PRELIMINARY FINDINGS FROM AN

INSTRUMENT DEVELOPMENT STUDY TO MEASURE PERCEIVED COMPETENCE & CONFIDENCE OF CLINICAL NURSE EDUCATORS

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CONTENTS

Abbreviation:

- CE: Clinical educator
- PCC: Perceived competence & confidence

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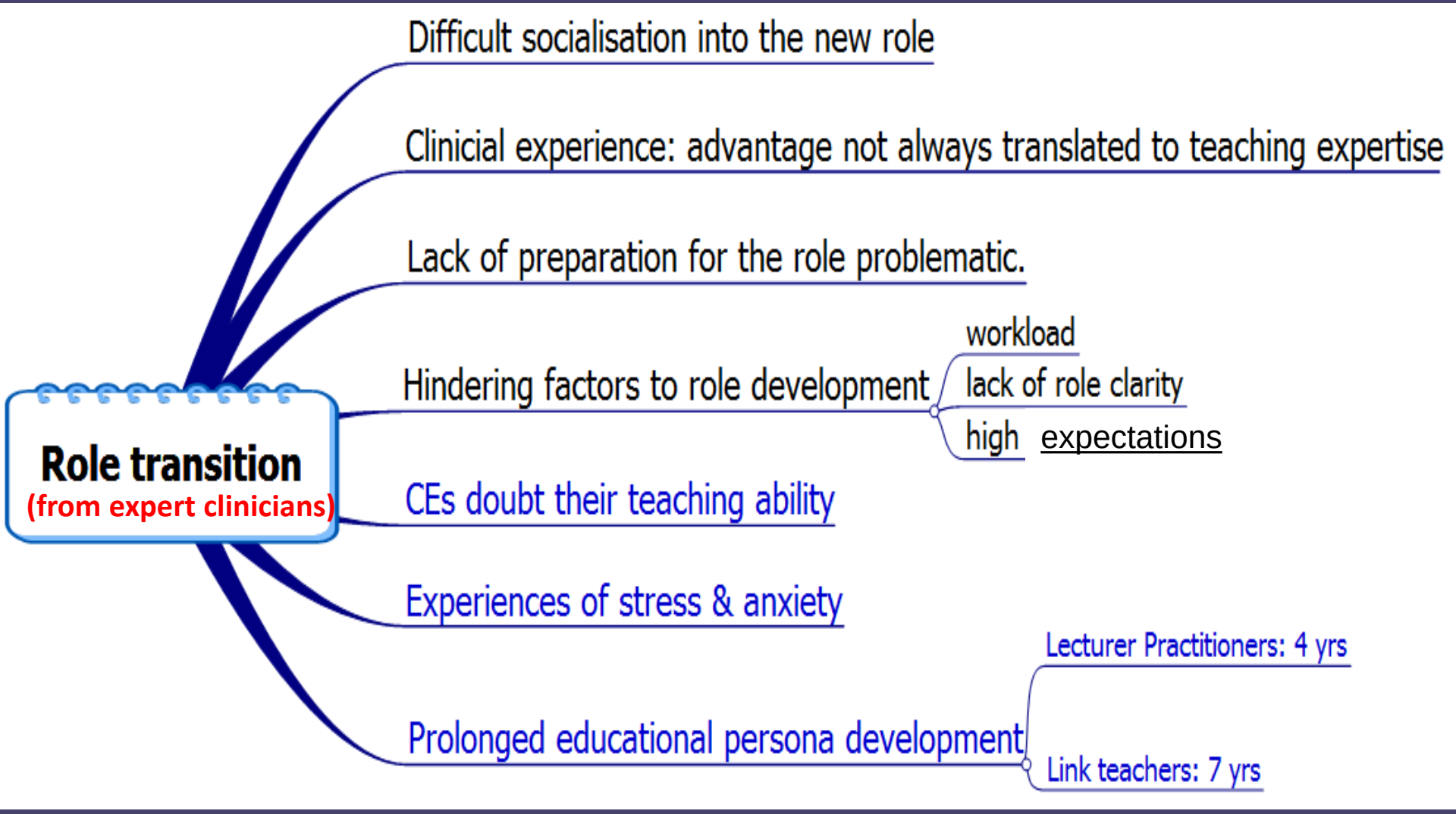
RESEARCH BACKGROUND

- Critical role of CNEs to quality of nursing education
- Clinical educators can affect student learning approach
- Clinical settings are complex and dynamic
- Students & clinical educators need to be supported for the role.
- Nurse educators in Western countries experience many difficulties with transition from clinician role to educator regardless of their background

