

SEEQ-R1/R2 Fall 2015: Data Analysis Report

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Data analysis conducted and report written by Rob Stupnisky.

OBJECTIVE & DATA SET

The objective of the current data collection and analyses was to explore the psychometric quality of the SEEQ-R1 Instrument (see Appendix A) by conducting statistical tests on actual student responses. Data was collected in late fall 2015 using both paper-and-pencil and online (Qualtrics) surveys. Data analysis was conducted in January-February 2016 (see Appendix B Codebook for variables names).

SAMPLE SELECTION

The initial dataset included 955 responses to the USAT. An initial 24 participants were dropped from the data due to responding to no or very few questions, leaving 931 participants. Missing responses to the remaining questions were excluded using pairwise deletion (i.e., on a question by question basis).

An issue with the data was the lack of variability in a significant percentage of participants' responses to the instrument. For example, of the 931 remaining responses, 98 participants (10.7%) provided the same answer to every question on the SEEQ-R1 (i.e., zero standard deviation among all responses). Providing the same answer repeatedly to every question may be a valid set of responses by a participant, such as when an instructor is exceptional in all areas. However, this response pattern (also called "straight-lining"; Cole, McCormick, & Gonyea, 2012) may be the result of unengaged/careless participation as students were informed that this data was being used for official feedback on teaching (Meade & Craig, 2011), or biased responding – the halo (all positive; Madden et al., 2010) or horns (all negative; McNatt, 2010) effect when rating instructors. Indeed, 73% of the responses by those who had zero variability answered all questions "5 = *Strongly agree*". Psychometrically, with so many straight-lined responses the result was non-normal, negatively skewed distributions for many of the SEEQ-R1 items.

learning1_1

sd_seeqr1				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	101	10.6	10.7
	.17	38	4.0	14.7
	.18	1	.1	14.8
	.18	2	.2	15.0
	.18	2	.2	15.3
	.18	1	.1	15.4

		Frequency	Percent
Valid	1 Strongly disagree	8	7.9
	3 Neutral	4	4.0
	4 Agree	14	13.9
	5 Strongly agree	74	73.3
	Total	100	99.0
Missing	6 NA	1	1.0
Total		101	100.0

The data was re-analyzed on three samples that excluded participants providing SEEQ-R1 responses with (1) no variability ($SD > 0$), (2) very limited variability ($SD \leq .25$; approximately equivalent to excluding participants with 2 of 32 questions with different answers by 1 response point; e.g., all 5s and two questions answered with 4), or (3) limited variability ($SD \leq .50$; cutoff based on J. Gaskin, personal communication, February 2, 2016). The SETIC decided to focus this report on the results of the third sample ($SD \leq .50$; $n = 508$), which provided the clearest interpretation of the data. The SETIC discussed and acknowledged that future samples would likely contain straight-lined responses due to unengaged participation and/or biased responding; however, they believed that the analyses for deciding on the new scale should rely primarily on the most engaged/unbiased responses. Appendixes D, E, and F present the main results for the other samples, which generally led to the same conclusions as the current sample.

SAMPLE DESCRIPTION

The majority of the data was collected using paper-and-pencil surveys (76.2%; Format). Twenty-eight different instructors allowed the researchers to collect data from their class. The students were from a range of undergraduate years of experience with few graduate students (year_study), approximately equivalent gender, average age 21.5 years, predominantly domestic students who spoke English as their first language. Overall, the student characteristics of the analyzed sample appeared to be consistent with the general UND student population.

Format

		Frequency	Percent
Valid	1 Paper	387	76.2
	2 Online	121	23.8
	Total	508	100.0

DEMOGRAPHICS

year_study

		Frequency	Percent
Valid	1 Freshman	129	25.4
	2 Sophomore	102	20.1
	3 Junior	125	24.6
	4 Senior	99	19.5
	5 Graduate/Professional	36	7.1
	Total	491	96.7
Missing	System	17	3.3
	Total	508	100.0

gender

		Frequency	Percent
Valid	1 Male	248	48.8
	2 Female	237	46.7
	4 Choose not to identify	8	1.6
	Total	493	97.0
Missing	System	15	3.0
	Total	508	100.0

		age
N	Valid	476
	Missing	32
Mean		21.5378

international

		Frequency	Percent
Valid	1 Yes	16	3.1
	2 No	477	93.9
	Total	493	97.0
Missing	System	15	3.0
	Total	508	100.0

english

		Frequency	Percent
Valid	1 Yes	471	92.7
	2 No	23	4.5
	Total	494	97.2
Missing	System	14	2.8
	Total	508	100.0

REASON TAKING COURSE

Regarding reasons for taking the course, 73.6% said it was required for their major (req_major), whereas 44.3% said it was to fulfill an essential studies requirement (req_essent). Other reasons for taking the course were varied and approximately evenly distributed in agreement among interesting (reason_interst), reputation of the instructor (reason_repinstruct), and reputation of the course (reason_repcourse).

req_major

		Frequency	Percent
Valid	1 Yes	374	73.6
	2 No	107	21.1
	Total	481	94.7
Missing	System	27	5.3
Total		508	100.0

req_essent

		Frequency	Percent
Valid	1 Yes	225	44.3
	2 No	247	48.6
	Total	472	92.9
Missing	System	36	7.1
Total		508	100.0

		reason_interst	reason_repinstruct	reason_repcourse
N	Valid	414	362	371
	Missing	94	146	137
Mean		3.30	3.28	3.06
Std. Deviation		1.107	1.124	1.035

reason_interst

		Frequency	Percent
Valid	1 Strongly disagree1	32	6.3
	2 Disagree2	54	10.6
	3 Neutral3	147	28.9
	4 Agree4	121	23.8
	5 Strongly agree5	60	11.8
Total		414	81.5
Missing	6 NA	8	1.6
	System	86	16.9
	Total	94	18.5
Total		508	100.0

reason_repinstruct

		Frequency	Percent
Valid	1 Strongly disagree1	31	6.1
	2 Disagree2	34	6.7
	3 Neutral3	166	32.7
	4 Agree4	66	13.0
	5 Strongly agree5	65	12.8
Total		362	71.3
Missing	6 NA	21	4.1
	System	125	24.6
	Total	146	28.7
Total		508	100.0

reason_repcourse

		Frequency	Percent
Valid	1 Strongly disagree1	34	6.7
	2 Disagree2	52	10.2
	3 Neutral3	177	34.8
	4 Agree4	74	14.6
	5 Strongly agree5	34	6.7
Total		371	73.0
Missing	6 NA	21	4.1
	System	116	22.8
	Total	137	27.0
Total		508	100.0

QUESTIONS ABOUT YOURSELF (i.e., the students)

Many students reported some form of agreement (i.e., agreed or strongly agreed) that they regularly participate in class when appropriate (self_participate), completed their homework and readings to prepare for class (self_homework), attended all class sessions and required meetings (self_attend), asked instructor for feedback when needed (self_feedback), and put forth full effort (self_effort).

Statistics

		self_participate	self_homework	self_attend	self_feedback	self_effort
N	Valid	457	458	453	433	459
	Missing	51	50	55	75	49
Mean		4.15	4.36	4.15	4.05	4.25
Std. Deviation		.728	.777	.912	.836	.745
Skewness		-.613	-1.269	-1.040	-.736	-.855
Kurtosis		.262	1.574	.781	.489	.593

self_homework

		Frequency	Percent
Valid	1 Strongly disagree1	1	.2
	2 Disagree2	15	3.0
	3 Neutral3	34	6.7
	4 Agree4	174	34.3
	5 Strongly agree5	234	46.1
	Total	458	90.2
Missing	6 NA	1	.2
	System	49	9.6
	Total	50	9.8
Total		508	100.0

self_participate

		Frequency	Percent
Valid	2 Disagree2	11	2.2
	3 Neutral3	59	11.6
	4 Agree4	238	46.9
	5 Strongly agree5	149	29.3
	Total	457	90.0
Missing	System	51	10.0
Total		508	100.0

self_attend

		Frequency	Percent
Valid	1 Strongly disagree1	5	1.0
	2 Disagree2	22	4.3
	3 Neutral3	63	12.4
	4 Agree4	173	34.1
	5 Strongly agree5	190	37.4
	Total	453	89.2
Missing	6 NA	6	1.2
	System	49	9.6
	Total	55	10.8
Total		508	100.0

self_feedback

		Frequency	Percent
Valid	1 Strongly disagree1	3	.6
	2 Disagree2	15	3.0
	3 Neutral3	78	15.4
	4 Agree4	199	39.2
	5 Strongly agree5	138	27.2
	Total	433	85.2
Missing	6 NA	4	.8
	System	71	14.0
	Total	75	14.8
Total		508	100.0

self_effort

		Frequency	Percent
Valid	2 Disagree2	13	2.6
	3 Neutral3	45	8.9
	4 Agree4	215	42.3
	5 Strongly agree5	186	36.6
	Total	459	90.4
Missing	System	49	9.6
Total		508	100.0

HOW WOULD YOU RATE THE NEW FORM?

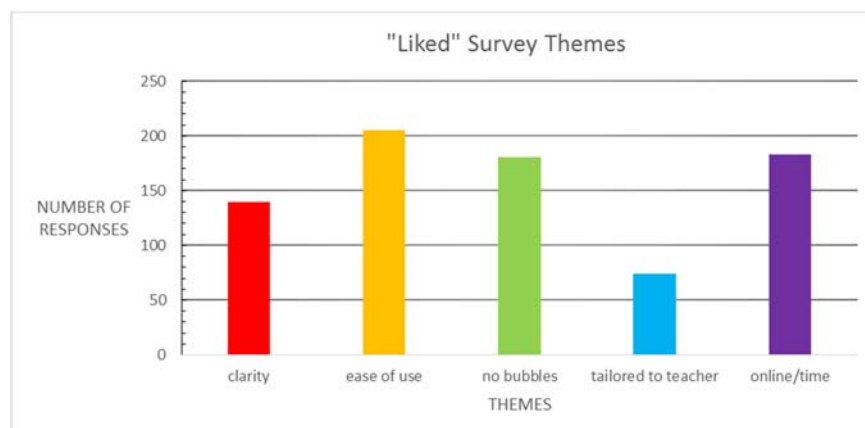
After completing the SEEQ-R1, students were asked how they would “rate the proposed new form’s effectiveness in gathering students’ evaluations of instructors”. Students’ responses were generally positive, with 70.5% indicating they thought the new form was “Good” or “Very Good”.

Statistics			rate_form	
rate_form			Frequency	Percent
N	Valid	488	1 Very poor (1)	3
	Missing	20	2 Poor (2)	7
Mean		3.93	3 OK (3)	120
		.757	4 Good (4)	251
Std. Deviation			5 Very good (5)	107
			Total	488
			Missing System	20
			Total	508

QUALITATIVE FINDINGS

An analysis was conducted on the qualitative question “Please list up to three things you LIKED about the proposed new Student Evaluation of Teaching form.” The qualitative responses contained a great deal of missing data and most answers were very short (1-10 words), thus this limited findings to basically a summary of common responses. Open coding began with searching for common statements and phrases that could be identified as codes. Five codes were identified and the remainder of the responses were coded for these.

The most common code was “Ease of use”, which included statements such as “Easy to read and understand”. Another code was “No bubbles”, which related to responses such as “Was not scantron” and “No filling in bubbles-this is much easier and less time consuming”. The third code was “Online”, which yielded statements such as “It was online”, “Much more comfortable and can take my time without feeling rushed by other students being done in 2 minutes”. A fourth code was “Clarity”, which was tied to statements such as “The questions are more clear than the old form” and “I liked the questions asked. They are more to the point! Very nice!” Finally, another code was called “Tailored to teacher”, which included responses such as “Finally more areas related to the teacher!” and “Covered everything needed to be a good teacher”. A content analysis was also conducted in which the number of times each code was found was tabulated. Overall, the students had many positive responses about the form. An analysis of the question “Please list up to three things you did NOT LIKE about the proposed new Student Evaluation of Teaching form.” was started but the codes/findings were redundant with the current analysis, thus it was discontinued.



DESCRIPTIVE STATISTICS & RELIABILITIES for SEEQ-R1 and SEEQ-R2

Descriptive statistics were examined for normal distributions of data (normal/ideal skewness and kurtosis = between +1 and -1; severely non-normal skewness > 2.3, kurtosis > 7.0). Cronbach's alpha reliability tested for internal consistency of the subscales (>.70 adequate, > .80 good, > .95 redundant).

For the **SEEQ-R1**, the majority of scale items showed normal distributions and most of the subscales had adequate to good reliability. Some scale questions were slightly non-normal (e.g., learning1_1) and one subscale had less than adequate reliability (Learning). Based on feedback that a reduced number of items would be preferred, but desiring to maintain at least 3 items per subscale for validity, the SETIC reviewed the SEEQ-R1 analyses and dropped items to create the **SEEQ-R2**. The reliabilities of the original SEEQ-R1 and revised SEEQ-R2 scales are below.

