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Review Article

An Enhanced Formative Assessment and Self-Regulated Learning Program: From the Classroom to the Workplace

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Abstract

Effective instruction in the classroom and training/evaluation in the workplace have been the focus of countless approaches and claims, not all of them contained within a complete theory of learning or substantiated with the appropriate research. This article will describe an Enhanced Formative Assessment Program that uses the self-regulated learning (SRL) model. SRL teaches students and workers to become more efficient and effective learners through a three stage cyclical process. The first planning stage teaches the learner how to set goals, select appropriate strategies, and make efficacy judgments. The second practice stage teaches them how to monitor their progress in real time. And the third evaluation stage allows learners to measure how close they came to achieving their goal, and more importantly, sets the stage for the next SRL cycle so that they can make additional progress. We will more fully describe the model and the research that supports its efficacy in the classroom as well as its potential applications to the workplace.

Keywords: Formative assessment; Self-regulated learning; Mastery learning; Transfer of training; Industrial training and performance evaluation.

Introduction

This paper describes a five-step Enhanced Formative Assessment Program that uses self-regulated learning to maximize learning. In its most elemental form, formative assessment involves the use of an assessment instrument, e.g., a classroom quiz or workplace evaluation, which is administered by the teacher or supervisor. The results of this assessment are then returned to the student or supervisee. Inherent in this process is the belief that by using these assessments together with the subsequent feedback produced by the teacher or supervisor, the recipient's work product will be enhanced.

In order to optimize the usefulness of formative assessments, researchers have concluded that certain "built ins" must be included. For example, the best outcomes are usually obtained when feedback includes specific suggestions about what the recipients can do to improve their skills [1]. By contrast, feedback that focuses on praise or punishment is far less effective. Additionally, it is necessary that the recipient of the feedback must actively participate in the formative assessment process, [2-4]. In other words, when students or supervisees receive feedback, together with specific suggestions for follow up, there must be an explicit requirement that they engage in activities that *demonstrate* that they are actually using the feedback to improve their performance.

An example of constructively using feedback in the classroom would be requiring students who incorrectly answer a math problem to use the teacher's feedback to solve another mathematics problem that uses the same strategies. Similarly, in the workplace, a supervisee might be required to use the feedback they receive from an evaluation to improve some aspect of their work performance, e.g., using a recommended sales technique when making a specific number of new sales calls.

Finally, the researchers also emphasized that teachers and supervisors must also make adjustments to their teaching or supervision in response to the assessment evidence. In other words, they are also expected to make changes to their teaching and management styles on the basis of the new information generated by the assessment. We will discuss this topic in a later section, but suffice it to say that teachers and supervisors all-too-often give lip service about their willingness to change their instructional or supervisory approaches, but these adjustments are often not carried out in practice [5].

When a feedback system contains these components, there is ample evidence that students and workers improve their performance. For example, across a range of content domains students' achievement gains generated with formative assessment were among the largest ever reported for education interventions [3,4,6]. Underscoring the importance of formative assessment and feedback in the learning process, a review of 196 formative assessment/feedback studies found that when properly implemented this approach resulted in a positive mean effect size of 0.79 an effect size greater than students' prior cognitive ability, socioeconomic background, and class size [1]. In summary, for formative assessment to be effective it must include a multi-step process that involves both teachers. (Supervisors) and students (supervisees) using feedback to constructively alter their behaviors.

However, while formative assessment positively impacts performance, it is our belief that it can be improved upon. Most of the above cited work focuses on the content elements of the learning process, e.g., learning mathematics content strategies in the classroom or increasing product sales in the workplace. In addition, many programs also incorporate a variety of learning-how-to learn skills, e.g., how to set goals or manage time. We believe that this type

