Facilitating Research Self-Efficacy through Teaching Strategies Linked to Self-Efficacy Theory

Corie Hebert

Heidi S. Kulkin
Bonnie Ahn

Southeastern Louisiana University
500 Western Ave, Hammond, Louisiana 70402
United States of America

Abstract

Over the past several years social work educators have struggled with developing curriculum and teaching methods that facilitates students' competence in understanding and conducting research. In an attempt to add to the current knowledge base, Albert Bandura's (1977a) theory of self-efficacy is applied to teaching research to college students in a bachelor's level social work program. Teaching strategies and assignments are presented along a continuum of learning; each assignment is linked to one of Bandura's four sources of self-efficacy. The intent of this paper is to expand the knowledge base which applies theory to educational practices.

Keywords*: Education, research self-efficacy, Albert Bandura, theory of self-efficacy*

Many professional degree programs design their curricula around the skill sets their students will require when entering the workforce. Research skills are commonly valued in social science degree programs such as social work, psychology, and consumer sciences. Educators in these professions often struggle in getting students to value, understand, and feel confident using research to a degree that that they will then employ those skills once in the field of practice. The struggle has been described as a "research-practice gap" by family studies educators (Davis & Sandifer-Stech, 2006) and low scientific output by counseling psychology educators (Kahn & Scott, 1997). The Social Work profession also has a long history of struggling with the task of teaching research (Adam, Zosky & Unrau, 2004; Dinerman, 1981; Dunlap, 1993; Epstein, 1987; Green, Bretzin & Leininger, 2001; Lazar, 1990; Wainstock, 1994).

The current environment in social service provision is increasingly governed by managed care tactics and inter-professional competition among service providers, compelling social work educators to examine research curricula and teaching methods that will decrease the anxiety and self-doubt students feel about research. Yet despite the emphasis on evidence-based practice methods (Dziegielewski, 2013), the lack of active research by social work students once they graduate has been lamented (Bishman&Hardcastle, 1999; Dietz, Westerfelt, & Barton, 2004; Gerdes, Edmonds, Haslam, & McCartney, 1996; Marino, Green, & Yung, 1998; Penka& Kirk, 1991; Rosen, 2003). From an educator's point of view, these findings are distressing. The *National Statement on Research Integrity in Social Work* (2006) by the Council on Social Work Education proclaims: "research activities are essential for the continued growth and improvement of the profession," (p.2) making it incumbent on social work educators to develop teaching strategies that will enable students to master the skills required to be proficient in their field.

Other disciplines that value research productivity in the field of practice but struggle with effective teaching of research skills include Counseling Psychology (Holland, 1986; Kahn & Scott, 1997), and Family Sciences (Davis & Sandifer-Stech, 2006). The problem has led fields across the spectrum to devote more effort to improving research training (Davis & Sandifer-Stech, 2006; Gelso, 2006; Gelso, Baumann, Chui &Salvela, 2013; Gelso, Mallinckrodt, & Judge, 1996; Onwuegbuzie & Wilson, 2003; Unrau& Beck, 2004). However, few studies have addressed the problem in undergraduate instruction and fewer still have provided hands-on teaching strategies to improve research training. A number of studies have identified Albert Bandura's (1977a) self-efficacy theory as an important construct in dealing with this problem (Gelso et al, 1996; Holden, Barker, Rosenberg &Onghena, 2008; Kahn & Scott, 1997, Unrau & Grinnell, 2005; Unrau & Beck, 2004).

This article outlines a research curriculum and teaching strategies grounded in Bandura's (1977a, b, 1981, 1984, 1994, 1997) theory of self-efficacy that can be incorporated into undergraduate programs for the purpose of increasing student's research competence. Albert Bandura's self-efficacy theory was introduced as a component of his social cognitive theory (Bandura, 1977a). His studies of self-beliefs were later found to play a role in academic motivation and learning. Bandura (1994) defined self-efficacy as one's belief in his or her own ability to produce a desired effect. These beliefs influence how the individual feels, thinks and motivates themselves. Self-efficacy not only affects how an individual feels, but also influences an individual's actions (Bandura, 1997). The scope of Bandura's theory provides support for utilizing the construct in academia inasmuch as he found that students with higher levels of self-efficacy participate more readily, work harder, persist longer and have fewer adverse emotional reactions when they encounter difficulties (Bandura, 1997). In addition, Bandura's theory of self-efficacy has found growing acceptance and has been widely used by social work educators (Ahn, Boykin, Hebert & Kulkin, 2012; Holden, Anastas & Meenaghan, 2003, 2005; Holden, Barker, Meenaghan, Anastas, &Metrey, 2002; Montcalm, 1999; Petrovich, 2004: Rishel & Majewski, 2009; Unrau & Grinnel, 2005).

