Information Survival Skills for Students in Intelligence Studies and International Affairs

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"Knowing a great deal is not the same as being smart; intelligence is not information alone but also judgment, the manner in which information is collected and used"
– Carl Sagan

Abstract
For professionals in International Affairs (IA) and Intelligence Studies (IS), information is core and good information is critical. Graduate education in several disciplines may incorporate expert techniques and content knowledge as well as the scholarship in the field in order to prepare students for this field. However, there are professional skills around information strategy and evaluation that may not be covered in the traditional curricula of the political or social sciences. The ability to find, evaluate and use information for analysis and decision-making is foundational.
The Policy Sciences & Economics Library (PSEL) at Texas A&M University has developed a module-based, cafeteria-style curriculum around strategic research skills aligned with the American Association of Colleges & Universities’ prescribed learning outcomes and Intelligence Community (IC) competencies as defined by the Office of the Director of National Intelligence (ODNI). It is intended to be embedded and versatile - some components are online for asynchronous or distance learning and some can be presented in and established class, aligning them with the goals and contents of the specific course. The topics may also be modified for specific projects or degree capstones for group and individual consultations. Anecdotal feedback from instructors and students indicates that this curriculum contributes to more thoughtful papers with relevant and authoritative sources as well as, ultimately, a more effective capability to find, evaluate and use information in their jobs as analysts.

The Challenge of Information Strategy in Intelligence

The explosion of the Internet has added more complexity to Intelligence efforts in a number of ways: in terms of the proliferation of information that is now readily available to analysts, consumers and foreign actors; and in view of the vulnerability of information systems to remote attack or even internal infiltration. It used to be that looking for information was an effort, digging through reference books, indexes or files - looking for a needle in a haystack; now, with any open source information virtually at your fingertips, it is like, as Mitchell Kapor said, “taking a drink from a fire hydrant.” The issue is now how to find what you need in all of the information that is available and how to tell the good from the bad from the ugly. This is no less true for those in the Intelligence
field, in fact, it is even more so: “It may now be true that the value of intelligence to consumers is more dependent on the evaluation of information (grappling with mysteries) than on discovering ‘secrets’.“¹ Breuggemen refers to this issue of information overload in the context of the intelligence agencies and its negative impact: “This compromises the decision-making process at both the executive and tactical intelligence levels, putting in jeopardy our ability to accurately conduct long-range, strategic planning and proactively address crime.”²

While the curriculum in International Affairs and Intelligence Studies has evolved new models, emergent technology and innovative theories, the information skills and methods have not kept pace. In a field where being able to find information, evaluate it effectively and use it to analyze situations and make recommendations for security or policy decisions, students may be missing these competencies in their studies and entering their professional lives in the Intelligence Community ill-prepared.

**Career Skills and Competencies Specified in the Intelligence Community**

Miller writes that intelligence studies “comprises the collection, analysis, and dissemination of information to decision makers and/or strategists”³; he defines it within the context of business but the definition is still relevant for an International Affairs or Intelligence Studies environment: “United states agencies are hiring aggressively to meet the intelligence challenges of the new century. But who is being hired? What

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qualifications are required? The core competencies establish qualifications for new
analysts who can meet the strategic and tactical requirements created by the as yet
unknown future."4 Moore outlines the skills that are core: critical reasoning, literacy,
computer literacy, expression, foreign language proficiency, research, information
gathering and manipulation, project/process management, and visualization.
These intelligence-specific skills or “tradecraft” are often inculcated into graduates after
hiring: “Professionals must possess specific skills to effectively execute the various
phases of the intelligence process. They obtain these abilities from inherent traits,
coursework, professional experience, and mentors.”5 There has been significant
training and socialization into the profession, quite distinct from what people may have
experience in their education: Marrin defines the distinction with:

“the term “training” is usually associated with internal government
programs intended to provide specific instruction for the implementation of
job-related tasks, while the term “education” is normally associated with
academic programs or courses geared to provide more conceptual or
theoretical frameworks having less immediate effect on performance, but
laying the foundation over the longer term.”6

Spracher reinforces this dichotomy: “The efficacy of higher education in national
security intelligence has heretofore received scant attention from the greater academic
community. Additionally, most intelligence agencies have focused rather narrowly on
the training of new analysts, collection managers, and other budding professionals after

their assignment and arrival.” Wu also examined the role of importance of information processing in intelligence work, prompted by an intelligence analysis position that specified “two categories of duties: (1) information collection, cataloging and storage, (2) information analysis for decision-making or recommendation.”