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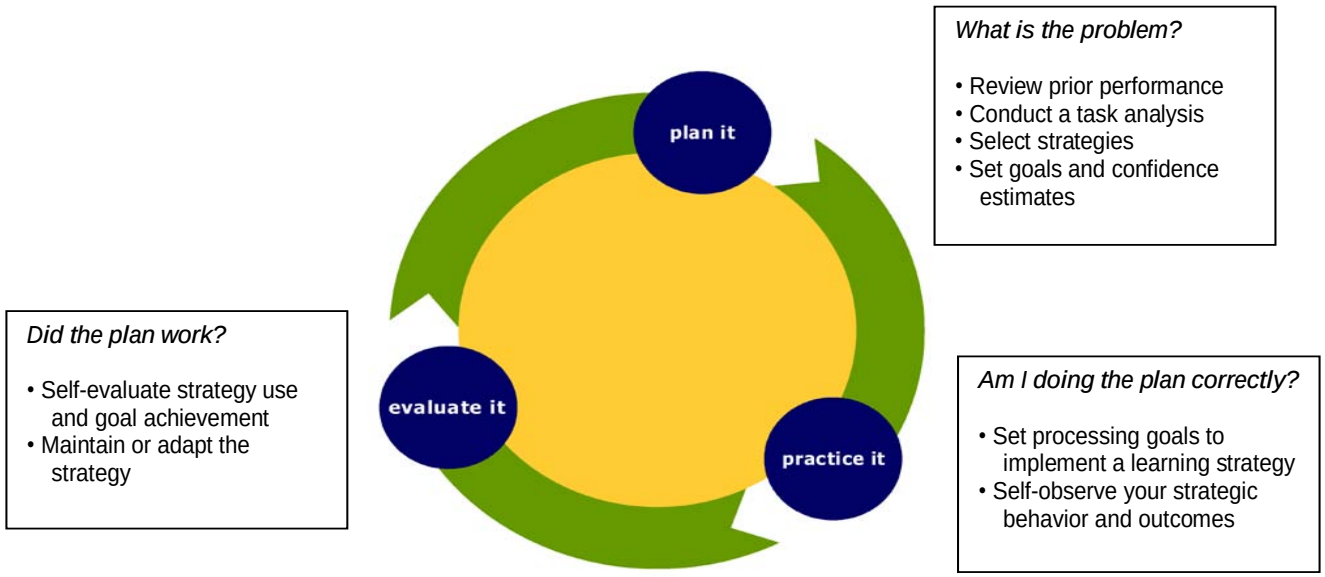

Figure 1: The Self-Regulated Learning Model: Plan It, Practice It, Evaluate It [14, 24]

of instruction is incomplete. In order for learners to maximize the effectiveness of using these content-based and learning-how-to-learn skills, it is important that they be contextualized within a more complete framework of learning that allows students and workers to gain an understanding of how these specific skills can best be implemented and evaluated. A focus of this article is to demonstrate how self-regulated learning (SRL), which is a generalized theory of how we learn, can be combined with formative assessment to maximize student learning and worker productivity.

The SRL component of formative assessment

The SRL approach guiding our work borrows heavily from Zimmerman's model [7-10] and Grant's model [11-13]. It is characterized by multiple feedback cycles, each of which consists of three main phases as illustrated in Figure 1 [14,15]. First is a **planning phase,** in which students (supervisees) learn how to effectively review their past efforts, analyze the task, choose those strategies that best address their specific learning challenge, set identifiable goals, and make self-efficacy judgments about their work. Next is a **practice phase** where students or supervisees implement their plan, monitor their progress, and make real time adjustments to their learning plans. This is followed by an **evaluation phase**, during which students or workers assess the effectiveness of their strategies based on feedback from the instructor or supervisor. They then build on successful strategies and modify or replace less effective ones. The students' or supervisees' responses from the evaluation phase become the basis for the planning phase in the next iteration of the SRL cycle.

Much of the success of the SRL interventions aimed at improving performance in both classroom and workplace derives from its cyclical nature; i.e., each time students or workers complete a cycle, they learn to more effectively use the feedback, and they therefore, come closer to achieving their ultimate goal. Students and supervisees begin to understand that success is directly related to experimenting with different strategies, and is not simply a function of innate ability or some other external force.

The power of SRL competence in an educational setting is

highlighted in a classic study in social learning, which found that strong SRL skills are more highly correlated with college grade point average than are scores on the SAT [16]. More recently, a meta-analysis of 84 SRL studies in an educational setting found overall mean effect sizes of .69 for SRL interventions [17].

SRL has also demonstrated its usefulness in the workplace. When SRL was embedded in the within a coaching program, there was a reduction in workplace stress [18]. Similarly, SRL programs positively impacted employee sales performance [19,20]. Other investigators are more conservative in their conclusions and focus on better understanding the specific self-regulation behaviors that are most effective in facilitating learning in the workplace [21-23].

In summary, while there is powerful evidence regarding the impact of formative assessment and SRL interventions, there have been few attempts to integrate these complimentary approaches. The Enhanced Formative Assessment and Self-Regulatory Learning Program address this challenge.

