

SPOT RATINGS

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The average mean SPOT evaluation for the twenty-three graduate courses I taught at Seattle University from 1996 to 2000 (309 student-quarters) is **4.1** (on a scale from 1 to 5). Ten of these classes were taught for the first time, four were taught only once. The content of half of the courses is mathematics, which tends to limit the diversity of available teaching styles.

The following table summarizes my SPOT ratings for courses taught at SU:

		SPOT Questions*					
Quarter	Course	1	2	3	4	5	Mean
W96	SE560	3.9	4.2	4.6	4.4	4.0	4.2
A96	SE592C	2.7	2.7	3.7	3.3	3.1	3.1
W97	SE560	4.1	4.2	4.8	4.5	3.8	4.1
	SE500	3.7	4.3	4.0	4.0	4.4	4.1
S97	SE561	3.7	4.1	4.7	4.4	3.5	4.1
	SE543	4.2	4.5	4.7	4.7	3.3	4.3
A97	SE502	4.1	4.1	4.4	4.4	3.2	4.0
	SE553	3.8	4.1	4.3	4.1	3.2	3.9
W98	SE543	4.5	4.6	4.5	4.6	4.6	4.6
S98	SE500	4.2	4.2	4.7	4.5	3.8	4.3
A98	SE560	4.0	4.2	4.7	4.3	3.7	4.2
	SE502	3.8	4.1	4.2	4.2	3.2	3.9
W99	SE561	3.7	4.3	4.5	4.3	3.8	4.1
S99	SE500	3.5	4.2	4.3	4.3	3.5	4.0
	SE564	4.0	4.2	4.4	4.4	3.3	4.1
A99	SE502	4.6	4.6	4.6	4.6	3.9	4.4
	SE553	4.0	4.1	4.5	4.5	3.9	4.2
W00	SE543	4.4	4.9	5.0	4.9	3.9	4.6
S00	SE500	4.0	3.8	4.5	4.4	3.6	4.1
	SE514	4.2	4.2	4.9	4.7	3.9	4.4
A00	SE502	4.1	4.2	4.1	4.0	3.7	4.0
	SE560	4.1	4.3	4.5	4.5	3.8	4.2
W01	SE593	4.7	4.8	4.8	4.8	4.2	4.6
AVERAGE	N=23	4.0	4.2	4.5	4.4	3.7	4.1

*SPOT Questions:

1. well organized course
2. effective use of class time
3. instructor's attitude/teaching
4. overall impression of effectiveness
5. assessed learned skills

COMMENTARY ON SPOT RATINGS

In general, I am pleased with the SPOT ratings. The relatively low scores on learning assessment reflect the surprise that students have at my unconventional (but appropriate for graduate school) assessment techniques. Often, they arrive on campus expecting timed texts and rote learning, neither of which achieve my teaching objectives. Formative evaluation is continuously going on, and I do not hesitate to inform students about their understanding and progress. I believe the central difficulty is purely psychometric (see below).

Trends over years

The mean rating for each academic year, averaged over all courses for that year, has gradually increased:

1996-7	4.0
1997-8	4.2
1998-9	4.1
1999-00	4.3
2000-01	4.3

My first course taught as a faculty member (SE592C, Client-Server Architectures, Autumn 1996) received low SPOT ratings (mean = 3.1). I erred by teaching it as a graduate seminar and by volunteering as a new faculty member to teach a course with content that was not in my field of expertise. I encourage the Committee not to use student commentary for this course for evaluative purposes, since it is atypical.

Commentary on SPOT Psychometrics

Autumn'98 SE502 was one of the best courses I have taught, so the SPOT ratings (3.9) are not consistent with my personal evaluation. In looking at the results, a few observations come to mind:

1. SPOT ratings measure *normative expectations*, and thus undervalue all forms of educational innovation. This is particularly true for Autumn quarter introductory courses, for which new students bring their entire baggage of prior educational presumptions.

