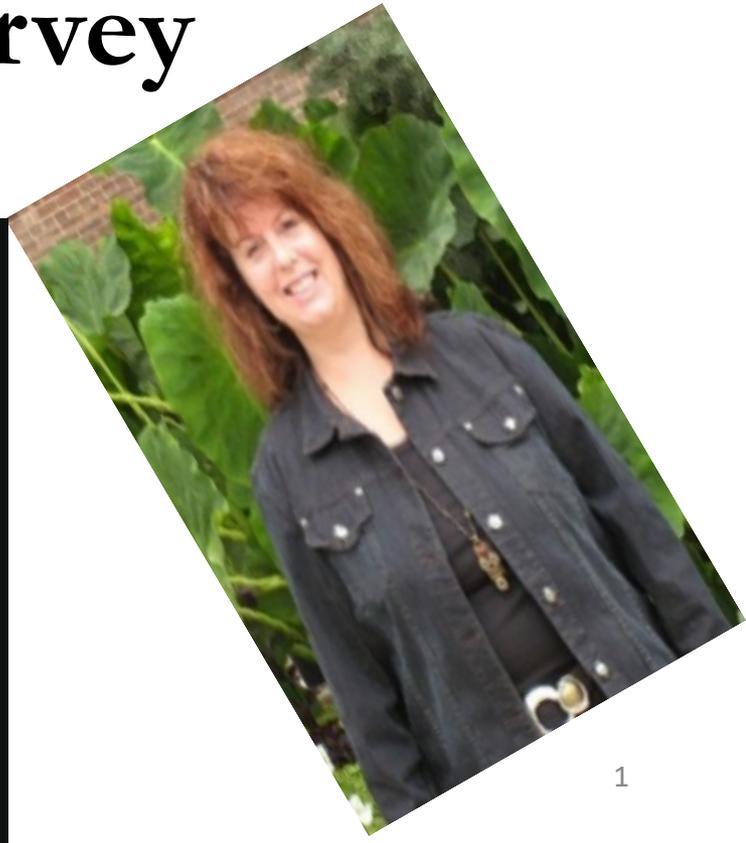
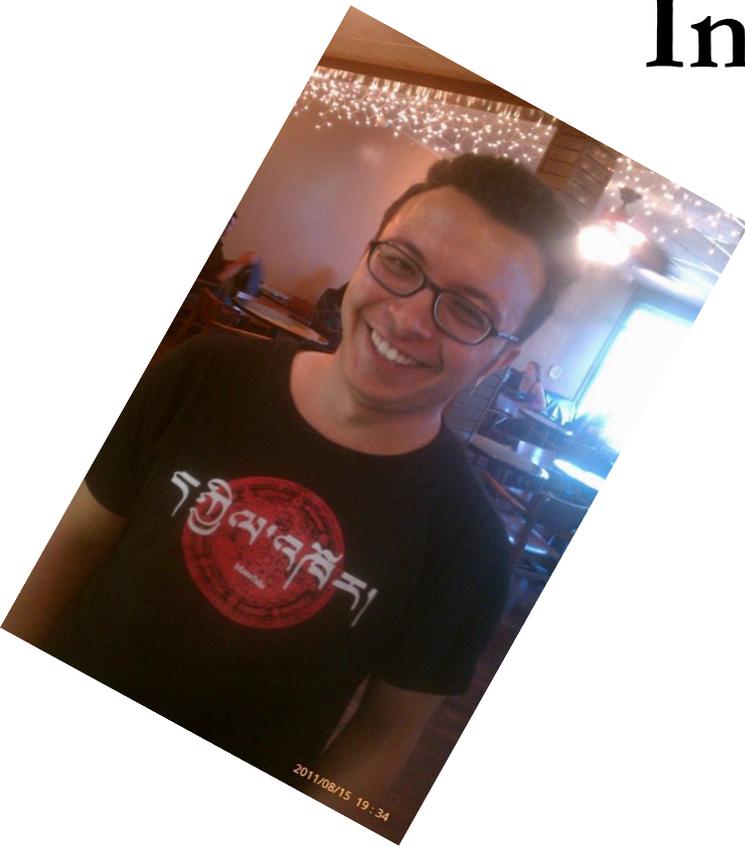
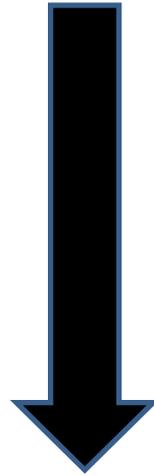


New Exploratory and Confirmatory Factor Analysis Insights into the Community of Inquiry Survey



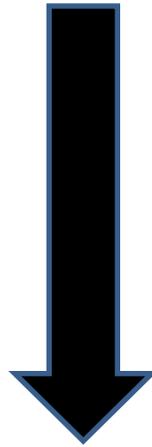


0 (Strongly Disagree) to 4 (Strongly Agree)



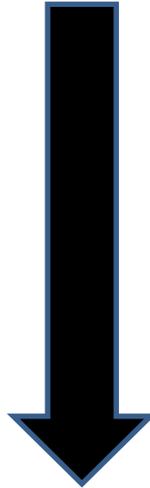
1 (Strongly Disagree) to 5 (Strongly Agree)

12 The instructor provided feedback that helped me understand my strengths and weaknesses relative to the course's goals and objectives.