The IC has invested effort in identifying competencies and desirable knowledge, skills and abilities (KSAs) related to intelligence activities. The Office of the Director of National Intelligence (ODNI) published a directive to the Intelligence Community, highlighting critical competencies. The taxonomy developed for these competencies is built around a “Core” that applies to all IC employees; building on this core, are Technical Expertise and Professional Tradecraft, respectively; Professional Tradecraft may then extended into Subject Matter Expertise. There are individual competency directories operational activities that follow this structure, with Technical Expertise addressing practical skills and methods while the Subject Matter Expertise (SME) focuses on content knowledge. The focus of the competencies was primarily position-specific and set out standards for purposes of hiring, training, evaluating and advancement. Among them, however, were more universal competencies around Analysis and Production and Research and Technology that, along with the Core Competencies, articulate information strategy skills such as “Research: Identifies a need for and knows where or how to gather information. Obtains, evaluates, organizes and maintains information.”

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Spracher discusses the implications of the ODNI framework for higher education: “The ODNI integrated competency standards, as a distillation of the ODNI’s thinking about the cognitive skills needed by the IC workforce, comprise a model for higher education administrators to operationalize the design and evaluation of intelligence education curricula which purport to develop these competencies.” In short, “the lines between government and academic, in terms of providing analytic training and education, are beginning to blur.”

**Bridging Education and Practice in Intelligence Studies**

Marrin addresses the traditional values that academics bring to the intelligence community:

“(1) As a place to recruit graduates with substantive knowledge and expertise of use to the Community; (2) As a place to send analysts for acquisitions of more or different knowledge; (3) as a place to acquire specific knowledge or expertise from academic experts; and (4) as a place to acquire information or advice in terms of managing the Intelligence Community from those who specialized in intelligence studies…”

Along this vein, Otis asks a key question, “How can the Intelligence Community (IC) and the academic community best cooperate in support of national security?” While she

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focuses on ways in which academic faculty can contribute to the intelligence process as consultants, I would offer that there is a more sustainable and strategic way in which they can collaborate: through incorporating intelligence competency (as defined by practitioners and intelligence agencies) into the curriculum.

Historically, the Intelligence agencies have hired from a multitude of disciplines, based on the specific subject knowledge that might be needed. International Affairs and Intelligence Studies are somewhat distinctive from the traditional social sciences and policy sciences academic programs because they tend to a more practical professional education. Spracher provides a timely and relevant study describing the state of the IA/IS curriculum; Salvetti frames the where Intelligence Studies fits within the curriculum:

“Similarly, I believe the way to close the gap between intelligence professionals and the citizens they work for is to promote the serious academic study of, and research into, the intelligence profession. I think many of you would agree that courses on intelligence are badly underrepresented at American universities. We can all list our favorite reasons for that. Some might point out that it is for the same reason that such subjects as military history are underrepresented: such courses are simply out of favor in the prevailing socio-political climate on campuses and within disciplines today. Some might mention the James Bond syndrome as a cause: the derring-do of secret agents surely can’t be seriously discussed as an academic topic. Some might point out that intelligence studies have largely been captured by the larger field of diplomatic history, where the tendency seems to be to treat intelligence as a minor sideshow whose contributions have been largely unimportant in
the vast sweep of the foreign policy process. There is, however, another, important reason that I am sure many of you are thinking about.”\textsuperscript{13}

Marrin also emphasizes that Intelligence studies programs “should address issues about intelligence at a conceptual and theoretical level, in addition to the more process-oriented knowledge directly related to actually doing intelligence analysis.”\textsuperscript{14} Wu asserts that “Adding a course in information process or strengthening knowledge organization in an intelligence analysis course may require the addition of a faculty member to the program. An alternative is to collaborate with a computer science or library and information science (LIS) department.”\textsuperscript{15}

**Aligning IC Competencies with Higher Education Learning Outcomes**

Spracher indicates that “The civilian higher education community has a key role to play in taking these required competencies into account in the design of curriculum or programs because newly hired officers are expected to possess a modicum of these competencies as a result of their educational experience.”\textsuperscript{16}

The ideal solution to incorporate these professional standards into Intelligence Studies programs would be to have a program accreditation process. Spracher says that the International Association for Intelligence Education (IAFIE) “definitely has a role to play,

\begin{itemize}
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a conduit for bringing people together who teach intelligence. However, it also has to establish “standards”…”¹⁷ As such an accreditation program does not yet exist, there are ways to align higher education efforts with IC needs.

In this era of accountability and assessment, AAC&U has captured the attention of leaders in higher education with their LEAP Vision for Learning; for many universities, these competencies are the basis for the institutional learning outcomes that are the framework that each class must meet.