SEEQ-R1 (all items) and SEEQ-R2 (all non-grey items)

Name	Learning:	
learning1_1	1. I have gained knowledge/skills that reflect the learning outcomes of this course.	
learning2_2	2. My interest in the subject has increased as a consequence of this course.	
learning3_3	3. I have found the course intellectually challenging.	
learning4_4	4. Course readings contributed to my learning.	Low reliability, CFA loading
	Engagement:	
engage1_5	5. Instructor promoted active student participation.	
engage2_6	6. Instructor's style of teaching held my interest during class.	Dropped to reduce # of items
engage3_7	7. Instructor invited students to share their ideas.	Redundant with 9
engage4_8	8. Instructor was engaged while teaching the course.	
engage5_9	9. Instructor encouraged students to ask questions.	
	Organization and Clarity:	
org_clar1_10	10. Instructor's explanations of course content were clear.	
org_clar2_11	11. Course was well organized.	
org_clar3_12	12. Course materials were well prepared.	
org_clar4_13	13. Instructor made it clear how each topic fit with the course learning objectives.	Dropped to reduce # of items
org_clar5_14	14. Assignment expectations were clearly explained.	Dropped to reduce # of items
	Depth and Breadth:	Scale made optional
dep_bre1_15	15. Instructor presented the background/context of ideas covered in class.	
dep_bre2_16	16. Instructor adequately discussed current developments in the field.	
dep_bre3_17	17. Instructor presented multiple viewpoints/theories when appropriate.	
dep_bre4_18	18. Instructor connected real world situations to the course when appropriate.	
	Classroom Environment:	
cl_enviro1_19	19. The class environment was conducive to my learning.	
cl_enviro2_20	20. Instructor used technology effectively.	Dropped to reduce # of items
cl_enviro3_21	21. When provided, educational technology contributed to my learning.	
cl_enviro4_22	22. Instructor fostered a supportive learning community.	Dropped to reduce # of items
cl_enviro5_23	23. Instructor used the resources of the classroom appropriately.	
	Individual Rapport:	
ind_rapp1_24	24. Instructor treated students with respect.	
ind_rapp2_25	25. Instructor recognized/integrated diverse student perspectives (e.g., race, gender, age).	Overlaps 24, poor psychometrics
ind_rapp3_26	26. Instructor was adequately accessible to students outside of class.	
ind_rapp4_27	27. Instructor helped with my individual learning needs when asked.	
	Graded Materials (e.g., exams, tests, assignments):	
grad_mat1_28	28. Feedback on graded materials was timely.	Timely is subjective
grad_mat2_29	29. Methods of evaluating student work were fair.	
grad_mat3_30	30. Graded materials tested course content as emphasized by the instructor.	
grad_mat4_31	31. Instructor provided useful/meaningful feedback to assist learning.	
	Overall:	
overall1_32	32. Overall, the course has been a worthwhile addition to my university experience.	
overall2_32	33. Overall, the instructor was effective in promoting my learning in this course.	

ITEM DESCRIPTIVE STATISTICS AND RELIABILITIES

Name	Learning:
learning1_1	1. I have gained knowledge/skills that reflect the learning outcomes of this course.
learning2_2	2. My interest in the subject has increased as a consequence of this course.
learning3_3	3. I have found the course intellectually challenging.
learning4_4	4. Course readings contributed to my learning.

Statistics

	learning1_1	learning2_2	learning3_3	learning4_4
N Valid	506	505	503	495
Missing	2	3	5	13
Mean	4.17	3.73	3.83	3.58
Std. Deviation	.772	1.024	.933	1.032
Skewness	-1.259	-.692	-.755	-.553
Kurtosis	3.035	.058	.503	-.122

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.650	.666	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
learning1_1	11.11	4.464	.597	.399	.492
learning2_2	11.56	3.936	.495	.351	.533
learning3_3	11.45	4.637	.379	.159	.616
learning4_4	11.69	4.621	.302	.105	.676

Reliability of Revised Scale:

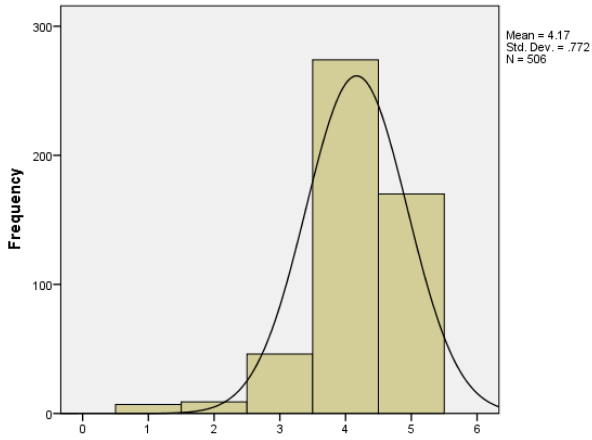
Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.681	.692	3

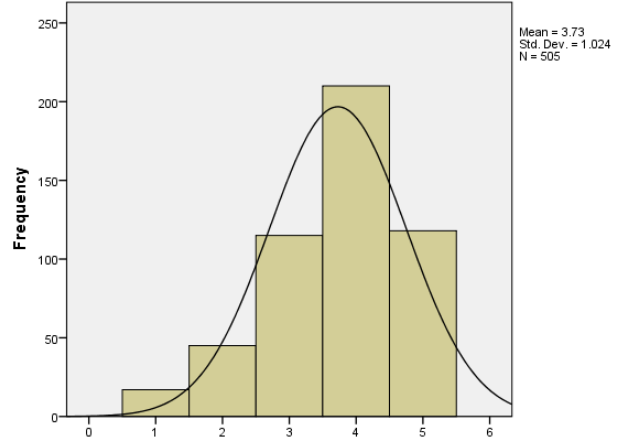
Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
learning1_1	7.56	2.547	.592	.376	.494
learning2_2	7.99	1.998	.536	.354	.536
learning3_3	7.89	2.575	.390	.158	.718

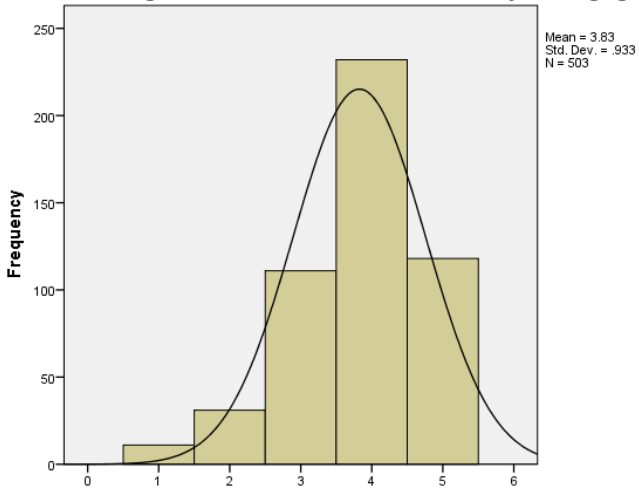
Learning:- 1. I have gained knowledge/skills that reflect the learning outcomes of this course.



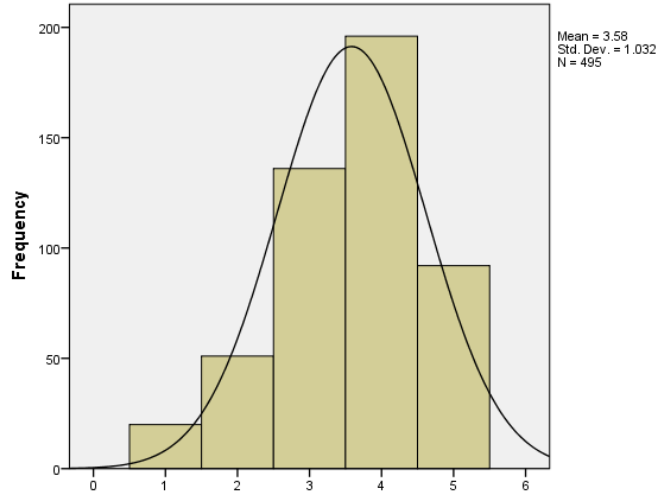
Learning:- 2. My interest in the subject has increased as a consequence of this course.



Learning:- 3. I have found the course intellectually challenging.



Learning:- 4. Course readings contributed to my learning.



Engagement:	
engage1_5	5. Instructor promoted active student participation.
engage2_6	6. Instructor's style of teaching held my interest during class.
engage3_7	7. Instructor invited students to share their ideas.
engage4_8	8. Instructor was engaged while teaching the course.
engage5_9	9. Instructor encouraged students to ask questions.

Statistics

		engage1_5	engage2_6	engage3_7	engage4_8	engage5_9
N	Valid	506	505	503	502	506
	Missing	2	3	5	6	2
Mean		3.93	3.73	4.05	4.35	4.14
Std. Deviation		.981	1.170	.941	.861	.916
Skewness		-.888	-.674	-1.039	-1.616	-1.154
Kurtosis		.435	-.459	1.022	2.955	1.389

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.822	.829	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
engage1_5	16.30	9.248	.641	.416	.780
engage2_6	16.50	8.735	.560	.436	.813
engage3_7	16.18	9.698	.584	.446	.796
engage4_8	15.90	9.549	.689	.508	.770
engage5_9	16.10	9.502	.644	.497	.780

Reliability of Revised Scale:

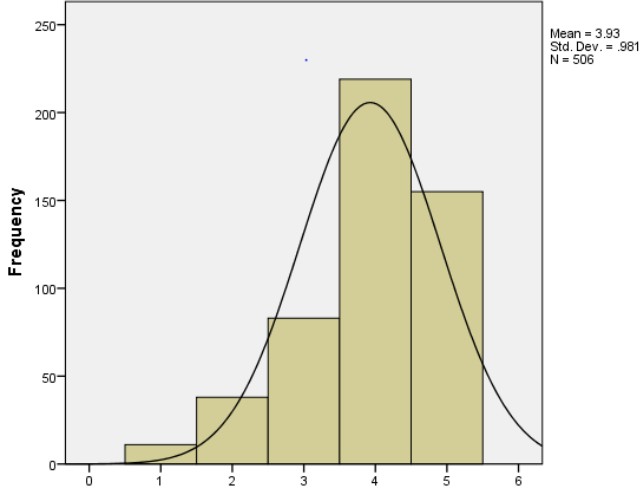
Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.759	.760	3

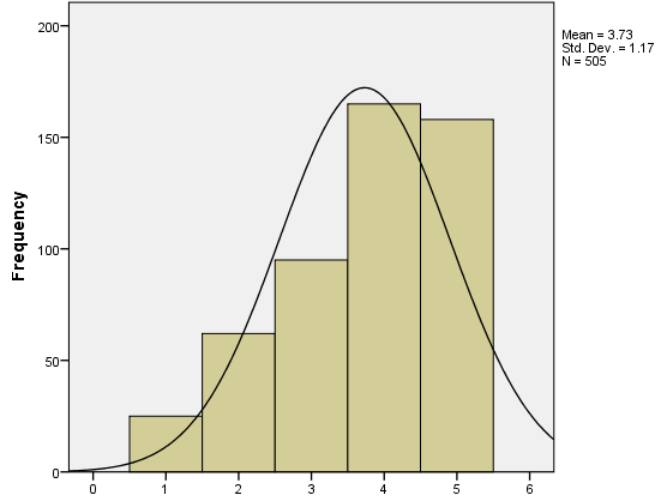
Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
engage1_5	8.49	2.459	.567	.321	.705
engage4_8	8.09	2.684	.598	.362	.669
engage5_9	8.29	2.508	.605	.370	.658

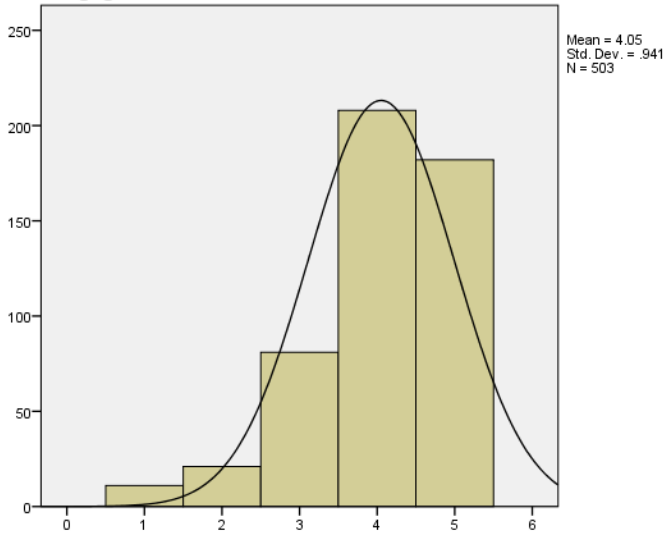
Engagement:-5. Instructor promoted active student participation.



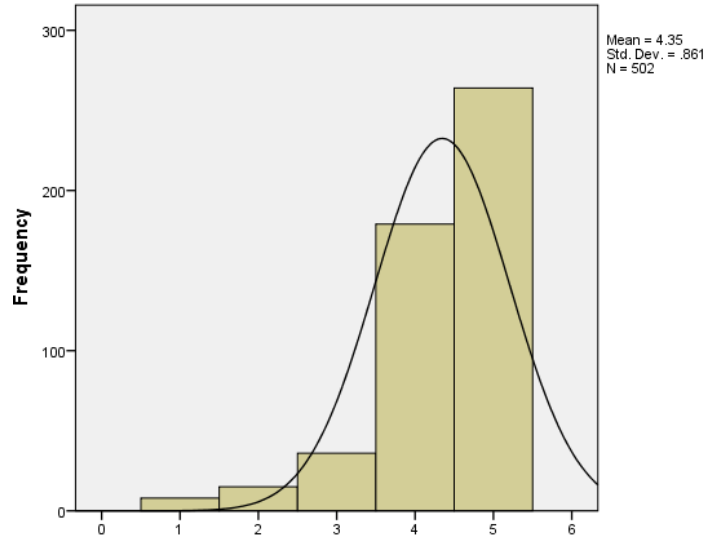
Engagement:- 6. Instructor's style of teaching held my interest during class.