The acceptance of Bandura's theory of self-efficacy is linked to research indicating that measures of self-efficacy provide useful predictions of future productivity and mastery of research skills (Brown, Lent, Ryan & McPartland, 1996; Forester, Kahn & Hesson-McInnis, 2004; Lynch, Zhang, & Korr, 2009; Multon, Brown & Lent, 1991; Schunk, 1995; Zimmerman, 1995). For instance, Lynch et al. (2009) drew a random sample of social workers from the Clinical Register of the National Association of Social Workers and found that social work practitioners were more likely to engage in research activity when they had a stronger level of research self-efficacy compared to those with a low level of research self-efficacy.

Teaching Strategies to Boost Research Self-Efficacy

This article outlines how one bachelor's level social work program used Bandura's theory of self-efficacy as a theoretical base upon which to build a research curriculum design and teaching strategies to use in the classroom. The research curriculum utilizes a two course research sequence designed to slowly build the student's ability to understand and conduct research. A common finding in the literature is that student's attitude/feelings and/or general knowledge about research does seem to improve with time, such as at the beginning of a research course compared to the end (Olsen, 1990; Secret, Ford & Rompf, 2003; Siegel, 1983, 1985; Unrau& Beck, 2004; Unrau& Grinnell, 2005). Anxiety about research also tends to decrease while positive thoughts and feelings about research can increase over the course of a semester (Maschi et al., 2007).

Therefore, theoretical concepts that underscore the development of a level of confidence in student's research abilities are explored and the time frame for teaching the skills falls along a continuum in which previously learned skills are reinforced. The research teaching methods/assignments described are also designed to build student confidence. Unrau and Beck (2004) conducted survey research seeking to understand what experiences students credited their research confidence to, and found that students gave credit to specific assignments completed in their research classes, such as literature reviews, research projects and reading research articles.

Both the research classes taught in the social work program utilize teaching methods that are designed to increase the student's level of confidence or perceived self-efficacy in conducting research. Bandura's theory of self-efficacy is tied to the beliefs an individual has about a specific task. It should be noted that a measure of self-efficacy is not actually measuring skill level, but it is measuring the level of confidence an individual has in executing a particular task. Petrovich (2004) notes that "self-efficacy theory is well suited to the design of professional training due to its flexibility; emphasis on pragmatic, situation-specific, client-focused intervention; and focus on empowerment" (p. 430).

The level of anxiety and fear students often have about research courses, also lends to the inclusion of teaching methods that can increase a student's confidence in that particular skill set. According to Bandura (1981) a person will naturally avoid actions he or she feels he is not able to perform, but will take on activities he or she feels capable of handling (p. 201). Montcalm (1999) also encourages the use of Bandura's self-efficacy theory in the teaching of research by noting that self-efficacy is the belief one holds about his or her ability, which in turn reflects that individual's belief about his or her competence. Montcalm further asserts that those who, "take an optimistic view of their abilities are likely to mount extra effort needed to reach the level of performance required for success" (p. 98). Montcalm (1999) suggests four teaching strategies to utilize in applying Bandura's theory of self-efficacy to teaching research to college students.

The strategies emanate from Bandura's four sources of self efficacy, to include: performance accomplishments, vicarious experiences, verbal persuasion, and emotional arousal as perceived through changes in physiological states (Bandura, 1977a, 1981). As noted, the proposed research curriculum utilizes a research sequence in which two research courses (Social Research Methods and Methods of Analysis and Dissemination) are designed along a continuum of research knowledge. Both the research courses utilize teaching techniques that are based on Bandura's four sources of self efficacy. As an overview, the first research course, Social Work Research Methods, focuses on examining the principles and foundations of designing and conducting social science research. The course facilitates students' abilities to utilize research findings. Students are also taught how to demonstrate effective oral and written communication in working with colleagues; apply strategies of ethical reasoning to arrive at principled decisions; and identify how research evidence informs professional practice.