Although the face validity of the questions (well organized, effective time management, encouraging, effective teacher, assessment) seems strong, they are biased toward a particular conservative style of teaching, and (to my knowledge) the questions have no backing of either concurrent or predicative validity. For example, most entrepreneurial learning is made in a context of chaos not organization; harsh instruction is often more effective in the

long term than encouraging instruction; the perception of teaching effectiveness is usually based on emotional/cultural rather than cognitive impressions; it is possible that *all* assessment techniques are inappropriate; appropriate teaching styles vary tremendously over different cultural groups; the content of different courses interacts with rating variance (compare, for e.g., ratings for required vs elective courses, or mathematics vs social issues courses); and in general, a naive student is often poorly prepared to assess the quality (as opposed to the entertainment value) of a classroom experience.

This is not to say that SPOT ratings are a bad idea, just that they need considerable sophistication, both psychometrically and psychologically, for accurate interpretation. Any SU policy which fails to view SPOT scores as relative, cultural, course specific, and contextual is a bias and non-professional policy.

2. SPOT ratings are extremely sensitive to outlying ratings. This is an obvious statistical consequence of using non-normalized scores. The mean is skewed toward the top of the range, and the standard deviation of measurements is not even tabulated. For example, in SE502, one student (out of 23) elected minimal ratings; this single student changed class average ratings by about .15 (ratings change from 4.2 to 4.35 when the student is omitted from analysis). Thus, negativistic students have disproportionate influence (recall it is the variance not the rating that determines weightings). The effect is to undervalue all forms of risky or controversial teaching.

The remediation is straightforward: specify the intent and assumptions of SPOT ratings and use simple, known, and appropriate statistical reporting techniques. A confidence interval around SPOT ratings would be enormously helpful in assessing their meaning. Better yet, the 1-5 rating scales support a non-parametric ranking analysis far better than parametric mean scores.

SPOT COMMENTS ON ORGANIZATION, ASSESSMENT, AND GOOD TEACHING
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 June 2001

The percentages of students expressing concern for either course organization or assessment policies are quite small, and certainly justified in light of the bulk of positive comments.

			report		neg org	neg ass	pos
W96	SE560	Human-Computer Interaction	25	21	4	0	10
A96	SE592C	Client-Server Architectures	29	24	10	0	4
W97	SE560	Human-Computer Interaction	19	14	1	0	9
	SE500	Data Structures and Algorithms	7	7	1	1	2
Sp97	SE561	Programming the Interface	15	12	1	1	4
	SE543	Applied Formal Methods	6	6	1	2	3
			63		14	4	22
A97	SE502	Mathematical Foundations	16	14	1	1	10
	SE553	Artificial Intelligence	15	13	2	3	7
W98	SE543	Applied Formal Methods	9	8	0	0	6
S98	SE500	Data Structures and Algorithms	20	17	0	0	9
			52		3	4	32
A98	SE560	Human Computer Interaction	12	9	1	0	5
	SE502	Math Foundations	23	23	1	2	9
W99	SE561	Programming the Interface	4	4	0	0	1
S99	SE564	Computer Graphics	8	8	0	0	4
	SE500	Data Structures and Algorithms	12	11	1	1	8
			55		3	3	27
A99	SE502	Mathematical Foundations	17	14	0	1	11
	SE553	Artificial Intelligence	8	8	1	0	7
W00	SE543	Applied Formal Methods	9	7	0	0	1
S00	SE500	Data Structures and Algorithms	17	11	3	0	4
	SE514	Programming Methods	25	19	1	0	8
			59		5	1	31
A00	SE502	Mathematical Foundations					
	SE560	Human-Computer Interaction					
W01	SE593	Computer Ethics	12	11	0	0	9
total			240		29	13	122
%					12	5	51
total without year 1			166		11	9	90
%					7	5	54

SPOT HOURS SPENT FOR CLASS HOMEWORK

My objective of two hours homework for each hour in class is nicely achieved.