(Al Kadri et al. 2011, Anderson 2009, Boyd 2010, Cangelosi et al. 2009 , Dempsey 2007, Manning and Neville 2009, Myrick and Yonge 2002 Ramage 2004, Schriner 2007, Siler and Kleiner 2001)

TRANSITION FROM CLINICIAN TO CE ROLE



(American Association of Colleges of Nursing 2005, Anderson 2009, Boyd 2010, Cangelosi et al. 2009 , Dempsey 2007, Manning and Neville 2009, Ramage 2004, Schriner 2007, Siler and Kleiner 2001)

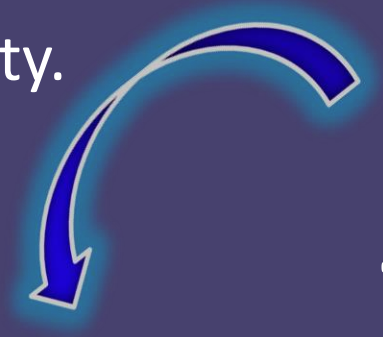
TRANSITION FROM CLINICIAN TO CE ROLE

- Little is know about this transition for clinical educators in Asian countries (Vietnam).

- Clinical educator recruitment methods in Asian countries:
  - Observed to be different in Western countries.
  - Effectiveness of the model unexplored
  - Clinical educator development in competence and confidence in the transition unknown.

Existing scale?

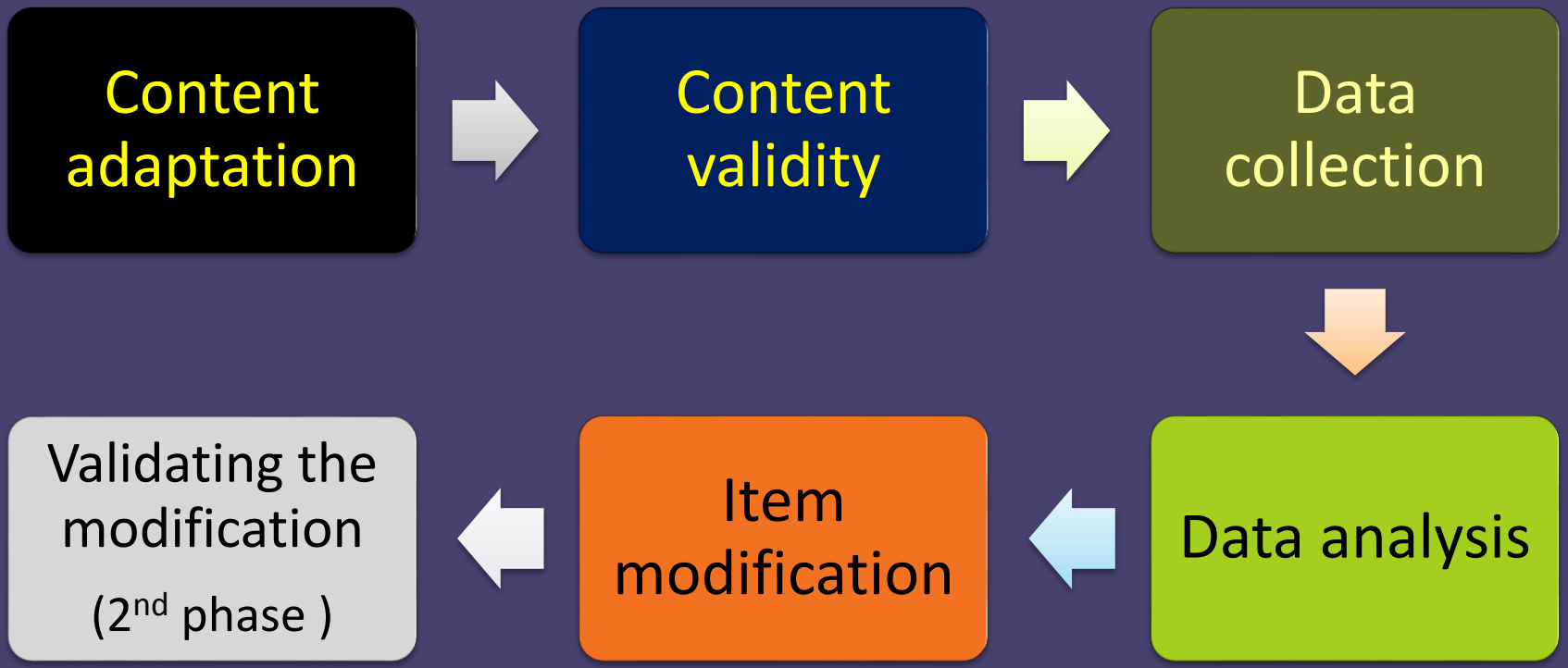
- Nurse educator skill acquisition assessment (NESAA) (Ramsburg, 2012).
- Content: 40 questions, based on 8 domains of competency areas (National League of Nursing, 2005).
- **NOT specific to clinical nursing education**.
- High reliability, unknown validity.