The second research course, Methods of Analysis and Dissemination, focuses on the application of techniques of measurement and analysis related to phenomena important to the professional field. The statistical analysis of quantitative data to advance the profession's knowledge base and the utilization of computers for information management and data analysis are emphasized. Students learn how to apply the skills of collecting, organizing, interpreting data and critically analyzing and evaluating interventions. Along this continuum of research knowledge, students progressively learn more complex skills that culminate and lead to mastery of a set of research practice behaviors. The design of the sequence and the teaching strategies employed are based on what are considered the instructional and social influences on self-efficacy beliefs. The techniques described are made to align with Bandura's four sources of self-efficacy.

Bandura's Sources of Self-efficacy
Performance Accomplishments

The first strategy of encouraging performance accomplishments involves incorporating "hands on" learning opportunities. A key component is introducing "doable" research tasks or assignments first so that students have the opportunity to be successful, and then adding more challenging assignments once the students have mastered the basic tasks. The first research course lays the foundation for research knowledge by teaching students basic concepts and skills needed to understand and conduct research. The teaching methodology follows Bandura's self-efficacy theory in that students build their knowledge and self-confidence by mastering basic skills through hands on assignments that guide them through the research process step by step.

For instance, an early assignment is designed to help build the student's self confidence by comparing everyday ways of knowing with simple empirical studies. Students are instructed to choose something to observe in their environment, such as how often instructors keep their office hours. Students first write down their observations, and then they learn to quantify those observations as data, thereby accomplishing a task that they might have felt intimidated by. After completing the assignment, students are able to discover how reliable the use of the scientific method is in discovering truths.

Similarly, the second research course starts from a core base of knowledge regarding basic statistics that students learn in the first research course. The base knowledge is then built upon by introducing students to the Statistical Package for the Social Sciences software (SPSS) for analyzing statistics. Early on, students learn how to code variables in SPSS through completing an assignment in which they create variables, code them and enter them into a data set. Then they learn how to run and interpret the different variables in terms of descriptive statistics. Skills are slowly built upon and culminate in the ability to run and interpret inferential statistical analyses. Both research courses utilize the concept of building performance accomplishments in many of the course assignments, as this particular source of self-efficacy is noted to have the strongest influence on feelings of self efficacy (Montcalm, 1999).

Vicarious Experiences

Self-efficacy can also be elicited from vicarious experiences, or those in which an individual observes others completing tasks (Bandura, 1981). The second strategy suggested by Montcalm (1999) involves students observing others who are similar to themselves successfully completing research projects. The use of "real life" examples in class can help the student feel more confident about his or her own research abilities when in the field. Students can observe research activity through films, guest speakers, and student presentations. The research methods instructor invites upper level students who are involved in collaborative research projects with faculty to come and speak to the class about their own experiences doing research.

Role models who share their experiences completing research tasks successfully, and also share characteristics with class members, such as age, gender and student status, have a greater potential to raise the student's sense of research self-efficacy (Bandura, 1981). In the second research class, the instructor models data analysis skills through the use of a computer lab. The instructor demonstrates how to use SPSS to run a descriptive analysis on a data set that is projected onto a screen the whole class can observe. Students are simultaneously seated at individual computers containing the same data set. Students are able to practice the procedures and obtain prompt feedback. Students receive reinforcement from the instructor and other peers.

After the simulation exercise on the projected screen, students are instructed to move into groups of two or three around one computer and choose several different variables from the data set. After choosing the variables, students are instructed to run descriptive analysis procedures, interpret the findings of the analysis, and present their findings to the class. During this activity students are able to observe each other, work together to solve problems and think critically, and successfully complete the necessary tasks. Another means of eliciting vicarious experiences is utilized by inviting guest speakers from the community who are able to share their experiences using or "doing" research at their agency of practice. The speaker is asked by the instructor to focus on ways in which he/she utilizes statistical analysis and data from the field to improve social work outcomes.

Verbal Persuasion

The third strategy of verbal persuasion is employed as students are encouraged to try more challenging research tasks. As noted by Bandura (1981), verbal persuasion does not have as strong an influence on self-efficacy as performance accomplishments, but the instructor's consistent, ongoing feedback and encouragement to students as they work to master the skills, helps to boost the student's feelings about his or her abilities. This method is utilized in both of the research courses. In the first research course, students are guided through each step of the research process, starting with the completion of an Institutional Review Board (IRB) application and culminating in a research proposal. As students complete assignments on formulating a hypothesis, selecting a sampling methodology, choosing measurement instruments and selecting a study design, the instructor provides various forms of feedback to the student. Students receive feedback through written comments and grades, one-on-one consultation and the sharing of "best student works" in class.

