Validity and Reliability of the Instruments

Challenge as stated by CAEP	Proposed Solution (Including LCAS)
• Data must come from valid and reliable instrumentation	• Instrumentation in LCAS shows satisfactory validity and reliable (summary of statistical procedures and data on next slide)

Content Validity – Content of the surveys is based upon well-established content from the fields of cognitive and educational psychology. Specifically, the work of Jean Piaget, Howard Gardner, and Erik Erikson provided the content foundation for measurements of cognitive development, multiple intelligences, and psychosocial development respectively. Additional content support may be found via the FAQ, "What is the theoretical basis and practical application for LCAS?"

Construct validity – Diagnostic activity/interview techniques along with self-report survey are common and acceptable practices within the social sciences research, particularly as exemplified by the abovementioned theorists, for measurement of these phenomena.

Reliability of the Instruments

- Procedure for Establishing Diagnostic Instrument Reliability
    - 5000 completed surveys were randomly selected from approximately 14500 student records in the LCAS data archive and current (live) data files. Selection was conducted using a random number table.
    - The randomly selected surveys were then stratified into groups based upon respondent reported age.
    - Each group was examined for internal reliability using Cronbach's *alpha*.
        - George and Mallery (2003) provide the following rules of thumb: "_ > .9 – Excellent, _ > .8 – Good, _ > .7 – Acceptable, _ > .6 – Questionable, _ > .5 – Poor, and _ < .5 – Unacceptable" (p. 231)
    - The resulting correlations by age group were:

Age	3-5	6	7	8	9	10	11	12	13	14	15	16	17	>18**
n=	414	413	655	257	415	552	448	263	414	241	172	379	170	207
α (total scale)	.79*	.92	.92	.94	.94	.92	.90	.91	.92	.92	.93	.96	.95	.96

* This includes measurement of some developmentally delayed 3 year-olds. Without these students, α=.88

** Data from college classes where teachers were freshman and sophomore level university instructors