

Research collaborations and Performance of Academicians: An Empirical Analysis

***Fahmeer Hussain^a, Pradhyuman Singh Lakhawat^b, Poonam Singh^c
Shanti Swaroop Chauhan^d**

a. Research Scholar, JSBS & C, SHUATS Prayagraj.

b. Ph.D., Assistant Professor, JSBS & C, SHUATS Prayagraj.

c. Ph.D., Assistant Professor, JSBS & C, SHUATS.

d. Ph.D., Assistant Professor, JSBS & C, SHUATS.

Abstract: The term “collaboration” is the action of working together with others to produce or create something, and in the context of academic bodies, it is used mostly on the level of research. In other words, it is the mutual engagement of participants in a coordinated effort to solve a problem together. However, the collaboration also involves cooperation, in which the responsibilities of each partner may not be shared equally. Collaborative learning is a widely used instructional method, but the learning potential of this instructional method is often underused in practice. Higher education institutions are facing an increasing demand to collaborate with each other in the knowledge economy. Yet, research on how higher education management enhances collaborative work is rare. Present study takes research collaboration as a catalyst for improving the faculty performance in higher education institutions. Since, it has been observed by many researchers that better faculty performance leads to the higher productivity and student’s learning. This study focuses on factors collaborative Research i.e., “physical facilities of the institute helpful for collaborative research work”, “availability of sufficient time for collaborative research practices”, “availability and allocation of funds from the institute or competitive authorities for collaborative research” and “receiving the inspiration by the superior / fellow colleagues for collaborative research”. Series of Focused group interviews were conducted and data were analyzed. Results show that factors evoking effective collaboration were student autonomy and self-regulatory behaviour, combined with a challenging, open, and complex group task that required the students to create something new and original are directly related with the faculty performance. It is concluded that collaborative research practices in higher education should be designed that build shared growth and academic development. In this article, It has been also explored that how collaborative teacher research can reposition teachers to be powerful stakeholders and policymakers rather than skilled technicians and implementers.

Keywords: Higher Education Management, Research Collaboration, Social Network Perspective, Social Network Analysis, Theory-Practice Translation

1. Introduction

Research collaboration can take on many forms: teacher and teacher academic and teacher whole school practitioner teams and community practitioner collaboration. Collaboration between different practitioners can offer opportunities for interdependence, diverse thought and blurred boundaries. Collaboration amongst teachers can help build and strengthen solidarity. Either with or between teachers, collaboration offers a way to address the technical rationalism that results from positivism by contextualizing findings. Common to all collaborative research is the goal to overcome the traditional and contentious theory/practice rift between academics and teachers. Without collaboration, academic researchers run the risk of developing ideas only through their data, while practitioners risk developing ideas only through interactions with students. Through collaborative work and dialogue, practitioners and researchers can build more robust educational theories and practices. Collaboration provides teachers and university researchers to explore common interests. In one study, in collaboration with Oakland Public Schools and Berkeley Unified School District, organized a professional development group of urban elementary school teachers who were all interested in studying diversity in their teaching. The teachers, who named themselves the San Francisco East Bay Teacher Study Group, met every Tuesday to discuss issues of diversity. Dyson and two graduate students made observational visits to the teachers’ classrooms, and the teachers observed one another. They conducted case studies that they presented to the group. The group’s collaboration resulted in a book entitled *What Difference Does Difference Make: Teacher Reflections on Diversity, Literacy and the Urban Primary School*. With the exception of a 20-page introduction, all chapters were written collectively and all of the collaborators’ voices were included throughout the entire book. In this way, the teachers took ownership of their own professional development in a supportive and transformative environment through collaboration that included a “multiplicity” of voices. Consequently, the San Francisco East Bay Teacher Study Group’s work

offers not only a framework for teacher reflection on issues of diversity; but also a model of how academics and classroom teachers can conduct collaborative research, while respecting one another’s expertise. Collaboration can also result in beneficial explorations of content-area pedagogy. Consider, for example, the collaborative partnership between teachers, graduate students, and university researchers that fostered for over a decade. The focus of their collaborations was science

