

The Last Word:

An Interview With Lyn Corno— The Ingredients for Making a Self-Regulated Scholar

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Homework

JAA: You are an outstanding scholar recognized as an expert on the importance of homework. How do you define homework?

Corno: I've tried, as I know you have, to broaden the definition of homework for scientific study. Most laypeople view homework as assignments sent home by teachers that students are told to complete by a particular date. Of course, homework is that; but it can also be seen as work that students elect to do on their own at home, long-term projects, or efforts they take to keep ahead of schedule. Sometimes, it is completed with other students in afterschool programs. These examples imply a very different "definition" of homework. Today, homework is a process by which the completion of academic tasks infiltrates family and peer dynamics and impacts the nature of teaching in community organizations as well as schools.

JAA: How do you measure homework?

Corno: Well, I don't think you "measure homework." You can certainly *record* time spent, completion rates, and grades on

homework; you can interrupt the work and ask students how they are feeling, as Mihaly Csikszentmihalyi does. You can also observe and videotape students as they work; then you make records of their time on task, the setting, disruptions, and so forth. Jianxhong Xu and I had students and parents observe video records like this; we then asked them in stimulated recall interviews about their beliefs, intentions, work habits, and emotions. These data produced revealing evidence about the processes involved beyond the academic work itself—processes of self-, other-, and co-regulation as well as emotions, expectations, and so forth. So there are lots of ways to “capture,” if not “measure,” what happens during homework.

JAA: What does your research tell you about the contribution of homework to academic achievement?

Corno: In the few randomized experiments that my students and I have conducted, we had hypotheses about the mediators of homework effects on learning (e.g., parental assistance with homework in my 1980 dissertation or teacher feedback on homework in a 1985 study with Maria Cardelle-Elawar, both published in the *Journal of Educational Psychology*). Of course, Harris Cooper has addressed this question in his many meta-analyses of research on homework. In general, studies show that the relationship between homework and achievement is mediated by what students are *doing* during homework and how they perceive the tasks at hand, as well as what teachers do with the homework. Homework can have a positive influence on achievement under certain circumstances.

On average, you get some direct effects in the elementary school when teachers give corrective teacher feedback on required assignments that address topics also being covered in the classroom (this was a main finding of the study with Maria Cardelle-Elawar). This makes sense; homework completion then becomes a sort of proxy for more “time spent on task,” and of course task engagement and achievement are strongly correlated. Nevertheless, the situation is more complex than this because

students take more than knowledge and skills from the process of doing homework; there are interacting cognitive and affective processes as well.

JAA: What does your research tell you about the role of motivation on homework?

Corno: One of the articles I wrote about this subject in the early 1990s was entitled “Homework Is a Complicated Thing.” In some ways, that title says it all. Motivation and emotion—particularly the need to manage negative emotions—play strong roles in how students deal with homework beginning around the second grade when the curriculum becomes more demanding and the self-regulation skills of students are just budding. That is a time when some instruction in task management has to kick in, or there can be problems going forward. In addition, as I said in the article, there are a lot of media-flamed myths about homework that can be dispelled when you look at the science instead.

JAA: What is the role of the parents on children’s homework effectiveness? How can parents promote their children’s homework effectiveness?

Corno: Parents, guardians, or even older siblings can be helpful in the homework process especially when they model and promote good work habits. They can also be intrusive if they try to take over during homework, and that’s not so good. When they are being helpful, parents will organize a proper space for good work to occur and make certain their children have time in their afterschool schedules to do homework. They can bring materials nearby, limit distractions, provide good lighting, and repeat a mantra like “focus” or “concentrate” to help establish positive scripts that students will call forth on their own later. But they also have to set expectations and budget the child’s time initially, and it’s good to be available for assistance as needed. I say “be available,” because parents should not be doing work *for* their kids, or even insisting on doing the homework “together.” However, beginners with homework in particular—again, stu-

dents in the first, second, and sometimes third grades—benefit from having a support network available. If they need help or want their work checked, then a parent or sibling can lean over and assist.

JAA: You describe homework as the job of the students. Could you please explain your position?