These standards align with the priorities of the IC: “Critical thinking is often highlighted as important in analysis. But an understanding of how to think about problems, to apply logic and reasoning skills, is important across the IC.”¹⁸ There are other similarities between the ODNI and AAC&U standards that are highly relevant and can inform curriculum efforts in IA and IS. The nomenclature is distinctive so it is necessary to compare them point by point, as indicated in the Association Map in Figure 1.

**Figure 1: Map of ODNI Competencies to AAC&U Learning Outcomes Rubric**

<table>
<thead>
<tr>
<th>ICS 610-3/4: Core (for Non-supervisory Employees and Supervisory and Managerial Employees, GS-15 and below)</th>
<th>ODNI Competency Directory for the Intelligence Community Workforce&lt;sup&gt;19&lt;/sup&gt;</th>
<th>AAC&amp;U Rubrics&lt;sup&gt;20&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engagement and collaboration</td>
<td>Civic engagement</td>
<td></td>
</tr>
<tr>
<td>Critical thinking</td>
<td>Critical thinking/ Creative Thinking</td>
<td></td>
</tr>
<tr>
<td>Leadership and Integrity</td>
<td>Ethical reasoning</td>
<td></td>
</tr>
<tr>
<td>Accountability for results</td>
<td>Problem solving</td>
<td></td>
</tr>
<tr>
<td>Technical Expertise/Management proficiency</td>
<td>[No equivalent]</td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td>Oral communication/ Written communication</td>
<td></td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>ICS 610-6: Collection and operations</th>
<th>Collection operations</th>
<th>Quantitative literacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collection resources management</td>
<td>Information literacy/Reading</td>
<td></td>
</tr>
<tr>
<td>Customer operations and requirements</td>
<td>[No equivalent]</td>
<td></td>
</tr>
<tr>
<td>Languages/Cultural Expertise (SME competencies)</td>
<td>Global Learning/ Intercultural knowledge and competence</td>
<td></td>
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<tr>
<td>Tools and methods</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>ICS 610-7: Analysis and production</th>
<th>Collections systems capabilities</th>
<th>[No equivalent]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer operations/requirements</td>
<td>Foundations and skills for lifelong learning</td>
<td></td>
</tr>
<tr>
<td>Processing and exploitation capabilities</td>
<td>Integrative learning</td>
<td></td>
</tr>
<tr>
<td>Researching</td>
<td>Inquiry and analysis</td>
<td></td>
</tr>
<tr>
<td>Tools and methods</td>
<td></td>
<td></td>
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</tbody>
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Several of the concepts map recognizably. For example, under the “Essential Learning Outcome” of Intellectual and Practical Skills, the AAC&U includes and Inquiry and analysis which equates to Researching on the ODNI side; Critical thinking and communication are present in both guidelines; and both also include a cultural and language component as a priority. Problem-solving is similar to accountability for results, with the emphasis on the outcome or resolution of an issue. While leadership and integrity are not synonymous with ethical reasoning, they both indicate an attention to a moral code in terms of engagement.

However, some of the areas from the ODNI, those in particular related to finding and gathering intelligence, are described with some very technical jargon that does not make the similarities between them and the AAC&U rubrics apparent. Collection operations is defined as “operational knowledge of capabilities of the collection disciplines, the strengths and weaknesses of specific technical sensor platforms, and human sources in the area of responsibility…”21 The collection disciplines it refers to are the collection of information from people (HUMINT), signals or electronic transmission (SIGINT), imagery such as photos or satellite images (IMINT) and open source or public information (OSINT). Collection resources management is “the process of receiving and analyzing customer requirements, determining resource availability and capability, prioritizing and developing collection strategies, identifying teask resources, evaluating

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performance or reporting, and updating collection plans.”22 These efforts could correlate to quantitative (or qualitative) research.

Processing and exploitation, or “the conversion of collected information into forms suitable to the production of intelligence” is very comparable to the AAC&U definition of Integrated learning: “Integrative and applied learning is an understanding and a disposition that a student builds across the curriculum and co-curriculum, from making simple connections among ideas and experiences to synthesizing and transferring learning to new, complex situations within and beyond the campus.”23

In addition to the similarities between the learning outcomes and the IC competencies, several of AAC&U’s High Impact practices are evident in education programs for intelligence studies. These High Impact practices “were correlated with positive educational results for students:”24

- Service learning
- Study abroad
- Student-faculty research
- Capstone experience
- Collaborative assignments
- Internships.25

These recommended teaching methods are readily present in many IA and IS programs as well, some of them are event required components such as internships, study abroad and capstones in an effort to impart experiential learning. In addition, as with many other professional programs, much of the coursework is collaborative projects and presentations.