The instructor provided feedback that helped me understand my strengths and weaknesses

28 Online discussions were valuable in helping me appreciate different perspectives



Discussing course content with my classmates was valuable in helping me appreciate different perspectives

Research Context



Sample



EFA_s (N = 219) / CFA_s (N = 178)

Results



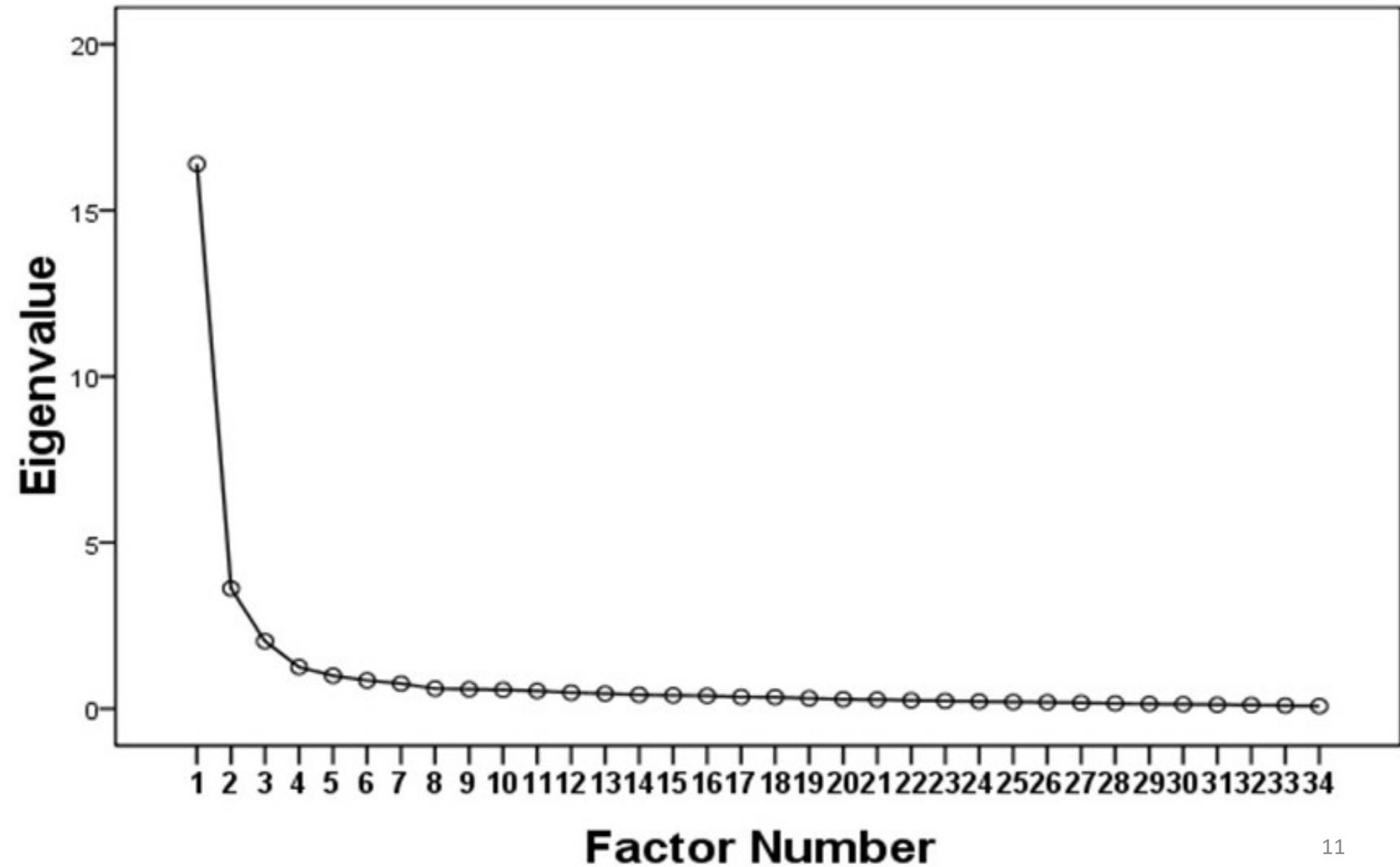
EFAs: Descriptive statistics ($N = 219$)

