Short Research Article

First-Year Students' Self-Regulation Process Through Self-Report at a Minority Serving Institution (MSI)

ABSTRACT

First-year college students face a difficult task of self-regulating in a formal academic environment, especially those lacking the fundamental skills to do so. The purpose of this study is to assess the self-regulated processes of first-year students at a Minority Serving Institution, or MSI. Participants consisted of 822 freshmen (519 females; 303 males) enrolled in an orientation course at a Minority Serving Institution in the United States. Collection of data included using the Self-Regulation Questionnaire designed to assess self-regulatory processes through self-report. The questionnaire was administered through Taskstream system and analyzed through version SPSS 23 for continued analysis of data. The data were analyzed using a regression analysis to determine whether correlations existed within or between variables. The self-regulation score was calculated by totaling all the items. Analysis of data from this study indicated that females (r = -.12, p <.001) and transfer students (r = .14, p <.001) had significantly higher SRQ scores. The data also revealed that for self-regulation, more transfer students (41.5%) placed in the high (intact) category than did non-transfer students (24.7%). A stepwise regression model predicting the SRQ total score were based on six candidate demographic variables. The final two variable model was significant (p = .001) and accounted for 3.2% of the variance in the SRQ total score. Specifically, SRQ total scores were higher for transfer students (β = .13, p = .001) and for females (β = -.11, p = .001). Among 822 participants, 306 fell into the low self-regulation range; 293 were in the mid-level self-regulation range; and 223 ranked in the high self-regulation range. Results stemming from the dataset revealed that thirty-seven percent of first-year students have low self-regulatory scores. Nearly 50% of the male students were less favorable to self-regulate than female students during their experience in post-secondary education.

1. INTRODUCTION

Self-regulation is defined as the ability to control and regulate one's impulses to set and reach long term goals (Zimmerman, 2002). First-year college students face a difficult task of self-regulating in a formal academic environment, especially those lacking the fundamental skills to do so. Although teaching self-regulated learning is a skillset college and university professors are not obligated to teach students in higher education, it would be helpful for

23 students in dire need to undergo self-regulatory therapy. The Gestalt theory is a self-
24 regulatory therapy founded by Frederick (Fritz) and Laura Perls in the 1940s. One of the
25 goals of this therapy is to enable individuals to become "aware" of what they are doing, how
26 they are doing it, and how they can change themselves (Yontef, 1993).
27
28 Zimmerman's (2002) case study provides an ideal illustration of a student's inability to self-
29 regulate. In this study, a high-school student, "Tracey," listens to music on MTV as she
30 prepares for an upcoming midterm mathematics examination. The study revealed that
31 "Tracy has not set any study goals for herself--instead she simply tells herself to do as well
32 as she can on the test. She uses no specific learning strategies for condensing and
33 memorizing important material and does not plan out her study time, so she ends up
34 cramming for a few hours before the test." Like many students who possess "only vague
35 self-evaluative standards," she "cannot gauge her academic preparation accurately."
36 Rather, she "attributes her learning difficulties to an inherent lack of mathematical ability and
37 is very defensive about her poor study methods." The study showed further that because
38 "Tracey" fears "looking stupid," she fails to seek assistance and does not look for library
39 resources independently because, in her words, she "already has too much to learn."
40 Moreover, according to the study, "Tracey" exhibits a number of self-defeating attitudes:
41 She "finds studying to be anxiety-provoking, has little self-confidence in achieving success,
42 and sees little intrinsic value in acquiring mathematical skills." (p. 64)

43 The Gestalt theory suggests that Tracy, and students like her, can benefit from an action
44 plan consisting of an awareness of one's inability to self-regulate, which is the initial step in a
45 self-regulation plan. For this research study, awareness has been defined as the ability to
46 recognize the state of a condition or identify a problem that is based on information or
47 experiences that presently exists. Therefore, a Self-Regulation Questionnaire (SRQ) was
48 used as the instrument to determine first-year students' self-regulation processes through
49 self-report at a Minority Serving Institution (MSI). Brown, Miller, & Lawendowski (1999)
50 developed The Self-Regulation Questionnaire (SRQ) as a first attempt to assess self-
51 regulatory processes through self-report.