The enhanced formative assessment program (EFAP) with SRL

As mentioned, our program combines elements of formative assessment and SRL. We will illustrate how the different portions of the program can be implemented in both the classroom and the workplace. We expect that knowledgeable teachers and supervisors have previously implemented much of what is described here in bits and pieces; however, the EFAP-SRL program attempts to tie together these different procedures in the context of a general metacognitive model. Similar descriptions of the EFAP and SRL model are also available [24,25].

Step 1: Administering the EFAP-SRL assessment in the classroom and workplace

What should be included?

In this section we will discuss some of the formative assessment and SRL components that should be included in a successful assessment instrument.

1. The assessment should include *both* academic (workplace) content as well as metacognitive components. Here are some examples of how an EFAP-SRL formatted classroom quiz would differ from a traditional classroom quiz. First, students are asked to look over the quiz, and, before starting to answer the questions, they are asked to predict their quiz grade. This parallels the self-evaluation portion on many workplace assessments. Next, students are asked to read each quiz question, but before answering it, they are asked to make a self-efficacy judgment about how confident they are that they will correctly answer the question. After attempting to solve the problem, students are also required to make an additional self-evaluation judgment indicating how confident they are that they correctly solved the problem. The importance of these judgments is reflected in the finding that students who were more accurate in their self-efficacy and self-evaluation judgments also did better on a variety of academic outcome measures than students who were overly optimistic in their confidence judgments [26]. An example of an SRL-formatted math quiz used in this study is included in Appendix 1[24-26].

The parallel workplace evaluation situation would occur when supervisees are asked to judge how confident they are that their predicted competence level on an evaluation is accurate. The educational rational for asking students to make these types of metacognitive judgments can be illustrated by the following example. Let's say that a group of students consistently overestimate their grade predictions as well as being overly optimistic about their self-efficacy judgments. The clear implication is that these students believe that they know more than they actually know. This incorrect belief often results in a false sense of security, and consequently, a lack of motivation to improve. Conversely, there are students who underestimate their skill level, i.e., their predicted grades are often lower than their actual assessment scores and their self-efficacy judgments are also low relative to their actual work. This type of belief system indicates that these students are being inefficient in their learning in that they are devoting too much time and effort in mastering the tasks at hand.

There are analogous situations in the workplace. There are workers who believe that they know more than they actually know, e.g., when they consistently give themselves higher performance evaluations than they get from their supervisors. In order to preserve their self-perception, they are often not receptive to feedback from their supervisors, at least as it is traditionally delivered. As a result, they are less likely to make the effort to improve and may even be hostile to supervisory feedback. Conversely, there are also workers who consistently underestimate their skill level, and who rate themselves lower during performance evaluations than do their supervisors. This response style might indicate that these workers are over learning the skill sets on the evaluation, and it would be more efficient if they were challenged to expand their learning to include new areas. In addition, it could be helpful to introduce self-efficacy and self-evaluation judgments into the supervisory process.

It is instructive that self-efficacy and self-confidence measures appear to have an optimal range in both academia and in industry. Excessive and deficient levels may have a deleterious effect on performance in either setting. But there are also defensive mechanisms that partially compensate for deficient levels in a reasonably constructive fashion. At the other end of the spectrum, most psychologists would agree that self-confidence is important, but cockiness may be destructive, either in school or at work.

Organizations today emphasize teamwork and interpersonal skills as prerequisites for the success of their managers and supervisors. Excessive self-confidence, and certainly cockiness, especially when it is accompanied with low performance ratings, is perceived to be dysfunctional for these individuals and a "turnoff" for their colleagues. Schools are slowly moving in the same direction. They recognize that to train students who will succeed in their careers, they need to tame behavior that will antagonize others. SRL may be a potent tool in accomplishing this objective, in both schools and industry, not only because it facilitates training and performance, but also because it allows for learning without the need for embarrassment or bravado that may serve to undermine relationships

2. There is also a question about how to best space EFAP-SRL oriented assessments. We prefer to emphasize multiple short assessments rather than relying on longer termed more summative assessments. In keeping with recommendations, these assessments

Appendix 1: **A Sample EFAP Mathematics Quiz**

Name: _____ Date: _____ Quiz #: _____

Predicted Score: _____ Preparation Time: _____ mins.