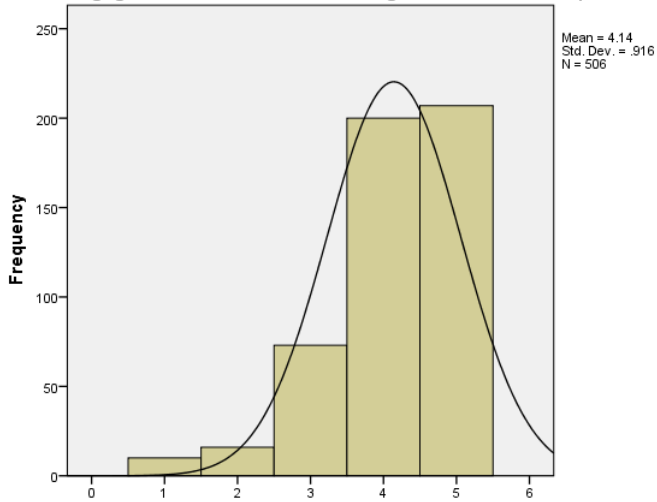
Engagement:- 7. Instructor invited students to share their ideas.



Engagement:- 8. Instructor was engaged while teaching the course.



Engagement:-9. Instructor encouraged students to ask questions.



Engagement:-9. Instructor encouraged students to ask questions.

Organization and Clarity:	
org_clar1_10	10. Instructor's explanations of course content were clear.
org_clar2_11	11. Course was well organized.
org_clar3_12	12. Course materials were well prepared.
org_clar4_13	13. Instructor made it clear how each topic fit with the course learning objectives.
org_clar5_14	14. Assignment expectations were clearly explained.

Statistics

		org_clar1_10	org_clar2_11	org_clar3_12	org_clar4_13	org_clar5_14
N	Valid	505	506	506	503	501
	Missing	3	2	2	5	7
Mean		4.08	4.10	4.23	4.07	4.11
Std. Deviation		.939	.951	.844	.913	.952
Skewness		-1.090	-1.222	-1.173	-.949	-1.045
Kurtosis		1.082	1.499	1.520	.669	.620

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.875	.876	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
org_clar1_10	16.50	9.178	.719	.520	.844
org_clar2_11	16.49	9.020	.738	.615	.840
org_clar3_12	16.36	9.391	.778	.646	.832
org_clar4_13	16.51	9.645	.652	.438	.860
org_clar5_14	16.48	9.492	.640	.415	.864

Reliability of Revised Scale:

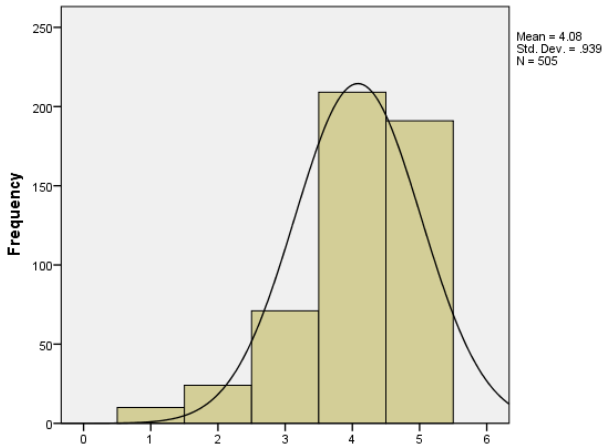
Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.858	.860	3

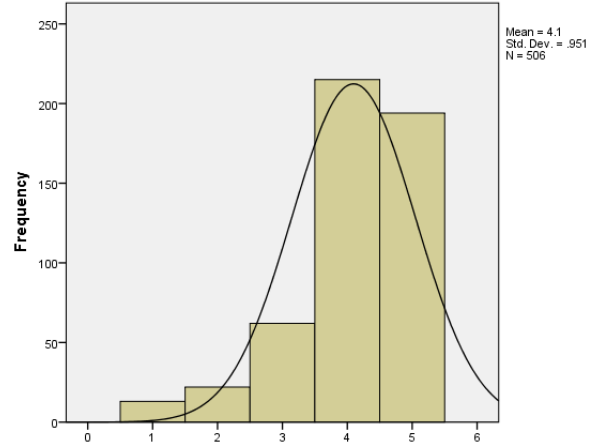
Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
org_clar1_10	8.33	2.825	.676	.458	.855
org_clar2_11	8.31	2.593	.767	.611	.769
org_clar3_12	8.18	2.923	.763	.603	.779

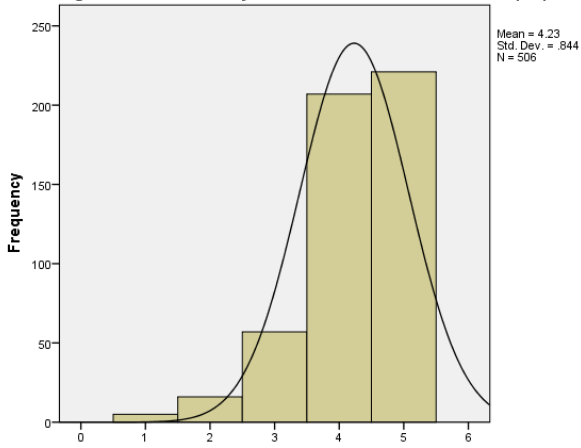
Organization and Clarity:- 10. Instructor's explanations of course content were clear.



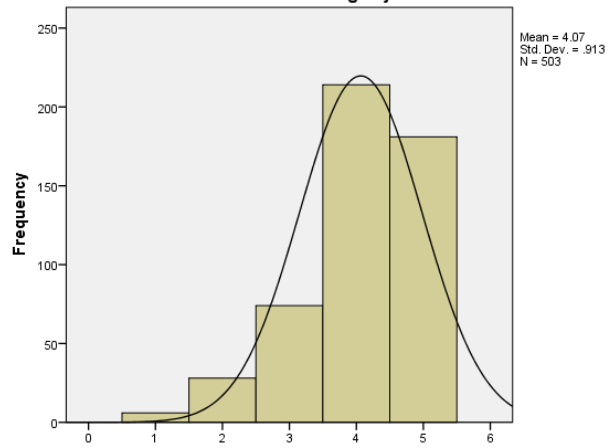
Organization and Clarity:-11. Course was well organized.



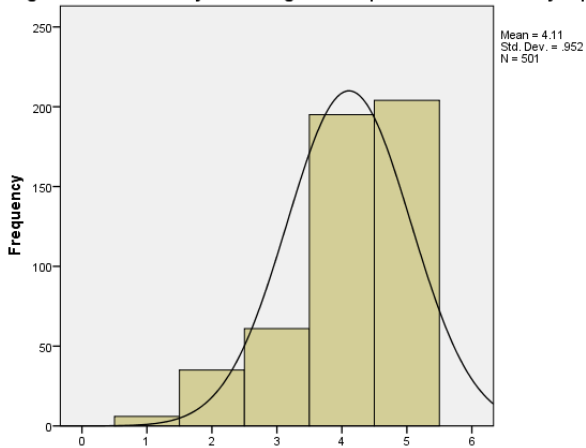
Organization and Clarity:- 12. Course materials were well prepared.



Organization and Clarity:-13. Instructor made it clear how each topic fit with the course learning objectives.



Organization and Clarity:- 14. Assignment expectations were clearly explained.



Depth and Breadth:	
dep_bre1_15	15. Instructor presented the background/context of ideas covered in class.
dep_bre2_16	16. Instructor adequately discussed current developments in the field.
dep_bre3_17	17. Instructor presented multiple viewpoints/theories when appropriate.
dep_bre4_18	18. Instructor connected real world situations to the course when appropriate.

Scale dropped from SEEQ-R2 and made optional for future measures based on (1) cross loading with Organization and Clarity subscale in EFA and (2) the need to reduce overall number of items.

Statistics

		dep_bre1_15	dep_bre2_16	dep_bre3_17	dep_bre4_18
N	Valid	505	500	503	503
	Missing	3	8	5	5
Mean		4.16	3.99	4.12	4.40
Std. Deviation		.759	.962	.885	.751
Skewness		-1.099	-.884	-1.155	-1.553
Kurtosis		2.382	.444	1.457	3.562

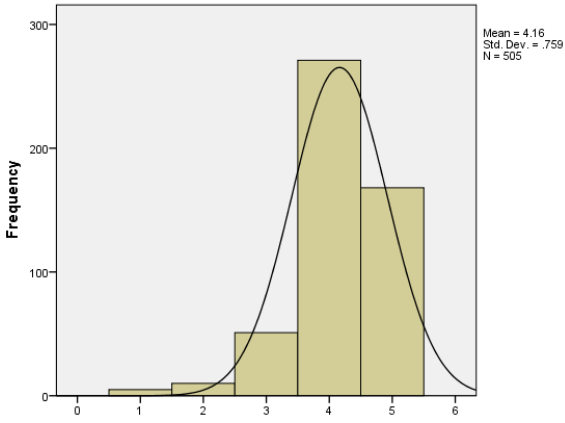
Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.845	.850	4

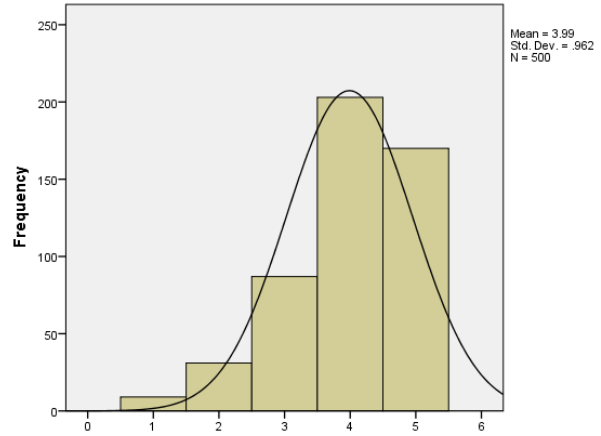
Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
dep_bre1_15	12.51	4.889	.683	.468	.805
dep_bre2_16	12.69	4.142	.691	.481	.804
dep_bre3_17	12.56	4.465	.675	.460	.807
dep_bre4_18	12.28	4.860	.701	.492	.799

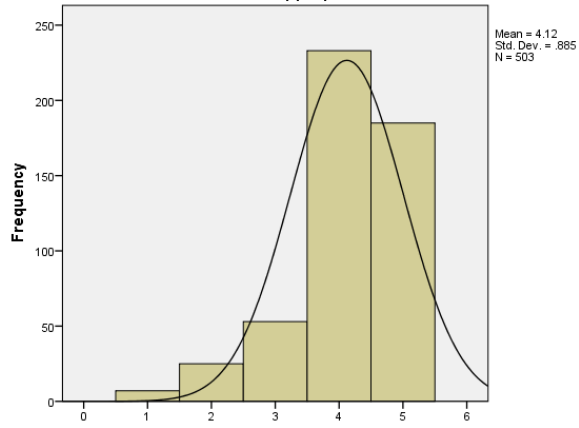
Depth and Breadth:- 15. Instructor presented the background/context of ideas covered in class.



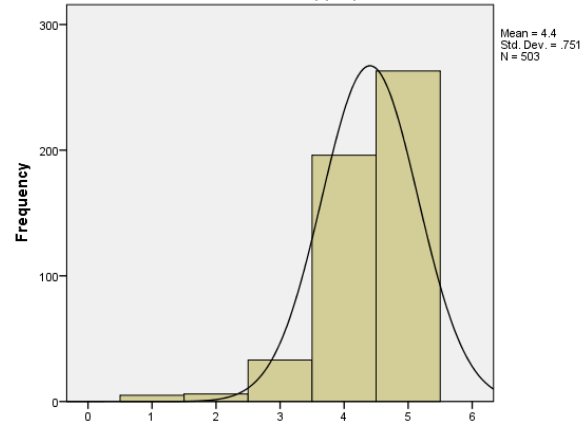
Depth and Breadth:- 16. Instructor adequately discussed current developments in the field.



Depth and Breadth:-17. Instructor presented multiple viewpoints/theories when appropriate.



Depth and Breadth:-18. Instructor connected real world situations to the course when appropriate.



Classroom Environment:	
cl_enviro1_19	19. The class environment was conducive to my learning.
cl_envrio2_20	20. Instructor used technology effectively.
cl_enviro3_21	21. When provided, educational tech. (e.g., computer exercises, multi-media, presentations) contributed to my learning.
cl_enviro4_22	22. Instructor fostered a supportive learning community.
cl_enviro5_23	23. Instructor used the resources of the classroom appropriately.