52 No current publication has presented research on assessing first-year students' abilities to
53 self-regulate at a Minority Serving Institution; neither has research fully identified determining
54 factors of students' abilities or inabilities to self-regulate. The purpose of this manuscript is
55 to assess self-regulatory processes of first-year college students at a Minority Serving
56 Institution (MSI).

57 This study is significant because as mentioned earlier, first-year college students confront
58 the difficult task of self-regulating in a formal academic environment, especially those lacking
59 the fundamental skills to do so. Therefore, the purpose of this quantitative correlational study
60 was to measure the level of self-regulatory skills in a sample of first-year college students
61 enrolled at a Minority Serving Institution as measured by the SRQ total score; and to
62 determine if their self-regulatory skill levels were related to their demographic characteristics.

63

1.1 Research Questions

65
66 What is the level of self-regulatory skill in a sample of first-year college students enrolled at a
67 Minority Serving Institution as measured by the SRQ total score?

68 Are those self-regulatory skill levels related to the student's demographic characteristics?

2. METHODOLOGY

2.1 Participants

Study participants were 822 students (519 females and 303 males) enrolled in an introductory freshman orientation course at an MSI in the United States. The MSI in this study is a comprehensive urban public university. Sample representation based on race was coded as Black or African American (n =742), Hispanic or Latino (n = 50), Whites or Caucasians (n = 19), American Indians (n = 3), Alaskan Natives (n = 1), Asian (n = 3), and Pacific Islanders (n = 8).

Table 1.   Frequency counts for demographic variables

Variable	Category	n	%
First generation college student	No	448	54.5
	Yes	374	45.5
Summer Bride Program			
	No	670	81.5
	Yes	152	18.5
Gender			
	Female	519	63.1
	Male	303	36.9
Transfer Student			
	No	704	85.6
	Yes	118	14.4
Race/Ethnicity			
	Asian	3	0.4
	Black or African American	742	90.3
	Other Pacific Islander	8	1.0
	White/Caucasian	19	2.3
	Hispanic or Latino	50	6.1
Family Income [a]			
	Less than $10,000	134	16.3
	$10,000 to $19,000	80	9.7
	$20,000 to $29,000	118	14.4
	$30,000 to $39,000	88	10.7
	$40,000 to $49,000	80	9.7
	$50,000 to $59,000	85	10.3
	$60,000 to $69,000	50	7.1
	$70,000 to $79,000	46	5.6
	$80,000 to $89,000	43	5.2
	$90,000 to $99,000	17	2.1
	$100,000 or More	73	8.9

Note. N = 822
[a] Income: *Mdn* = $34,500.

The table above indicates forty-six percent of the students were first-generation college students, and 18.5% attended the Summer Bridge Program. The number of females (63.1%) in the sample exceeded the number of males (36.9%). Fourteen percent were transfer students. The most common racial or ethnic background was Black/African-American (90.3%). Family income ranged from less than $10,000 per year (16.3%) to $100,000 or more per year (8.9%) with the median family income of *Mdn* = $34,500.

2.2 Procedures

The Self-Regulation Questionnaire (SRQ) was used to assess students' abilities to develop, implement, and flexibly maintain planned behavior to achieve specific goals. Brown, Miller, & Lawendowski (1999) developed The Self-Regulation Questionnaire (SRQ) as a first attempt to assess self-regulatory processes through self-report. Building on the foundational work of Frederick Kanfer (Kanfer, 1970a, 1970b), Miller and Brown formulated a seven-step model of self-regulation (Brown, 1998) (Miller & Brown, 1991). In this model, behavioral self-regulation may falter because of failure or deficits at any of these seven steps. The seven rationally-derived subscales are the following: (1) Receiving relevant information, (2) Evaluating the information and comparing it to norms, (3) Triggering change, (4) Searching for options, (5) Formulating a plan, (6) Implementing the plan, and (7) Assessing the plan's effectiveness of first and second subscales. The recommended use of the instrument in this study was adhered to, thus avoiding a separate interpretation of the subscales.