Corno: Oh, I think you're referring to a piece I wrote for the journal, *Theory Into Practice*, again with my former research assistant, Jianzhong Xu, who is now at Mississippi State University. We referred to homework metaphorically as the “job of childhood.” Just like adults have jobs they do, homework is a kid’s “job” when he or she is not in school. I got that from my husband who set a clear expectation for our son when he told him, “Until you have a job that pays you for work, THIS IS YOUR JOB. So do it just like I do my job, every day, without complaining.” Phil Jackson used the same analogy in speaking of teachers as the “student’s boss.” I will say, although Xu and I had fun with the metaphor in that article (this journal has a practitioner audience after all), I don’t think the copy editor liked it very much—she kept trying to get us to take the references to it out of the piece!

JAA What does the research suggest about the homework experience of gifted learners?

Corno: Very able students have an easier time than some other students with much of their homework, as you would expect. Even if their organization skills aren't the best, learners with strong cognitive-intellectual skills can often get through whole-class assignments faster and so will benefit by having additional material to master. It's a challenge for teachers to maintain enthusiasm in highly able students with whole-class assignments, however, so many teachers differentiate with homework. They offer choice options on topics in writing, or arrange research projects that able students can complete over time in addition to whole-class homework. I've seen teachers have strong students

study a topic independently and then give a presentation to the class—lead a discussion on the stoics in a humanities class or explain a math theorem, for example.

JAA: What can policy makers and administrators do to enhance teachers, parents, and students' perceptions of homework?

Corno: I tried to answer this question as best I could in another article I wrote in 2000 for an issue of the *Elementary School Journal* on non-subject-matter outcomes entitled “Looking at Homework Differently.” This article extends the idea that homework is complicated. From what I read, most media portray homework in simplistic ways. Perhaps even more disturbing, I have found that many parents have strong views on homework based on nothing more than their own experiences. If you try to tell a parent who says something like, “I don’t really think homework makes kids learn more,” that there is actually research on this topic, I find they have little interest in learning about the research; they just continue to list their strong beliefs.

I think we have to educate those in authority positions so that they can explain the complexities involved to teachers and parents—to get administrators to move away from hosting that perennial first “parent night” talk on “How much homework is too much?” Rather, we have to convince them that such a discussion should be entitled “How it pays to do your homework,” or something like that. This could be a good springboard for a broadened and penetrating discussion on the aspects of homework that are good and those that need to be readdressed to make the experience better for students. The door then opens to suggestions for how teachers, parents, and students can use homework to develop academic aptitude and self-confidence—and it *can* be used to do this! When children do additional academic work outside school, they are likely to become acclimated to academic rigor, and this matters in their schoolwork going forward. Homework can also lead to better work habits, which get rewarded by teachers all along the age range, thus increasing students’ sense of efficacy.

Teachers as Self-Regulated Learners

JAA: Together with your colleagues, you have been a pioneer advocating for teachers and teacher candidates to engage in self-regulation of learning during their educational training. What led you to adopt that educational position?

Corno: This is actually a research agenda that has been developed largely by my former student, now my colleague, Judi Randi. She is first author on the writing we have done together on this topic, and she continues to study this subject with her preservice students. Judi speaks of the importance of teachers viewing “from both sides of the desk” what it means for both students and teachers to be self-regulated. She asks how teachers can be expected to promote self-regulation in students if they themselves do not understand the construct of self-regulated learning as psychologists define it.

Randi advocates giving teachers a solid intellectual understanding of the literature on self-regulated learning, along with opportunities to display their own command of the underlying skills and processes. In the same way that we would teach students how to self-regulate their learning, Randi would teach teachers. In addition to readings and discussions about the concept, her teachers see models of self-regulation, experience a mastery of skills and strategies independently and in small groups, write their own narratives about characters that embody self-regulation, and keep journals on their own self-regulation practices to which she responds with collaborative feedback. Randi has seen few teacher education programs that adopt a perspective like this. She is experimenting at her institution, the University of New Haven in Connecticut, and collecting data on this topic.

Initial Interest in Psychology and Education

JAA: What motivated you to pursue a career in psychology and education?

Corno: Honestly, as it often goes, this happened through a combination of chance and circumstance. In college, I majored in English with a psychology minor—I thought perhaps I would teach high school English, but when I graduated, a friend's father said why didn't I come to work for his "lab." This turned out to be one of the federally funded educational research labs established in the early 1970s—Southwest Regional Laboratory (SWRL); my friend's father, Bob Baker, was then codirector. SWRL was producing systematic instructional programs for kindergarten through sixth grade. Because I was an English major, I was hired to write some of the materials for the upper levels of the SWRL reading program, which was introducing literary criticism and critical reading skills in the sixth grade. This was a new thing back then!