THIS STUDY

To develop an instrument to measure clinical nurse educator perceived competence and confidence in clinical teaching.

INSTRUMENT DEVELOPMENT



VALIDITY & RELIABILITY

- ***Reliability:*** Internal consistency: Cronbach alpha's
- ***Content validity:*** panel of experts in nursing education & practice
- ***Convergent validity:*** Items' high loading (>0.5)
- ***Discriminant validity:*** No cross-loadings & low correlation between subscales (<0.7)

(Hair et al, 2010)

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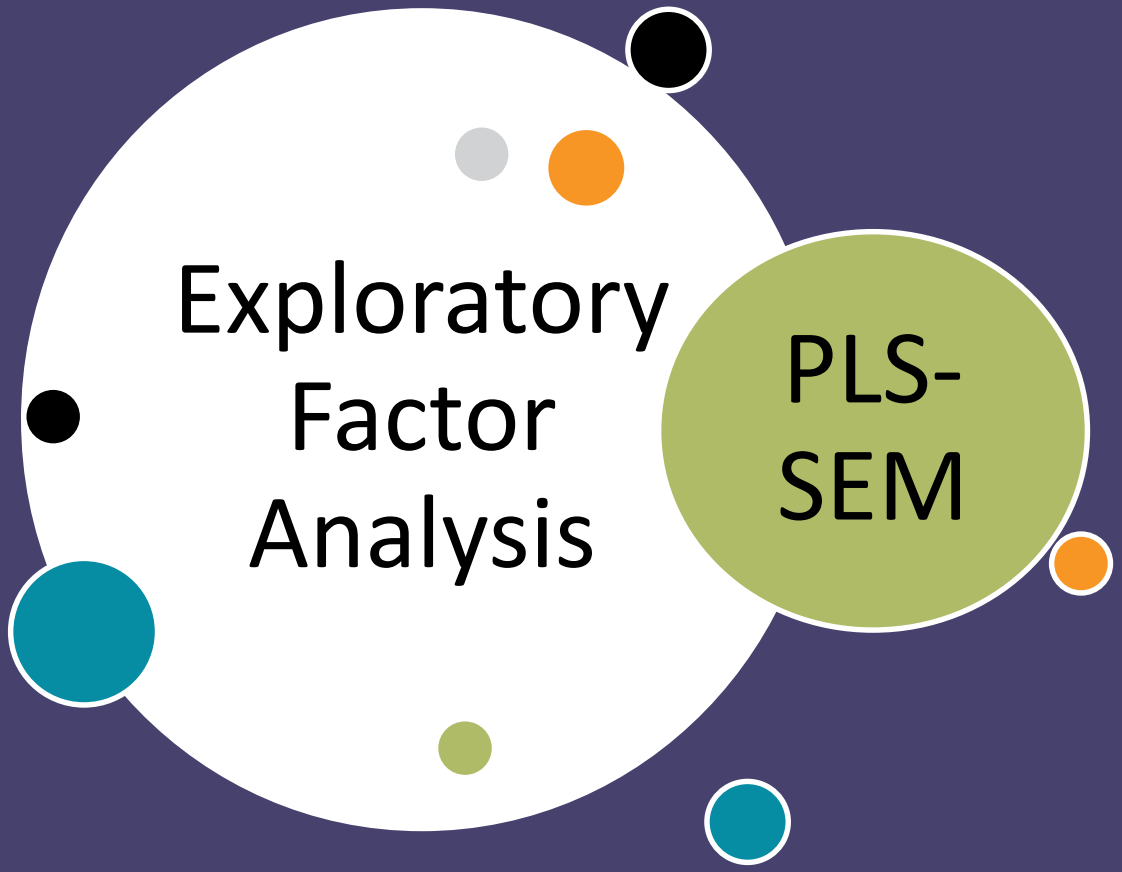
ANALYSIS



PLS-SEM: Variance-based Partial Least Square –Structural Equation Modelling

FACTOR ANALYSIS

- Used to identify dimensions & structure underlying the dataset through the analysis of correlations among variables or groups of variables.
- ***Exploratory factor analysis (EFA):***
  - –applied when the factorial theory is tentative
  - –to explore the theoretical structure of the dataset
  - –possibly to reduce the number of items from a defined pool of items
- ***Confirmatory factor analysis (CFA):***
  - –suitable when the conceptual ground is solid
  - –allow a hypothesised model to be tested and confirmed

