IAIA -15 Training Course Proposal by Glenn Brown

Topic Area: Tools for Impact Assessment

Section 1 - Basic Information

a) Course title:	Organized Reasoning and Environmental Impact Assessment
b) Level:	Intermediate
c) Prerequisites:	Previous participation in researching and writing IA documents
d) Language of delivery.	English
e) Duration	1 day
f) Maximum no. of participants	24*
g) Required to bring laptop.	No. But useful if one has it
h) Name and contact details of each trainer	Glenn Brown
	7-2455 West First Avenue
	Vancouver, Canada
	V6K 1G5
	Mobile + 604-780-1609
	Email glenn.brown@telus.net
	Member of IAIA Yes
	Signed Code of Conduct Yes

* I have experimented with different sized audiences and found that, while smaller is better, I can handle about 20-24 and still provide good personal feedback to each small group. If more than 24 people want to take the workshop, I am happy to give it a second time on a different day, if desired.

Section 2 – Course Description

a) Summary of the purpose(s), content, and anticipated learning outcomes of the course (maximum 300 words). Please include within the text the level of the course and its prerequisites. An edited version of this text will be published on the IAIA15 website.

Environmental impact assessment constantly uses reasoning to reach conclusions. That process is called 'argument'. Not argument meaning 'quarrel,' but argument meaning a series of reasons, leading to conclusions, targeted for a specific audience. Most professionals are not formally trained in organized reasoning. Therefore they do not know there are many techniques of argument that organize ideas to help an audience better understand the reasoning in written presentations. Assessments are complex documents. Using the tools of argument can make them easier for audiences to understand. And easier for authors to write!

This one day workshop will share guidelines for organized reasoning. These guidelines apply to all professional technical writing, but this workshop is targeted specifically to

environmental assessment. This is an intermediate level workshop. Participants should have experience researching and contributing to the writing of one or more assessments. They should have some experience with the difficulties of preparing an assessment and some of the challenges that come from the reactions of different audiences to assessment documents.

The workshop will analyze some written EIA documents and show how they contain common errors in their arguments. We will distinguish three different kinds of argument that technical writing and EIAs contain. Participants practice assembling evidence and reasons for each kind of argument. We will show several steps, and introduce some computer-based tools, that will bring better argument into technical report writing. Although not required, if participants bring a laptop it will be helpful for one of the exercises. At the end, participants will have a new perspective on how to write technical reports and EIAs, and several new techniques they can use on the job.

The workshop includes discussion and practice in small groups, lunch and breaks for refreshment. A summary document is provided. The workshop is limited to 24 people.

b) Detailed description of the course structure and content (2 – 5 pages), including an outline of participatory and/or case study-based exercises. Interactive approaches to courses are strongly encouraged.

Overview of workshop

The workshop is built around 6 sections, three before lunch and three afterwards. (Although these and other details can be modified depending upon the details of IAIA 15 format.) The six sections are of similar but not quite equal length. The fourth is somewhat longer than the rest and the sixth is relatively short. Within each section the oral presentations (illustrated by PowerPoint slides) are interspersed with interactive break-out sessions, of differing length. In them, small groups of participants either address questions referring to the previous material, or practice skills just introduced with assigned small problems. All of the examples and break-out activities use environmental topics typical of EIA work.

Participants leave with both a new perspective on organizing and sharing ideas, and specific tools and techniques they can use the next day. Below, the six sections are listed, then described in more detail.

Morning
- What is organized reasoning and argument
- Analyzing arguments in EIAs
- Key elements of argument: concepts, reasons, evidence and strong arguments

Afternoon
- Three types of complex argument: Fact, evaluation & recommendation
- Linking argument with technical report writing
- Where from here? Ongoing improvement in your reasoning and writing

What is organized reasoning and argument

The introductory section is one of definition and foundation. We define an argument not as an emotional 'quarrel', but as a logical process with three elements: 1) reasons assembled to lead 2) to a conclusion 3) for a specific audience. The reasons and the conclusion make up the argument itself. But arguments should not be considered 'generic.' Rather, the nature of the reasons and how they are shown to lead to a conclusion should be crafted with a specific audience in mind.