When I worked at SWRL, it became clear that to get further in the field of educational research, I really had to have a doctorate in educational psychology. I applied to programs in the state of California (where I wanted to stay) and planned to attend the school that offered me the most in scholarship money. That would be Stanford, and so there I went in 1974. When I finished the doctoral program at Stanford, I was given a 5-year term appointment on the faculty to serve as a replacement for Dick Snow and Bob Calfee, who were going on consecutive leaves during that period. After that, Larry Cremin asked me to apply for a faculty position at Columbia University's Teachers College, and I went there as an associate professor in 1982.

JAA: What childhood experiences influenced the way in which you perceive human learning and behavior?

Corno: That is an interesting question no one has ever asked me, but I have actually thought about it. I was always very organized, and so I was able to do well in school as a child, even when I struggled with the content. My mother was an organization freak so I'm sure I learned this at her knee. I was heartened by how much teachers were willing to work with me to help me do better in difficult subjects because it was clear that I was taking instruction and following through on tasks. I have to believe that

some of my early thinking on the topic of self-regulated learning, and certainly the continued work on volition, came about when I moved my organization skills from what psychologists call the episodic (personal experience) to the semantic (theoretic principle) level.

JAA: Did you have any teacher who influenced your learning experience and development in any particular way?

Corno: Not one teacher, but several, influenced my learning experiences and development, primarily while I was in graduate school at Stanford. Bob Calfee is a great example of someone who fostered my development; not only did he make me his assistant director of the Center for Research at Stanford when I first joined the faculty, he had me teach one of his own courses when he went on leave. I was still a doctoral student the first time I taught this course. The course was a one-quarter course on experimental design that met three times weekly and included some lab projects. I learned far more about experimental design having to teach about it than I ever did from other courses I'd taken on the topic. I still use what I taught in that course every time I review prospective journal articles that involve experimental designs.

JAA: As you pursued your advanced education, who have been your role models?

Corno: I would have to say that foremost were Dick Snow and Lee Cronbach, both of whom I studied with at Stanford. Snow was my dissertation chair, and Cronbach was such an intellectual giant that all of the students felt lucky to be able to take his courses. But I also worked closely with, and learned a tremendous amount from, Nate Gage. Nate served as my academic advisor and hired me for his research team. I've already said Bob Calfee was instrumental when I joined the faculty, but I took several courses from him as well. I had early papers published as book chapters—before there were any data to report—by

Lou Rubin, a curriculum theorist who was a visiting scholar at Stanford one summer. Lou liked to do edited books and asked me to contribute chapters to a couple of them. That was a learning experience because Rubin insisted on readable prose. But the work I did in the late 1990s, with Lee Cronbach, as part of a team writing a book to honor Dick Snow, will always be a highlight of my career in terms of what it's possible to learn from participant modeling. We completed almost all of the work on the Internet, so I have written records of the transactions as well. I hope someday to do something with these files; some of the discussions that took place among the team members were incredible. I did share some of this at an AERA memorial session honoring Cronbach after he died.

Richard Snow and Education

JAA: You worked closely with Richard Snow. To me, one of the most impressive legacies of Richard Snow was the Aptitude x Treatment Interaction (ATI) formula postulating that individual differences in intellectual ability may be used to tailor educational instruction to optimize learning potential and academic performance. What is your take on his interaction approach?

Corno: Well, be careful. This set of ideas was not formulated exclusively by Snow. Snow would want me to correct this. The *Handbook for Research on Interactions* published in 1977 had Cronbach as lead author with Snow. They wrote their handbook over a period of years during which they reviewed every example of ATI research they could find, and in that volume they credited several other psychologists working at the same time who developed similar ideas but applied them in other ways (e.g., Donald Campbell and Bob Glaser). Cronbach and Snow also said that Binet and Eysenck wrote early papers that set the stage for ATI theory.

What Cronbach and Snow wrote about ATI in 1977 was taken much further by Snow himself in the following years;

Cronbach went on to develop other ideas. So perhaps it is Snow who is most associated nowadays with ATI. But in the end, Snow went far beyond the early aptitude-by-treatment interaction algorithm. We tried to capture the broadened theory that Snow struggled to develop late in his life in the Snow legacy book entitled *Remaking the Concept of Aptitude*, published in 2002 by Erlbaum and coauthored by Cronbach, Kupermintz, Lohman, Mandinach, Porteus, and Talbert.