The projects and assignments themselves tend to be focused on formats and activities that graduates will see (and be asked to complete) upon entering the intelligence field. There is widespread use of Action learning, involving the case study method or simulations, as a way to learn the mental strategies involved in thinking about complex situations. There are also reports an presentations that focus on both policy and security situations to inculcate the ability to write a brief analysis and recommendation to decision makers: Boys and Keating discuss a practical assignment: the policy brief that “requires specific research skills because it usually focuses on a contemporary issue. The online media is an important source of information, but critical scholarly judgment is required to make appropriate use of this material. Research a brief must also go beyond this to other sources of information: policy documents, political speeches and critical commentary from interest groups.”

Along with the use of these instructional methods, many faculty incorporate these learning outcomes into their courses, even including elements of information literacy. However, this is a compelling opportunity to partner with academic librarians, whether faculty or practitioners, as information specialists.

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The Evolving Role of Library Information and Research Strategy Education

The traditional role of libraries and librarians has been as curators of information, wherein students would seek out the library if they had a specific question that required an answer, if their assignments specified a certain number of library sources or if the instructor invited the librarian to come to class. In this model, librarian might provide library instruction such as a library tour, orientation to services or even a session demonstrating library resources in a specific discipline. So much of these efforts were reactive and supplementary to the process of learning at universities: if the library was not involved with a class, there was the perception that it was no great loss.

Not unrelated, the advent of the Internet seemed, at the time, to herald the end of libraries, in the minds of scholars and of librarians. Instructors, researchers and students assumed that they could get any information these needed:

“Students and professors at this point are caught between traditional library research skills and Internet research skills. Undergraduates as a whole are particularly weak on both sorts “information literacy” and the degree of their Internet skills varies widely within a single class. The teaching of thorough skills and a thoughtful, critical approach to quality research on the Internet is spotty and relatively rare…nor do professors as a whole appear to be calling for such student training, even though they often express the belief that the use of the Internet has deteriorated the
However, in addition to providing a new medium for librarians to reach students and instructors, it also presented a new and compelling validation for libraries and their role in supporting the educational mission; while the information was easier to get to, the very democratic nature of the Internet made crucial the ability to effectively find, evaluate and use the information.

Information literacy (IL), one of the AAC&U standards, is defined by the American Library Association as the competence to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information." They went on to develop competencies, both in a general framework and within several disciplinary contexts, including Political Science which enjoys a close association with IIS and IA curricula. These standards actually align and expand on the AAC&U criterion for Information Literacy. The Political Science Research Competency Guidelines articulate 5 standards with associated performance indicators and learning outcomes:

- Standard One: Know and Plan - Determines nature and extent of needed information
- Standard Two: Access - Accesses needed information effectively and efficiently.
- Standard Three: Evaluate - Evaluates information and its sources critically, and incorporates selected information into his/her knowledgebase and value system.
- Standard Four: Use - Uses information effectively to accomplish specific purpose.

27 Selcher, Wayne A. "Use of Internet sources in international studies teaching and research." International Studies Perspectives 6, no. 2 (2005): 175.
• Standard Five: Ethics - Understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.  

Of the 15 operational competency directories in the Intelligence Community Standards, there are 3 which are especially relevant to for purposes of information literacy and research skills:

• Core
• Collection and operations
• Analysis and production

Library research and sessions have generally been a “field trip” from the classroom to the library – either looking at, generally, how to use the library or, more specifically, what library resources may be useful to complete a class assignment. With a shifting focus in higher education to emphasize learning outcomes or, for practical disciplines, the need for students to acquire the skills required in the profession, there is an opportunity to embed these key library and information strategies into the curriculum, thus providing both a relevant context and a built-in incentive for learning and applying them.

Embedding Information Literacy into the IA/IS Curriculum

The research required of students in IA and IS, and ultimately fundamental to the work in Intelligence analysis is varied and time-critical. Topics may address anything from

women world leaders, to the famine in Cambodia, from the invasion of ISIS to the competitive interests of countries in the Northern Hemisphere as the Arctic melts, necessitating understanding and use of different information formats and media:

“Students preparing for careers in the policy sciences must be able to conduct research on a variety of contemporary and constantly evolving topics. They must be able to find credible and authoritative sources of information, and they will need to be able to interpret, analyze, and translate research information from a wide variety of sources.”