			Hours: 11+ 9/10 7/8 5/6 5-						
W96	SE560	Human-Computer Interaction	25	21	1	1	5	7	7
A96	SE592C	Client-Server Architectures	29	24	1	2	5	6	10
W97	SE560	Human-Computer Interaction	19	14	0	3	3	5	3
	SE500	Data Structures and Algorithms	7	7	1	1	3	1	1
Sp97	SE561	Programming the Interface	15	12	1	3	1	2	5
	SE543	Applied Formal Methods	6	6	0	0	0	3	3
			63		3	9	12	17	22
A97	SE502	Mathematical Foundations	16	14	0	0	8	3	3
	SE553	Artificial Intelligence	15	13	missing				
W98	SE543	Applied Formal Methods	9	8	0	3	1	2	2
S98	SE500	Data Structures and Algorithms	20	17	2	5	2	4	4
			39		2	8	11	9	9
A98	SE560	Human Computer Interaction	11	9	0	3	2	2	2
	SE502	Math Foundations	23	23	0	1	10	4	8
W99	SE561	Programming the Interface	4	4	0	2	1	1	0
S99	SE564	Computer Graphics	8	8	2	2	1	2	1
	SE500	Data Structures and Algorithms	12	11	0	0	4	3	4
			55		2	8	18	12	15
A99	SE502	Mathematical Foundations	17	14	0	2	4	4	4
	SE553	Artificial Intelligence	8	8	2	0	1	4	1
W00	SE543	Applied Formal Methods	9	7	1	0	3	2	1
S00	SE500	Data Structures and Algorithms	17	11	2	2	2	2	3
	SE514	Programming Methods	25	19	2	3	7	4	3
			59		7	7	17	16	12
A00	SE502	Mathematical Foundations	16	15	1	0	5	8	1
	SE560	Human-Computer Interaction	20	17	3	2	7	1	4
W01	SE593	Computer Ethics	12	11	0	1	5	2	1
total			237		15	33	63	61	65
weighted (12 10 8 6 4)					180	330	504	366	260
sum			1640/237 = 7 hours per student per week						
total without year 1			153		11	23	46	37	36
weighted (12 10 8 6 4)					121	230	368	222	144
sum			1085/153 = 7 hours per student per week						

SPOT BEST EFFORT

Students indicate a quite satisfactory commitment to giving their best effort to the class.

			Level:	SA	A	N	D	SD	
W96	SE560	Human-Computer Interaction	25	21	10	9	2	0	0
A96	SE592C	Client-Server Architectures	29	24	7	10	5	1	1
W97	SE560	Human-Computer Interaction	19	14	7	3	4	0	0
	SE500	Data Structures and Algorithms	7	7	3	3	1	0	0
Sp97	SE561	Programming the Interface	15	12	3	8	1	0	0
	SE543	Applied Formal Methods	6	6	2	4	0	0	0
			63		22	28	11	1	1
A97	SE502	Mathematical Foundations	16	14	5	8	1	0	0
	SE553	Artificial Intelligence	15	13	missing				
W98	SE543	Applied Formal Methods	9	8	5	2	1	0	0
S98	SE500	Data Structures and Algorithms	20	17	6	8	3	0	0
			39		16	18	5	0	0
A98	SE560	Human Computer Interaction	12	9	3	6	0	0	0
	SE502	Math Foundations	23	23	8	12	2	1	0
W99	SE561	Programming the Interface	4	4	1	2	1	0	0
S99	SE564	Computer Graphics	8	8	1	6	1	0	0
	SE500	Data Structures and Algorithms	12	11	2	7	2	0	0
			55		15	33	6	1	0
A99	SE502	Mathematical Foundations	17	14	4	7	2	1	0
	SE553	Artificial Intelligence	8	8	3	5	0	0	0
W00	SE543	Applied Formal Methods	9	7	4	3	0	0	0
S00	SE500	Data Structures and Algorithms	17	11	3	6	2	0	0
	SE514	Programming Methods	25	19	7	9	3	0	0
A00	SE502	Mathematical Foundations	16	15	8	4	3	0	0
	SE560	Human-Computer Interaction	20	17	8	7	2	0	0
W01	SE593	Computer Ethics	12	11	5	3	1	0	0
			59		21	30	7	1	0
total			237		84	118	31	3	1
weighted (5 4 3 2 1)					420	472	63	6	1
sum			962/237 = 4.1						
total without year 1			153		52	81	18	2	0
weighted					260	324	54	4	0
sum			642/153 = 4.2						