Before solving each problem, how confident are you that you can solve it correctly?	REMEMBER! Show all your work. Simplify all your answers.	**After** you have solved each problem, how confident are you that you solved it correctly?
0% 25% 50% 75% 100%	1. Factor completely: $10x^4 y + 4xy^2 - 2y =$	0% 25% 50% 75% 100%
0% 25% 50% 75% 100%	2. Divide: $8a^3b^2 - 12a^2bc + 4ab$	0% 25% 50% 75% 100%
0% 25% 50% 75% 100%	3. Express answer in scientific notation: a) 6700000 b) 0.000015	0% 25% 50% 75% 100%
0% 25% 50% 75% 100%	4. Compute and express in scientific notation: $(3.6 \times 10^{-4})(6 \times 10^6)/1.2 \times 10^{-3}$	0% 25% 50% 75% 100%
0% 25% 50% 75% 100%	5. Multiply: $(5x - 3)^2$	0% 25% 50% 75% 100%

should be fairly quick and feedback should be available as soon as possible [3,4]. By using this approach, the recipients have more opportunities to get and make use of constructive feedback. Or conversely, it makes it more difficult for them to ignore the feedback. For example, in a classroom setting we ask teachers to give short quizzes at least once a week rather than waiting for weeks at a time for a major examination. It might be beneficial to consider a similar shift for some workplace evaluations.

Step 2: Scoring the assessment in the classroom and the workplace

In educational settings, teachers are expected to score the EFAP-SRL assessments and then return them to their students together with specific comments and the requirement that they act on this feedback. This turn around must be done in a timely fashion since the usefulness of most feedback degrades quickly. For example, how helpful is it for students to get feedback on how to do multiplication and division if they don't get this information until after the teacher starts discussing a more advanced topic such as the division of fractions, which relies on knowledge of multiplication and division? Under these circumstance the feedback is "too little too late." In the workplace, it is equally important that supervisees get feedback in a timely fashion.

Job enrichment and job expansion are popular agendas in many organizations seeking both to develop engaged employees as well as to increase efficiency. Both of these objectives also require sequential training and evaluation. It is essential that subsequent training be permitted to build on earlier knowledge acquisition and assessment. Feedback in the workplace, similar to feedback in education, must be timely to be effective.

In a related attempt to maximize the usefulness of feedback, some teachers attempt to be super helpful by covering the quiz with all kinds of comments and suggestions. More often than not, students view this sea of red as overwhelming. As a result, when recipients receive the feedback, they will most likely look at all the comments, freeze, and then file it away "somewhere."

This is analogous to what occurs in industry when supervisors are overly vigilant and overly detailed in their performance feedback. It becomes a dreaded ordeal, and many workers simply descend to a non-responsive "vegetative" type state where they are no longer receptive to the feedback or accepting its constructive component. Instead, they are protecting themselves against its destructive and demotivating overkill, by simply ignoring it.

It is also important to remember that the evaluator is also expected to use the assessment information in the form of assessment scores and items analyses to adjust their instruction or supervisory approaches. For example, when teachers give a test, and most of the class fails to answer a certain category of question correctly, they are expected to use this information to revise their future lessons. All too often we have found that teachers will recognize these knowledge gaps in their students; however, they decide not to change their lessons, thinking, "It's not my problem." Clearly, this approach will doom the students to failure.

The same situation applies to the workplace. Using the evaluation process to change behaviors is not limited to the supervisee. For formative assessment and self-regulation to be effective, it is also necessary for evaluators to review the recipient's performance assessment and then use this information to make changes in their supervision practices. Best practices in industrial training require the trainer to work with supervisors to review feedback after each training session and take "corrective action" when gaps emerge between training expectations and operational realities, especially with respect to transfer of training.

One of the authors (JF) engaged in three cycles of complex, multifaceted training, with a global heavy industrial manufacturing company based in California. There were 18 separate human resource management modules, ranging from conducting performance appraisals, to effective supervisorial techniques, to imposing discipline for misconduct. Between each cycle of training, he received feedback from workers and supervisors, and was required to adjust the training modules to be responsive to the progress and preferences of the trainees as well as the reported deficiencies of their prior training experience and feedback. It was a very arduous and demanding process. Although quantitative measures of learning unfortunately were not incorporated in the training design, qualitative comments solicited at the conclusion of the program were consistently positive and supportive of the new approach. When the same author taught a graduate training and development course in Istanbul for a second time last year, students were surprised, but very receptive, to the need for this unanticipated feedback loop. Student teams were required to design and present simulated training modules to their classmates and respond to feedback. Course evaluations and peer evaluations were far more positive using this modified SRL model than they were the prior year using a more traditional training model.