Teaching IA and IS students about finding, evaluating and using information, particularly within the context of their professional education has a fundamental dilemma that most academic disciplines do not encounter: graduates hired into intelligence agencies will have access to a plethora of information sources that are classified and not available either to academics or the public at large. This brings up questions about how to teach students about effectively gathering, evaluating and applying this restricted information: “After all, you can’t teach it if you can’t first research it. And you can’t research it if the source material isn’t available.” In the absence of that access, it is possible to approximate the research methods and modes of evaluation, focusing on scholarly sources and open source information. “They will need to be able to utilize these skills long after they have left the university environment with its numerous databases and

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31 Salvetti, Lloyd D. "Teaching Intelligence: Working Together to Build a Discipline." Teaching Intelligence at Colleges and Universities (1999), 18.
resources, so it is important that they understand the concepts rather than simply the tools.32

The kinds of information required in the fields of International Affairs and Intelligence Studies are myriad: government publications, new and primary source, think tank analysis and policy documents, scholarly studies and research data. This raises another issue that students may face: the use of foreign sources, either policy and government publications or international news, is essential in addressing global issues and the Western assumption that there is a transparent government and a free press may not be accurate.

There are many models of research support for the curriculum, library instruction or information literacy. Many methods are incorporated by faculty within their classes but librarians have also long provided instruction on research strategies, sources and methods to support class efforts and assignments. Probably, the most universal library instruction activity is the library tour or basic orientation: this is usually without any subject context, focusing just one the services and general library collections. Building on that, there are also subject specific sessions, at the request of the class instructor, which may entail an introduction to subject sources and method, some overview of the vocabulary used in the discipline and a demonstration of key databases. From this shallow consideration to a more relevant session, there is a class or assignment specific session which provides an exploration of sources meant to address a given project or question; it may provide examples (or ask for sample topics from the class) and walk

through the process of defining the terms and searching sources. The assignment specific session can be augmented with information literacy components that align with the learning outcomes articulated for the class and the necessary research strategies: it could take the form of an in-class exercise to evaluate some relevant examples of publications, the documentation of a PESTEL analysis for a global issue or the mapping of data, to name just a few examples.

These last couple of examples are more immersive in the discipline, focusing on building a rapport with the students and often results in additional consultations with individual students to support them through specific issues or gaps in their research efforts. The role of consultant may also turn into a regular mentoring session on research, particularly if the research project is ongoing and complex, such as a capstone project. This allows the capstone group to sit down with the librarian, develop a research plan to support their desired product or outcome and start on the first steps. As the group completes the initial phases, they may set up a standing meeting or return as needed to discuss next steps, unforeseen details or fill in gaps in their information. They can also work on finding data, visualizing data and helping the students present their findings. In this way, the librarian is mentor, supporting the goals of the capstone, reinforcing the efforts of the instructor and coaching students through the process so they can apply these information skills themselves, in a proxy for real-world intelligence work.

The continuum of this immersion of library information literacy efforts into the curriculum is illustrated in Figure 2 below.
The most entrenched information literacy effort is where the librarian is regularly in the classroom. This is not the same as a for-credit library class; it is a team-teaching opportunity to incorporate principles of information literacy into the subject matter: in this instance, students learn how to effectively find, evaluate and use information in Intelligence Studies. The discipline provides both the context and the incentive for
learning the research skills, including how to overcome the idiosyncrasies, and transfer
them into a practical and professional environment.

These sessions, elaborated below, can be used as the IL foundation for an existing IA
or IS class, include a semester-long research topic (from another class, if possible) with
which to provide a context for these questions and issues. If so, some of the
assignments would be progress reports on their topic. The semester-long project could
also potentially be a research guide on a topic in their area of specialization, listing core
sources and any eccentricities. This curriculum can also serve as an a la carte menu
for instructor to pick and choose those elements, relevant to the course that they would
like to have included. This way, each of these sessions can be tailored to the context of
the class. Appendix A shows the curriculum with attendant readings and exercises with
an emphasis on building IL skills in partnership with the curriculum but as a stand-alone
research class.