2.3 Research Design

Participants responded to 63 questions designed on a 5-point Likert scale: 1 = strongly disagree, 2 = disagree, 3 = uncertain or unsure, 4 = agree and 5 = strongly agree. The questionnaire was administered through Taskstream and transposed to an Excel data file for initial cleaning and recoding. The data were analyzed using a regression analysis to determine whether correlations existed within or between variables. The self-regulation score was calculated by totaling all the items. Then, ranges of low, medium, and high were established using the developers' guidelines. Data were imported into SPSS version 23 for analysis.

3. RESULTS AND DISCUSSION

Results analyses are presented in two sections: the first reporting descriptive statistics and the second presenting a correlation analysis of demographic variables among the student participants. A total of 822 participants completed the survey. (No missing data was recorded.) Of the 822 participants, 306 placed in the low self-regulation range; 293 in the mid-level self-regulation range; and 223 in the high self-regulation range (See Table 2).

Table 2.   Frequency distribution for SRQ categories

SRQ Category	*n*	%
Low (Impaired)	306	37.2
Intermediate (Moderate)	293	35.6
High (Intact)	223	27.1

Categories developed by Brown, Miller, & Lawendowski (1999) were used. The results show that 27% of the sample had a high (intact) self-regulatory score based on the established criteria, while 37.2% of the sample had a low (impaired) self-regulatory score (See Table 2). The table below provides an explanation of the distribution of percentiles for the self-regulatory score. Overall, the mean SRQ score of the participants was *M* = 223.29 (*SD* = 23.42).

Table 3.   Distribution of percentiles for SRQ scores

Percentile	Score

1st		181.00
5th		189.00
25th		204.00
50th		223.00
75th		241.00
95th		263.00
99th		278.77

Note. N = 822

To determine whether a student's self-regulatory skill levels were related to the student's demographic characteristics, a series of chi-square tests were performed to compare the student's SRQ category with each of six demographic variables. The association between gender and SRQ category was found to be significant ($V = .15$, $p = .001$). Table 4 quantifies that association.

Table 4.   Chi-Square test for gender based on SRQ categories

	Female		Male	
SRQ Category	*n*	%	*n*	%
Low (Impaired)	165	31.8	141	46.5
Intermediate (Moderate)	203	39.1	90	29.7
High (Intact)	151	29.1	72	23.8

Note. χ^2 (2, N = 822) = 17.93, $p = .001$. Cramer's $V = .15$.

An analysis of Table 4 indicated that in terms of self-regulation, more males (46.5%) than females (31.8%) placed in the low (impaired) category. By contrast, 39.1% of the women and 29.7% of the men were represented in the intermediate (moderate) category. The association between transfer status and SRQ category was also significant ($V = .13$, $p = .001$).

Table 5.   Pearson correlations between demographic variables and SRQ scores

Demographic Variable	Score	
First generation [a]	.00	
Summer Bridge Program [a]	.01	
Gender [b]	-.12	****
Transfer Student [a]	.14	****
African-American [a]	.03	
Family Income	.06	

* $p < .05$. ** $p < .01$. *** $p < .005$. *** $p < .001$.
[a] Coding: 0 = No 1 = Yes.
[b] Gender: 1 = Female 2 = Male.
Note. N = 822.
Table 5 displays the Pearson correlations between each of the six demographic variables and the SRQ total score. Two of the six correlations were significant. Specifically, females (r = -.12, p <.001) and transfer students (r = .14, p <.001) had significantly higher SRQ scores. The data revealed that for self-

155 regulation, more transfer students (41.5%) placed in the high (intact) category than did non-transfer
156 students (24.7%). Also, a stepwise regression model predicting the SRQ total score were based on six
157 candidate demographic variables (See Table 6). The final two variable model was significant (p = .001)
158 and accounted for 3.2% of the variance in the SRQ total score. Specifically, SRQ total scores were
159 higher for transfer students (β = .13, p = .001) and for females (β = -.11, p = .001).

161 **Table 6.   Stepwise regression model of SRQ score on selected variables**

Variable	B	SE	β	p
Intercept	3.64	0.04		.001
Transfer Student [a]	0.14	0.04	.13	.001
Gender [b]	-0.09	0.03	-.11	.001

163 *Note*. Final Model (2, 819) = 13.40, *p* = .001. R^2 = .032. Candidate variables = 6.
164 [a] Transfer Student: 0 = *No* 1 = *Yes*.
165 [b] Gender: 1 = *Female* 2 = *Male*.