The second course utilizes verbal persuasion to continually master more difficult data analysis techniques along a continuum of research skills. The instructor spends one-on-one time with each student, guiding him or her through the techniques of running and analyzing inferential statistics in the computer lab. The instructor provides instructive ongoing feedback that acknowledges students achievements (Montcalm, 1999) on their abilities in navigating the process of running the analyses and interpreting the findings. Bandura (1977a) notes that feedback given by persons who are skilled, sincere and credible are more effective in raising levels of self-efficacy.

Physiological States

The final source of self-efficacy as noted by Bandura (1981) is linked to mood and states of physiological arousal. Demanding circumstances tend to cause changes in emotional and physiological states. The student's interpretation of this arousal is important. Those who have been successful in similar situations interpret the arousal as energizing, where those without a history of such successes regard it as debilitating (Bandura, 1977a, b). Instructors use techniques to allay the student's fears and anxiety over research early on in both courses. In the first course, the instructor begins the semester with an open discussion of student's fears and reservations about the course. Students are encouraged to discuss how these fears affect them and their willingness to learn the material.

The instructor then explains in detail how the course will progress and what the expectations will be. The use of previously gained knowledge is demonstrated by explaining that social work research is basically a method of using the problem solving model, which students are already familiar with from previous courses. The instructor in the second research course opens the class with humor and discusses/describes student anxiety about research by explaining the inverse relationship between time in the class and anxiety level…more time in, the less anxious you will become. This correlation is referred to throughout the semester. Additionally, the instructor asks students to share their fears and anxieties about taking the research course. Their fears are processed through class discussion during which time students are also encouraged to share their expectations of the course. Following the discussion, the instructor outlines course expectations and emphasizes her availability to help students with course material throughout the semester.

The use of these strategies when teaching research may lead to a feeling of mastery over the material, a key component to self-efficacy. A natural assumption from this theory is that students who have the opportunity to complete research tasks successfully will have higher levels of research self-efficacy, or a feeling of competence. This assumption supports the proposed curriculum design and teaching methods outlined in the article.

Discussion

Bachelor's level programs are encouraged to consider examining their research curriculums for their ability to engage students and help them achieve a sense of mastery and confidence. Exploring connections between research self-efficacy and research course content is an important step in developing quality undergraduate research curriculums that help train students to become competent professionals. Readers are also encouraged to examine their research curriculums for ways to incorporate theory into teaching techniques. In addition, they should closely evaluate their learning environments as well as their learning processes dynamics. Memmott and Brennan (1998) advocate for enhancing the learning environment to include the materials used in class such as audio visuals, as well as the instructor's knowledge and skills to improve the learning process. They also encourage the learning process dynamics of giving immediate direct feedback to the students as a means to facilitate learning. These types of techniques are easily incorporated in the undergraduate classroom.

This article offers suggestions in relation to a research curriculum that utilizes teaching activities to facilitate research self-efficacy in bachelor's level social work students, as based on Bandura's (1977a, b, 1981, 1984, 1997) theory of self-efficacy. The impetus for the article was to share teaching techniques that have been utilized by a bachelors level social work program. As presupposed by Bandura's theory, self-efficacy tends to be related to competence or a feeling of mastery; thus, students exhibiting high levels of research self-efficacy may be more competent in research activities. The goal is for students to ultimately be able to evaluate and employ research skills when they enter the practice field. It is also important to note that many students with an undergraduate degree in the social sciences progress to graduate programs. Davis and Sandifer-Stech (2006) propose that the improvement of undergraduate research curriculums that allow students to have positive research experiences can serve as a bridge to graduate education where their research skills can be further developed. The authors propose that an important step in that process is improving the student's research self-efficacy. It is hoped that these techniques can be modified and employed by other social science disciplines who struggle with the same task of teaching research.

References

Adam, N., Zosky, S.L., &Unrau, Y.A. (2004).Improving the research climate in social work curricula: Clarifying learning expectations across BSW and MSW research courses.*Journal of Teaching in Social Work,24(3)*, 1-18.

Ahn, B., Boykin, L., Hebert, C., &Kulkin, H. (2012). Exploring baccalaureate social work students' self-efficacy: Did it change over time? *Journal of Teaching in SocialWork, 32(5)*, 487-501.

