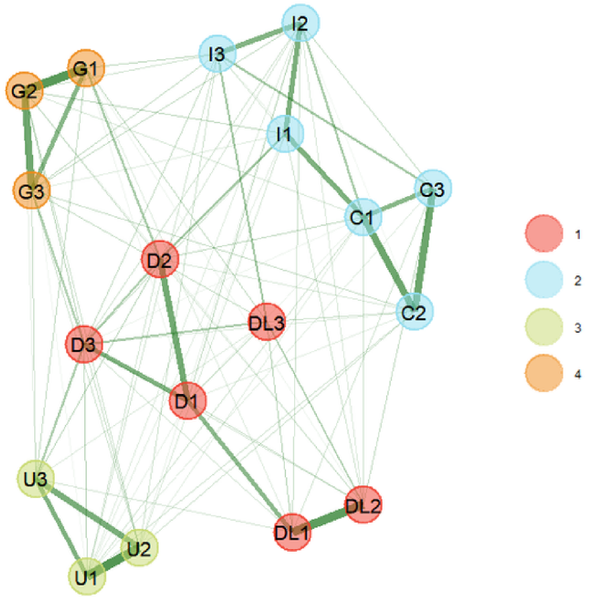
Evaluating dimensionality in non-cognitive measures: Exploratory vs. hierarchical exploratory graph analysis

- Accurate estimation of construct dimensionality is essential to validity of the interpretations and uses of the test
- There has been limited research on the application of network psychometrics approach to dimensionality estimation

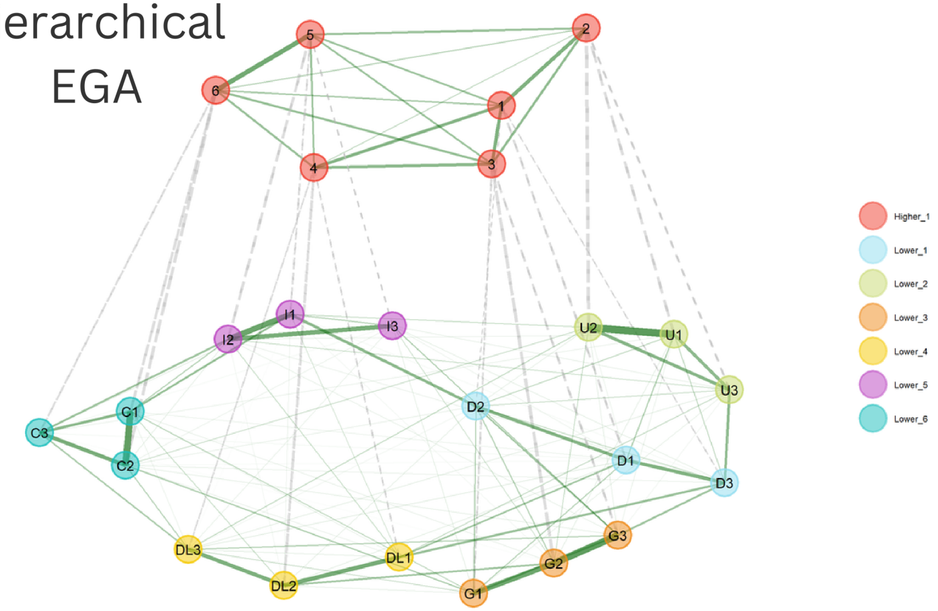
> *What is the difference between EGA and Hierarchical EGA in the estimation of instrument dimensionality*?

- Students' response data to a non-cognitive construct measuring 6 dimensions of students' perception of teaching effectiveness.
  - N = 649
    - design
    - utility of course resources
    - graded work
    - course delivery
    - instructional approach
    - class climate

EGA



Hierarchical EGA



- For this dataset, hierarchical EGA provides results that align more with the theory

Indices	EGA	Hierarchical EGA
Chi-sq	129***	200.859***
CFI	0.937	0.998
TLI	0.926	0.997
RMSEA	0.080	0.032
SRMR	0.040	0.036

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