Step 3: Self-reflection: how to make things better in the classroom and workplace

In an educational setting, when quizzes are returned to students, they also receive a Self-Reflection Form for each incorrectly answered question. For example, in the case of a mathematics class, this form might include several major sections. In the first section, students are asked to explain any discrepancies between their SRL judgments and their score on the quiz question. As mentioned, this discrepancy focuses on whether students overestimate, underestimate, or are on target in their perception of their predictive abilities and confidence judgments relative to their actual performance (grade) on the question. Similarly, students are also asked to specify which strategies were not effective when they prepared for the quiz. The second section of the EFAP Self-Reflection Form focuses on the students' use of academic content strategies. Students must correctly answer the quiz question, by writing out each strategy step of the solution. Students are then asked to apply these same strategies to the solution of another mathematics problem. The importance of this exercise is that it requires that students act on the instructor's feedback rather than just passively review it. As a reward for their constructive participation, students can earn up to 100% of the original value of the problem. However, to earn this amount of credit, the students must demonstrate a 100% level of mastery of the situation. A sample copy of a self-reflection form is included in Appendix 2. Further examples and descriptions of the Reflection Form are also available [24,26].

Within the workplace, an analogous situation might require the

Appendix 2: **A Sample EFAP Reflection/Revision Form**

SRL Math Revision Sheet, Quiz #____ Item # ____
Student: _____ Date: _____
Instructor: _____

Now that you have received your corrected quiz, you have the opportunity to improve your score. Complete all sections thoroughly and thoughtfully. Use a separate revision sheet for each new problem.

PLAN IT 8pts

1. a. How much time did you spend studying for this topic area? _____

   b. How many practice problems did you do in this topic area _____in preparation for this quiz?

   (circle one) 0 – 5 / 5 – 10 / 10+

   c. What did you do to prepare for this quiz? (use study strategy list to answer this question)

2. After you solved this problem, was your confidence rating too high (i.e. 4 or 5)? yes no

3. Explain what strategies or processes went wrong on the quiz problem.

PRACTICE IT 8pts

4. Now re-do the original quiz problem and write the strategy you are using on the right.

Definitely not confident Not confident Undecided Confident Very confident

5. How confident are you now that you can correctly solve this similar item?

1 2 3 4 5

6. Now use the strategy to solve the alternative problem. 4pts

7. How confident are you now that you can correctly solve a similar problem on a quiz or test in the future? 4pts

1 2 3 4 5

supervisee to constructively respond to the supervisor's evaluation by designing and implementing a plan based on the feedback received in the assessment. This is thought to create a greater level of engagement and increase the "ownership" of the action plan that is created to guide improved performance. The anticipated outcome is a greater probability that the action plan will be "internalized" and actually followed by the supervisee.

Furthermore, organizations are increasingly asking their workers to do a detailed self-assessment prior to having supervisors do the formal official assessment, for the record. Typically, both evaluations go into the personnel file and supervisors are frequently expected to address and explain the discrepancy. It is a very heuristic approach that can yield considerable insightful information for all parties, if properly interpreted and acted upon. The similarities to student self-reflection forms are apparent.

Step 4: Teachers and supervisors have another opportunity to revise their work

It is important to restate the obvious. Teachers and supervisors must use the information from the self-reflection forms to inform additional changes in their instruction or supervision. In addition, it might be worth considering some revision of the initial evaluation rating based on how constructively the recipient was able to implement the feedback.

In the workplace, all good organizational training programs incorporate a feedback loop as well. This typically entails reviewing the effectiveness of prior training, as well as the comments of trainees, and making appropriate adjustments to subsequent training programs. Quality management programs typically require "continuous improvement" and expect this feedback to be used to enhance the next iteration of training. Sometimes this is accomplished informally and intuitively while in other programs it is highly structured and formal.