Developing a Search (and Research) Strategy

- Choosing and defining a topic
  - Scoping a topic down (or up)
- Keywords, subjects and boolean logic (Appendix B)
- Organizing information
  - Importance of doing this in beginning
  - Documenting search terms and sources
  - Refworks or Endote

Scholarly sources

- Scholarly articles
  - Criteria
Refereed process
• Doing a literature review
• Indexes and sources of scholarly literature
• Secondary (scholarly articles) and Tertiary sources (book reviews)
• Cited reference indexes
• Sources of IR/IA Theory
  o When to consult other disciplinary literature
  o When to use news, policy, analysis
    ▪ ISIS
    ▪ Human trafficking

News and Primary sources
• Finding news sources (online and print)
• Social media as a news or primary source
  o Example: Arab Spring
• Newspapers
  o International and National
    ▪ Free vs state-sponsored press
• Alternative sources and slant
  o Fox vs CNN
  o Interviews and firsthand accounts
• Content analysis

Law, government documents and hard-to-find information
• E-government: Public and non-public information
  o Classified information
  o FOIA
• International policy (Appendix C)
  o International governments
  o Transparency and agenda setting
• Discussion of information ethics
Security vs Freedom of Information
- Privacy and personal information
- Discussion of Wikileaks

Finding and Using Data and Analysis
- NGOs and Think tanks
- International and national statistics
- Security data
- Polling and marketing data
- Correlating data
- Collecting data
  - Quantitative
  - Qualitative – survey, interview, etc

Visualizing and Mapping Data
- Making the Case
- Charts, tables and infographics
- GIS and mapping
- Finding graphics and photos

The Goal of Information Literacy
Fundamental to using all topics and type of information is the ability to effectively and accurately evaluate the information. As Intelligence analysts, students of IA or IS may go on to collect their own information and use it to make recommendations or decisions; however the decision is only as good as the data on which it is based. Verification of information is critical: “any literal material …can be intended to deceive – as can a fair amount of non-literal intelligence.”

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programs, in spite of not having access to classified information sources or tactical collection methods. This is why it is also important to expose students to open source information and not rely overly on those scholarly databases, which they will probably not use after graduating.

The concern for the veracity and relevance of information is articulated by the government and aligns well with the archetypal criteria delineated in library instruction. Brei identifies 6 criteria as “Measures of Success for Intelligence Products:”

- Readiness
- Timeliness
- Accuracy
- Objectivity
- Usability
- Relevance\(^{34}\)

While he is advising creators of intelligence reports, these criteria are almost identical to the criteria evaluating information sources for use in class research projects:

- Authority of the author
- Publisher of the content
- Forum of publication (scholarly journal vs. trade, news, government document)
- Purpose of publication
- Intended audience
- Currency

\(^{34}\) Brei, William S. Getting Intelligence Right: The Power of Logical Procedure. Joint Military Intelligence College, 1996.
All of these sources, topics and efforts are all engaged in one objective: to educate future analysts, policy makers and diplomats so that they can be effective. The APSA Taskforce on Graduate Education asserts that “Teaching, public service and research all require a breadth of training in intellectual tradition and open-mindedness about methodological tools”\(^ {35} \) while Clark indicates the value of incorporating certain methods into an IS curriculum: “Most analysts do not formally apply critical thinking methodologies except when management forces them to do so. By practicing them in academic studies, graduates can develop more logical approaches to dealing with problems in their IC jobs.”\(^ {36} \)


## Appendix A: PSEL Instructional Modules

Content and length may be modified on request to reflect the priorities and assignments in the course.