(Hair, Black, Babin, & Anderson, 2010, Ferguson & Cox, 1993)

PLS-SEM

- Prediction-oriented variance-based approach
- Focus on endogenous target constructs in the model
- Aim to maximising explained variance.
- Concern for use: Lack of global optimization criterion

RATIONALE FOR USE:

- Prediction & theory development.
- Exploratory/ Extension of an existing structural theory
- Not require data normality
- Small sample size
- Formative measurement of latent variables

(Hair et al, 2012, Hair et al, 2011)

ANALYSIS

Photo source: https://plus.google.com/+ImreGaborFarago/posts

DEMOGRAPHIC CHARACTERISTICS

		N	%
Gender	Male	26	25.0
	Female	78	75.0
Age Group	20-25	22	21.2
	26-30	49	47.1
	31-35	13	12.5
	36-40	7	6.7
	More than 40	13	12.5
Background	Nursing	90	86.5
	Medicine	12	11.5
	Other	2	2
Highest qualification	Collegial Degree of Nursing	16	15.4
	Bachelor of Nursing	49	47.1
	Master of Nursing	15	14.4
	Doctor of Nursing	1	1.0
	Master Degree in Health-related discipline	10	9.6
	Medical Doctor	13	12.5

N= 104

EXPLORATORY FACTOR ANALYSIS

Pattern Matrix[a]

	Factor				
	1	2	3	4	5
A1_1		.304			.531
A2_2				.807	
A3_3					.646
A4_4	.597	.282	-.331		
A5_5	.582			.245	.316
B1_6	.220	.222		.234	.307
B2_7	.381	.203			
B3_8		-.200		.402	.322
B4_9	.333	.287		.302	
B5_10	.829				
C1_11	.376				
C2_12	.386			.520	
C3_13	.459			.563	
C4_14	.792				
D1_15			.228		.824
D2_16					.804
D3_17	.305		.204		.493
D4_18	.393		.268		.227
D5_19	.838	-.276			
E1_20				.678	
E2_21		.240	.278	.369	
E3_22	.821	-.325	.374	.521	
E4_23	.582		.468		
F1_24		.700			
F2_25		.789			
F3_26		.665			
F4_27				.502	
F5_28		.236	.227	.640	
G1_29		.587		.225	
G2_30		.258	.366	.245	
G3_31			.803		.273
G4_32	-.346		.770		
G5_33		.207	.566		
H1_34	-.232	.796			
H2_35		.505	.385		
H3_36	.327		.625		
H4_37		.567			
H5_38	.385	.450	.308		-.254

38 Questions

Extraction Method: Principal Axis Factoring.
Rotation Method: Promax with Kaiser Normalization.
a. Rotation converged in 17 iterations.

Pattern Matrix[a]

	Factor				
	1	2	3	4	5
D5_19	1.002				
B5_10	.892				
C4_14	.796				
A5_5	.668				
A4_4	.511				
G3_31		.858			
G4_32		.810			
G5_33		.571			
H3_36		.516			
D2_16			.885		
D1_15			.811		
A3_3			.725		
A1_1			.555		
F5_28				.875	
E1_20				.749	
A2_2				.597	
F4_27				.580	
E2_21				.534	
F2_25					.951
F1_24					.744
F3_26					.542