Statistics

	cl_enviro1_19	cl_envrio2_20	cl_enviro3_21	cl_enviro4_22	cl_enviro5_23
N Valid	498	507	476	502	502
Missing	10	1	32	6	6
Mean	3.91	4.27	4.11	4.08	4.23
Std. Deviation	.975	.776	.870	.860	.771
Skewness	-.843	-1.290	-.903	-.890	-1.030
Kurtosis	.406	2.753	.839	.810	1.524

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.856	.861	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
cl_enviro1_19	16.76	7.336	.581	.338	.854
cl_envrio2_20	16.41	7.692	.689	.538	.822
cl_enviro3_21	16.57	7.243	.698	.518	.818
cl_enviro4_22	16.60	7.461	.656	.494	.829
cl_enviro5_23	16.44	7.552	.757	.610	.807

Revised Scale Reliability:

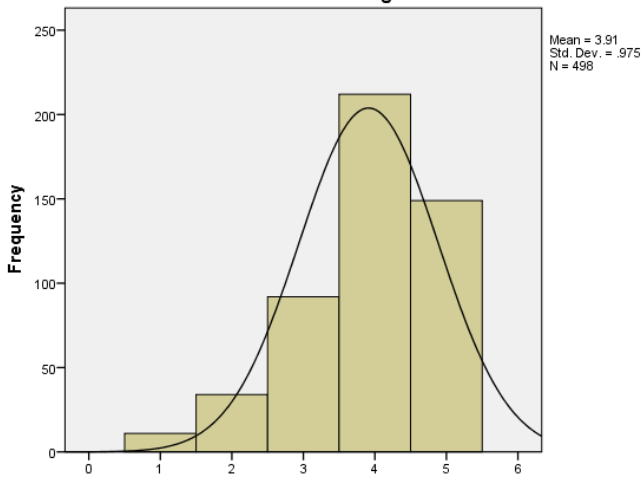
Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.770	.778	3

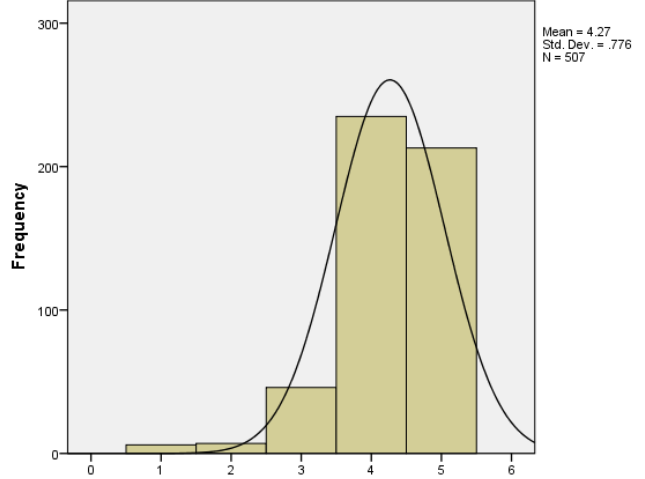
Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
cl_enviro1_19	8.37	2.112	.564	.319	.748
cl_enviro3_21	8.18	2.224	.628	.416	.662
cl_enviro5_23	8.03	2.519	.640	.422	.666

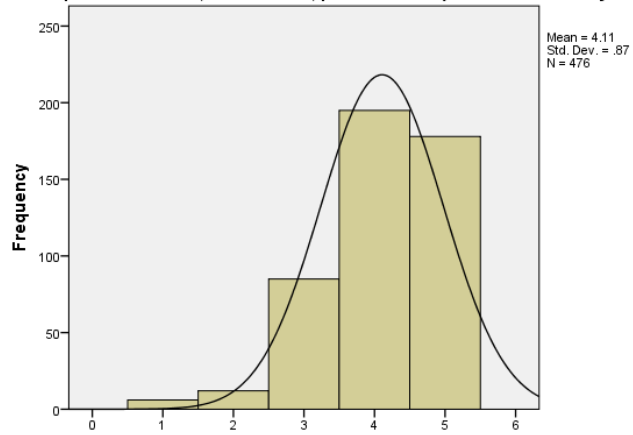
Classroom Environment:- 19. The class environment was conducive to my learning.



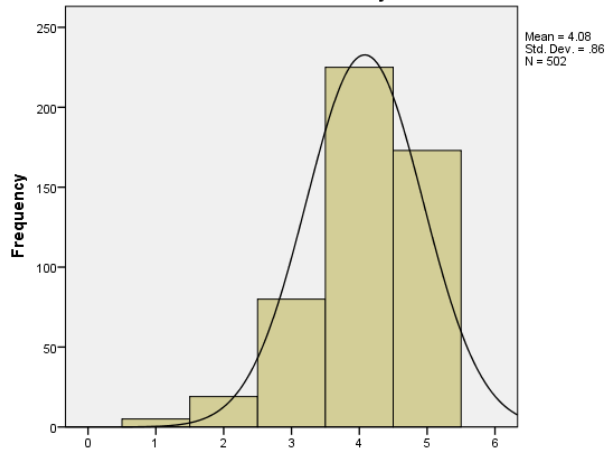
Classroom Environment:-20. Instructor used technology effectively.



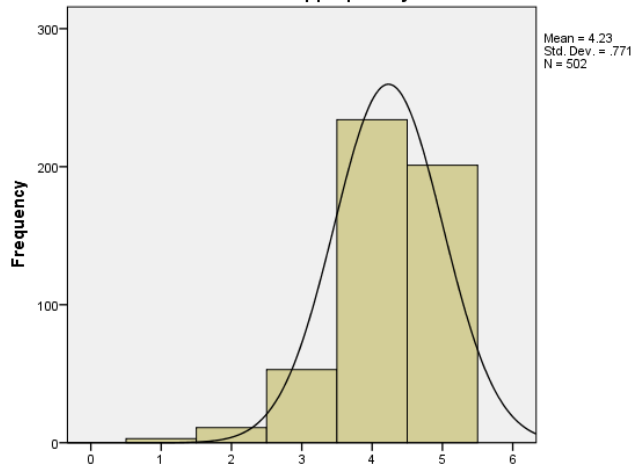
Classroom Environment:-21. When provided, educational technology (e.g., computer exercises, multi-media, presentations) contributed to my learning.



Classroom Environment:-22. Instructor fostered a supportive learning community.



Classroom Environment:-23. Instructor used the resources of the classroom appropriately.



Individual Report:	
ind_rapp1_24	24. Instructor treated students with respect.
ind_rapp2_25	25. Instructor recognized/integrated diverse student perspectives (e.g., race, gender, age).
ind_rapp3_26	26. Instructor was adequately accessible to students outside of class.
ind_rapp4_27	27. Instructor helped with my individual learning needs when asked.

Statistics

		ind_rapp1_24	ind_rapp2_25	ind_rapp3_26	ind_rapp4_27
N	Valid	505	477	454	433
	Missing	3	31	54	75
Mean		4.42	4.38	4.31	4.29
Std. Deviation		.796	.812	.781	.845
Skewness		-1.444	-1.571	-1.014	-1.138
Kurtosis		2.075	3.190	.911	1.174

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.852	.852	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
ind_rapp1_24	13.06	4.185	.689	.486	.813
ind_rapp2_25	13.08	4.316	.640	.433	.833
ind_rapp3_26	13.18	4.121	.720	.564	.800
ind_rapp4_27	13.20	3.891	.722	.572	.799

Revised Scale Reliability:

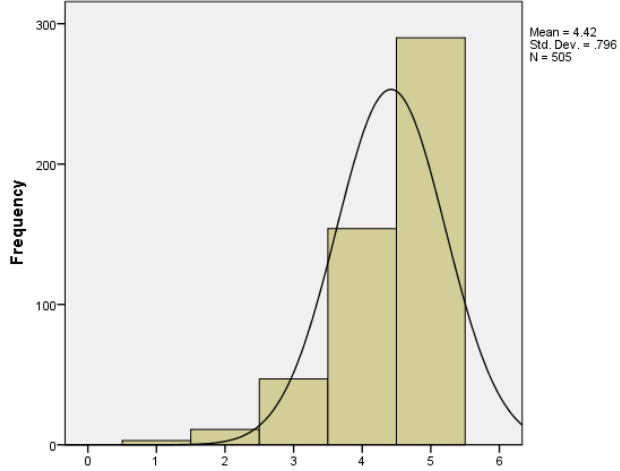
Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.828	.827	3

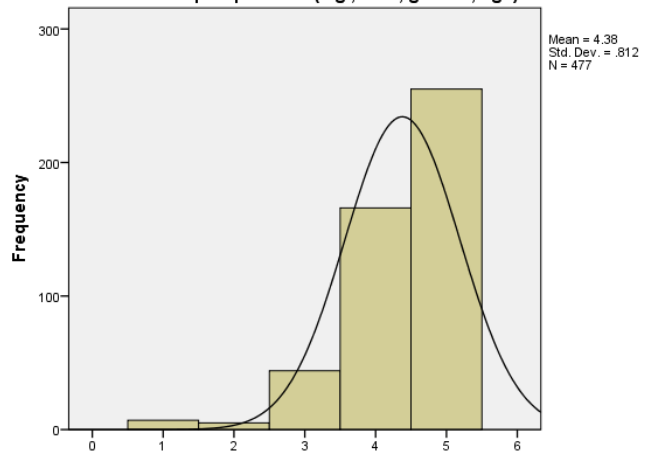
Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
ind_rapp1_24	8.62	2.245	.609	.371	.834
ind_rapp3_26	8.76	2.044	.719	.543	.729
ind_rapp4_27	8.78	1.857	.734	.561	.711

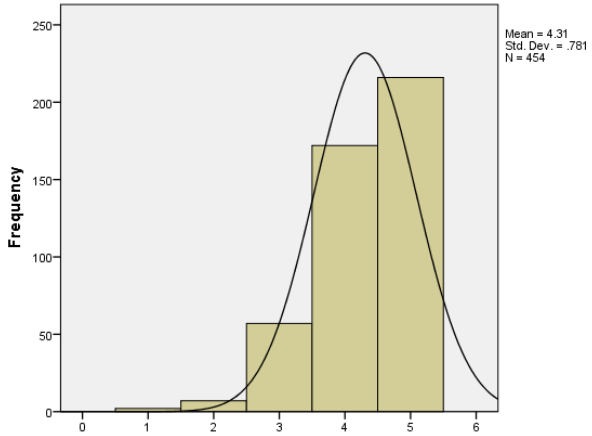
Individual Rapport:-24. Instructor treated students with respect.



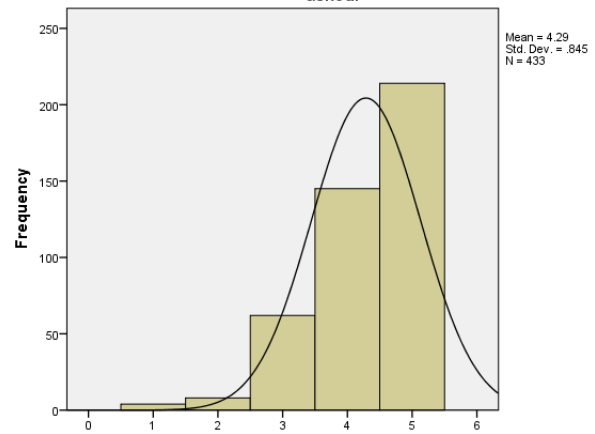
Individual Rapport:-25. Instructor recognized/integrated diverse student perspectives (e.g., race, gender, age).



Individual Rapport:-26. Instructor was adequately accessible to students outside of class.



Individual Rapport:-27. Instructor helped with my individual learning needs when asked.



Graded Materials (e.g., exams, tests, assignments):	
grad_mat1_28	28. Feedback on graded materials was timely.
grad_mat2_29	29. Methods of evaluating student work were fair.
grad_mat3_30	30. Graded materials tested course content as emphasized by the instructor.
grad_mat4_31	31. Instructor provided useful/meaningful feedback to assist learning.

Statistics

		grad_mat1_2 8	grad_mat2_2 9	grad_mat3_3 0	grad_mat4_3 1
N	Valid	506	506	505	501
	Missing	2	2	3	7
Mean		3.90	4.07	4.12	3.99
Std. Deviation		1.029	.907	.831	.954
Skewness		-.844	-1.228	-1.105	-.930
Kurtosis		.164	1.840	1.734	.709

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.810	.816	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
grad_mat1_28	12.19	5.502	.489	.243	.834
grad_mat2_29	12.02	5.125	.710	.537	.723
grad_mat3_30	11.97	5.586	.664	.492	.749
grad_mat4_31	12.10	5.068	.676	.477	.738

Revised scale reliability

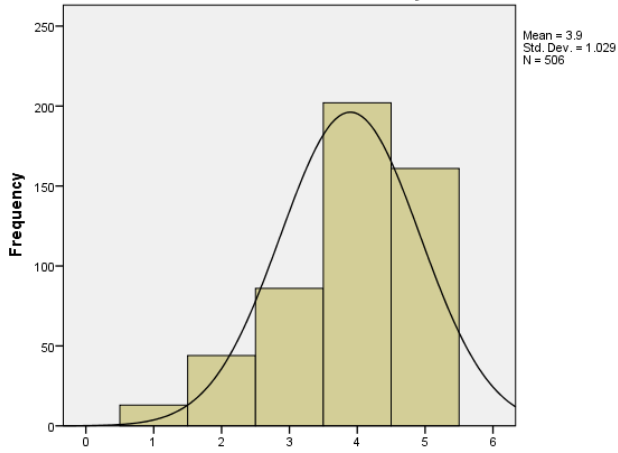
Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.833	.835	3

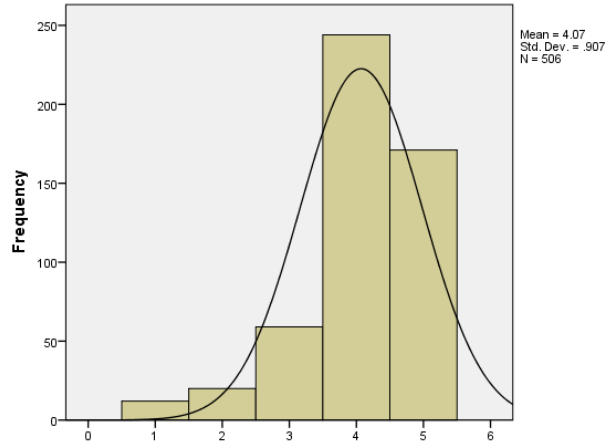
Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
grad_mat2_29	8.11	2.557	.719	.520	.743
grad_mat3_30	8.06	2.843	.694	.487	.773
grad_mat4_31	8.20	2.524	.675	.456	.791

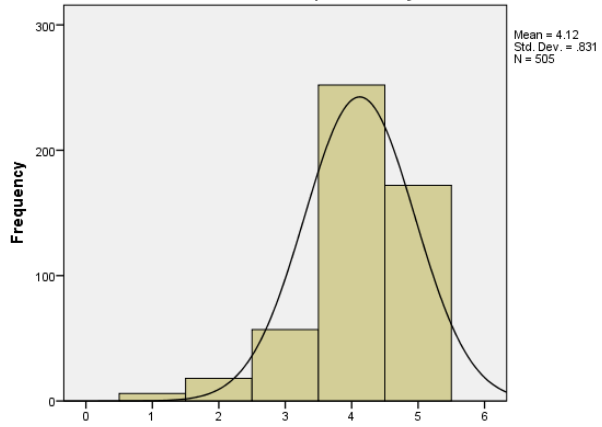
Graded Materials (e.g., exams, tests, assignments):- 28. Feedback on graded materials was timely.



