Assignment 2: Theoretical Perspective and Literature Review

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Literature Map

Theoretical Perspective

The problem of student self-efficacy is grounded in Social Cognitive Theory (SCT). This theory was originally developed by Albert Bandura (1977) and was primarily used to study human motivation, affect, and action. SCT indicates that self-efficacy is a psychosocial process, primarily influenced by mastery experience, vicarious experience, social persuasions, and affective states. These influences, then, determine the extent to which people believe they have the ability to act in such a way as to produce desired outcomes, thus increasing the motivation to accomplish tasks or goals. SCT has been widely used in education (Usher & Pajares, 2006), counseling (Brady-Amoon & Fuertes, 2011), and in the work setting through career theory (Hackett & Betz, 1981) and social-cognitive career theory (Lent, Brown, & Hackett, 1994).
Literature Review


The author discusses the two major theoretical frameworks of educational psychology, student approaches to learning (SAL), crediting Biggs (1987) and Marton & Saljo (1976), and self-efficacy, crediting Bandura (1986 and 1997). Phan argues that this study is unique by combining the SAL and self-efficacy theoretical frameworks into one conceptual model for examination. Of particular emphasis is the substantial research noting positive interrelations between a positive student sense of academic self-efficacy and approaches to learning, especially with deep learning, which combine to heighten student academic achievement. This two-year longitudinal quantitative study involving 252 university students employed latent growth curve modeling (LGM) to analyze changes in self-efficacy for two major learning approaches, surface and deep. Phan also used Likert-scale inventories and Statistical Product and Service Solutions (SPSS) AMOS version 18 analysis. The two instruments employed were the Self-efficacy for Learning and Performance subscale of the Motivated Strategies for Learning Questionnaire (MSLQ) and the Deep and Surface Processing subscales from the Study Processing Questionnaire (SPQ). Results confirmed Bandura’s argument that mastery experiences (the first, and most influential, of Bandura’s four factors that formulate self-efficacy) heighten a positive sense of student self-efficacy and suggest that reflecting in and on past learning experiences, including both successes and failures, is important, especially those engagements subject to mastery. Phan also reports that a deep learning approach orientation tends to accompany individuals with positive self-efficacy, and vice versa, reinforcing the importance of educators providing students with learning opportunities that deepen understanding and build a sense of competence. The author discusses several limitations of the study and suggests further research should investigate classroom teaching and learning practices that build positive self-efficacy.


In another study at the conceptual framework level, the authors investigated whether academic self-efficacy and academic self-concept represent two distinctly different psychological constructs, and also sought to shed light on the nature of the relationship between the constructs. They develop their theoretical perspective from Schunk’s (1991) and Bong & Slaavik’s (2003) work, not Bandura’s. The authors cite Bong & Slaavik’s argument that academic self-concept primarily involves a person’s *ability* in a given setting while academic self-efficacy primarily involves one’s *confidence* to successfully perform a particular task. This quantitative study involved the 2003 PISA (Programme for International Student Assessment) Survey of 8,796 secondary students across 277 schools in OECD (Organisation for Economic Co-operation and Development) countries. They employed Confirmatory Factor Analysis AMOS 6 to investigate math self-efficacy (MSE) versus math self-concept (MSC). Results showed that in mathematics the two constructs, academic self-efficacy and self-concept, are indeed distinct, student academic self-concept strongly influences their academic self-efficacy beliefs, and academic self-concept is a better predictor and mediator for affective states while academic self-efficacy better predicts and mediates academic achievement. The authors argue that their findings, specifically that
student academic self-concept strongly influences academic self-efficacy, not vice versa, partially contradict Bandura’s theory. They suggest academic self-concept is more past-oriented and concerned with perceived ability while academic self-efficacy is more future oriented and focused on confidence in completing a task. Relative to future research the authors suggest that longitudinal research in this area would be informative.


Although not a contradictory study such as Ferla et al (2009), the authors sought to determine if elements of invitational theory (Purkey, 2000; Purkey & Novak, 1996) could supplement Bandura’s SCT four tenets of self-efficacy formation. Invitational theory holds that people can intentionally send positive and empowering messages to themselves, improving their own functioning, and bolster the potential of others as well. The authors make the point that there is a commonality in this interpersonal construct and Bandura’s third self-efficacy formation source (social persuasion). The authors investigated if there is a connection between the invitations that students send themselves and others, and the confidence with which students pursue academic endeavors. In a quantitative study of 468 Grade 6 students, one of the few significant studies found at the middle school level, the authors used the Sources of Self-Efficacy Scale (Lent, Lopez & Bieschke, 1991) to assess students’ evaluations across each of Bandura’s four self-efficacy formation sources, the Inviting/Disinviting Index-Revised to measure the extent to which students were inviting to themselves and others, Bandura’s (2006) Children’s Self-Efficacy Scale to measure academic self-efficacy, and academic achievement was measured using academic class grades provided by school administrators. Results of the study confirmed self-efficacy correlation with Bandura’s four self-efficacy formation sources for all race and gender groups. In addition, inviting self and inviting others correlated with academic self-efficacy, and, as other researchers have found, self-efficacy correlated with academic achievement for all groups. The authors reported surprise at the extent to which invitations predicted academic self-efficacy beliefs for all groups. They argue that the strong correlation of invitations to self-efficacy justify inclusion as a fifth self-efficacy formation source to Bandura’s SCT and should be further investigated in future self-efficacy research.