21 Questions

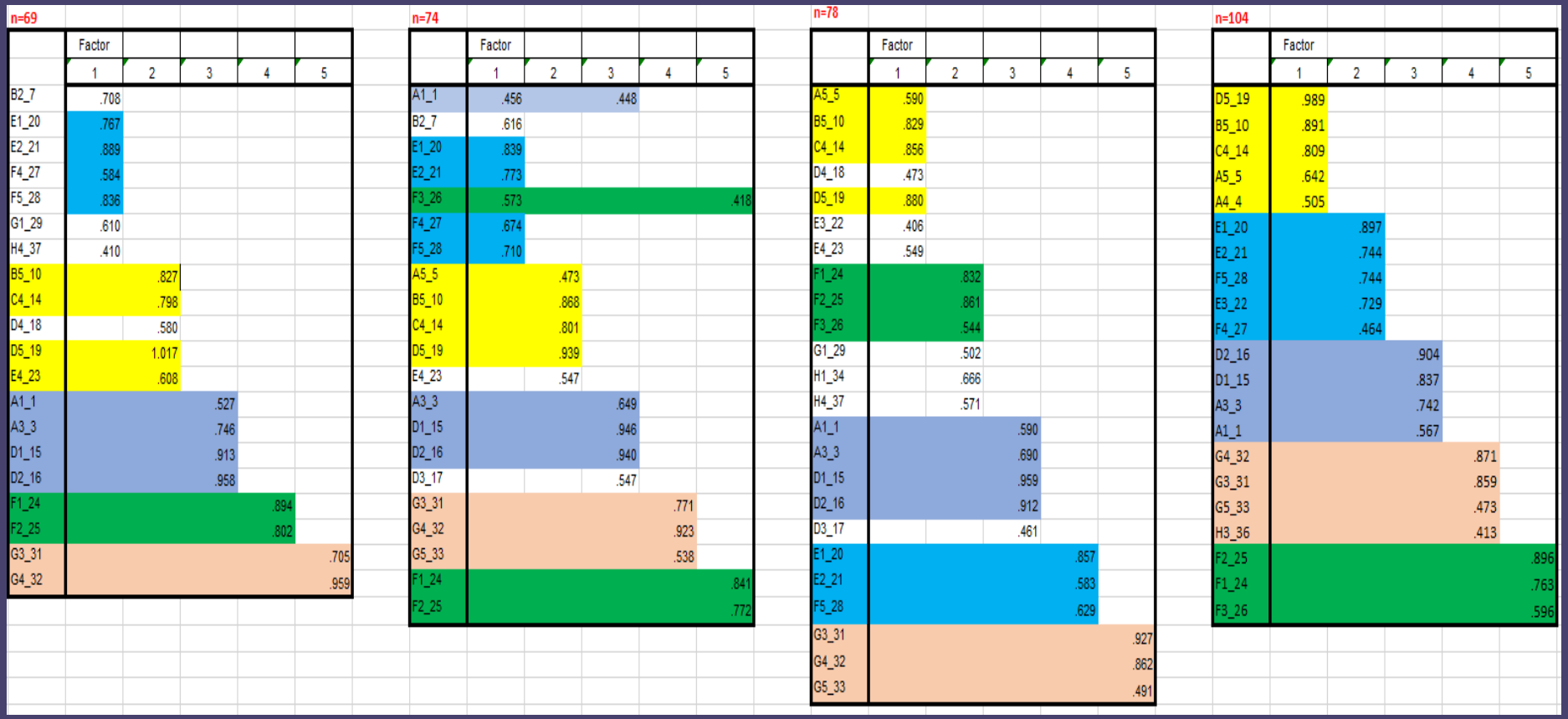
Extraction Method: Principal Axis Factoring.
Rotation Method: Promax with Kaiser Normalization.
a. Rotation converged in 7 iterations.

Factor Correlation Matrix

Factor	1	2	3	4	5
1	1.000	.571	.484	.638	.526
2	.571	1.000	.550	.670	.615
3	.484	.550	1.000	.522	.438
4	.638	.670	.522	1.000	.597
5	.526	.615	.438	.597	1.000

VALIDATING FACTOR ANALYSIS

- Internal EFA Replication
- 70% of pilot sample - random split



n=69

	Factor				
	1	2	3	4	5
B2_7	.708				
E1_20	.767				
E2_21	.889				
F4_27	.584				
F5_28	.836				
G1_29	.610				
H4_37	.410				
B5_10		.827			
C4_14		.798			
D4_18		.580			
D5_19		1.017			
E4_23		.608			
A1_1			.527		
A3_3			.746		
D1_15			.913		
D2_16			.958		
F1_24				.894	
F2_25				.802	
G3_31					.705
G4_32					.959

n=74

	Factor				
	1	2	3	4	5
A1_1	.456		.448		
B2_7	.616				
E1_20	.839				
E2_21	.773				
F3_26	.573				.418
F4_27	.674				
F5_28	.710				
A5_5		.473			
B5_10		.868			
C4_14		.801			
D5_19		.939			
E4_23		.547			
A3_3			.649		
D1_15			.946		
D2_16			.940		
D3_17			.547		
G3_31				.771	
G4_32				.923	
G5_33				.538	
F1_24					.841
F2_25					.772

