Computer and Information Literacy Assessment Report
Cognitive Science Program

Context

- Calendar year: CY 2021
- Course in which assessment took place: Cog468 "Cognitive Science Capstone Seminar"
- Semester: Fall, 2021
- Number of sections: 1

Learning Outcomes

These are the three learning outcomes that we are given to use as the basis for our assessment of the computer and information literacy component of general education:

- Learning Outcome 1: Perform basic operations of personal computer use
- Learning Outcome 2: Understand and use basic research techniques
- Learning Outcome 3: Locate, evaluate, and synthesize information from a variety of sources

Results in Tabular Form

Learning Outcome	Information			Results							
	Date of Data Collection	Students Assessed		Exceeding Standards		Meeting Standards		Approaching Standards		Not Meeting Standards	
	Sem/Yr	#	%	#	%	#	%	#	%	#	%
Perform the basic operations of personal computer use	Fall '21	3	100	3	100	0	0	0	0	0	0
Understand and use basic research techniques	Fall '21	3	100	3	100	0	0	0	0	0	0
Locate, evaluate, and synthesize information from a variety of sources	Fall '21	3	100	3	100	0	0	0	0	0	0

Assessment Tool and Measure

We used the assessment tool and measure identified in our assessment plan update.

Method of Analysis

Our computational method of analysis is detailed in the final section of the assessment plan. In abstract terms, our process of analysis for individual students with respect to each learning outcome consists of:

1. Recording, in symbolic terms, some observations about the student's behavior with respect to the learning outcome, which indicate the degree to which we feel that student is meeting our expectations.
2. Mapping the symbols to numbers and averaging the numbers in a manner that performs an abstraction operation over the observations.
3. Mapping the numeric results back to the domain of symbols, the result of which denotes the degree to which we believe that the student has met our expectations with respect to the learning outcome.

Our computational process of analysis for the students in aggregate with respect to each learning outcome consists of:

1. Averaging the averages computed in step 2 of the analysis for the individuals.
2. Mapping the average of the averages to the domain of symbols.

Computation of Results

LO 1: Perform basic operations of personal computer use

- Student 1: (0*0)+(0*1)+(0*2)+(5*3) = 15; (15/5) = 3.0; 3.0 → +
- Student 2: (1*0)+(0*1)+(0*2)+(4*3) = 13; (13/5) = 2.6; 2.6 → +
- Student 3: (0*0)+(0*1)+(0*2)+(5*3) = 15; (15/5) = 3.0; 3.0 → +

- Aggregate: (3.0+2.6+3.0)/3 = 2.867; 2.867 → +

LO 2: Understand and use basic research techniques

- Student 1: (0*0)+(0*1)+(0*2)+(5*3) = 15; (15/5) = 3.0; 3.0 → +
- Student 2: (1*0)+(0*1)+(3*2)+(2*3) = 12; (12/5) = 2.6; 2.6 → +
- Student 3: (0*0)+(0*1)+(1*2)+(4*3) = 13; (15/5) = 2.8; 2.8 → +

- Aggregate: (3.0+2.6+2.8)/3 = 2.800; 2.800 → +

LO 3: Locate, evaluate, and synthesize information from a variety of sources

- Student 1: (0*0)+(0*1)+(0*2)+(5*3) = 15; (15/5) = 3.0; 3.0 → +
- Student 2: (0*0)+(0*1)+(1*2)+(4*3) = 14; (14/5) = 2.8; 2.8 → +
- Student 3: (0*0)+(0*1)+(0*2)+(5*3) = 15; (15/5) = 3.0; 3.0 → +

- Aggregate: (3.0+2.8+3.0)/3 = 2.933; 2.933 → +

Analysis of Results

Instruction: Please be sure to address each learning outcome and both strengths and weaknesses revealed by the assessment, if any.

Note: My analysis here is virtually identical to what it was during our previous round of computer and information literacy assessment. Moreover, I don't think that I can better articulate my thoughts with respect to our students and the learning outcomes than I did three years ago. Consequently, I am just going to echo the analysis that I wrote in our last assessment report.

By performing this assessment, and observing that each of the students "exceeded expectations" on all three learning outcomes, we confirmed our intuition that senior cognitive science majors are capable of effectively using computing machines to support their research activities and present their research findings.

LO 1: Perform basic operations of personal computer use

Our experience is that most cognitive science majors enter the program with pretty good computer use skills. Those few who may not enter the program with those skills, surely develop them in the course of taking their computer science requirements (programming and cognitive computational modeling) and their psychology requirements (statistics and research methods).

LO 2: Understand and use basic research techniques

Cognitive science embraces science as its principle way of knowing, assumes an interdisciplinary stance, fosters a deep relationship with computation, and explicitly incorporates courses in statistics and research methods. All things considered, it is not surprising that cognitive science students can hold their own with respect to basic research techniques.

LO 3: Locate, evaluate, and synthesize information from a variety of sources

One of the defining assumptions of the field of cognitive science is the interdisciplinary assumption which incorporates within it the idea of integrating knowledge from different disciplines. We highlight the idea of integrating knowledge from disparate disciplines in order to enhancing our understanding of the mind/brain right from the start of our curriculum, in our two introductory cognitive science courses. Beyond that, a number of required courses for cognitive science majors feature research methodologies directly incorporating the ideas associated with this learning outcome (e.g., research methods, semiotics, language and culture). Consequently, it is not surprising that our students are have considerable skill when it comes to locating, evaluating, and synthesizing information from a variety of sources.

Action to be taken

Instruction: Please indicate the connection between the assessment findings and the proposed action(s); if no action is to be taken, please indicate why you think none is necessary.

It is not clear from the findings that any action needs to be taken. The students are required to take computer science courses, which focus on a range of computational and design skills, psychology courses, including statistics and research methods, and cognitive science courses, which, by virtue of the interdisciplinary assumption that underlies the field, tend to focus on locating, evaluating, and synthesizing information from a variety of sources. Consequently, cognitive science majors tend to learn to be very capable with respect to the three computer and information literacy learning outcomes.

That said, it is easy to make a suggestion that would surely benefit cognitive science students. On the whole, cognitive science students tend to be pretty good with standard text editors and document preparation systems. I would like to encourage the cognitive science faculty to challenge the students to use better tools, especially when it comes to text editors and document preparation systems. For example, through advisement, we might encourage first and second year cognitive science students to take the LaTeX course that is now regularly offered on campus. This would enhance their document preparation skills, and position them to comfortably prepare articles which require the use of particular LaTeX templates, as is the case for a number of cognitive science related meetings and journals.

Suggestions for others doing CIL assessment

Althought the computer and information literacy learning outcomes tend to transcend fields of study, it may be more meaningful to do this sort of assessment if you can find compelling ways to flavor assessment of the the three learning outcomes with ideas, methodologies, and technological skills that are associated with your particular field of study.