In the session, examples are provided of what are and are not arguments. Break out sessions discuss examples and address whether particular kinds of writing (proposals, EIA reports, policies, etc) are arguments or not.

The introduction ends with the observation (the argument): if most professional written work is argument (as we have now agreed), and there are 2500 years of organized thinking and

guidelines about how to prepare arguments (from Aristotle to cognitive psychology and communications theory), then it would be helpful for professionals to be familiar with tools of argument and organized reasoning.

The rest of the workshop provides an introduction to those guidelines and tools. We also make the point that we are looking specifically at professional arguments. In the professional context, we assume our goal is fair and honest presentation of information to reasonable audiences so they can follow our reasoning and voluntarily choose to agree with the conclusion. We do not deal with the larger field of 'persuasion' which may or may not be fair, honest or concerned with the audience understanding the information.

Analyzing arguments in EIAs

We then specifically look at arguments and the EIA process. The university I teach at is oriented towards professional practice. Most of our Master's students are employed in the environment field and often do their thesis on a challenge at work. My grad student Tim Hicks worked for a government agency that reviews developer's EIAs and then writes their own EIA summaries as the basis for the Minister's decisions. They were not satisfied with the quality of the evaluations of significance in their own product and asked Tim to do his thesis on the challenge. He and I decided that an argument analysis might show weaknesses in EIA documents, and that would suggest how improvements could be made.

His project, results and recommendations are presented and discussed (partly based upon the presentation he and I made at IAIA 13). Although there was often ample evidence available, the EIAs turned out to present very weak arguments, with many essential features absent or poorly done. That is, there were rarely clear and consistent definitions, few reasons were offered for conclusions offered, and many intermediate conclusions were missing.

In the 198 significance arguments analyzed, the quality and organization of the reasons did not meet the criteria for a 'strong argument' in any case. (Yes. Zero strong arguments in 198 potential cases.) Thus argument analysis showed why the agency was uncomfortable with its written products and gave insights into where to make improvements. (Also, if the developer's EIAs were better written, the agency's summaries of them would have been better also.)

We discuss Tim's general recommendations for improving significance arguments in EIAs at a specific agency, and how those steps can be partly met with the ideas and guidelines in the rest of the workshop.

Key elements of argument: concepts, reasons, evidence and strong arguments

This section addresses some more advanced elements of reasoning, beyond the earlier simple definition of argument. We identify several building blocks of reasoning, which we address in sequence 1) concepts and definitions, 2) simple statements of reasoning, and 3) complex arguments (cases) which are made of multiple sub-arguments. Almost all professional writing and especially large EIAs are complex arguments.

This section explores 1 and 2, leaving item 3 for after lunch. As elsewhere, break out groups review key ideas and work through examples.

We identify concepts as abstract ideas, but we commonly deal with concepts. Key professional ideas, including 'sustainability', 'significance', and 'endangered species' are all concepts. Such ideas are basic intellectual building block of arguments. Concepts come with two frequent challenges, vagueness (being somewhat unclear or fuzzy in their meaning) and ambiguity (when there is more than one meaning for a term. In an ambiguous situation the reader is not certain which of the different meanings is meant). For simple concepts like 'table' the two challenges rarely apply but for many professionally relevant concepts, like sustainability or significance, there is often crucial vagueness or ambiguity.

Means to identify difficulties with vagueness and ambiguity in the work of other people, and of avoiding difficulties in one's own writing are discussed. People often have difficulties understanding the distinction between 'reasons' for a conclusion and the 'evidence' upon which the reasons are based. They are clarified in the group work. A desirable goal is offered: to create a 'strong argument' in which the reasons are, collectively, acceptable, relevant and sufficient.

Lunch

Three types of complex argument: Fact, evaluation & recommendation

We recognize that most professional work, and certainly EIAs, involves complex arguments made up of many dozens or hundreds of contributing pieces of evidence, reasons and (sub) conclusions. But all complex arguments (also called cases) can be identified as being one of three different types, called Fact cases, Evaluation cases and Recommendation (or Policy) cases. Regardless of the different kinds of information in the reasoning, the type of case is determined by the nature of the final conclusion. This section distinguishes among the three types.