n=78

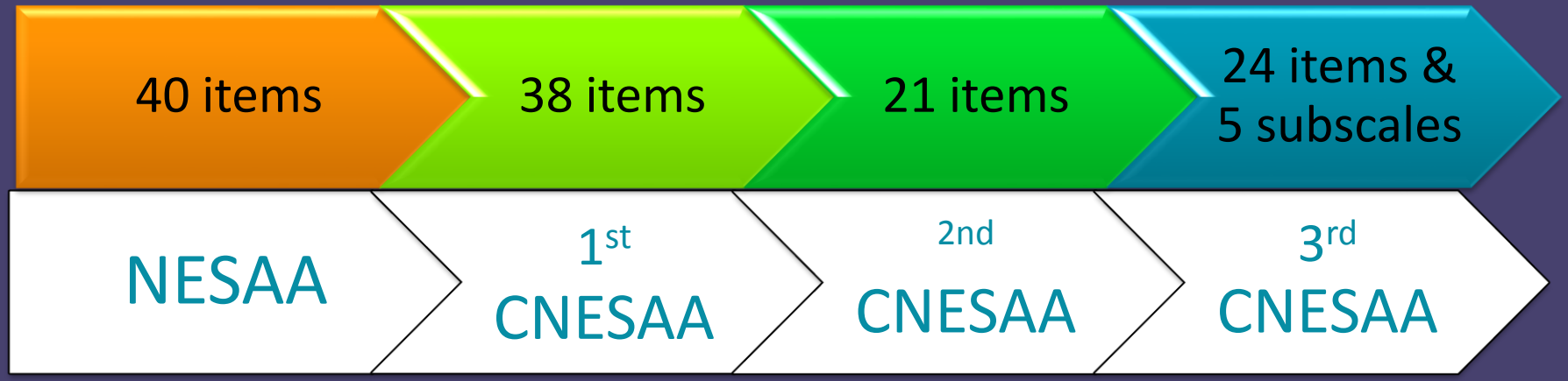
	Factor				
	1	2	3	4	5
A5_5	.590				
B5_10	.829				
C4_14	.856				
D4_18	.473				
D5_19	.880				
E3_22	.406				
E4_23	.549				
F1_24		.832			
F2_25		.861			
F3_26		.544			
G1_29		.502			
H1_34		.666			
H4_37		.571			
A1_1			.590		
A3_3			.690		
D1_15			.959		
D2_16			.912		
D3_17			.461		
E1_20				.857	
E2_21				.583	
F5_28				.629	
G3_31					.927
G4_32					.862
G5_33					.491

n=104

	Factor				
	1	2	3	4	5
D5_19	.989				
B5_10	.891				
C4_14	.809				
A5_5	.642				
A4_4	.505				
E1_20		.897			
E2_21		.744			
F5_28		.744			
E3_22		.729			
F4_27		.464			
D2_16			.904		
D1_15			.837		
A3_3			.742		
A1_1			.567		
G4_32				.871	
G3_31				.859	
G5_33				.473	
H3_36				.413	
F2_25					.896
F1_24					.763
F3_26					.596

- > 70% of the patterns reiteratively replicated.

MODIFICATION & REFINEMENT OUTPUT



SUBSCALES:

1. Enhancing student learning
2. Relating theory and practice
3. Engaging in scholarship
4. Functioning as a leader
5. Participating in professional development.

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PILOT DATA ANALYSIS - RELIABILITY