167 The purpose of this study was to measure the level of self-regulatory skills in a sample of
168 first-year college students as measured by the SRQ total score and to determine if their self-
169 regulatory skill levels were related to their demographic characteristics.   The findings
170 revealed that there is an equal distribution among first-year college students at an MSI to
171 self-regulate in ranges low, medium, and high.   Of the 822 participants, 306 placed in the
172 low self-regulation range; 293 in the mid-level self-regulation range; and 223 in the high self-
173 regulation range. Implication for future studies indicate a need to focus on the sample
174 population which represents those students whose scores fell in the low self-regulatory
175 range.

176 The researchers, therefore, recommend a comprehensive needs assessment to determine
177 the self-regulation skill levels among incoming freshmen (pre- and post- freshman year).
178 Implementing a needs assessment will guide university administrators and professors in
179 designing effective self-regulatory strategies appropriate for their institution's demographics.
180 Equally important, a needs assessment will crystallize the scope of the self-regulation issue
181 among entering freshmen and guide the creation of innovations for desirable regulatory
182 behaviors among them. Undoubtedly, an innovative model would include a self-regulatory
183 awareness plan that will enhance student study skill habits and enrich the university-learning
184 experience (Zimmerman, 2008; Wolters, 2011).   Such a plan would enable students to
185 complete specific tasks, evaluate their performance, and reflect on their progress. The need
186 for a specially tailored self-regulatory model for Minority Serving Institutions is supported by
187 the previous research of Zumbrunn, Tadlock & Roberts (2011), which recommended
188 continuous research about self-regulation among students based on evidence that only a
189 few students are fully or sufficiently self-regulated.

190 Bembenutty's study (2007) found that students who are unable to self-regulate are also
191 unable to set goals and select learning strategies that are appropriate for specific tasks.
192 Further, the study found that learners who are thoughtfully engaged and successful in
193 completing academic tasks are motivated to do so, and, most importantly, can apply learning
194 strategies that yield delayed gratification outcomes. The process of utilizing delayed
195 gratification, according to Hoerger, Quirk, and Weed (2011), refers to an individual's
196 predisposition to delay instant gratification with the hope of gaining significant and long-
197 lasting rewards. An initiative that cultivates academic awareness, informed by a recognition
198 of the benefits of delayed gratification, can enable students to identify their academic
199 characteristics and promote academic wellness. This innovative approach by MSI's will

200 move minority students beyond the traditional norms toward efficacious solutions to complex
201 learning challenges.

202 To encourage an understanding of self-awareness among their students, Brigham Young
203 University's Center for Student Success designed an Academic Wellness Inventory to
204 enable students to assess their personal academic wellness. The inventory recommends
205 that students self-evaluate themselves across nine areas based on their college
206 experiences. These areas of experiences are time management, social activities, class
207 preparation, study habits, reading and writing skills, test preparation, test-taking skills,
208 feelings about learning, and values and goals.

209 The Self-Regulatory Awareness Plan (SRAP) for incoming freshmen at Minority Serving
210 Institutions should include strategic managerial procedures that monitors cognitive and
211 behavioral changes, as well as, measure growth in the student(s) ability to self-reflect on
212 their academic potential, and in long-term usher in a sea-change in student achievement.
213 The SRAP would be guided by three parts: meta-cognition (thinking about one's thinking),
214 strategic actions (planning, monitoring, and evaluating personal progress against a
215 standard), and an intrinsic motivation to learn (Zimmerman, 2002). It will also look closely at
216 designing measureable outcomes that evaluates the improvement of academic performance,
217 social cognition; increasing levels of motivation, increased levels of self-confidence, self-
218 efficacy and moral cognition, moral and behavioral conduct, and increasing healthier mental
219 learning environments with lower levels of psychopathology (e.g., depression). In fact, self-
220 regulated students achieve and maintain academic wellness by eliminating adverse
221 behaviors and cognitive impediments and by increasing strategies that promote
222 perseverance and performance (Byrnes, Miller, & Reynolds, 1999; Mega, Ronconi, & De
223 Beni, 2014). Thus, integrating innovative academic initiatives for success, such as self-
224 regulating strategies, for a diverse group of underprepared students is key to the
225 sustainability of MSI's.