Step 5: Integrating content and SRL skills: The big talk

It is important for the recipient of the feedback to view the return of any assessment as the starting point for additional learning rather than as a mark of failure. We have already mentioned that students can use the feedback from a quiz to improve their performance on the self-reflection form. In addition, we expect classroom instructors to engage in ongoing discussions, which focus on the relationship between the students' content knowledge, e.g., quiz scores, and their SRL competencies. In one example teachers might have their students graph the relationship between their SRL judgments and their quiz scores over time. This approach can be very helpful since many times students are very quick to dismiss one or two instances where there are discrepancies between their quiz grades and their SRL judgments. Having this type of discussion in a group setting can be particularly effective

Similarly, in the workplace it is important that supervisors continue to have ongoing discussions with supervisees that include *both* the specific workplace strategies that need improvement and the more general metacognitive approaches that focus on how they plan, implement and evaluate their use of these strategies.

This is reasonably parallel to academic settings because best practices in organizational performance evaluation feedback also require that workers comment about the assessments offered by their managers after they receive the results. Ideally, this is followed by both manager and worker collaborating on an action plan for improvement going forward, as previously described, which is typically referred to as the "corrective action" step. This approach is thought to create the greatest probability for improvement. As mentioned, these discussions should include both the specific workplace strategies as well as more general topics from the SRL model.

From a psychometric perspective, what is being described here is a type of "convergent validity". It is certainly not unique to academic environments although it takes a different form in organizations. Most corporate entities have adopted a "one over one" evaluation system, in which a supervisor, as well as the supervisors manager, review each rating before it is shared with the employee. This serves to keep everyone honest and is also thought to increase the validity and reliability of the evaluation process. The underlying logic is that this redundant review precaution should avoid highly subjective or retaliatory rating practices by careless, incompetent, or malevolent supervisors.

Does the EFAP-SRL program work?

Over the last twelve years, our group has applied the EFAP-SRL program to a variety of educational problems and our results have been both statistically and educationally significant. For example, students randomly assigned to SRL math classes demonstrated greater academic progress and SRL skill development when compared to students assigned to control group classes [26]. Similar results were also reported [24,25,27-30].

These investigators also found some preliminary evidence that students may be able to carry over (transfer) the skills that they learn in the SRL classes to more advanced classes where EFAP-SRL instruction is no longer available. This type of transfer of training is a reflection that generalized learning is taking place, and educational psychologists consider it the gold standard. Similarly, workers who learn how to use the SRL model may be more likely to transfer specific strategies, e.g., sales techniques that they learned with one group of clients into new areas of sales.

There is, however, an intriguing disconnect between the academic environment and the organizational environment. While most measures of academic achievement and learning have considerable face and content validity, the same cannot usually be said for their business counterparts. This is especially true when we employ criterion related measures, such as predictive and concurrent validity[1]

Indeed, some of the best job selection tests, only manifest validities in the 0.4 were 0.5 range. In fact, statistically significant validities can even be lower than 0.2. If we calculate coefficients of determination, by squaring the correlation coefficients, we note that in industry, the best psychometric devices may only account for less than 25% of the variance inherent in job success. And if we consider the routine use of tests with minimal levels of statistical significance, we may only account for 4% of the variance associated with job success! This may be problematic when we try to evaluate SRL against flawed or relatively inconsequential performance or achievement measures.

Conclusion

Today, more than ever before continuous, or lifelong, learning is considered an essential requirement for successful students and workers alike. We live and work in an environment of constant change, and those of us who can most quickly adapt are the ones most likely to survive and be successful, especially in increasingly competitive environments. Learning specific academic or job skills may be necessary, but not sufficient for success. Rather, everyone needs to develop the metacognitive skills that allow them to understand how they can more effectively approach any new situation. SRL has a special place in facilitating this process for students and workers alike.

In fact, the distinction between students and workers is gradually disappearing as lifelong learning becomes important for both groups. More and more students have to work and more and more workers have to continue their learning through additional schooling and other modes of training.

