culture in the U.S. Intelligence Community: An Ethnographic Study* (Washington, D.C.: Central Intelligence Agency Center for the Study of Intelligence, 2005), available at: https://www.cia.gov/library/center-for-the-study-of-intelligence/csi-publications/books-and-monographs/analytic-culture-in-the-u-s-intelligence-community/analytic_culture_report.pdf; and Derbentseva, Natalia, Lianne McLellan, and David R. Mandel, *Issues in Intelligence Production: Summary of Interviews with Canadian Managers of Intelligence Analysts* (Toronto: DRDC Toronto Technical Report 2010-144, 2011).

²⁹ "Open & Distance Education and eLearning", Routledge, accessed May 30, 2013, available at: http://www.routledge.com/books/subjects/Open-&-Distance-Education-and-eLearning_ED510000/

Blackboard Catalyst Awards.³⁰

Educational technology: While many online courses were designed to be accessed via desktop computers, students are increasingly accessing course content via wireless mobile devices. Moreover, the first generation of “digital natives” is growing up and will demand to be taught in different ways than in the past.³¹ Institutions and instructors that adapt early and harness technology effectively can enhance both teaching and learning.

Evaluation, assessment, and measurement: There is a vast body of literature on these topics, with templates, checklists, and evaluation criteria that apply to training, higher education, and/or online learning. Some of these materials may be adapted to evaluate intelligence studies courses. Course developers, instructors, and administrators may also find it helpful to consult Douglas Hubbard’s book *How to Measure Anything*, which challenges common assumptions about measurement and may spark innovative measurement criteria for courses on intelligence.³²

Insights from these diverse areas should help evaluate and improve online intelligence studies courses, thereby better equipping students and better serving the Intelligence Community.

³⁰ “Blackboard Catalyst Awards,” Blackboard, accessed May 30, 2013, available at: <https://www.blackboard.com/About-Bb/Industry-Leadership/Catalyst-Awards.aspx>

³¹ See, for example, Beetham, Helen and Rhona Sharpe, eds., *Rethinking Pedagogy for the Digital Age: Designing for 21st Century Learning* (New York: Routledge, 2013) and Jukes, Ian, Ted McCain, Lee Crockett and Mark Prensky, *Understanding the Digital Generation: Teaching and Learning in the New Digital Landscape* (Kelowna, BC: Corwin, 2010).

³² Hubbard, Douglas, *How to Measure Anything: Finding the Value of Intangibles in Business* (Hoboken, NJ: John Wiley & Sons, 2010).