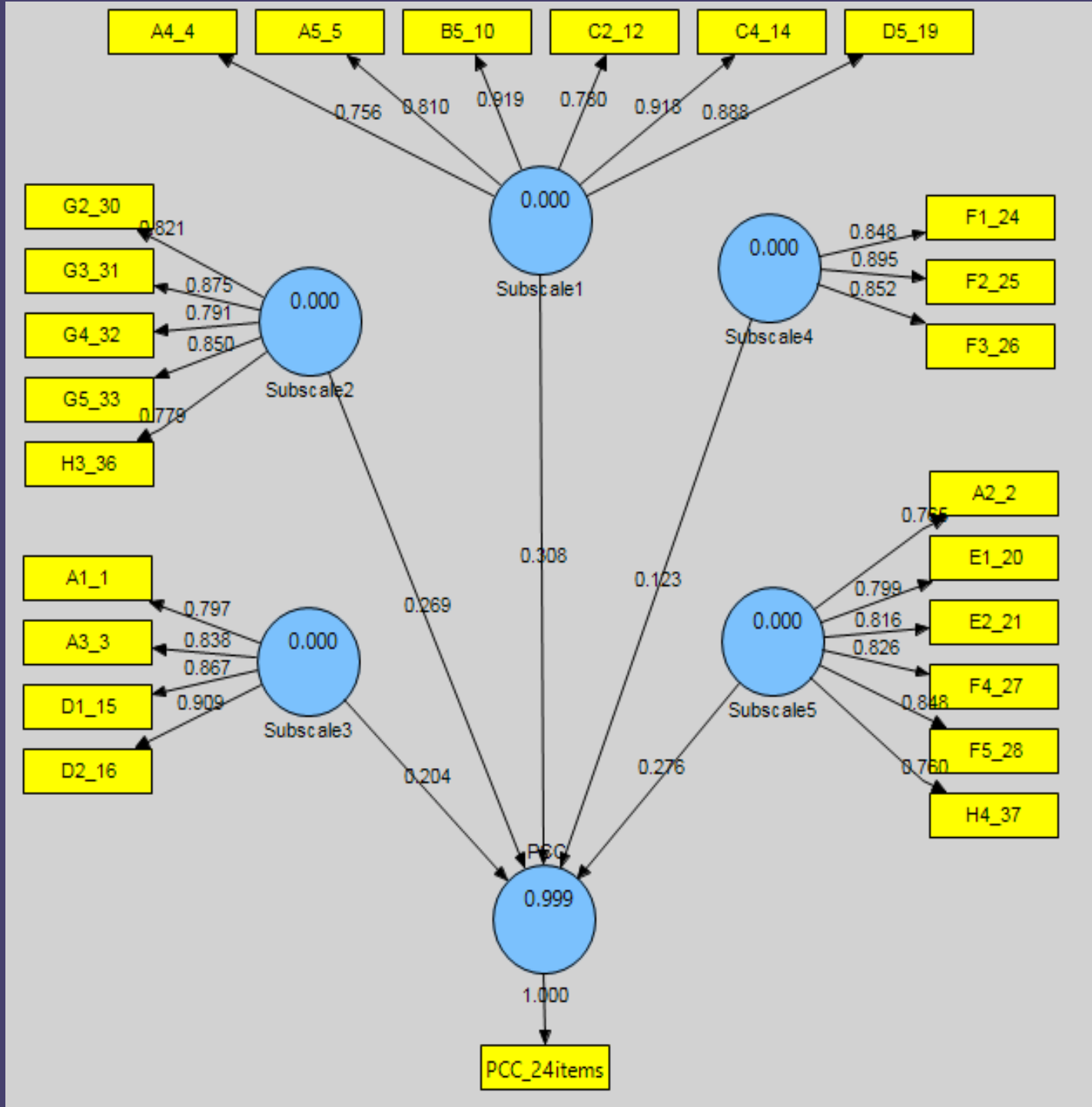
	Subscales	Cronbach's alpha
1	Enhancing student learning	.92
2	Relating theory and practice	.88
3	Engaging in scholarship	.88
4	Functioning as a leader	.88
5	Participating in professional development	.83

PLS-SEM

Outer loadings:

0.756-0.918

→Indicator reliability

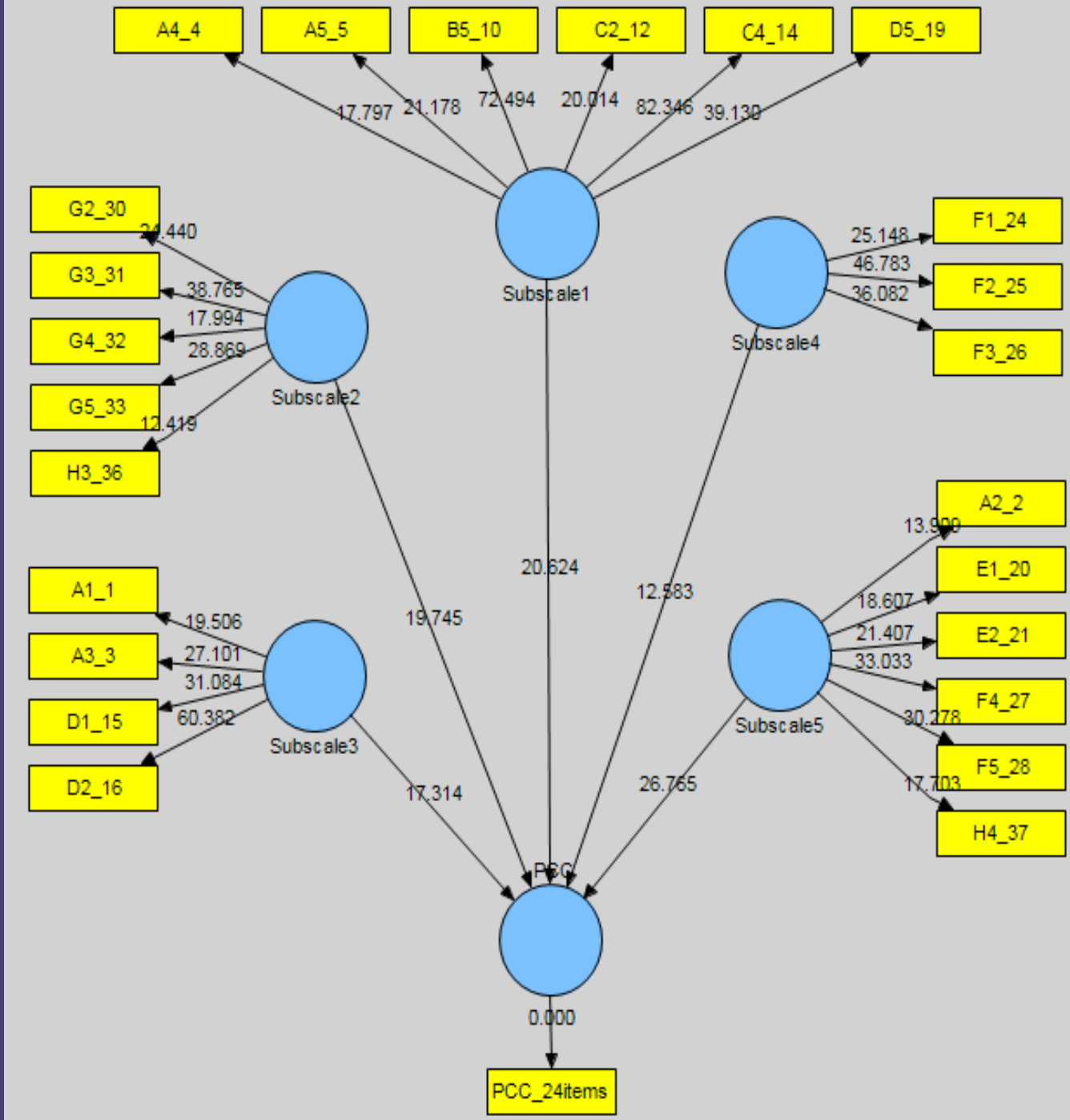


PLS-SEM

Bootstrap:

T-statistics > 3.29

P<0.001



PLS-SEM

Factor	Average Variance Extract	Composite Reliability
1	0.718	0.938
2	0.679	0.914
3	0.729	0.915
4	0.748	0.899
5	0.645	0.916

AVE>0.5 → Convergent validity

Composite reliability: 0.899 - 0.938 → Internal reliability

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ITEM MODIFICATION & REFINEMENT OUTPUT

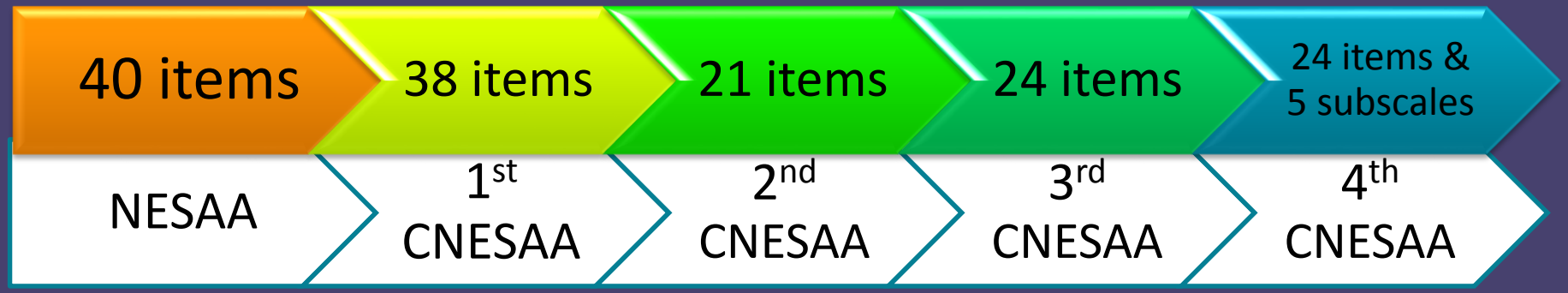
Original survey (NESAA Tool)	Piloted version (CNESAA Tool)	Modified version (CNESAA Tool)
1. Low confidence 2. Moderately low confidence 3. Moderately confidence 4. Moderately high confidence 5. High confidence		Not at all confident → Extremely confident 0 9

Rationale for modification:

- Data skewness
- Feedback from champions & participants
- Cultural awareness
- Consultation with experts.

DOMAIN	FREQUENCY					MEAN	STANDARD DEVIATION
	1	2	3	4	5		
DOMAIN A							
A1_1	0	1	22	43	38	4.13	.777
A2_2	0	9	32	44	19	3.7	.869
A3_3	0	4	23	40	37	4.06	.857
A4_4	1	8	36	43	16	3.63	.872
A5_5	5	13	40	36	10	3.32	.978
DOMAIN B							
B1_6	0	2	18	36	31	4.07	.767
B2_7	0	5	26	43	30	3.94	.857

ITEM MODIFICATION & REFINEMENT OUTPUT



- Clarification & rewording made to enhance the clarity of content.
- NEXT STEP: Validation in an independent sample using CFA.


THANK YOU VERY MUCH!
Yen Bai, Vietnam
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