Bandura, A. (1977a). Self-efficacy: Toward a unifying theory of behavior change. *PsychologicalReview, 8*4, 191-215.

Bandura, A. (1977b). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1981). Self-referent thought: A developmental analysis of self-efficacy. In J.Flavell and L. Ross (Eds.), *Social Cognitive Development: Frontiers and Possible   Futures*   (pp.200-239).   Cambridge, England: Cambridge University Press.

Bandura, A. (1994). Self-efficacy.In V.S. Ramachaudran (Ed.), *Encyclopedia of Human Behavior* (Vol, 4, pp. 71-81). New York: Academic Press.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.

Bishman, C., &Hardcastle, D. (1999).*Integrating research into practice*. New York, NY: Brooks/Cole.

Brown, S.D., Lent, R.W., Ryan, N.E., &McPartland, E.B. (1996). Self-efficacy as anintervening mechanism between research training environments and scholarly productivity: A theoretical and methodological extension. *The Counseling Psychologist*, *24*(3), 535-544.

The Council on Social Work Education.(2006). *CSWENational Statement on Research Integrity in Social Work*. Retrieved from http://www.cswe.org/CentersInitiatives/CurriculumResources/22252.aspx

Davis, C.J. &Sandifer-Stech, D. (2006). Wade into the water: Preparing students for successful quantitative research. *Family Relations, 55*, 56-66.

Dietz, T. J., Westerfelt, A., & Barton, T. R. (2004).Incorporating practice evaluation with the field practicum.*The Journal of Baccalaureate Social Work 9 (2),* 78-90.

Dinerman, M. (1981).*Social Work Curriculum at the Baccalaureate and Master's Levels*. NewYork: The Lois and Samuel Silberman Fund.

Dunlap, K.M. (1993). A history of research in social work education: 1915-1991. *Journalof Social Work Education, 29*(3), 293-301.

Dziegielewski, S.F. (2013). Problem identification, contracting and case planning. In B.A. Thyer, C.N. Dilmus& K.M. Sowers (Eds.), *Developing evidence based generalist practice skills* (pp. 69– 92). Hoboken, NJ: John Wiley & Sons, Inc.

Epstein, I. (1987). Pedagogy of the perturbed: Teaching research to the reluctant. *Journal ofTeaching in Social Work*, *31*(31), 71-89.

Forester, M., Kahn, J.M., &Hesson-McInnis, M.S. (2004).Factor structures of three measures of research self-efficacy, *Journal of Career Assessment,12(1),* 3-16.

Gelso, C.J. (2006). Applying theories to research.The interplay of theory and research in science. In F. Leong & J Austin (Eds.), *Psychology research handbook: A primer for graduate students and research assistants.* (2nded.). Thousand Oaks, CA: Sage.

Gelso, C.J., Baumann, E.C., Chui, H.T. &Savela, A.E. (2013). The making of scientist-psychotherapist: the research training environment and psychotherapist. *Psychotherapy, 50*(2), 139-49.

Gelso, C.J., Mallinckrodt, B. & Judge, A.B. (1996). Research training environment, attitudes toward research and research self-efficacy: The revised Research Training Environment Scale. *The Counseling Psychologist, 24*, 304-322.

Gerdes, K., Edmonds, R., Haslam, D., & McCartney, T. (1996).A statewide survey of licensedclinical social workers' use of practice evaluation procedures.*Research on Social Work Practice, 6,* 27-43.

Green, R.G., Bretzin, A., Leininger, C., & Stauffer, R. (2001). Research learningattributes of graduate students in social work, psychology, and business. *Journalof Social Work Education, 27*(2),333-341.

Holden, G., Meenaghan, T., Anastas, J., &Metrey, G. (2002). Outcomes of social workeducation: The case for social work self-efficacy. *Journal of Social WorkEducation, 38*(*1*),115-129.

Holden, G., Anastas, J., &Meenaghan, T. (2003).Determining attainment of the EPAS foundation program objectives: Evidence for the use of self-efficacy as an outcome.*Journal of Social work Education,39*, 425-440.

Holden, G., Anastas, J., &Meenaghan, T. (2005). EPAS objectives and foundation practice self-efficacy: A replication. *Journal of Social Work Education*, *41,* 559-570.

Holden, G., Barker, K., Rosenberg, G. &Onghena, P. (2007). Assessing progress toward accreditation related objectives: Evidence regarding use of self-efficacy as an outcome in the advanced concentration research curriculum. *Research on Social Work Practice, 17,* 456-465.