226 As mentioned earlier, "Tracey" exhibits the characteristics manifested in underprepared
227 entering freshmen who are unaware of their self-regulatory deficiencies. The
228 implementation of a self-regulation initiative (SRAP) will provide students like "Tracey" with a
229 practical method to develop self-regulatory abilities and behaviors, establish study goals,
230 create effective self-evaluative standards, gauge their level of academic preparation, identify
231 and develop intrinsic values that will increase academic grit and performance and will ensure
232 academic and long-term success. The ultimate goal of a SRAP would be to transform
233 underprepared students into "good" students-- those who, according to Mega, Ronconi and
234 De Beni (2014) are self-regulated.

235 Results of the dataset revealed that 37% of the first-year study participants had low self-
236 regulatory scores. In addition, the data show gaps between male and female self-
237 regulation. Minority males fall behind minority females in one of the seven self-regulatory
238 sub-scales. Further, gender-gap percentages in the dataset widen because the regulatory
239 skill level of first-year college males decreases by population-percent as the level of self-
240 regulatory subscale increases. The existence of gender gaps in self-regulatory scores at
241 various skill levels suggests a need for a qualitative investigation that supports the statistical
242 findings.

243 The results from the study's dataset suggest that male students at MSI's are less likely to
244 self-regulate than female students during their experience in post-secondary education. For
245 this reason, the seven-dimensions-of-wellness model could serve as an innovative approach
246 to help male students self- regulate to set and reach long-term goals. Higher education
247 literature suggests summer bridge programs have the potential to prepare students for their

248 first year of college and to enhance academic success (Roderick & Engel, 2001; Roderick,
249 Engel, & Nagaoka, 2003; Roderick, Jacob, & Bryk, 2002). Thus, program administrators
250 should consider introducing the seven-dimensions-of-wellness model by developing
251 mentoring initiatives tailored to the needs of individual male students to improve their general
252 well-being. The main goal of the male mentoring initiative would be to encourage academic
253 awareness among male students to help them develop realistic academic expectations. In
254 sum, the initiative endeavors to assist male students in improving their academic skills, in
255 preparing themselves psychologically for the challenge of college-level coursework, and in
256 developing peer-to-peer camaraderie during their experience in post-secondary education.
257
258
259 **4. CONCLUSION**
260
261 Previous research suggests that self-regulation should begin during the early childhood
262 stage of growth and become an ongoing process throughout adolescence and adulthood.
263 The underlying assumption is that external influences related to the acquisition of self-
264 regulatory skills at an early stage have an impact on student proficiency in setting academic
265 goals and completing tasks--behaviors that can positively impact academic performance in
266 post-secondary educational experiences.

267 Evaluating students' ability to self-regulate highlights the fact that many students are unable
268 to self-regulate and offers a means to reduce the number of freshmen students unable to set
269 and meet short-term and long-term academic goals. Indeed, such evaluations and
270 concomitant measures to remediate may increase the ability of students to use goals as a
271 starting point to select and change learning strategies and behaviors that will facilitate their
272 successful completion of academic tasks and afford them opportunities to travel new thinking
273 pathways. As reported by the National Wellness Institute (NWI) (2018), students' abilities to
274 self-regulate and to determine impacts of their academic successes are pre-evaluative
275 indicators of cultivating academic wellness which has been described as a conscious and
276 *aware* state of a self-directed and evolving process of achieving one's full potential.

277 **COMPETING INTERESTS**
278
279 Authors have declared that no competing interests exist.
280
281
282 **REFERENCES**
283

284 Bembenutty, H. (2007). Self-Regulation of learning and academic delay of gratification:
285 Gender and ethnic differences among college students. *Journal of Advanced Academics,*
286 *18(4)* pp. 586-616.

287 Bridges, B. K., Kinzie, J., Nelson Laird, T., & Kuh, G. D. (2008). Student engagement and
288 student success at Historically Black and Hispanic-Serving Institutions. In M. Gasman, B.
289 Baez, & C. S. V. Turner (Eds.), Understanding Minority-Serving Institutions, pp. 217-236.