If the final conclusion is factual (the caribou population is declining) it is a fact case. If it is a criterion-based evaluation (this is better than that; this result is significant) it is an evaluation case. And if the conclusion recommends any form of behaviour or action in the future (monitor water levels for lead content; approve this project), then it is a recommendation case. We also identify several key sub-types of each kind of case.

Reports of most baseline studies generate fact cases. Determining specific 'valued components, or 'significance' determinations involve an evaluation case. Advice, suggested restoration programs, guidelines for adaptive management, etc are 'recommendation cases'. The three kinds of cases have interrelationships. Fact cases can stand alone. Evaluation cases need some factual conclusions as input for part of the reasoning. All recommendations logically require the input of both fact and evaluation cases.

Some of the steps of complex arguments are often missed, with key ideas being tacit, implied or otherwise not stated. Groups work on creating arguments of the different subtypes. They use specific guidelines to make the short exercises practical. Multiple challenges come up and are addressed. This is the longest session with the most numerous different interactive exercises.

GB reviewing a point about the relationship of evidence to conclusions, with a small group creating their own example arguments, in the Organized Reasoning and EIA workshop in Hong Kong, January 2014

Linking argument with technical report writing

Although the whole workshop is about creating strong arguments, it is not always obvious how to include a more explicit use of organized reasoning in technical documents and EIAs. This section shows multiple steps to do so.

We provide specific tactics, like the use of headings and subheadings, as well as general strategies which apply to entire documents, such as adopting an alternate approach to research and writing. We also introduce several computer-based tools which are built into Microsoft Word and which few people know about (Outline View, Readability Statistics) or are often not used effectively (Grammar Checker).

With examples we show how all of these approaches can make argument fit more easily into technical reports and EIA documents.

Where from here? Ongoing improvement in your reasoning and writing

Organized reasoning is a process and mastering it is a continuous effort. People leaving this workshop will have new skills they can immediately use on the job. But organized reasoning and presenting argument in written form is a difficult process and one that a person improves

gradually. To wrap up the workshop we considered different options for practice and improvement.

- Preparing a learning plan with milestones
- Monitoring your own work.
- Getting input from books and websites.
- Working with one or more colleagues.
- Getting occasional expert input or coaching.

We suggest variations on each which can make them more effective, and provide a list of relevant references for people to explore as they wish.

At the close, an evaluation form is provided for written feedback to the workshop leader and conference organizers.

c) Description of the materials that participants will receive prior to or during the course.

    1) Printed copy of the PowerPoint slide presentation.

    2) Outline of the analysis of the argument errors in EIA documents.

    3) 20 page handout covering main points of organized reasoning, applications to writing technical reports including EIAs, discussion of continuing learning and practice in organized reasoning and a list of background readings.

d) Description of any technological equipment required to facilitate this course beyond the usual flip charts and PowerPoint projectors.

    We need to have small group interaction, so we need to have separate tables at which 3-4 (maximum 5) people can sit. That is, not a lecture hall or a room with seats bolted to the floor in rows.

e) Provisions for pre and post conference communication with participants.

    I am available for communication via email (glenn.brown@telus.net), Skype (glenn.brown30) and telephone (+604-780-1609) before and after the conference. I will be at the IAIA 15 conference.

Section 3 - Qualifications of the Trainer

a) (a) An abridged curriculum vitae (maximum 1 page) for each trainer.

    One page cv for Glenn Brown follows.

GLENN BROWN   glenn.brown@telus.net
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I am an ecologist, environmental manager and educator with over 25 years experience working in Canada, United States, Central America, West Africa, Southeast Asia, China and Mongolia. Based in Vancouver, Canada, I am an independent consultant and I teach in the *Masters of Environment and Management* program at Royal Roads University.