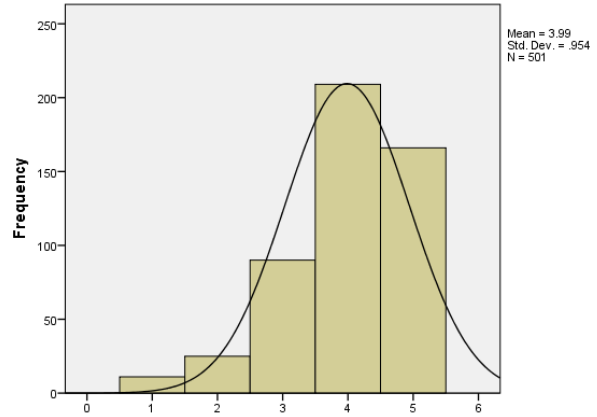
Graded Materials (e.g., exams, tests, assignments):- 29. Methods of evaluating student work were fair.



Graded Materials (e.g., exams, tests, assignments):- 30. Graded materials tested course content as emphasized by the instructor.



Graded Materials (e.g., exams, tests, assignments):-31. Instructor provided useful/meaningful feedback to assist learning.



		Overall:	
overall1_32	32.	Overall, the course has been a worthwhile addition to my university experience.	
overall2_32	33.	Overall, the instructor was effective in promoting my learning in this course.	

Note. Cronbach's alpha reliability only appropriate with +3 items, thus a correlation was analyzed.

Statistics

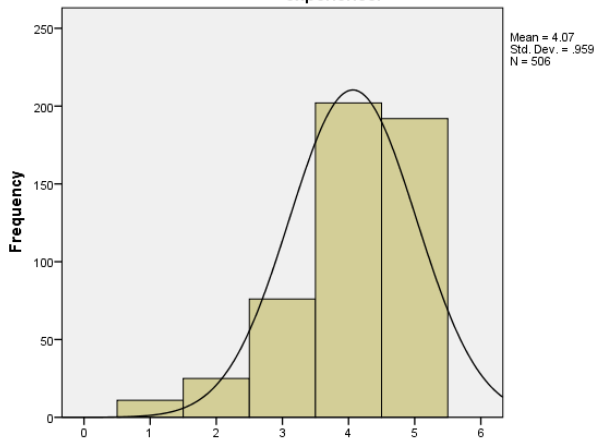
		overall1_32	overall2_32
N	Valid	506	507
	Missing	2	1
Mean		4.07	4.20
Std. Deviation		.959	.914
Skewness		-1.063	-1.275
Kurtosis		.932	1.557

Correlations

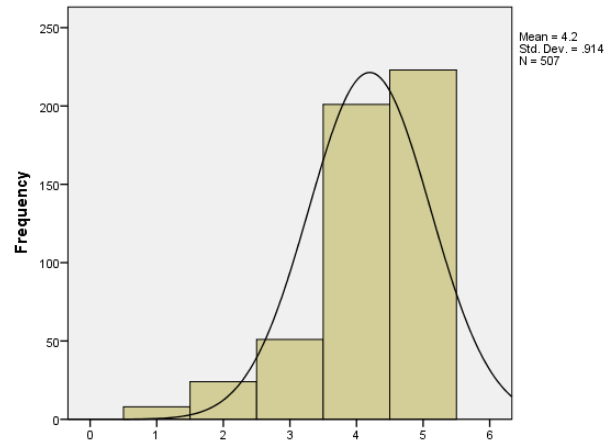
		overall1_32	overall2_32
overall1_32	Pearson Correlation	1	.724**
	Sig. (2-tailed)		.000
	N	506	505
overall2_32	Pearson Correlation	.724**	1
	Sig. (2-tailed)	.000	
	N	505	507

** . Correlation is significant at the 0.01 level (2-tailed).

Overall:- 32. Overall, the course has been a worthwhile addition to my university experience.



Overall:- 33. Overall, the instructor was effective in promoting my learning in this course.



EXPLORATORY FACTOR ANALYSIS (EFA)

Several exploratory factor analysis were conducted to determine how items may freely combine based on similarity of responses by participants (SPSS Principle Axis Factoring, extracted factors with eigenvalues greater than 1.00 and using scree plot, direct oblimin [oblique] rotation, only loadings > .30 displayed).

The results of the SEEQ-R1 (items 1-31, excluding "Overall" items) suggest 3 factors should be extracted based on scree plot or 6 factors based on eigenvalue > 1. Both criteria indicate multidimensionality exists among the items, however, several of the hypothesized subscales showed cross-loadings (e.g., Organization and Clarity ≈ Depth and Breadth) and a number of individual items cross-loaded on several scales.

Total Variance Explained

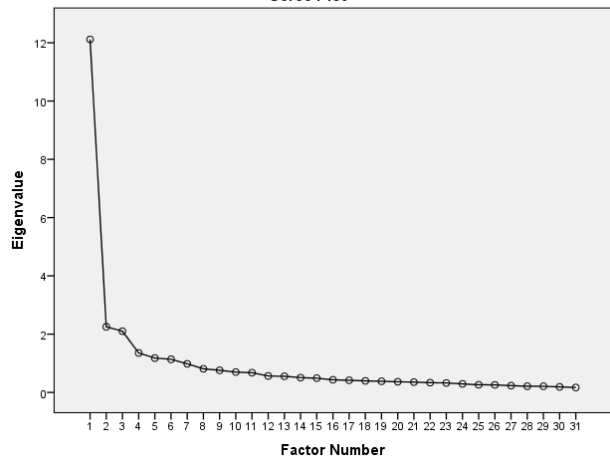
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	
1	12.114	39.079	39.079	11.716	37.794	37.794	8.332
2	2.252	7.264	46.343	1.790	5.776	43.569	4.047
3	2.100	6.776	53.118	1.693	5.462	49.032	5.928
4	1.354	4.368	57.486	.967	3.120	52.152	7.030
5	1.179	3.804	61.290	.742	2.393	54.545	7.796
6	1.136	3.665	64.954	.691	2.231	56.776	2.249
7	.981	3.166	68.120				

Pattern Matrix^a

	Factor					
	1	2	3	4	5	6
learning1_1		.582				
learning2_2		.688				
learning3_3		.476				
learning4_4						
engage1_5			.520			
engage2_6		.386				
engage3_7			.806			
engage4_8			.463			
engage5_9			.779			
org_clar1_10	.689					
org_clar2_11	.601					
org_clar3_12	.600					
org_clar4_13	.598					
org_clar5_14	.605					
dep_bre1_15	.633					
dep_bre2_16	.575					
dep_bre3_17	.428					
dep_bre4_18	.567					
cl_enviro1_19					.485	
cl_enviro2_20					.803	
cl_enviro3_21					.860	
cl_enviro4_22					.336	
cl_enviro5_23					.571	
ind_rapp1_24			.331	.431		.367
ind_rapp2_25						.415
ind_rapp3_26				.320		.518
ind_rapp4_27				.383		.432
grad_mat1_28				.527		
grad_mat2_29				.787		
grad_mat3_30				.696		
grad_mat4_31				.720		

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.

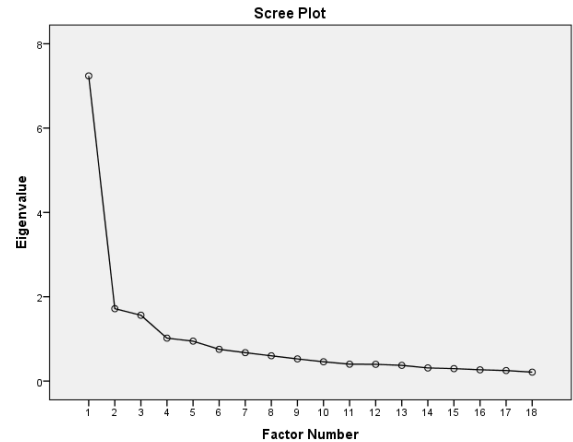
Scree Plot



Another EFA was conducted on the SEEQ-R2. The extraction results (eigenvalues, scree plot) again suggest fewer than 6 factors should be extracted, perhaps as few as 3. This suggests some multidimensionality exists in the items but that there is correlation among the items and scales. To explore for the hypothesized 6 factors, a six factor extraction was specified. The rotated factor matrix supports six meaningful factors present (i.e., items group into expected factors with loadings > .40). We next used a confirmatory factor analysis to test the hypothesized factor structure.

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	7.238	40.211	40.211	6.872	38.180	38.180	4.609
2	1.717	9.538	49.749	1.304	7.247	45.427	2.715
3	1.561	8.674	58.423	1.216	6.758	52.185	3.972
4	1.018	5.657	64.080	.673	3.741	55.926	4.329
5	.947	5.261	69.341	.500	2.779	58.705	3.593
6	.753	4.185	73.526	.393	2.186	60.891	3.825
7	.674	3.745	77.271				



Pattern Matrix^a

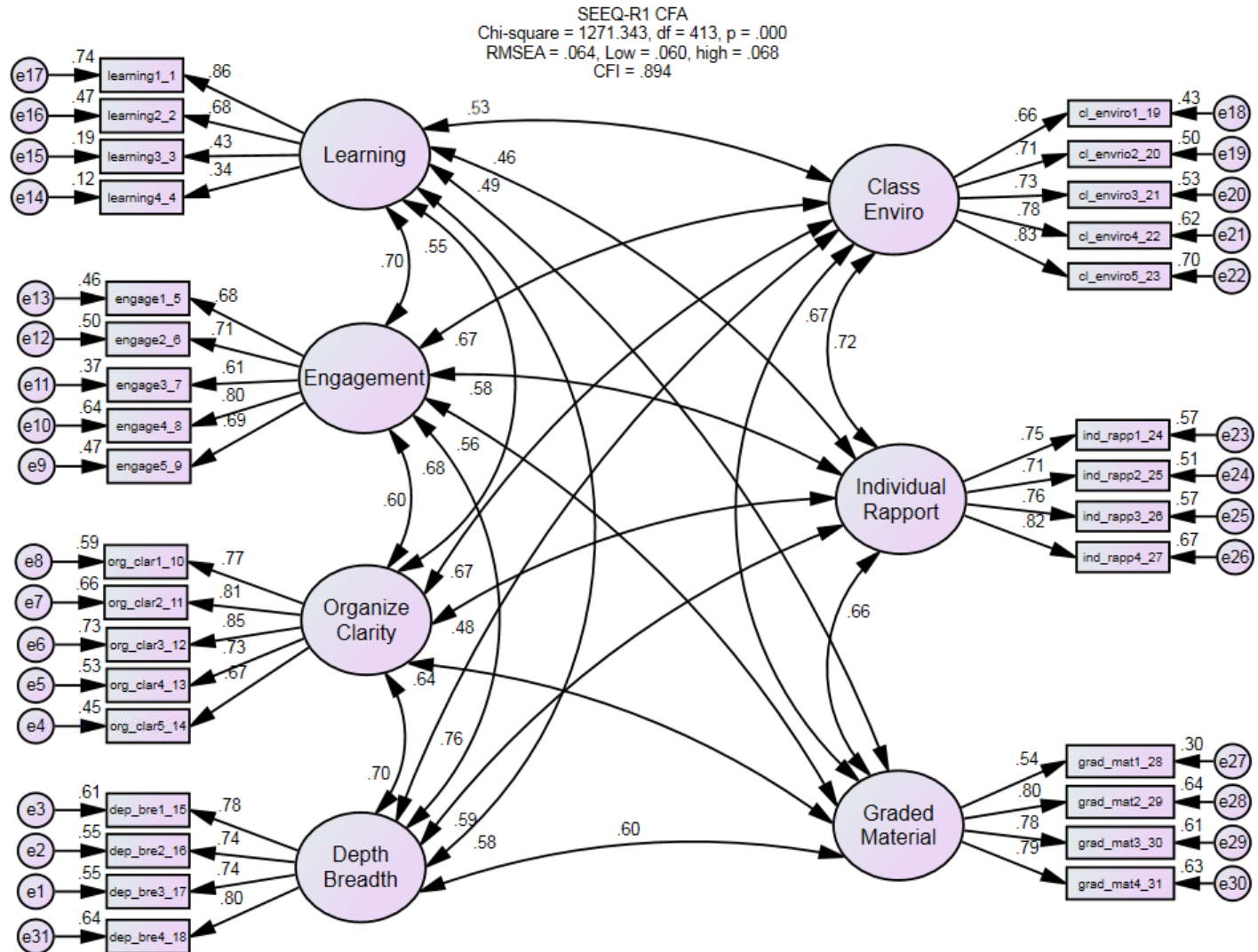
	Factor					
	1	2	3	4	5	6
learning1_1		.654				
learning2_2		.720				
learning3_3		.416				
engage1_5					-.504	
engage4_8					-.494	
engage5_9					-.803	
org_clar1_10			-.669			
org_clar2_11			-.815			
org_clar3_12			-.748			
cl_enviro1_19	.579					
cl_enviro3_21	.733					
cl_enviro5_23	.571					
ind_rapp1_24						.418
ind_rapp3_26						.894
ind_rapp4_27						.730
grad_mat2_29				.851		
grad_mat3_30				.729		
grad_mat4_31				.597		

Extraction Method: Principal Axis Factoring.
 Rotation Method: Oblimin with Kaiser Normalization.
 a. Rotation converged in 12 iterations.