<table>
<thead>
<tr>
<th>Module/Session</th>
<th>Length</th>
<th>Students Prepare for session</th>
<th>Topics Covered</th>
<th>Associated Learning Outcomes (TAMU based on AAC&amp;U)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to information literacy</td>
<td>45 min</td>
<td>Read: <em>Does public ignorance matter?</em>&lt;sup&gt;“&lt;/sup&gt;</td>
<td>Intro to Libraries; Finding books (LibCat, WorldCat); Survival skills (Get it for me, guides, getting help); <em>Roundtable activity:</em> Discuss a situation where more info would have made a better outcome</td>
<td>Problem solving (Define problem, evaluate outcome); Foundations and skills for lifelong learning (Reflection); Teamwork (Fosters constructive team climate)</td>
</tr>
<tr>
<td>Choosing and scoping a topic; Developing a search strategy</td>
<td>1 hour with hands-on</td>
<td>Read: “From Questions to Problems.” (2003). <em>Craft of Research,</em> 56-88.</td>
<td>Choosing/refining a topic; Literature searching: keywords, subjects, boolean; Translating strategy from google scholar to databases; Assignment: concept mapping and strategy worksheet</td>
<td>Inquiry and analysis (Topic selection, Existing knowledge); Reading (Comprehension, relationship to text)</td>
</tr>
<tr>
<td>Literature review and scholarly publishing</td>
<td>1 hour with hands-on</td>
<td>Read: “Step 2: Search the Literature.” (2012). <em>Literature Review,</em> 37-61.</td>
<td>Why do a lit review? How do you know a source is authoritative? (reliability); Peer review process; What is quality? (What does it tell us?); Assignment: citation map article</td>
<td>Information literacy (Determine the Extent of Information Needed, Access the Needed Information); Problem solving (Identify strategies); Foundations and skills for lifelong learning (Curiosity)</td>
</tr>
<tr>
<td>Evaluating information</td>
<td>45 min (plus optional 30 min for in-class exercise)</td>
<td>Read: &quot;Methods for evaluating information sources: An annotated catalogue.&quot; (2012). <em>Journal of Information Science.</em></td>
<td>Discussion of Checklist and criteria; How do you know a source is authoritative? Relevant? ; Primary vs secondary vs tertiary (and when to use them); Assignment: evaluating information worksheet.</td>
<td>Information literacy (Evaluate Information and its Sources Critically); Critical thinking (Explanation of issues, Evidence, Selecting and using information to investigate a point of view, Influence of context and assumptions); Ethical reasoning (Ethical Self-Awareness, Understanding Different Ethical Perspectives, Ethical Issue Recognition, Application of Ethical Perspectives); Reading (genres); Creative thinking (Embracing Contradictions, Connecting, Synthesizing, Transforming)</td>
</tr>
<tr>
<td>Organizing and Documenting information and research materials</td>
<td>1 hour with hands-on</td>
<td>Download: EndNote/RefWorks to your OAL account or laptop</td>
<td>Citing sources using EndNote/RefWorks (choose one); Record keeping; Academic Integrity; Tips (TOC in Word)</td>
<td>Problem solving (Identify strategies); Creative thinking (Acquiring Competencies, Solving problems); Written communication (Sources and Evidence)</td>
</tr>
<tr>
<td>News and primary sources, including social media</td>
<td>45 min</td>
<td>Read: “A matter of trust.” (1998). <em>American Journalism Review.</em> Watch: Truthiness (<a href="http://www.colbertnation.com/the-colbert-report-videos/24039/october-17-2005/the-">http://www.colbertnation.com/the-colbert-report-videos/24039/october-17-2005/the-</a>)</td>
<td>Slant/agenda/mission/perspective; International, national and local sources; Alternative sources; Content analysis (why and how); Assignment: Map your topic with pro/con view points and PESTEL analysis</td>
<td>Civic knowledge (Diversity of Communities and Cultures); Intercultural knowledge (Cultural self-awareness, Knowledge of cultural worldview frameworks, Empathy); Ethical reasoning (Understanding Different Ethical Perspectives); Foundations and skills for lifelong learning (Transfer); Inquiry and analysis (Limitations and Implications, Existing Knowledge); Critical thinking (Explanation of issues, Evidence, Selecting and using information to investigate a point of view or conclusion, Influence of context and assumptions); Civic knowledge (Diversity of Communities and Cultures, Analysis of Knowledge, Civic Identity and Commitment, Civic Action and Reflection);</td>
</tr>
<tr>
<td>Topic</td>
<td>Duration</td>
<td>Reading</td>
<td>Qualitative vs. Quantitative; International and national statistics; Polling and marketing data</td>
<td>Assignment:</td>
</tr>
<tr>
<td>-------------------------------------------</td>
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<tr>
<td>Lies, damned lies, and statistics</td>
<td>45 min</td>
<td>Read: “How is the Ku Klux Klan Like a Group of Real-Estate Agents?” (2005). <em>Freakonomics</em>, 49-78</td>
<td>Qualitative vs. Quantitative; International and national statistics; Polling and marketing data</td>
<td>Assignment:</td>
</tr>
<tr>
<td>Law and government documents</td>
<td>45 min</td>
<td>Read: “From FOI World to WikiLeaks World: A New Chapter in the Transparency Story.” (2011). <em>Governance.</em></td>
<td>E-government and finding government documents (google and gov sites); International documents; Local docs; FOOU documents and whistleblowing (Security vs Freedom of Information); Finding laws; Assignment: Find legislative history or Shepherdize law</td>
<td>Civic knowledge (Analysis of knowledge, Civic contexts); Ethical reasoning (Understanding Different Ethical Perspectives, Ethical Issue Recognition); Inquiry and analysis (Limitation and implications); Critical thinking (Explanation of issues, Evidence, Selecting and using information to investigate a point of view, Influence of context and assumptions); Reading (Analysis, Interpretation)</td>
</tr>
<tr>
<td>Finding hard to find information</td>
<td>45 min</td>
<td>Read: Electronic Frontier Foundation statement on Privacy plus one Issue of your choice from that page (<a href="https://www.eff.org/issues/privacy">https://www.eff.org/issues/privacy</a>)</td>
<td>Other sources (NGOs and Think tanks); Information as commodity (Privacy and personal information - referenceUSA); Assignment: Identify reputable organizations and experts on topic</td>
<td>Civic knowledge (Analysis of knowledge, Civic contexts); Ethical reasoning (Understanding Different Ethical Perspectives, Ethical Issue Recognition); Inquiry and analysis (Limitation and implications); Critical thinking (Explanation of issues, Evidence, Selecting and using information to investigate a point of view, Influence of context and assumptions); Reading (Analysis, Interpretation); Ethical reasoning (Ethical Self-Awareness Understanding Different Ethical Perspectives/Concepts, Ethical Issue Recognition, Application of Ethical Perspectives/Concepts, Evaluation of Different Ethical Perspectives/Concepts); Information literacy (Access and Use Information Ethically and Legally)</td>
</tr>
<tr>
<td>Making the Case: Visualizing and Using Data and other information</td>
<td>1 hour (plus optional 30-45 minutes for mapping data)</td>
<td>Read: “How to Tell a Story with Data.” (2013) <em>Harvard Business Review.</em></td>
<td>Finding graphics and photos; Finding transcripts and audiovisual files; Mapping data (Geocommons and Fusion tables); Use of Infographics and others (Arab spring timeline); Demo ESRI Case Study (if GIS session, have students choose one to read and discuss in class).</td>
<td>Civic knowledge (Civic Communication, Diversity of Communities and Cultures); Inquiry and analysis (Limitations and Implications, Conclusions); Critical thinking (Selecting and using information to investigate a point of view or conclusion, Influence of context and assumptions, Evidence, Conclusions and related outcomes); Creative thinking (Taking risks, Connecting, Synthesizing, Transforming); Oral/written communication; Quantitative literacy (Representation, Communication, Interpretation, Representation, Calculation, Application, Analysis, Assumptions); Information literacy (Use Information Effectively to Accomplish a Specific Purpose); Problem solving (Define Problem, Identify Strategies Propose Solutions) Intercultural knowledge (Cultural self-awareness, Knowledge of cultural worldview frameworks, Empathy); Ethical reasoning (Understanding Different Ethical Perspectives); Foundations and skills for lifelong learning (Transfer); Inquiry and analysis (Design Process, Analysis);</td>
</tr>
</tbody>
</table>
### Appendix B: SAMPLE CONCEPT FRAMEWORK FOR TOPIC