Projects I have worked on involved: impact assessment; mineral exploration; oil and gas development; rehabilitation of degraded land; ecotourism and economic development; parks and protected areas; science and environmental education; and endangered and invasive species. As a consultant, I work with industry, government and NGO clients. I have been employed in the environment department of a mineral exploration company and as the executive director of a science education NGO. The rest of this cv addresses my education and training background.

Although I am a practicing scientist, I have long been interested in education for professional practice. I completed a PhD in Education to further that interest. (My thesis addressed applications of instructional psychology to science education.) Since then I have taught and continued consulting work. The master's program I have taught in for nine years is specifically designed for professional practice. (The university's 'niche' is providing applied programs for working professionals.) While I teach in standard units (3 credit courses), the content and the delivery (break out sessions, small group work, team projects) are designed like practical training. I created a course in *Analytical Thinking* since thinking and writing are important practical skills for professionals. I received my University's 'outstanding teaching' award for my contributions. My recent university teaching experience is:

Royal Roads University, Victoria, Canada   2005-Present
Associate Faculty   Masters Program in Environment and Management
● Designed and teach graduate courses
       Ecosystem Science and Management
                (Population biology, landscape ecology, biodiversity, sustainability, adaptive
                ecosystem management, watershed science and management, ecosystem services)
       Analytical Thinking and Communications
                (Reasoned argument, structured decision making, technical writing and managing self-
                directed learning and thinking)
● Received 2008 *Kelly Award for Outstanding Teaching*

Professional Training
Aside from university courses, I have completed over 200 short term (half day, one day, multiple day) training workshops related to my jobs or within consulting projects involving staff training and capacity development. They combine presentations, participatory activities and small group work.

Audience	Main topic of workshop
Environmental professionals	Organized reasoning; Ecosystem services; Watershed management; or Conservation in protected areas
Ecotourism guides	Designing ecotourism programs and guiding visitors
In service teachers Volunteer parents and scientists	Science teaching methods (field trips to wetlands, using microscopes, etc.)
Co-op university students	Study and learning skills; or Using portfolios for self-management
On the job training of recent graduates	Project management
Final semester graduating students	Job/practicum search process and methods

Education   Ph.D.   Education   Simon Fraser University
                   M.Sc.   Biology   University of Illinois
                   M.Sc.   Geography   University of Alberta
                   B.Sc. (First Class Honours)   Geography   McGill University

Written work: Over 100 professional reports, publications and conference papers.

b) History of the course: title(s), number of times, where and to whom it has previously been delivered and evidence of its success, number of attendees

This exact workshop has been given in three locations, as below.

One-day Workshop: Organized Reasoning and Environmental Impact Assessment				
Location and Sponsor	**Local coordinators of the workshops. Contact Information**	**Audience**	**Number of attendees**	**Evidence of success**
Hong Kong Regional EIA Symposium, run by Hong Kong Institute of EIA. Pre-symposium workshop January 2014	Grace U Symposium coordinator and Senior Environmental Protection Officer Government of Hong Kong SRA, +(852) 2835 2164 hkieia.hk@gmail.com, or accord@edp.gov.hk	Professionals involved with EIA from Hong Kong, China and east Asia	29 in one workshop	Very positive comments on feedback forms. Requests for follow up workshops. Contact local coordinator for details.*
Vancouver IAIA-WNC Affiliate, BC Branch. Professional Development workshop May 2014	Jeff Matheson Branch coordinator IAIA-WNC Affiliate, Vancouver branch, and Director of Projects Tetra Tech EBA Vancouver Canada + (604) 685-0017 x237 Jeff.Matheson@tetratech.com	Professionals working with EIA from Vancouver area	20 in two workshops	Very positive comments on feedback forms. Requests for follow up workshops. Contact local coordinator for details.*
Whitehorse Yukon. IAIA-WNC Affiliate, Yukon Branch. Professional Development workshop June 2014	Travis Richie IAIA-WNC Yukon Region Committee Member, and Manager, Environment, Assessment & Licensing, Yukon Energy Corporation, Whitehorse, Yukon +(867) 393-5350 travis.richie@yec.yk.ca	Professionals working with EIA in Yukon Territory	29 in two workshops	Very positive comments on feedback forms. Requests for follow up workshops. Contact local coordinator for details.*

*All local coordinators are familiar with the responses of the audiences, have copies of the post-workshop feedback forms, and have agreed to speak with you if desired. Ms. U and Mr. Matheson were also attendees of the whole workshop, and thus have a detailed perspective. Mr. Richie was able to attend for an hour or two, but not the whole workshop.