The ATI research that I and others conducted after the publication of Cronbach and Snow's handbook is reviewed in this legacy book for Snow; we did that to bring the ATI perspective up to date. However, there is much more there than just ATI research. This is a book I wish more people would read. It is a very powerful but tricky agenda to try, as Snow did, to "remake" the ill-understood concept of aptitude and then to develop from that the important implications for education.

JAA: Snow also expanded the notion of "aptitude" from being purely cognitive abilities to include conative and affective characteristics. How has his approach influenced your scholastic work?

Corno: He did expand on the definition, measurement, and theory of aptitude; that is perhaps his greatest legacy. Snow was also instrumental in getting me to focus on *conation* (or purposive striving)—he told me early in my career that process theory was badly needed in that domain. And sure enough, when I began reading about motivation in the 1970s, intending to teach a course at Stanford on the subject, I saw that education textbooks tended to deal with categories of trait-like variables (e.g., self-concept, anxiety, locus of control) one at a time, as if they were unrelated. This made no sense to me, having studied attribution theory with Mark Lepper and social learning theory with Al Bandura. Bandura was just starting to expand social learning theory into social cognitive theory and doctoral students in my generation at Stanford made early research contributions supporting that agenda (e.g., Dale Schunk). I thought it was time for an information processing perspective on motivation

in educational settings, and that is what I outlined while developing the concept of *cognitive engagement* for a 1983 article in the *Educational Psychologist*, coauthored with my former student, Ellen Mandinach. Our model of cognitive engagement in classroom learning and motivation combined information processing theories of cognition and motivation to identify four types of engagement that varied according to how actively involved the student was in his or her own classroom learning. We defined *self-regulated learning* as the highest form of cognitive engagement.

Snow also sent me many papers on the research being conducted abroad when he was scientific liaison to the Office of Naval Research in Europe during the early 1980s. He told me that someone in the United States needed to go back to the concept of *volition* as distinct from *motivation* because both were embodied in conative functioning. The new theoretical research in Germany that addressed the differences directly was not being read by psychologists in the United States. So I wrote an article on modern conceptions of volition and their implications for education that was published in a 1993 issue of the *Educational Researcher*. I guess you can say that Snow did indeed have an influence on my scholastic work!

Service to the Field of Psychology and Education

JAA: You are a past president of the American Psychological Association's (APA) Educational Psychology Division 15. Could you describe your experience of being elected? What was your agenda and what was accomplished?

Corno: It was a great honor and an obligation. The Division was in need of some good organization and follow-through, and as I've said that sort of assignment tends to work to my advantage. There were several things I tried to do while I was president. One was to get all appointed offices up to date and in-line with our bylaws. I also formed a membership committee to set an agenda

intended to increase our declining membership and support some new initiatives, such as working with a graphics designer and the APA staff to produce a color membership brochure. I contacted the American Educational Research Association's Special Interest Group, Self-Regulated Learning and Studying, which I know you are involved with, Héfer, to see if we might share some membership drive activities. I held annual executive committee retreats at my home over a weekend in November to do some strategic planning for the division's main goals concerning better division functionality, support for junior scholars, recognition of member accomplishments, and doing a better job of sharing scholarship, all of which we will begin to address in coming years. Ellen Mandinach, who followed me as president, was a great program chair, and we had solid representation for the division at the annual meetings. We also put the division journal, *Educational Psychologist*, out to bid for a new and better contract while I was president, and that move has helped to keep our treasury in good shape. All in all, it was a very busy year for me as president, but again I was honored to be given the opportunity to lead.

JAA: You have been a successful editor of some of the most prestigious educational journals. To what you attribute your successes as a journal editor? How could you describe your editorial experience?

Corno: I sometimes think that people get to be editors of “prestigious” journals when they are moving toward the end of their careers. I hope that’s not the case for me, but I have to say that doing a lot of editing keeps one up on the literature in a unique way—the exposure to topics I would not read about ordinarily has been invaluable in allowing me to theorize broadly and to be integrative in my own scholarship.