290 Brigham Young University (2018). Academic Wellness Inventory. The Academic Success
291 Center. Retrieved from https://casc.byu.edu/academic-wellness-survey

292 Brown, J. M. (1998). Self-regulation and the addictive behaviors. In W. R. Miller & N.
293 Heather (Eds.), Treating addictive behaviors (2nd ed., pp. 61-74). New York: Plenum Press

Brown, J. M., Miller, W. R., & Lawendowski, L. A. (1999). The self-regulation questionnaire. In L. VandeCreek & T. L. Jackson (Eds.), *Innovations in clinical practice: A source book,* Vol. 17, pp. 281-292). Sarasota, FL, US: Professional Resource Press/Professional Resource Exchange

Byrnes, J. P., Miller, D. C., & Reynolds, M. (1999). Learning to make good decisions: a self-regulation perspective. Child Development, 70, 1121-1140.

Carlson, A.M. (2018). Metacognitive Strategies: Definition & Examples. *Educational Psychology: Homework Help Resource,* Chapter 5, Lesson 12. Retrieved from: https://study.com/academy/lesson/metacognitive-strategies-definition-examples-quiz.html

Cassidy, S.F. (2011). Self-regulated learning in higher education: identifying key component processes. University of Salford, Manchester. doi.org/10.1080/03075079.2010.503269

Dewey, J. (1933). How We Think: A Restatement of the Relation of Reflective Thinking to the Educative Process. Boston, MA: D.C. Heath & Co Publishers. Retrieved from: http://pubman.mpdl.mpg.de/pubman/item/escidoc:2316308/component/escidoc:2316307/Dewey_1910_How_we_think.pdf

Eisenberg, N., Smith, C. L., Sadovsky, A., & Spinrad, T. L. (2004). Effortful control: Relations with emotion regulation, adjustment, and socialization in childhood. In R. F. Baumeister & K. D. Vohs (Eds.), Handbook of self-regulation: Research, theory, and applications (pp. 259-282). New York, NY, US: Guilford Press

Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new era of cognitive-developmental inquiry. *American Psychologist,* 34, 906-911.

Freire, P. (1973). Education for critical consciousness. New York: Seabury
Grolnick, W. S., Kurowski, C. O., & Gurland, S. T. (1999). Family processes and the development of children's self-regulation. Educational Psychologist, 34, 3–14.

Harris, K. R., Friedlander, B.D., Saddler, B., Frizzelle, R. & Graham, S. (2005). Self-monitoring of attention versus self-monitoring of academic performance: Effects among students with ADHD in the general education classroom. Journal of Special Education, 39 (3), 145-156.

Hoerger, M., Quirk, S. W., and Weed, N. C., (2011). Development and validation of the delay gratification inventory. Psychological Assessment, 23(3), 725-738.

Howse, R. B., Lange, G., Farran, D. C., & Boyles, C. D. (2003). Motivation and self-regulation as predictors of achievement in economically disadvantaged young children. The Journal of Experimental Education, 71, 151-174

Ihde, D. (1977). Experimental Phenomenology: An Instruction. State University of New York Press Kanfer FH. Self-monitoring: Methodological limitations and clinical applications. J. Cons. Clin. Psychol. 1970a; 35:148–152.

Kanfer FH. Self-regulation: Research, issues, and speculation. In: Neuringer C, Michael JL, editors. Behavior Modification in Clinical Psychology. New York: Appleton-Century-Crofts; 1970b. pp. 178–220.

336 Kochanska, G., Murray, K., & Coy, K. (1997). Inhibitory control as a contributor to
337 conscience in childhood: From toddler to early school age. Child Development, 68, 2, 263-
338 277.

339 Mayer, R. E. (2008). Learning and Instruction (2nd ed). Upper Saddle River, NJ: Pearson
340 Merrill Prentice Hall

341 Mega, C., Ronconi, L., and De Beni, R. (2014). "What makes a good student? How
342 emotions, self-regulated learning, and motivation contribute to academic achievement."
343 Journal of Educational Psychology 106(1):121

344 Miller, W. R., & Brown, J. M. (1991). Self-regulation as a conceptual basis for the prevention
345 and treatment of addictive behaviours. In N. Heather, W. R. Miller & J. Greeley (Eds.), Self-
346 control and the addictive behaviours (pp. 3-79). Sydney: Maxwell Macmillan Publishing
347 Australia