References

1. Hattie J, Timperely H. The power of feedback. Review of Educational Research. 2007; 77: 81-112.
2. Sadler, Royce D. Formative assessment and the design of instructional systems. Instructional Science. 1989; 18: 119-140.
3. Black P, Wiliam D. Assessment and classroom learning. Assessment in Educational: Principles, Policy & Practice. 1998; 5: 7 -74
4. Black P, Wiliam D. Inside the black box: Raising standards through classroom assessment. Phi Delta Kappan. 1998; 80: 139-148.
5. Hardwood EM, Cohen JR. Classroom assessment: Educational and research opportunities. Issues in Accounting Education. 14: 691-724.
6. Black P, Wiliam D. Developing the theory of formative assessment. Educational Assessment, Evaluation and Accountability. 2009; 21: 5-31.
7. Zimmerman BJ. Attaining self-regulation: A social cognitive perspective. In: Handbook of self-regulation (Boekaerts M, Pintrich PR, Zeidner M, eds), pp. 13–39. San Diego: Academic Press. 2000
8. Zimmerman BJ. Becoming a self-regulated learner: An overview. Theory into Practice. 2002; 41: 64-70.
9. Zimmerman BJ. Achieving self-regulation: The trial and triumph of adolescence. In: Academic motivation of adolescents (Pajares F, Urdan T, eds), Academic Motivation of Adolescents, pp. 1-27. North Carolina: IAP. 2002
10. Zimmerman B (2006) Development and adaptation of expertise: The role of self-regulatory processes and beliefs. In: The Cambridge handbook of expertise and expert development (Ericsson, Charness N, Feltovich P, Hoffman R, eds), pp. 705-722. Cambridge: Cambridge University Press.
11. Grant AM, Greene J. It's Your Life. What Are You Going to Do With It? Cambridge: Perseus Publishing; 2001.
12. Grant AM. The impact of life coaching on goal attainment, metacognition, and mental health. Social Behavior and Personality. 2003; 31 : 253–264.
13. Grant AM. Personal life coaching for coaches-in –training enhances goal attainment, insight, and learning. Coaching: An International Journal of Theory, Research, and Practice. 2008; 1: 54 -70.
14. Hudesman J, White N, Moylan A, Crosby S. The SRL College prep teacher training program. 2005
15. Hudesman J, Millet N, Niezgoda G, Han S. The use of self-regulated learning, formative assessment, and mastery learning to assist students in developmental mathematics: A demonstration project. The International Journal of Research and Review. 2013; 10: 1-17.
16. Zimmerman BJ, Bandura A. Impact of self-regulatory influences on writing course attainment. American Educational Research Journal. 1994; 31: 845-862.
17. Dignath C, Buettner G. Components of fostering self-regulated learning among students. A meta-analysis on intervention at primary and secondary school level. Metacognition and Learning. 2008; 3: 231-264.
18. Ladegard G. Stress management through workplace coaching: the impact of learning experience. International Journal of Evidence Based Coaching and Mentoring. 2011; 9: 29-43.
19. VandeWalle D, Brown SP, Cron WL, Slocum JR. The influence of goal orientation and self-regulation tactics on sales performance: A longitudinal field test. Journal of Applied Psychology. 1999; 84: 249-259.
20. Porath CL, Bateman TS. Self-regulation: from goal orientation to job performance. J Appl Psychol. 2006; 91: 185-192.
21. Vancouver J. Integrating self-regulation theories of work motivation into a dynamic process theory. Human Resource Management Review. 2008; 18: 1 -18.
22. Vancouver J, Day D. Industrial and organizational research on self-regulation: from constructs to applications. Applied Psychology: An international Review. 2005; 54: 155 – 185.
23. Sitzmann T, Ely K. A meta-analysis of self-regulated learning in work-related training and educational attainment: what we know and where we need to go. Psychol Bull. 2011; 137: 421-442.
24. Hudesman J, Crosby S, Ziehmke N, Everson H, Isaac S, et al. Using formative assessment and self-regulated learning to help developmental mathematics students to achieve: A multi-campus study. Journal on Excellence in College Teaching.
25. Hudesman J, Crosby S, Flugman B, Isaac S, Everson H, et al. Using formative assessment and metacognition to improve student achievement. Journal of Developmental Education.
26. Zimmerman BJ, Moylan AR, Hudesman J, White N, Flugman B. Enhancing self-reflection and mathematics achievement of at-risk urban technical college students. Psychological Test and Assessment Modeling. 2011; 53: 108 - 127.
27. Blank S, Hudesman J, Zimmerman B. A Self-Regulated Learning Assessment System for Electromechanical Engineering Technology Students. NSF DUE0512572. New York: City University of New York; 2007.
28. Hudesman J, Zimmerman B, Flugman B. A Comprehensive Cognitive Skills Academy for Associate Degree Students. FIPSE P116B010127. New York: City University of New York; 2005.
29. Hudesman J, Zimmerman B, Flugman B. The Replication and Dissemination of the Self-Regulated Learning Model to Improve Student Performance in High Schools, Two-Year, and Four-Year Colleges: FIPSE PB116B060012. New York: City University of New York; 2010.
30. Glen D. How students can improve by studying themselves. The Chronicle of Higher Education. 2010; 22.

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