<table>
<thead>
<tr>
<th>Concept A: Human trafficking</th>
<th>Concept B: Middle East</th>
<th>Concept C: Economy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex trafficking</td>
<td>MENA</td>
<td>Trade</td>
</tr>
<tr>
<td>Prostitution (pre-90s)</td>
<td>Gulf States</td>
<td>Labor</td>
</tr>
<tr>
<td>Forced labor</td>
<td>Individual countries</td>
<td>Business</td>
</tr>
<tr>
<td>Sex slavery</td>
<td></td>
<td>Commodity</td>
</tr>
<tr>
<td>Forced marriage</td>
<td></td>
<td>Commercial</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Black market</td>
</tr>
</tbody>
</table>
Appendix C: WORKSHEET: COUNTRY OR REGION-SPECIFIC RESEARCH

Enter your country or region below (include any names from the native language or variations in spelling):

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What kinds of resources do you need to find on your topic (newspaper articles, books, statistics, maps, scholarly articles, primary sources, etc)?</td>
<td></td>
</tr>
<tr>
<td>2. What resource would you use to find books on your topic in the Libraries? What subject terms are most productive?</td>
<td></td>
</tr>
<tr>
<td>3. What resource would you use to find books on your topic that are not at Texas A&amp;M? How would you go about getting these books?</td>
<td></td>
</tr>
<tr>
<td>4. List any newspapers from your country/region subscribed to by the Libraries (indicate if they are in print or electronic). Are there any in the native language?</td>
<td></td>
</tr>
<tr>
<td>5. Where would you find scholarly articles on your topic? List at least 3 databases and the terms that yield the most productive results.</td>
<td></td>
</tr>
<tr>
<td>6. What information about an article or books chapter would you need to write down in order to find it again (the same information that would be needed for a reference list)?</td>
<td></td>
</tr>
<tr>
<td>7. How would you go about getting the full article?</td>
<td></td>
</tr>
</tbody>
</table>
8. Which databases have statistical or demographic information on your country?

9. Are there videos on your country or region?

10. Does the government of your country (or a country in your region) have a web site?

11. Looking at the recent information on your region or country, what are the topics of interest?

12. Other issues?