The authors studied academic achievement in mathematics from the context of Social Cognitive Career Theory (SCCT), a Bandura SCT-based framework broadened by Lent, Brown, & Hackett (1994), seeking to test transference of hypotheses. SCCT takes into consideration the person, environment, and behavior, and how these interact to inform career development. Like SCT, SCCT hypothesizes that self-efficacy and outcome expectations are directly influenced by mastery goal orientation and experiences. Their quantitative study involved 277 Grade 8 and 9 students in a private Argentinian school using the following instruments: Mathematics Outcome Expectations Scale, Mathematics Performance Goals Scale, Logical-Mathematical Self-Efficacy Scale, Numerical Reasoning subscale of the Differential Aptitude Test (Version 5), and
mathematics courses grades. Results confirmed the tenets of both SCT and SCCT that academic performance success is associated with students of positive self-efficacy who engage in challenging mastery experiences. The authors note a study generalization limitation is the specific demographic group studied, thus they suggest future investigations be done in more heterogeneous settings. They encourage educators to ensure students are engaged in self-efficacy enhancing learning environments as these experiences can influence subsequent educational coursework choices and career direction.


In another applied context, the authors sought to fill research gaps at the university level by investigating the relationships between self-efficacy and self-rated abilities, two self-beliefs widely used in counseling. Of particular interest were the outcome measures of college students’ adjustment and academic performance. Using Bandura’s SCT foundation, this quantitative study involved 271 full-time undergraduate university students. The College Self-Efficacy Inventory (CSEI) was used to measure self-efficacy strength, the Self-Estimates subscale of the Self Directed Search (SDS) was used to measure self-rated ability strength, the Student Adaptation to College Questionnaire (SACQ) assessed adjustment, and cumulative grade-point average (GPA) measured academic performance. Results showed a positive correlation between the distinct constructs of self-efficacy and self-rated abilities, that self-efficacy contributes to college adjustment, and supported other research that shows a positive correlation between self-efficacy and academic performance. Regarding academic performance the study revealed that the combination of self-efficacy, self-rated abilities, and adjustment predicted or explained the majority of variance compared to high school GPA or SAT score. The authors suggest counselors place greater emphasis on self-efficacy when working with students, and that future investigation should be done in different settings and student populations.


The authors note the considerable research supporting Bandura’s SCT argument that there is strong correlation between positive self-efficacy and performance, and sought to investigate the psychological phenomena involved. They state that their study, which extends Bandura’s fourth factor of self-efficacy formulation (affective states), is unique in attempting to determine the motivational mechanisms that underlie an individual’s sense of self-efficacy. In a two-tiered, quantitative longitudinal study involving 274 secondary school teachers and 100 university students working in groups the authors measured efficacy beliefs by adapting Schwarzer’s (1999) general self-efficacy scale. Positive affect was measured along enthusiasm, satisfaction, and comfort dimensions while activity engagement was analyzed using vigor, dedication, and absorption dimensions. Confirmatory Factor Analyses (CFA) were accomplished using AMOS version 17, while Structural Equation Modeling (SEM), several goodness-of-fit models, Multiple Analyses of Variance (MANOVA), and Analyses of Variance (ANOVA) statistical analysis tools were also employed. Results showed that there is a reciprocal relationship between efficacy beliefs and activity engagement through their impact on positive affect, enthusiasm is the positive affect with the greatest effect on activity engagement, and a gain spiral is created when
efficacy beliefs increase over time due to engagement and enthusiasm. The authors suggest future investigation could be done to determine the impact of Bandura’s three other major sources of self-efficacy formation (mastery experience, vicarious experience, and social persuasions) on self-efficacy, affect and performance over time, and suggest that practical interventions designed to build positive self-efficacy need to be studied.


In another study based firmly on the SCT framework, the authors explored student motivation in high school introductory science courses. This mixed methods study of 288 first- and second-year high school students included the following instruments: essays, online surveys, interviews, Statistical Program for the Social Sciences (SPSS version 17.0), Analysis of Moment Structures (AMOS version 7.0), and a Structural Equation Model (SEM). Results showed that the students’ intrinsic motivation, self-efficacy, self-determination, and achievement were related. Consistent with SCT, they found self-efficacy was the motivation factor most related to achievement. Students enrolled in the Advanced Placement Program (AP) program were higher than non-AP students in intrinsic motivation, self-efficacy, self-determination, and achievement. Qualitative analysis noted that patterns in students’ essays and interviews identified inspiring teachers, collaborative learning activities and career interests as significant motivators. These findings suggest that science teachers should employ collaborative learning strategies and social modeling to heighten student motivation, achievement, AP coursework intent, and interest in science careers. The authors suggest future longitudinal studies to track how student motivation to learn science changes over the course of high school as students consider higher level science courses and pursue college and/or career paths.