348 Mezirow, J., and Associates. (1990 eds). Fostering Critical Reflection in Adulthood. San
349 Francisco: Jossey-Bass

350 National Wellness Institute (2018). The Six Dimensions of Wellness. Information retrieved
351 from: http://www.nationalwellness.org/?page=six_dimensions

352 Nicol, D. J., & Macfarlane-Dick, D. (2006) Formative assessment and self-regulated learning:
353 a model and seven principles of good feedback practice, Studies in Higher
354 Education, 31:2, 199-218, DOI: 10.1080/03075070600572090

355 Price-Mitchell, M (2015). Metacognition: Nurturing Self-Awareness in the Classroom George
356 Lucas Educational Foundation. Retrieve from: https://www.edutopia.org/blog/8-pathways-
357 metacognition-in-classroom-marilyn-price-mitchell

358 Roderick, M., & Engel, M. (2001). The grasshopper and the ant: Motivational responses of
359 low-achieving students to high-stakes testing. Educational Evaluation and Policy Analysis,
360 23(3), 197-227.

361 Roderick, M., Engel, M., & Nagaoka, J. (2003). Ending social promotion: Results from
362 summer bridge. Chicago, IL: Consortium on Chicago School Research.

363 Roderick, M., Jacob, B. A., & Bryk, A. S. (2002). The impact of high-stakes in Chicago on
364 student achievement in promotional gate grades. Educational Evaluation and Policy
365 Analysis, 24(4), 333-357

366 Ryan, R. M., Connell, J. P., & Grolnick, W. S. (1992). When achievement is not intrinsically
367 motivated: A theory and assessment of self-regulation in school. In A. K. Boggiano & T. S.
368 Pittman (Eds.), Achievement and motivation: A social-developmental perspective (pp. 167-
369 188). Cambridge, England: Cambridge University Press

370 Schunk, D. H. (2001). Self-regulation through goal setting. ERIC Clearinghouse on
371 Counseling
372 and Student Services. Retrieved from http://www.ericfacility.net/databases/ ERIC_
373 Digests/ed462671.html
374
375 Simon, M. K., (2006). Dissertation and scholarly research: A practical guide to start &
376 complete your dissertation, thesis, or formal research project. Dubuque, IA: Kendall/Hunt

377 Stolp, S., Zabrucky, K.M. (2009). Contributions of metacognitive and self-regulated learning
378 theories to investigations of calibration of comprehension. International Electronic Journal of
379 Elementary Education, 2, 7-32.

380 Taylor, S. (1999). Better Learning through Better Thinking: Developing Students'
381 Metacognitive Abilities. Journal of College Reading and Learning, 30:1, 34-45, DOI:
382 10.1080/10790195.1999.10850084

383 The Brain Injury Association of New York State (2006). Tutorial: Cognitive and Learning
384 Strategies. LEARNet: A Resource for Teachers, Clinicians, Parents, and Students by the
385 Brain Injury Association of New York State. Retrieved from:
386 http://www.projectlearnet.org/tutorials/cognitive_and_learning_strategies.html

387 Van Meeuwen, L.W., Brand-Gruwel, S., Kirschner, P.A. et al. Education Tech Research Dev
388 (2018) 66: 53. https://doi.org/10.1007/s11423-017-9539-9

389 Wolters, C.A. (2011). Regulation of motivation: Contextual and social aspects. Teachers
390 College Record, 113 (2), 265-283.

391 Yontef, G. (1993). *Gestalt Therapy: An Introduction.* Appears in a chapter in *Awareness,*
392 *Dialogue, and Process* published by The Gestalt Journal Press and was copyright in 1993 by
393 Gary Yontef, Ph.D.

394 Zimmerman, B.J. (2002). Becoming a self-regulated learner: An overview. *Theory Into*
395 *Practice,* 41 (2), 64-70

396 Zimmerman, B. J. (2008). Investigating self-regulation and motivation: Historical background
397 methodological developments and future prospects. *American Education Research Journal*.
398 45(1), 166-183. doi: 10.3102/000283120731290.

399 Zumbrunn, S., Tadlock, J. and Roberts, E. D. (2011). Encouraging self-regulated learning in
400 the classroom: A review of the literature. Metropolitan Educational Research Consortium
401 (MERC), Virginia Commonwealth University

402