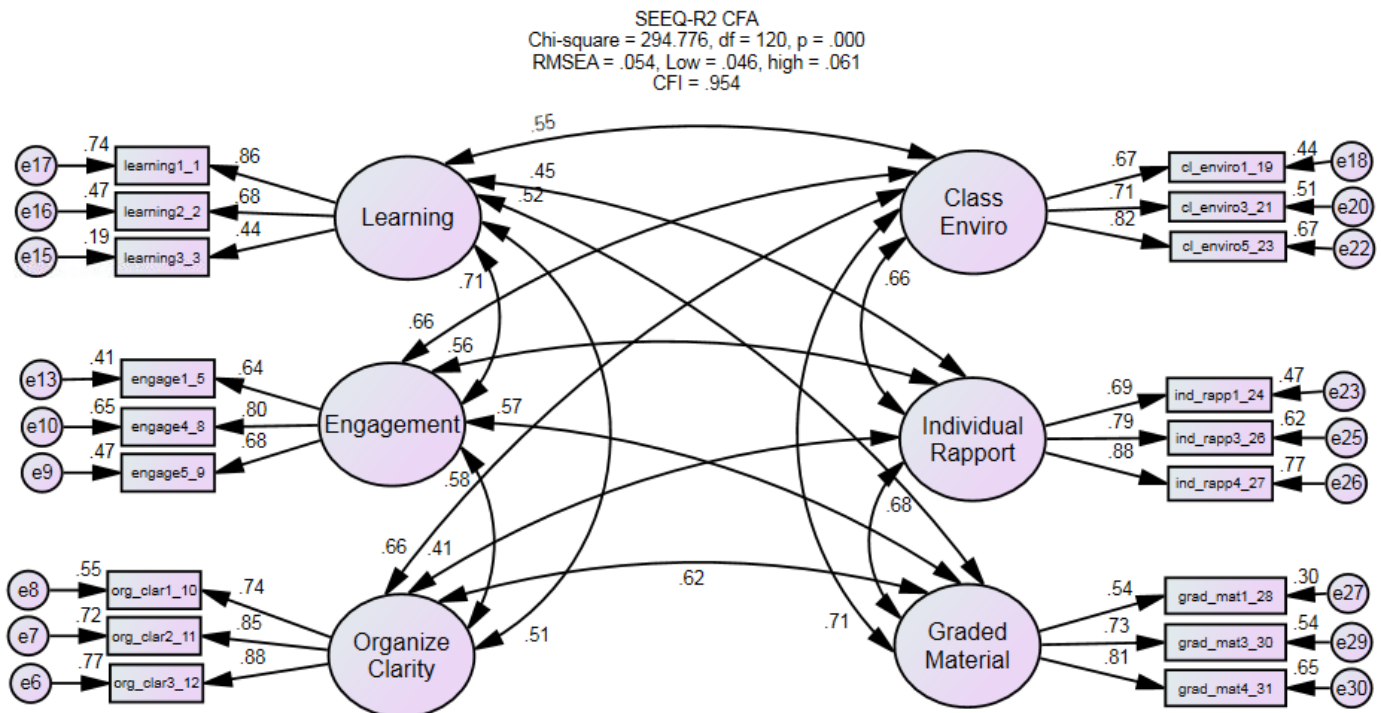
CONFIRMATORY FACTOR ANALYSIS (CFA)

Several CFA was conducted using the AMOS Structural Equation Modeling program. In a CFA, items are selected to load onto hypothesized factors (as opposed to an EFA where items are free to combine based on intercorrelations). The overall model is then tested in terms of if it “fits the data” based on several criteria. Models achieving good fit align with the following criteria: RMSEA $\leq .06$ great, $\leq .08$ good (narrow confidence interval within that range); CFI $\geq .95$ great, $\geq .90$ good. It is also desirable that factor loadings (path coefficients on lines between rectangular measured variable and circular latent variables) are high and positive, preferably $\geq .70$. Double headed arrows between latent variables represent correlations.

The CFA results for the SEEQ-R1 suggest the model fits the data adequately based on the RMSEA, but not great based on a low CFI. There were many factors loadings great than .70, but also a number of low loadings (e.g., learning4_4 = .34). There were many large positive correlations among the latent variables. Overall, the model shows some evidence for construct validity, but that with some modifications a better fit to the data could be achieved.



The CFA results for the SEEQ-R2 suggest the model fits the data very well according to all fit indexes. There were many factors loadings great than .70, but some low loadings were present (e.g., learning3_3 = .44). There were many large positive correlations among the latent variables. Overall, the model suggests the SEEQ-R2 instrument has excellent construct validity.



CONVERGENT AND DIVERGENT VALIDITY

Convergent validity tests if the items of a latent variable share a significant amount of variance (i.e., they are sufficiently intercorrelated). Convergent validity is supported when the average variance extracted (AVE, the average item variance explained or R^2 ; e.g., engagement AVE = $(.41 + .65 + .47)/3 = .51$) exceeds .50 for a given latent variable. The latent variable AVEs are presented along the grey diagonal of the table below. All latent variables showed good convergent validity with AVEs $\geq .50$, with the exception of learning which was very close to good convergent validity at .47.

Divergent validity tests if a latent variables is significantly distinct/different from other latent variables in the analysis (i.e., they are sufficiently unique). Divergent validity is supported when the average “average variance-extracted values (AVEs)” for any two constructs is greater than the square of the correlation between these two constructs (Discriminant validity = average AVE > squared correlation). The correlations among the latent variables are in the lower diagonal, the square of the correlations are in the upper diagonal in the table below. The latent variables all showed discriminant validity, with the exception of learning and engagement (average AVE .49 < squared correlation .55).

	1	2	3	4	5	6
1. Learning	.47	.50	.26	.30	.20	.27
2. Engagement	.71	.51	.34	.44	.31	.32
3. Org/Clarity	.51	.58	.68	.44	.17	.38
4. Class Enviro	.55	.66	.66	.54	.44	.50
5. Rapport	.45	.56	.41	.66	.62	.46
6. Graded Material	.52	.57	.62	.71	.68	.50

OTHER TESTS

RESPONSE FORMAT

Independent samples *t*-tests comparing paper-and-pencil versus online completion of the SEEQ-R2 revealed no significant differences on any of the SEEQ-R2 scales or overall measures.

RELATIONSHIPS WITH STUDENT DEMOGRAPHICS

Correlations with SEEQ-R2 scales and student age yielded no significant correlations. Correlations with year of study yielded no significant correlations with SEEQ-R2 scales with the exception of year of study and “engagement” correlated at $r = .10$ ($p < .05$), although this effect has little practical significance. Independent samples *t*-tests revealed no significant differences on any of the SEEQ-R2 scales based on gender, international student (yes/no), or speaking English as a first language (yes/no).

RELATIONSHIPS WITH STUDENT VARIABLES

	Reason for taking course:			Questions about yourself (i.e., student):				
	Interest	Rep. of instructor	Rep. of course	Participated when appropriate	Completed homework	Attended all classes	Asked for feedback when need	Put forth full effort
1. Learning	.31	.29	.23	.24	.16	.11	.27	.27
2. Engagement	.13	.34	.07	.21	.12	.15	.23	.22
3. Org/clarity	.11	.32	.18	.20	.23	.17	.22	.24
4. Class enviro	.21	.39	.18	.30	.22	.13	.27	.28
5. Rapport	.14	.31	.07	.22	.18	.12	.37	.21
6. Graded material	.15	.44	.22	.20	.14	.12	.24	.21
7. Overall course	.43	.51	.38	.23	.14	.17	.23	.28
8. Overall instructor	.27	.54	.25	.28	.18	.15	.28	.27

Correlations between the SEEQ-R2 scales and student variables were almost all statistically significant at $p < .05$, which was attributed in part to the large sample size (N ranged from 354 to 458, which varied due to missing data). Only two correlations, both $r = .07$, were nonsignificant (see “Reputation of Course”). Given the lack of interpretability based on statistical significance due to the large sample, Cohen (1988) suggested practical significance of correlations could be interpreted as .10 or less as “small”, about .30 as “medium”, and about .50 or larger as “large”. Based on these criteria, the majority of correlations should be characterized as small, eight correlations as medium (light shading), and only two correlations as large (darker shading). Note these medium to large correlations were mainly with the “Reason for taking course: Reputation of Instructor” item.

Students who took the course to fulfill a requirement for their major reported significantly more learning, $t(221.17) = 4.07$, $p < .001$, $M_s = 3.97$ vs. 3.70, a better classroom environment, $t(437) = 2.18$, $p < .05$, $M_s = 4.15$ vs. 3.97, and overall rated the course more positively, $t(477) = 3.00$, $p < .01$, $M_s = 4.25$ vs. 4.12.

Students who took the course to fulfill an essential studies requirement reported less learning, $t(466) = -2.27$, $p < .05$, $M_s = 3.83$ vs. 3.98, less engagement, $t(463) = -2.09$, $p < .05$, $M_s = 4.09$ vs. 4.23, less positive classroom environment, $t(429) = -2.89$, $p < .01$, $M_s = 4.01$ vs. 4.20, and less individual rapport with instructor, $t(381) = -2.44$, $p < .05$, $M_s = 4.28$ vs. 4.44.

References

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Appendix A

UND Student Evaluation of Teaching: Fall 2015 Data Collection INSTRUMENT

Dear students,

In an effort to improve the quality of feedback from students regarding teaching at UND, the University Senate Ad-Hoc Student Evaluation of Teaching Implementation Committee (SETIC) is collecting preliminary data on a proposed new Student Evaluation of Teaching (SET) form. Please answer the questions below in regards to the course in which you received this form. Please also respond to the questions on the reverse side. Your responses are anonymous and of great importance in continuing to develop this new evaluation form, so please answer thoughtfully and honestly.

Thank you, the SETIC

Course (e.g., BIO 111): _____ Instructor: _____

Instructions: For each of the following statements, circle the response that most closely expresses your opinion. Please circle NA (Not Applicable) if the statement does not apply to you or your instructor.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	NA
Learning:						
1. I have gained knowledge/skills that reflect the learning outcomes of this course.	1	2	3	4	5	NA
2. My interest in the subject has increased as a consequence of this course.	1	2	3	4	5	NA
3. I have found the course intellectually challenging.	1	2	3	4	5	NA
4. Course readings contributed to my learning.	1	2	3	4	5	NA
Engagement:						
5. Instructor promoted active student participation.	1	2	3	4	5	NA
6. Instructor's style of teaching held my interest during class.	1	2	3	4	5	NA
7. Instructor invited students to share their ideas.	1	2	3	4	5	NA
8. Instructor was engaged while teaching the course.	1	2	3	4	5	NA
9. Instructor encouraged students to ask questions.	1	2	3	4	5	NA
Organization and Clarity:						
10. Instructor's explanations of course content were clear.	1	2	3	4	5	NA
11. Course was well organized.	1	2	3	4	5	NA
12. Course materials were well prepared.	1	2	3	4	5	NA
13. Instructor made it clear how each topic fit with the course learning objectives.	1	2	3	4	5	NA
14. Assignment expectations were clearly explained.	1	2	3	4	5	NA
Depth and Breadth:						
15. Instructor presented the background/context of ideas covered in class.	1	2	3	4	5	NA
16. Instructor adequately discussed current developments in the field.	1	2	3	4	5	NA
17. Instructor presented multiple viewpoints/theories when appropriate.	1	2	3	4	5	NA
18. Instructor connected real world situations to the course when appropriate.	1	2	3	4	5	NA
Classroom Environment:						
19. The class environment was conducive to my learning.	1	2	3	4	5	NA
20. Instructor used technology effectively.	1	2	3	4	5	NA
21. When provided, educational technology (e.g., computer exercises, multi-media, presentations) contributed to my learning.	1	2	3	4	5	NA
22. Instructor fostered a supportive learning community.	1	2	3	4	5	NA
23. Instructor used the resources of the classroom appropriately.	1	2	3	4	5	NA
Individual Rapport:						
24. Instructor treated students with respect.	1	2	3	4	5	NA
25. Instructor recognized/integrated diverse student perspectives (e.g., race, gender, age).	1	2	3	4	5	NA
26. Instructor was adequately accessible to students outside of class.	1	2	3	4	5	NA
27. Instructor helped with my individual learning needs when asked.	1	2	3	4	5	NA
Graded Materials (e.g., exams, tests, assignments):						
28. Feedback on graded materials was timely.	1	2	3	4	5	NA
29. Methods of evaluating student work were fair.	1	2	3	4	5	NA
30. Graded materials tested course content as emphasized by the instructor.	1	2	3	4	5	NA
31. Instructor provided useful/meaningful feedback to assist learning.	1	2	3	4	5	NA
Overall:						
32. Overall, the course has been a worthwhile addition to my university experience.	1	2	3	4	5	NA
33. Overall, the instructor was effective in promoting my learning in this course.	1	2	3	4	5	NA

TURN OVER ↓

1. Overall, how would you rate the proposed new form's effectiveness in gathering students' evaluations of instructors?
 Very poor (1) Poor (2) OK (3) Good (4) Very good (5)

2. Please list up to three things you **LIKED** about the proposed new Student Evaluation of Teaching form?

Like 1: _____

Like 2: _____

Like 3: _____

3. Please list up to three things you did **NOT LIKE** about the proposed new Student Evaluation of Teaching form?

Dislike 1: _____

Dislike 2: _____

Dislike 3: _____

4. I think future students interested in taking this course would most like to know my responses to the following questions (please identify questions by number on reverse side of page): _____

5. Are you taking this course to fulfill... a major/minor program requirement: Yes No

6. Are you taking this course to fulfill... an Essential Studies/General Education requirement: Yes No

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	NA
Other reasons for taking course:						
7. Interest - I had a strong desire to take this course.	1	2	3	4	5	NA
8. Reputation of instructor – I really wanted to take a course from this instructor.	1	2	3	4	5	NA
9. Reputation of course – I really wanted to take this course, regardless of who taught it.	1	2	3	4	5	NA
Questions about yourself:						
10. I participated in the course when appropriate.	1	2	3	4	5	NA
11. I completed all of my homework and reading to prepare for class, unless excused.	1	2	3	4	5	NA
12. I attended all class sessions and related, required meetings, unless excused.	1	2	3	4	5	NA
13. I asked the instructor for feedback when I needed it.	1	2	3	4	5	NA
14. Overall, I put forth a full effort for this course.	1	2	3	4	5	NA

15. Gender (circle one): Female Male Other Choose not to identify

16. Age in years: _____

17. Year of study: Freshman Sophomore Junior Senior Graduate/Professional

18. Are you an international student: Yes No

19. Is English your first language: Yes No

20. Comments:

Thank you once again for your important contribution to improving the quality of the student evaluation of teaching form on the UND campus.