I lead a similar university level course

The origin of the one-day workshops in organized reasoning for professionals is my full course (30 contact hours plus assignments) in *Analytical Thinking and Communications*, which I developed and have taught seven times for master's students in Royal Roads University's *Master of Environment and Management* program. I have adjusted and expanded it over the years based upon student feedback and ideas from the literature.

Because that course has proven to be practical and popular, and the topic of clear reasoning is important to me, I have tried to reach audiences beyond my own students. To do that I have created one day workshops introducing key ideas and skills from the larger course. The workshops provide people with new abilities they can use on the job the next day, and introduce a continuing process towards improved reasoning and better technical writing.

I have offered other one-day workshops on *organized reasoning and technical writing* for professionals, but without a specific orientation to EIA, as follows

BC Institute of Agrologists. Vancouver, Canada. Professional development workshop. (upcoming Oct. 4)

Royal Roads University, Victoria, Canada. Workshop for students in the *Master of Arts in Environmental Education and Communications* program. Twice.

Royal Roads University, Continuing Studies Programs. Victoria, Canada. Extension course for professionals. Three times.

Alberta Energy Resource Conservation Board, Calgary, Alberta. Professional development workshop for staff.

Like all the workshops I lead, I collect feedback forms from the participants at the end. The feedback has been very positive, and I continuously make changes based upon suggestions or to respond to weaker points. Completed feedback forms from various workshops and my university classes are available for review.

c) If the course is new, give history of a comparable course, with the same information as in 3b.
 The course is not new. Information is above.

Section 4 Commitment of the trainers

a) Identify how many times any course by any of the trainers has been offered. If applicable, explain the reasons why a course offering has been cancelled.

I have taught over 200 workshops, on many specific topics, over thirty years. (I have summarized the main topics/themes and audiences on the cv above.) Most were one day or half day workshops to professionals, teachers or university students. I have also given multiple-day workshops for conservation professionals and tour guides at ecotourism attractions in developing countries. None have ever been cancelled or postponed.

I have also taught 37 university level courses in ecology, environmental management, analytical thinking and science education and none (neither whole courses nor individual classes) have ever been cancelled or postponed. I had laryngitis once, but I did the class by whispering with the microphone turned to maximum and it worked out.

b) Similarly, identify earlier approved training courses you were involved in organizing, but where changes in trainers or course structure were amended, and explain the reasons for this.

This situation has never happened.

c) Indicate the level of commitment to give this course at IAIA15 by noting any circumstances that would cause the course to be cancelled (other than if the minimum enrolment is not reached) or circumstances that would cause the instructor(s) not to be in Florence to offer the course. Note also that courses that require a minimum of more than 10 participants will be at a disadvantage.

Delivering courses and training workshops to professionals is the heart of my current career. I am very interested in expanding my audience to more IAIA members. Providing this workshop to IAIA 15 is my top priority for the month of April and I can think of no reason that I would not attend. I am in charge of my time and my financial affairs and there is no one who can overrule my decisions or my funding for travel. I have already allocated a budget and arranged other projects to leave two weeks free in April for visiting the conference and staying to visit Italy afterwards. I will not change my mind about this.

d) Note backup strategy in the event an instructor must withdraw unexpectedly.

As stated, I cannot imagine withdrawing. However, the workshop is built around group activities supported by a PowerPoint presentation. I could present the PowerPoints to a class from a distance over Skype, and have a local assistant coordinate the breakout participatory activities. Alternately, I could prepare a 'voice over Powerpoint' presentation that could be run without me being present or online.

e) Statement agreeing to provide free places to students based on formula described in the "Student participation" paragraph below.

I am happy to provide free spaces in my workshop for students based on the formula described in the paragraph titled 'Student participation' in the proposal description document.