definition

Time unit: one class period

**Student's Engagement (SE)**

-The interactive behavior of other students in a classroom

- Higher level of SE indicates higher frequency of other students' engagement

- (possibly average EL)

**Teacher's Engagement (TE)**

- The interactive behavior of the instructor

- Higher level of TE indicates higher frequency of instructor's engagement

**Combined Engagement (CE)**

- The level of social engagement as perceived by the student

- Higher CE indicates that the student perceives the classroom environment as highly socially interactive

- CE = SE + TE

**Introversion Level (IL)**

- The introversion level of the student

- High IL indicates the student is introverted; low IL indicates the student is extroverted

- (Based on Big-5 introversion level)

**Engagement Level (EL)**

- The student's socially interactive behavior that can be perceived by other students

- High EL indicates the student is actively participating in social interaction in the classroom

**Stress (St)**

- The stress generated by the socially interactive classroom environment

- High St indicates the student is feeling stress due to the classroom environment

- ST = ST \* IL + ST

**Energy (E)**

**Cognitive Fatigue (CF)**

- The net cognitive tiredness of the student

- High CF indicates students are too tired to focus and engage

**Motivation (M)**

- Student's willingness to participate in classroom activities

- High M indicates the student is motivated to participate in classroom activities

**Achievement (Ach)**

- Student's measurable outcome from the class

- High Ach indicates the student is performing well in class (e.g., good grades)

**Cognitive Engagement (CE)**

- Student's engagement in a passive way

- High CE indicates the student is cognitively engaged in classroom activities (e.g., focusing or thinking)

**Behavioral Engagement (BE)**

- Student's active participation

- High BE indicates the student is actively responding to classroom activities (e.g., taking notes, answering questions, discussing)

**Absorption Capacity (AbC)**

- Student's intellectual capacity to stay focused and learn

- High AbC indicates a student can effectively absorb knowledge

**Self-esteem (S)**

- Student's judgment or confidence about self

- High S indicates the student is confident and satisfied with themselves

Formulas

CE = SE + TE

ST = ST \* IL +ST

CF = ST + E

M = CF

BE = M

CE = M \* I

AC = CE + BE

Ach = AC

EL = CE + BE + IL