Selected Research Basis for AL Theory of Change

Key Characteristics of Activated Learning			
Teacher Change	Student Change	Established Mechanism	Studies
Defines, delineates, and refers to EF constructs in taught curriculum and in short troubleshooting conversations. Connect performance challenges to EF weakness.	Gains metacognitive knowledge and skill. Understands EF attributions for challenges and feel more motivated.	Awareness of own learning and understanding of cognition (metacognitive knowledge) leads to better learning. Attributing poor performance to factors which be mastered and controlled are more motivating than fixed attributions related bad luck, poor character, or low intelligence.	(Bransford, Brown, & Cocking, 2000) (Gaier, 2015; Weiner, 1974)
Adds a 5-10 minute "troubleshooting" session to routine teaching. Models self-awareness and self-compassion.	Experiences teachers' more proactive, positive, "can-do" tone; builds self-esteem.	The tone, mood, and mindset present in a classroom is the primary driver of student success.	(Cited in Tough, 2016)
Within troubleshooting conversations, regularly engages the anticipation of obstacles and the creation of strategies to overcome those obstacles.	Learns to anticipate obstacles and create strategies to overcome those obstacles. Preforms tasks more quickly and with better results.	Anticipating obstacles and creating strategies to overcome those obstacles in advance of performance allows students to apply strategies flexibly and improve academic performance.	(A. Duckworth, Kirby, Gollwitzer, & Oettingen, 2013; Popham, 2011)
Within troubleshooting conversations, provides more	Experiences more success.	Success has a reciprocal positive effect that drives students' willingness to persevere, and thus strengthens academic behaviors.	(Cited in Farrington et al., 2012)

proactive EF intervention rather than using student failure or frustration as cues to intervene.		Teachers with inadequate tools for managing student behavior clamp down, control, abandon new approaches, and this control hurts student motivation.	(Klusmann, Kunter, Trautwein, Ludtke, & Baumert, 2008; Muller, Gorrow, & Fiala, 2011; Yong & Yue, 2007)
Within troubleshooting conversations, integrates strategy and learning skill instruction in daily tasks.	Develops EF expertise and practical skill.	The most effective approaches to building non-cognitive skills are integrated throughout the day, not only in separate lessons. Working on authentic problems promotes deeper learning.	(A.L. Brown et al., 1981; Diamond & Lee, 2011; Duffy, Lowyck, & Jonassen, 1993; Farrington et al., 2012)
Within troubleshooting conversations, recruits students in the creation of strategies using an inquiry-based approach.	Feels more engaged and satisfied by process of creating and using strategies.	Inquiry promotes student engagement and feelings of satisfaction.	(Zafra-Gómez, Román-Martínez, & Gómez-Miranda, 2015)
Within troubleshooting conversations, models and directly teaches students a process for being adaptable, resourceful, and using a problem-solving mindset.	Learns a process for being adaptable, resourceful, resilient and using a problem-solving mindset.	Mindsets of problem-solving, self-efficacy, adaptability, and personal control are associated with mental health and resiliency.	(Bandura, 1977; Brooks & Goldstein, 2001; Prince-Embury, Keefer, & Saklofske, 2016; Wyman, Cowen, Work, & Kerley, 1993)
Incorporates more feedback on students' choice of and use of co-created strategies. Crowds out feedback that is controlling.	Enjoys greater intellectual and creative autonomy; improved motivation and engagement.	Teacher feedback "typology" indicates that 3 of 4 feedback types identified are either controlling or intrusive. For example, rewarding/punishing, approving/disapproving, or specifying attainment/specifying improvement. Only constructing achievement/constructing the way forward is consistent with student autonomy and motivation.	(Tunstall & Gipps, 1996)

		Motivation and engagement driven by feelings of competence and autonomy.	(Deci & Ryan, 2000; Jonassen, 2000)
Provides actionable feedback based on co-created, achievable targets.	Can more easily act on teacher feedback. Practices strategy work more deliberately and with greater motivation. Enjoys academic gains.	Formative assessment providing instrumental and achievable steps to meeting challenges increases student motivation, learning, and engagement.	(Hattie & Timperley, 2007)
Emphasizes value of student strategy work by focusing on it with feedback and assessment.	Feels as though his or her efforts and processes are being recognized by teachers.	When children receive feedback about the value of their learning and thinking processes, they are more willing to *demonstrate* their learning and thinking processes.	(Dweck, 2006)
Through increased emphasis on the observation of student process, learns to notice and appreciate a wider variety of creativity, ideas, and talent.	Feels more understood, appreciated, and respected by teacher.	Relationships play a major role in students' success at school relationships play in students' success at school.	(Multiple studies cited in Martin & Dowsin, 2009)

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