In terms of what makes for success as an editor, I think of those mini-courses they hold before conferences that teach prospective authors how to get published in scholarly journals. Perhaps because I began editing a section of the *American Educational Research Journal* back in 1993 and have been editing some other academic journal ever since without a break, I tend

to get invited to these meetings. I always tell the prospective authors in attendance that they have a right to expect editors to give them good feedback regardless of the ultimate editorial decision. And so that is what I try to do—to give authors the sort of constructive response to their work that I would want an editor to give to mine. I also try to work with young scholars to develop their papers when they have potential but are not quite there.

It's very easy to get overloaded as an editor and not take the time to write extended letters to authors; most editors of journals sponsored by organizations like AERA or APA do the work without remuneration (i.e., in addition to their faculty positions). In recent years, with the *Educational Psychologist* and *Teachers College Record*, I've had more time to do editorial work and that has been all to the good.

Current Projects and Legacy

JAA: You have been a fruitful researcher. What line of research are you currently pursuing?

Corno: Right now I'm working with Judi Randi to collect data on adaptive teaching. We have charted a pretty complex agenda, which we wrote about in a 2005 monograph for the *British Journal of Educational Psychology*. I addressed this topic in my presidential talk for Division 15 as well; that address has since appeared in the *Educational Psychologist*. We are observing and interviewing teachers to document the key qualities that mark adaptive teaching; ultimately, we hope to be able to demonstrate the importance of this sort of flexibility to a number of student outcomes.

I am also continuing to work with Jianzhong Xu. He has developed his own line of research on homework comparing rural and urban learners, students of different cultural groups, and looking at interest levels in homework. I am also doing some theoretical writing on volition. I can't let that go, you know!

JAA: How would you like the fields of education and psychology to remember you? What do you consider your legacy to be?

Corno: I once told Mary McCaslin, a long-time friend, coauthor, and a professor at the University of Arizona, that the best thing about my throwing down the gauntlet on volition to the educational psychology community is that no one who researches that term in relation to education nowadays can avoid coming across things I've written. So I think, even though it has been my research on homework that has gotten the most popular exposure, the fact that I was steadfast in insisting that volition was not an expendable construct for educational psychology is something you will see if you "Google" me in the future. Because motivation denotes commitment (goal setting) and volition denotes follow-through (protecting goals), a full explication of goal pursuits in education requires accounting for both motivation and volition.

Although I understand the need for theoretical parsimony, I have been puzzled by the resistance that reintroducing *volition* as a key construct in education has encountered among some in our educational psychology circles. But in recent years, I have seen a softening; the resistance existed primarily among motivation researchers who believed they were able to capture all that was needed about purposive striving by expanding the definition of motivational processes to include planning, implementation, and reflection. Now that people like Marty Seligman (a prominent psychologist who studies positive psychology), Monique Boekaerts (a Dutch psychologist who studies well-being), and Dave Lohman (a cognitive psychologist who leads the research on the Iowa Tests of Basic Skills) have begun to hone in on aspects of volition as they investigate personal qualities other than intelligence that predict life accomplishments, the motivation researchers are starting to realize that there is something beyond the idea of "implementation" that simply cannot be captured within the concept of motivation. This has to be accounted for. I and others call that *volition*; Seligman and Duckworth call it "grit," which they define as "perseverance and passion for long-term goals" (see article by Angela Duckworth and others in a

2007 *Journal of Personality and Social Psychology*). The function of conation that Snow urged me to study many years ago is an umbrella that covers both motivation and volition.

JAA: Would you like to say anything else?

Corno: I would just like to thank you, Héfer, for the opportunity—I don't like self-promoting, but all of this reflecting was fun!

Editors' Note: Lyn Corno is an adjunct professor of education and psychology (formerly professor) at Teachers College, Columbia University, where she has been on the faculty since 1982. Professor Corno edited the *American Educational Research Journal* (section on Teaching, Learning, and Human Development), the *Educational Psychologist*, and *Teachers College Record* (currently). She has held both elected and appointed offices in the American Educational Research Association and the American Psychological Association. Corno is a Fellow of the American Psychological Association, the Association for Psychological Science, and the American Association for the Advancement of Science. She is board member emeritus (formerly Chair) of the National Society for the Study of Education. Dr. Corno's research interests are in conceptualizing self-regulated learning, homework, theory of volition, and adaptive teaching. Her most recent books are *Remaking the Concept of Aptitude: Extending the Legacy of Richard E. Snow* (with Cronbach, Kupermintz, Lohman, Mandinach, Porteus, & Talbert) and *Education Across a Century: The Centennial Volume of the Yearbook of the National Society for the Study of Education*.