Holden, G., Barker, K., Rosenberg, G. &Onghena, P. (2008). The Evaluation Self-Efficacy Scale for assessing progress toward CSWE accreditation-related objectives: A replication. *Research on Social Work Practice, 18*, 42-46.

Holland, J.L. (1986). Student selection, training, and research performance.*The Counseling Psychologist, 14,* 121-125.

Kahn, J.H. & Scott, N.A. (1997).Predictors of research productivity and science-relatedcareer goals among counseling psychology doctoral students.*The Counseling Psychologist, 25*(1), 38-67.

Lazar, A. (1990). Statistics courses in social work education. *Journal of Teaching in SocialWork. 4*(*1*), 17-31.

Lynch, M.T., Zhang, L., &Korr, W.S. (2009). Research training, institutional support, and self-efficacy: Their impact on research activity of social workers. *Advances in Social Work, 10*(*2*), 193-210.

Marino, R., Green, R.G., & Young, E. (1998). Beyond the scientist-practitioner model's failureto thrive: Social workers' participation in agency-based research activities. *Social WorkResearch*, *22*, 188-192.

Maschi, T., Bradley, C., Youdin, R., Killian, M.L., Cleaveland, C., &Barbera, R.A. (2007).Social work students and the research process: Exploring the thinking, feeling and doing of research. *The Journal of Baccalaureate Social Work, 13*(*1),* 1-12.

Montcalm, D.M. (1999). Applying Bandura's Theory of Self-Efficacy to the Teaching ofResearch, *Journal of Teaching in Social Work, 19(1-2),* 93-107.

Memmott, J. & Brennan, E.M. (1998). Learner-learning environment fit: An adult learning model for social work education. *Journal of Teaching in Social Work, 16*(1/2), 75-95.

Multon, K.D., Brown, D.D., & Lent, R.W. (1991). Relation of self-efficacy beliefs to academic outcomes: A meta-analytic investigation. *Journal of Counseling Psychology, 38*, 30-38.

Olsen, L. (1990). Integrating a practice orientation into research curriculum: The effecton knowledge and attitudes.*Journal of Social Work Education, 26(2),* 155-161.

Onwuegbuzie, A.J. & Wilson, V.A. (2003). Statistics anxiety: Nature, etiology, antecedents, effects and treatment– A comprehensive review of the literature. *Teaching in Higher Education, 8*, 195-209.

Penka, C. E., & Kirk, S. A. (1991).Practitioner involvement in clinical evaluation.*Social Work36(6),* 513-518.

Petrovich, A. (2004). Using self-efficacy theory in social work teaching.*Journal of Social Work Education 40(3*), 429-443.

Rishel, C.W., &Majewski, V. (2009). Student gains in self-efficacy in an advanced MSW curriculum: A customized model for outcomes assessment. *Journal of Social Work Education, 45*(3), 365-383.

Rosen, A. (2003). Evidence-based social work practice: Challenges and practices. *Social WorkResearch, 27,* 197-208.

Schunk, D.H. (1995). Self-efficacy and education instruction. In J.E. Maddux (Ed.), *Self-efficacy adaptation and adjustment:Theory, research, and application* (pp. 281-303). New York: Plenum Press.

Secret, M., Ford, J., &Rompf, E.L. (2003). Undergraduate research courses: A closer lookreveals complex social work student attitudes. *Journal of Social Work Education, 39(3),* 411-422.

Siegel, D.H. (1983). Can research and practice be integrated in social work education?*Journal of Education for Social Work, 19*(3),12-19.

Siegel, D.H. (1985). Effective teaching of empirically based practice.*Social WorkResearch & Abstracts, 21(1),*40-48.

Unrau, Y.A., & Beck, A., R. (2004). Increasing research self-efficacy among students inprofessional academic programs.*Innovative Higher Education, 28*, 187-204.

Unrau, Y.A., & Grinnell, R.M., Jr. (2005). The impact of social work research courses onresearch self-efficacy for social work students. *Social Work Education, 24*(6),639-651.

Wainstock, S. (1994). Swimming against the current: Teaching research methodology toreluctant social work students. *Journal of Teaching in Social Work, 9*, 3-16.

Zimmerman, W.S. (1995). Self-efficacy and educational development.In A. Bandura (Ed.),*Self-efficacy in changing societies* (pp. 202-231). New York: Cambridge UniversityPress.