In this study squarely built on SCT theory, the authors investigated what motivational factors influence student mastery learning orientation. Specifically, they studied the relationships of student perceptions of belonging among the motivational variables of self-efficacy, perceived instrumentality, personal achievement goals, and perceptions of the classroom goal orientation. Significant literature review of mastery orientation was provided in this quantitative study involving 249 students in high school English classes. Analysis was conducted using Likert-scale questionnaires, Approaches to Learning Survey, Patterns of Adaptive Learning Survey (PALS), and Psychological Sense of School Membership (PSSM) scale. Results confirmed other research that a mastery goal approach predicts positive learning outcomes but the authors argue that this study extends prior understanding by suggesting a primary underlying causal factor is students who report a positive sense of belonging are more likely to focus on and apply cognitive processes toward understanding. They suggest that teacher feedback and support also influence student sense of belonging in the learning environment which impacts cognitive engagement. The authors suggest future investigations should include effects, such as achievement results, in addition to relations.

The authors investigated the extent to which Bandura’s (1997) sources of self-efficacy predict middle school student science self-efficacy beliefs, sought to confirm previous studies showing that science self-efficacy predicts science achievement, and explored how science self-efficacy may differ by gender. Significant SCT foundations are included to ground this study. In order to determine whether self-efficacy makes an independent contribution to the prediction of science achievement, the authors included the academic motivation constructs of self-regulatory practices, self-concept, and anxiety. Their quantitative study involved 319 students in Grades 5-8 and used the following instruments: Sources of Science Self-Efficacy Scale, explanatory factor analysis (EFA), a confidence rating questionnaire, Academic Self-Description Questionnaire (ASDQ-1), an anxiety questionnaire, Children’s Multidimensional Self-Efficacy scale, and student science class grades. Results showed significant correlations that all four of Bandura’s self-efficacy influences (mastery experience, vicarious experience, social persuasions, and affective states) promote self-efficacy, and affirms previous research that science self-efficacy does predict achievement in science. Gender differences were found to be minimal and not statistically significant. The authors note that regression analyses revealed mastery experiences as having a particularly strong influence on self-efficacy, and that they as a category predict science self-efficacy beliefs. It was suggested that future investigations focus on different levels, settings, and demographic compositions across the educational spectrum.


In another study firmly grounded in Bandura’s SCT, and one of the few that is based on classroom pedagogical interactions, the authors investigated the effect of teacher formative feedback on student self-efficacy. They provide significant evidence in the literature about the positive impact that feedback has on self-efficacy (Zimmerman, 1997), on informing students’ mastery learning strategies (Zimmerman & Kitsantas, 2002), and on goal attainment where progress feedback is combined with mastery learning goals (Schunk & Rice, 1991). The authors employed Skinner’s (1996) construct of control where in an academic setting students are the agents of control, learning strategies are the means of control and desired educational goals are the ends of control. This quantitative study involved 77 Grade 7 and 79 Grade 8 Chinese students’ acquisition of English vocabulary. Statistical analysis included Likert-scale questionnaires, vocabulary test results, and Univariate Analysis of Variance (ANOVA) to analyze changes in student self-efficacy. Results showed that students derived greater benefits to self-efficacy from formative feedback than summative feedback, and self-referenced feedback, where the focus is on task engagement and self-improvement, was more beneficial than norm-referenced feedback, where students compare themselves to others and tend to attribute ability to outcome results. Formative feedback was shown to provide strategic information to improve learning and empowered students with a sense of control which enhanced self-efficacy. The authors note the short duration of this study and suggested future investigations involve ongoing, regular formative feedback episodes to determine longer-term effects on self-efficacy. Combining self-referencing and formative feedback, they suggest, should further empower student self-efficacy.
A thoughtful reflection of the literature leads to the conclusion that developing student self-efficacy is of vital importance in education. Previous researchers have provided ample evidence that positive self-efficacy benefits student motivation and academic outcomes. A critical analysis of both in-study researcher recommendations for future investigation as well as cross-study identification of gaps reveals two needs: greater focus across the K-12 educational spectrum, and more evaluation of ongoing, practical classroom-level formative experiences and tools that build student self-efficacy. The trajectory of this literature review and map suggests further investigation is now warranted in the area of K-12 formative, student-directed learning engagements that are consistent with Bandura’s mastery experience tenets and have the potential of building positive student self-efficacy. Following further literature review, both a proposed purpose statement and focused research questions should emerge toward a quantitative study in this promising area to benefit student development.
References