Sincerely, SETIC

Appendix B

UND Student Evaluation of Teaching: Fall 2015 Data Collection CODEBOOK

[December 2015] Dear students, In an effort to improve the quality of feedback from students regarding teaching at UND, the University Senate Ad-Hoc Student Evaluation of Teaching Implementation Committee (SETIC) is collecting preliminary data on a proposed new Student Evaluation of Teaching (SET) form. Please answer the questions below in regards to the course in which you received this form. Please also respond to the questions on the reverse side. Your responses are anonymous and of great importance in continuing to develop this new evaluation form, so please answer thoughtfully and honestly.

Thank you, the SETIC

format	1 = Paper, 2 = Online [coded by researchers]
course	Course (e.g., BIO 111): _____ [open ended]
instructor	Instructor: _____ [open ended]

Instructions: For each of the following statements, circle the response that most closely expresses your opinion. Please circle NA (Not Applicable) if the statement does not apply to you or your instructor. (1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree, 6 = NA)

Name	Learning:
learning1_1	1. I have gained knowledge/skills that reflect the learning outcomes of this course.
learning2_2	2. My interest in the subject has increased as a consequence of this course.
learning3_3	3. I have found the course intellectually challenging.
learning4_4	4. Course readings contributed to my learning.
	Engagement:
engage1_5	5. Instructor promoted active student participation.
engage2_6	6. Instructor's style of teaching held my interest during class.
engage3_7	7. Instructor invited students to share their ideas.
engage4_8	8. Instructor was engaged while teaching the course.
engage5_9	9. Instructor encouraged students to ask questions.
	Organization and Clarity:
org_clar1_10	10. Instructor's explanations of course content were clear.
org_clar2_11	11. Course was well organized.
org_clar3_12	12. Course materials were well prepared.
org_clar4_13	13. Instructor made it clear how each topic fit with the course learning objectives.
org_clar5_14	14. Assignment expectations were clearly explained.
	Depth and Breadth:
dep_bre1_15	15. Instructor presented the background/context of ideas covered in class.
dep_bre2_16	16. Instructor adequately discussed current developments in the field.
dep_bre3_17	17. Instructor presented multiple viewpoints/theories when appropriate.
dep_bre4_18	18. Instructor connected real world situations to the course when appropriate.
	Classroom Environment:
cl_enviro1_19	19. The class environment was conducive to my learning.
cl_enviro2_20	20. Instructor used technology effectively.
cl_enviro3_21	21. When provided, educational tech. (e.g., computer exercises, multi-media, presentations) contributed to my learning.
cl_enviro4_22	22. Instructor fostered a supportive learning community.
cl_enviro5_23	23. Instructor used the resources of the classroom appropriately.
	Individual Rapport:
ind_rapp1_24	24. Instructor treated students with respect.
ind_rapp2_25	25. Instructor recognized/integrated diverse student perspectives (e.g., race, gender, age).
ind_rapp3_26	26. Instructor was adequately accessible to students outside of class.
ind_rapp4_27	27. Instructor helped with my individual learning needs when asked.
	Graded Materials (e.g., exams, tests, assignments):
grad_mat1_28	28. Feedback on graded materials was timely.
grad_mat2_29	29. Methods of evaluating student work were fair.
grad_mat3_30	30. Graded materials tested course content as emphasized by the instructor.
grad_mat4_31	31. Instructor provided useful/meaningful feedback to assist learning.
	Overall:
overall1_32	32. Overall, the course has been a worthwhile addition to my university experience.
overall2_32	33. Overall, the instructor was effective in promoting my learning in this course.

rate_form	1. Overall, how would you rate the proposed new form's effectiveness in gathering students' evaluations of instructors? Very poor (1), Poor (2), OK (3), Good (4), Very good (5)
-----------	--

liked1	2. Please list up to three things you LIKED about the proposed new Student Evaluation of Teaching form? _____ [3 open ended]
liked2	
liked3	
not_liked1	3. Please list up to three things you did NOT LIKE about the proposed new Student Evaluation of Teaching form? _____ [3 open ended]
not_liked2	
not_liked3	

studentQ1	4. I think future students interested in taking this course would most like to know my responses to the following questions (please identify questions by number on reverse side of page): _____ [3 open ended]
studentQ2	
studentQ3	

req_major	5. Are you taking this course to fulfill... a major/minor program requirement: [1 = Yes, 2 = No]
req_essent	6. Are you taking this course to fulfill... an Essential Studies/General Education requirement: [1 = Yes, 2 = No]

(1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree, 6 = NA)

Name:	Other reasons for taking course:
reason_interest	7. Interest - I had a strong desire to take this course.
reason_repinstruct	8. Reputation of instructor – I really wanted to take a course from this instructor.
reason_repcourse	9. Reputation of course – I really wanted to take this course, regardless of who taught it.
	Questions about yourself:
self_participate	10. I participated in the course when appropriate.
self_homework	11. I completed all of my homework and reading to prepare for class, unless excused.
self_attend	12. I attended all class sessions and related, required meetings, unless excused.
self_feedback	13. I asked the instructor for feedback when I needed it.
self_effort	14. Overall, I put forth a full effort for this course.

Gender	15. Gender: (Male =1, Female = 2, Other = 3, Choose not to identify = 4)
Age	16. Age in years: _____ [open ended]
Year_study	17. Year of study: [1 = Freshman, 2 = Sophomore, 3 = Junior, 4 = Senior, 5 = Graduate/Professional]
International	18. Are you an international student: [1 = Yes, 2 = No]
english	19. Is English your first language: [1 = Yes, 2 = No]

comments	20. Comments: _____ [open-ended]
----------	----------------------------------

Thank you once again for your important contribution to improving the quality of the student evaluation of teaching form on the UND campus. Sincerely, SETIC

	Online Only
ResponseID	Qualtrics generated ID
IPaddress	IP address
StartDate	Start day and time
EndDate	End day and time
Total_time	End minus start time
Expected_grade	What is your expected grade in this course? [1 = A, 2 = B, 3 = C, 4 = D, 5 = F, 6 = Don't know]

Outlier	1 = Incomplete response, 2 = Suspicious data
---------	--

Appendix C SEEQ-R2

Directions: Students are an important source of information about the effectiveness of a course and instructor. Please respond candidly to the following questions. The results are used by faculty to make improvement in their own courses and by departments in faculty performance evaluations and in tenure and promotion decisions. (retained from current USAT)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	NA
Learning:						
1. I have gained knowledge/skills that reflect the learning outcomes of this course.	1	2	3	4	5	NA
2. My interest in the subject has increased as a consequence of this course.	1	2	3	4	5	NA
3. I have found the course intellectually challenging.	1	2	3	4	5	NA
Engagement:						
4. Instructor promoted active student participation.	1	2	3	4	5	NA
5. Instructor was engaged while teaching the course.	1	2	3	4	5	NA
6. Instructor encouraged students to ask questions.	1	2	3	4	5	NA
Organization and Clarity:						
7. Instructor's explanations of course content were clear.	1	2	3	4	5	NA
8. Course was well organized.	1	2	3	4	5	NA
9. Course materials were well prepared.	1	2	3	4	5	NA
Classroom Environment:						
10. The class environment was conducive to my learning.	1	2	3	4	5	NA
11. When provided, educational technology (e.g., computer exercises, multi-media, presentations) contributed to my learning.	1	2	3	4	5	NA
12. Instructor used the resources of the classroom appropriately.	1	2	3	4	5	NA
Individual Rapport:						
13. Instructor treated students with respect.	1	2	3	4	5	NA
14. Instructor was adequately accessible to students outside of class.	1	2	3	4	5	NA
15. Instructor helped with my individual learning needs when asked.	1	2	3	4	5	NA
Graded Materials (e.g., exams, tests, assignments):						
16. Methods of evaluating student work were fair.	1	2	3	4	5	NA
17. Graded materials tested course content as emphasized by the instructor.	1	2	3	4	5	NA
18. Instructor provided useful/meaningful feedback to assist learning.	1	2	3	4	5	NA
Overall:						
19. Overall, the course has been a worthwhile addition to my university experience.	1	2	3	4	5	NA
20. Overall, the instructor was effective in promoting my learning in this course.	1	2	3	4	5	NA

Open-ended Questions (retained from current USAT):

1. Describe some aspects of this course that promoted your learning.
2. What specific, practical changes can you recommend that might improve the learning in this course?
3. If a student asked whether you would recommend this course from this instructor, what would you recommend and why?

Appendix D
ALL PARTICIPANTS (N = 931)

Exploratory Factor Analysis

Pattern Matrix^a

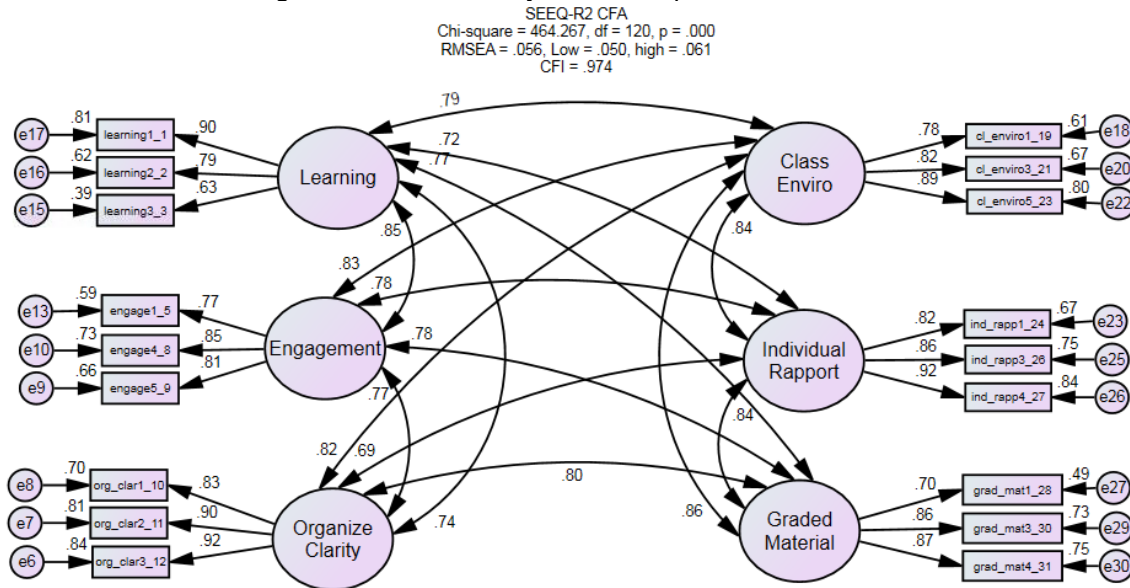
	Factor					
	1	2	3	4	5	6
learning1_1		.546				
learning2_2		.727				
learning3_3		.439				
engage1_5					-.507	
engage4_8					-.483	
engage5_9					-.787	
org_clar1_10			-.649			
org_clar2_11			-.859			
org_clar3_12			-.782			
cl_enviro1_19	.602					
cl_enviro3_21	.819					
cl_enviro5_23	.552					
ind_rapp1_24						.486
ind_rapp3_26						.852
ind_rapp4_27						.787
grad_mat2_29				.839		
grad_mat3_30				.698		
grad_mat4_31				.606		

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.

An exploratory factor analysis explored the intercorrelations among the questions. With a six factor extraction was specified, the rotated factor matrix supports six meaningful factors present (i.e., items group into expected factors with loadings > .40).

Confirmatory Factor Analysis

The overall model had great fit to the data on several criteria: RMSEA ≤ .06 (narrow confidence interval within that range); CFI ≥ .95. It is also desirable that factor loadings (path coefficients on lines between rectangular measured variable and circular latent variables) that are high and positive, preferably ≥ .70, which nearly all of them were. This result suggests the SEEQ-R2 has good construct validity in this sample.