	Possible minimum	Minimum	Possible Maximum	Maximum	Mean	SD
Teaching Presence (13 items)	13	20	65	65	56.84	9
Social Presence (9 items)	9	29	45	45	39.80	4.43
Cognitive Presence (12 items)	12	29.35	60	60	52.63	6.17
Total Presence	34	98	170	170	149.25	17.05

Range of average item ratings

Presence	Range
Teaching Presence	4.17 (SD = 1.05) to 4.56 (SD = .66)
Social Presence	4.19 (SD = .76) to 4.57 (SD = .54)
Cognitive Presence	4.26 (SD = .76) to 4.54 (SD = .57)

The scree plot



Parallel Analysis

	Measured Eigenvalues	Random Eigenvalues
Factor 1	16.39	1.83
Factor 2	3.61	1.72
Factor 3	2.03	1.63

Factor Loadings

No	Items	F1/TP	F2/CP	F3/SP
TP7	The instructor helped to keep course participants engaged and participating in productive dialogue.	.939		
TP3	The instructor provided clear instructions on how to participate in course learning activities.	.910		
TP2	The instructor clearly communicated important course goals.	.884		
TP8	The instructor helped keep the course participants on task in a way that helped me to learn.	.881		
TP13	The instructor provided feedback in a timely manner.	.844		
TP1	The instructor clearly communicated important course topics.	.827		
TP6	The instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking.	.818		
TP10	Instructor actions reinforced the development of a sense of community among course participants.	.769		
TP5	The instructor was helpful in identifying areas of agreement and disagreement on course topics that helped me to learn.	.750		
TP4	The instructor clearly communicated important due dates/time frames for learning activities.	.686		
TP11	The instructor helped to focus discussion on relevant issues in a way that helped me to learn.	.676		
TP9	The instructor encouraged course participants to explore new concepts in this course.	.660		
TP12	The instructor provided feedback that helped me understand my strengths and weaknesses.	.557		
CP29	Combining new information helped me answer questions raised in course activities.		.832	
CP25	I felt motivated to explore content related questions.		.807	
CP23	Problems posed increased my interest in course issues.		.762	
CP31	Reflection on course content and discussions helped me understand fundamental concepts in this class.		.760	
CP26	I utilized a variety of information sources to explore problems posed in this course.		.754	
CP24	Course activities piqued my curiosity.		.743	
CP33	I have developed solutions to course problems that can be applied in practice.		.732	
CP30	Learning activities helped me construct explanations/solutions.		.662	
CP28	Discussing course content with my classmates was valuable in helping me appreciate different perspectives.		.648	
CP34	I can apply the knowledge created in this course to my work or other non-class related activities.		.616	
CP32	I can describe ways to test and apply the knowledge created in this course.		.615	
CP27	Brainstorming and finding relevant information helped me resolve content related questions.		.441	
SP19	I felt comfortable interacting with other course participants.			.937
SP17	I felt comfortable conversing through the online medium.			.893
SP18	I felt comfortable participating in the course discussions.			.765
SP21	I felt that my point of view was acknowledged by other course participants.			.704
SP16	Online or web-based communication is an excellent medium for social interaction.			.701
SP20	I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.			.697
SP15	I was able to form distinct impressions of some course participants.			.586
SP14	Getting to know other course participants gave me a sense of belonging in the course.			13 .549
SP22	Online discussions help me to develop a sense of collaboration.		.379	.546

1st Set of CFAs

Levesque, Stanek, & Ryan (2004)

<i>Indices</i>	<i>Value</i>
GFI (goodness of fit index)	$\geq .90$
NNFI (non-normed fit index)	
CFI (comparative fit index)	
IFI (incremental fit index)	
RMSEA (root mean square error of approximation)	$\leq .05$ (desired) .05 – .08 (reasonable) $\geq .10$ (poor)

CFA-1

$(\chi^2 = 1500.97; df = 524; p = .00)$

<i>Indices</i>	<i>Value</i>
GFI	0.70
NNFI	0.96
CFI	0.96
IFI	0.96
RMSEA	0.096

CFA-6

$(\chi^2 = 1201.36; df = 519; p = .00)$

<i>Indices</i>	<i>Value</i>
GFI	0.75
NNFI	0.96
CFI	0.96
IFI	0.96
RMSEA	0.079

2nd Set of CFAs

CFAs: Descriptive statistics ($N = 178$)

	Possible minimum	Minimum	Possible Maximum	Maximum	Mean	SD
Teaching Presence (13 items)	13	28.33	65	65	57	8.80
Social Presence (9 items)	9	27	45	45	39.60	4.52
Cognitive Presence (12 items)	12	35	60	60	53.15	6.27