Convergent validity

The latent variable AVEs are presented along the grey diagonal of the table below. All latent variables showed good convergent validity with AVEs ≥ .50 in this sample. Thus, overall the scales exhibited good convergent validity, that is, they share a significant amount of variance (i.e., they are sufficiently intercorrelated).

Divergent validity

Divergent validity is supported when the average “average variance extracted (AVEs)” values for any two constructs is greater than the square of the correlation between these two constructs (Discriminant validity = average AVE > squared correlation). The correlations among the latent variables are in the lower diagonal, the square of the correlations are in the upper diagonal in the table below, and AVEs in grey diagonal. Overall, the majority of the scales showed divergent validity from each other in this sample, although exceptions include learning-engagement and class environment-rapport.

Descriptive Statistics and Reliability

The scales were examined for normal distributions of data (normal/ideal skewness and kurtosis = between +1 and -1; severely non-normal skewness > 2.3, kurtosis > 7.0). Cronbach's alpha (α) reliability tested for internal consistency of the subscales (>.70 adequate, > .80 good, > .95 redundant). Overall, in this sample all scales were somewhat negatively skewed and peaked, but not severely. The scales also all had adequate to good reliability.

	1	2	3	4	5	6	<i>M (SD)</i>	<i>skew</i>	<i>kurtosis</i>	α
1. Learning	.61	.72	.55	.62	.52	.59	4.15(.78)	-1.35	3.10	.81
2. Engagement	.85	.66	.59	.69	.61	.61	4.33(.77)	-1.77	4.47	.85
3. Org/Clarity	.74	.77	.78	.67	.48	.64	4.32(.76)	-1.62	3.40	.91
4. Class Enviro	.79	.83	.82	.69	.71	.74	4.29(.76)	-1.52	3.47	.87
5. Rapport	.72	.78	.69	.84	.75	.71	4.47(.72)	-2.02	5.76	.91
6. Graded Material	.77	.78	.80	.86	.84	.66	4.29(.80)	-1.48	2.86	.91

APPENDIX E
SD = 0 EXCLUDED (N = 833)

Exploratory Factor Analysis

Pattern Matrix^a

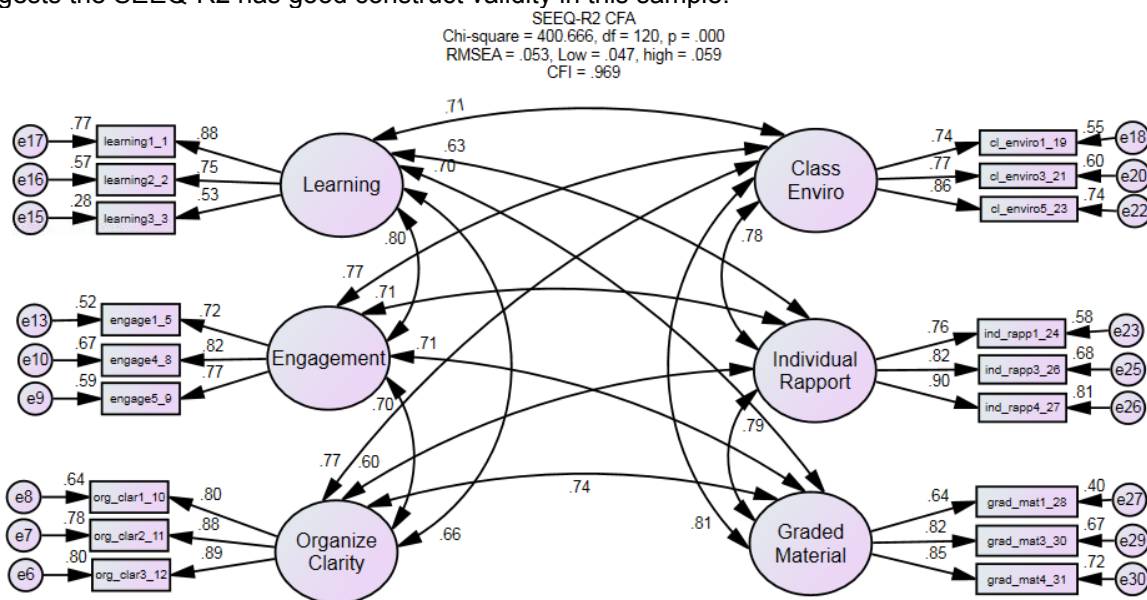
	Factor					
	1	2	3	4	5	6
learning1_1			.603			
learning2_2			.730			
learning3_3			.428			
engage1_5					-.504	
engage4_8					-.480	
engage5_9					-.787	
org_clar1_10						.642
org_clar2_11						.847
org_clar3_12						.781
cl_enviro1_19	.585					
cl_enviro3_21	.815					
cl_enviro5_23	.565					
ind_rapp1_24		-.470				
ind_rapp3_26		-.838				
ind_rapp4_27		-.798				
grad_mat2_29				.842		
grad_mat3_30				.714		
grad_mat4_31				.601		

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.

An exploratory factor analysis explored the intercorrelations among the questions. With a six factor extraction was specified, the rotated factor matrix supports six meaningful factors present (i.e., items group into expected factors with loadings > .40).

Confirmatory Factor Analysis

The overall model had great fit to the data on several criteria: RMSEA ≤ .06 (narrow confidence interval within that range); CFI ≥ .95. It is also desirable that factor loadings (path coefficients on lines between rectangular measured variable and circular latent variables) that are high and positive, preferably ≥ .70, which nearly all of them were. This result suggests the SEEQ-R2 has good construct validity in this sample.



Convergent validity

The latent variable AVEs are presented along the grey diagonal of the table below. All latent variables showed good convergent validity with AVEs ≥ .50 in this sample. Thus, overall the scales exhibited good convergent validity, that is, they share a significant amount of variance (i.e., they are sufficiently intercorrelated).

Divergent validity

Divergent validity is supported when the average “average variance extracted (AVEs)” values for any two constructs is greater than the square of the correlation between these two constructs (Discriminant validity = average AVE > squared correlation). The correlations among the latent variables are in the lower diagonal, the square of the correlations are in the upper diagonal in the table below, and AVEs in grey diagonal. Overall, the majority of the scales

showed divergent validity from each other in this sample, although exceptions include learning-engagement and class environment-rapport.

Descriptive Statistics and Reliability

The scales were examined for normal distributions of data (normal/ideal skewness and kurtosis = between +1 and -1; severely non-normal skewness > 2.3, kurtosis > 7.0). Cronbach's alpha (α) reliability tested for internal consistency of the subscales (>.70 adequate, > .80 good, > .95 redundant). Overall, in this sample all scales were somewhat negatively skewed and peaked, but not severely. The scales also all had adequate to good reliability.

	1	2	3	4	5	6	<i>M (SD)</i>	<i>skew</i>	<i>kurtosis</i>	α
1. Learning	.54	.64	.44	.50	.40	.49	4.41(.72)	-1.14	2.63	.75
2. Engagement	.80	.59	.49	.59	.50	.50	4.32(.71)	-1.53	3.65	.81
3. Org/Clarity	.66	.70	.74	.59	.36	.55	4.31(.76)	-1.40	2.62	.89
4. Class Enviro	.71	.77	.77	.63	.61	.66	4.27(.71)	-1.19	2.29	.83
5. Rapport	.63	.71	.60	.78	.69	.62	4.47(.66)	-1.58	3.72	.87
6. Graded Material	.70	.71	.74	.81	.79	.60	4.26(.76)	-1.22	1.95	.88

Appendix F
SD < .25 EXCLUDED (N = 756)

Exploratory Factor Analysis

Pattern Matrix^a

	Factor					
	1	2	3	4	5	6
learning1_1			.610			
learning2_2			.728			
learning3_3			.409			
engage1_5					-.507	
engage4_8					-.475	
engage5_9					-.780	
org_clar1_10						.643
org_clar2_11						.841
org_clar3_12						.784
cl_enviro1_19	.580					
cl_enviro3_21	.809					
cl_enviro5_23	.571					
ind_rapp1_24		-.458				
ind_rapp3_26		-.834				
ind_rapp4_27		-.799				
grad_mat2_29				.846		
grad_mat3_30				.717		
grad_mat4_31				.597		

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.

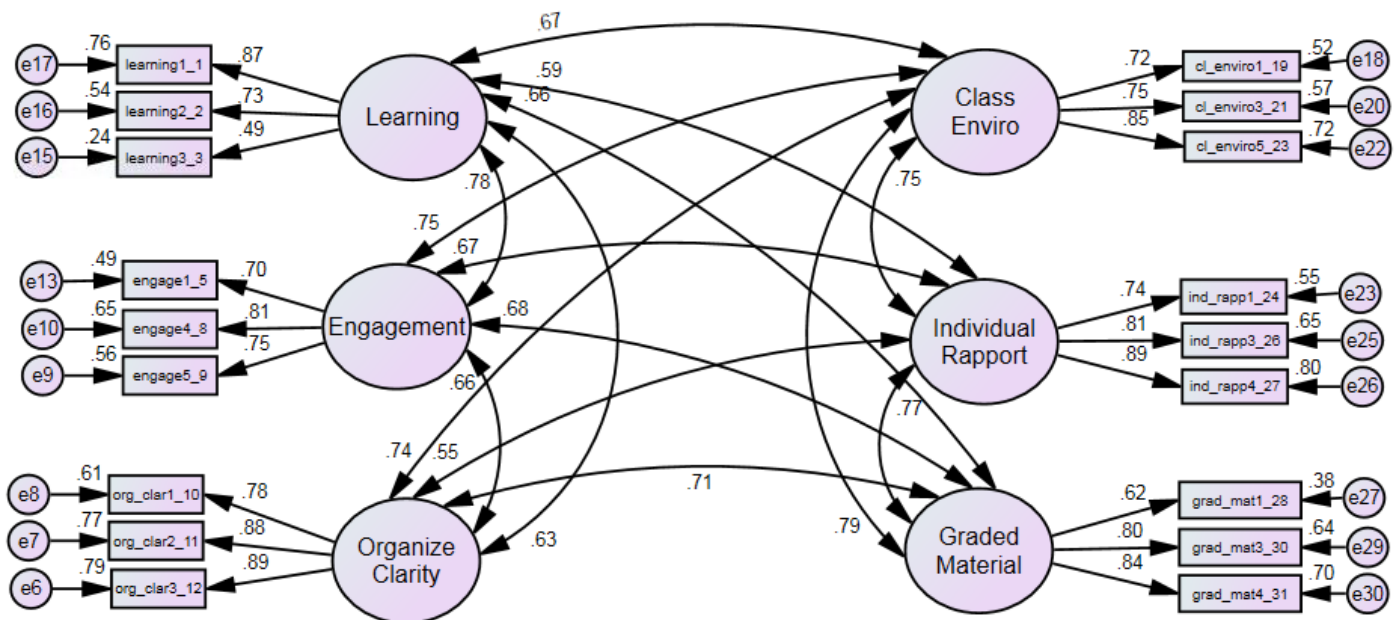
An exploratory factor analysis explored the intercorrelations among the questions. With a six factor extraction was specified, the rotated factor matrix supports six meaningful factors present (i.e., items group into expected factors with loadings > .40).

Confirmatory Factor Analysis

The overall model had great fit to the data on several criteria: RMSEA ≤ .06 (narrow confidence interval within that range); CFI ≥ .95. It is also desirable that factor loadings (path coefficients on lines between rectangular measured variable and circular latent variables) that are high and positive, preferably ≥ .70, which nearly all of them were. This result suggests the SEEQ-R2 has good construct validity in this sample.

SEEQ-R2 CFA

Chi-square = 370.504, df = 120, p = .000
RMSEA = .053, Low = .047, high = .059
CFI = .966



Convergent validity

The latent variable AVEs are presented along the grey diagonal of the table below. All latent variables showed good convergent validity with AVEs ≥ .50 in this sample. Thus, overall the scales exhibited good convergent validity, that is, they share a significant amount of variance (i.e., they are sufficiently intercorrelated).

Divergent validity

Divergent validity is supported when the average “average variance extracted (AVEs)” values for any two constructs is greater than the square of the correlation between these two constructs (Discriminant validity = average AVE > squared correlation). The correlations among the latent variables are in the lower diagonal, the square of the correlations are in the upper diagonal in the table below, and AVEs in grey diagonal. Overall, the majority of the scales showed divergent validity from each other in this sample, although an exception was learning-engagement.

Descriptive Statistics and Reliability

The scales were examined for normal distributions of data (normal/ideal skewness and kurtosis = between +1 and -1; severely non-normal skewness > 2.3, kurtosis > 7.0). Cronbach’s alpha (α) reliability tested for internal consistency of the subscales (>.70 adequate, > .80 good, > .95 redundant). Overall, in this sample all scales were somewhat negatively skewed and peaked, but not severely. The scales also all had adequate to good reliability.

	1	2	3	4	5	6	<i>M (SD)</i>	<i>skew</i>	<i>kurtosis</i>	α
1. Learning	.51	.61	.40	.45	.35	.44	4.06(.71)	-1.10	2.58	.73
2. Engagement	.78	.57	.44	.56	.45	.46	4.29(.71)	-1.47	3.35	.79
3. Org/Clarity	.63	.66	.72	.55	.30	.50	4.27(.77)	-1.33	2.32	.88
4. Class Enviro	.67	.75	.74	.60	.56	.62	4.23(.70)	-1.10	1.96	.81
5. Rapport	.59	.67	.55	.75	.67	.59	4.44(.65)	-1.46	3.07	.86
6. Graded Material	.66	.68	.71	.79	.77	.57	4.23(.76)	-1.15	1.69	.87