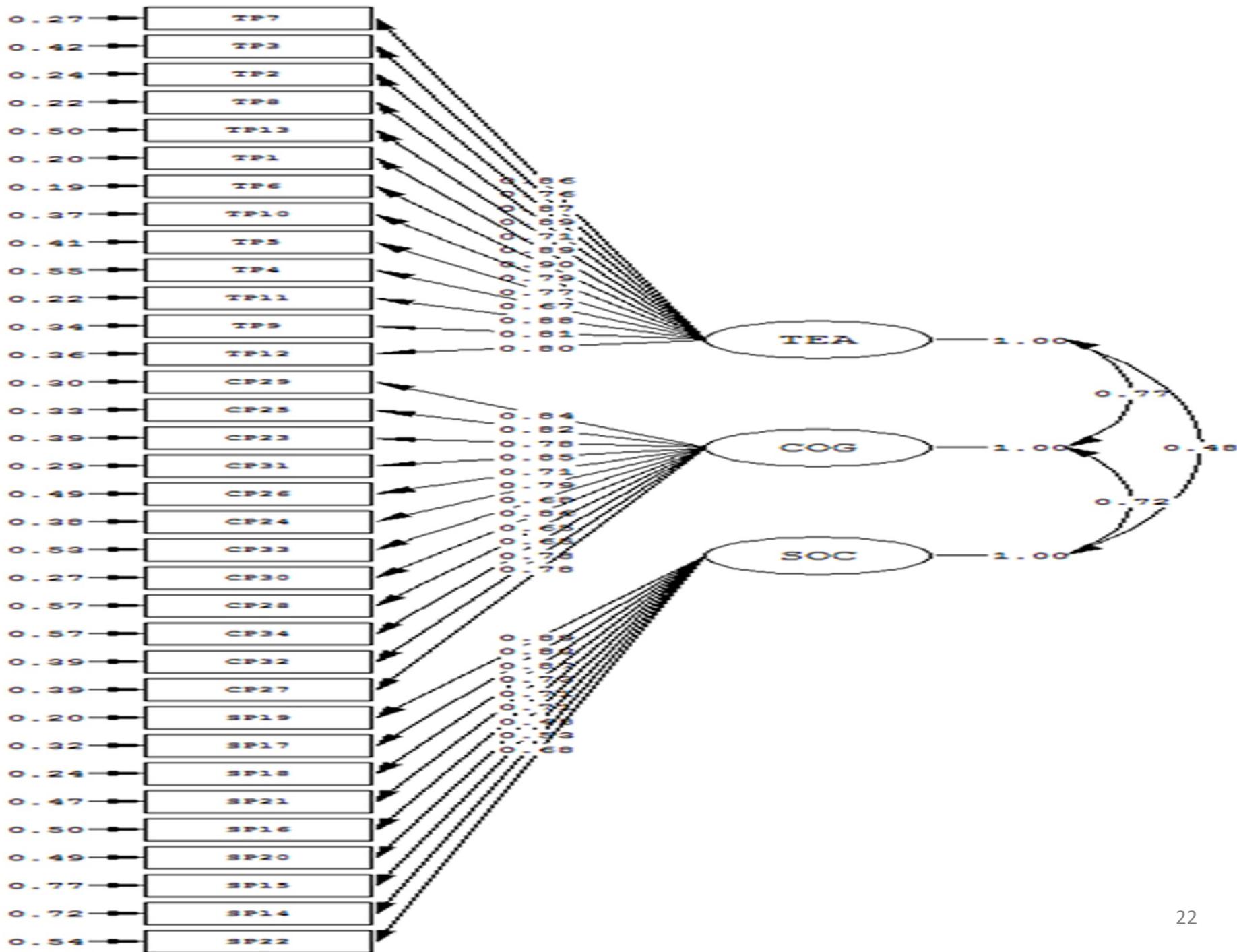
Range of average item ratings

Presence	Range	Alpha
Teaching Presence	4.28 (SD = .86) to 4.52 (SD = .71)	.961
Social Presence	4.19 (SD = .77) to 4.57 (SD = .54)	.900
Cognitive Presence	4.34 (SD = .66) to 4.59 (SD = .53)	.944

CFA-1

$(\chi^2 = 1587.11; df = 524; p = .00)$

<i>Indices</i>	<i>Value</i>
GFI	0.64
NNFI	0.95
CFI	0.96
IFI	0.96
RMSEA	0.11



CFA-11

$(\chi^2 = 1193.71; df = 514; p = .00)$

<i>Indices</i>	<i>Value</i>
GFI	0.73
NNFI	0.97
CFI	0.97
IFI	0.97
RMSEA	0.082

Highlights

- Factor solution included three factors.
- Parallel analysis, employed for the first time, favored three factors over four.
- Results did not indicate any substantial refinements to survey items.
- We need further factor analytic research on the survey and its revised versions with sound rationale for statistical techniques to be employed.
- The first CFA employed is more confirmatory compared to further CFAs with modifications.



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