inquiry. Wells explains that all phases of research, from grant writing, to formulating questions, to publishing, were “negotiated among all members of the group”. In this way, collaboration was voluntary and leveraged different types of expertise from all collaborators. As the above collaborative research projects demonstrate, collaborative teacher research has the power to disrupt hierarchy. First, collaboration can protect teachers from exploitation, since the researchers share and interpret data together. Second, collaboration ensures that teachers’ views are represented in the literature and that knowledge production is not unidirectional. Third, collaborative research facilitates publication for teachers, who would otherwise have much less access to research tools, journals, conferences, and research networks. Collaborative teacher research also helps build reciprocal alliances amongst teachers as well as between teachers and academics. Alliance building helps create communities of educators who have common instructional goals and agendas. These alliances broaden the collegiality within educational research. Additionally, alliances between all education practitioners can lead to coalitions that influence policymakers and help shape educational legislation. Collaborative teacher research alliances have emerged in school based and in pre-service settings. For example, chronicles efforts to create a culture of collaborative inquiry that embeds practitioner work in the ongoing work of the district. Their team, consisting of administrators and teachers, grew from a reflective teaching group to a classroom-based research group, a university researcher contracted to help assist in their qualitative study of multi-age classrooms. Their collaborative research explored concerns such as, the challenges to teaching and researching, district visions versus teacher research questions, and the rights of families during research. The collaborative alliance helped stakeholders support and understand teacher inquiry. Alliances have been especially important in pre-service teacher education as well. In one collaborative effort, both professors at the University of Georgia, reformed their teacher education program to better integrate theory and practice. Together with mentor teachers, they began their collaborative reform efforts by examining their respective roles in knowledge production and in the education of student teachers. Very early on, Graham and Hudson-Ross discovered that mentor teachers were disgruntled with their previous roles in teacher education and perceived the split between university and schools as a “great divide”:

1.1 Investigation of Secondary Data

Collaboration in different forms supports the development of research quality and quantity of organisation or a specific research topic. There are many evidences for support this statement. Riahi et al. (2014) in their bibliometric study on the research performance of Iran state that scientific collaborations with researchers in other countries could play a major role in enhancing the level of knowledge of our researchers. Sweile et al. (2016) doing the worldwide overviews says that collaboration among industry, clinical researchers and academic institutions can improve research quantity. One of the findings in Kodama, Watatani, and Sengoku (2013) in their analysis demonstrated a research assessment by proposing and introducing key performance indicators and found that a certain degree of interdisciplinarity and internal collaboration may bring about high research productivity. Graue et al. (2013) in their analysis of Denmark, Iceland, Norway and Sweden from 1979 – 2009 revealed that international collaborative research networks facilitate funding opportunities and contribute to further development of professional research competence in the same series Stein et al. (2006) stated that local and international collaboration may be useful in increasing research capacity in South Africa, and ultimately in improving mental health services, research collaboration in different ways: international as well as national and intra organisational is necessary for the increase the general research productivity of organizations. The examples of positive influence of research collaboration on research productivity and capacity can be found in many bibliometric studies that cover publications of different countries and research organisation in different fields of science and topics. Elhorst and Zigova (2014) measuring the research productivity of academic economists employed at 81 universities and 17 economic research in Austria, Germany and Switzerland stated that empirical results support the hypotheses that collaboration and that the existence of economies of scale increase research productivity. Chakravarty and Madaan (2016) in their analysis of research performance of Chandigarh city suggested that foreign collaborations and foreign journals have remained the epicentre of the research activity, National and international collaborations also form the basis of growth of research productivity. Zucker and Darby (2011) in their study on research activity at Japan find that identifiable collaborations between particular university star scientists and firms have a large positive impact on firms' research productivity, increasing the average firm's biotech patents by 34 percent, products in development by 27 percent, and products on the market by 8 percent as of 1989-1990. Collaboration (primarily collaboration with developed countries) can also help less developed countries to build their research capacity and increase research performance. Zdravkovic, Chiwona-Karlton and Zink (2016) measuring the research performance of five southern African Universities in fields of mathematics, physics, chemistry concluded that supporting international and national collaboration which includes increased scientific mobility, strong scientific groups and networks, are key factors for capacity building of research in southern African Universities. Collaboration also in general leads to the increase of levels of citations. Collaborated (especially internationally collaborated) publications receive higher number of citations the single-authorship papers. Evidence of positive influence of collaboration on the level of citation can be found in different studies. O’Leary et al. (2015) in their analysis of University of Toronto’s Faculty of Medicine research performance for 2008–2012 show that the academic

departments with the highest levels of collaboration and interdisciplinary research activity also had the highest research impact in the same linkage Fu et al. (2012) analysing the Acupuncture research for 1980-2009 state that international collaborative papers are the most frequently cited. Isiordia-Lachica et al. (2015) in the analysis of research performance of Universidad de Sonora (Mexico) stated that international co-authorship produced higher citation rates while Chuang, and Ho (2015) stated that research collaboration is responsible for the increasing number of highly cited papers over the years. Obamba and Mwema (2009) in their analysis find out that strategic international research collaboration between research communities located within Africa and those in developed countries, as well as regional partnerships among African universities themselves, represent the most productive framework for reinvigorating and strengthening research capacity within sub-Saharan universities, such collaboration also increases the visibility of research. Collaborative publications are in general more visible than purely national or one-author papers. Geracitano, Chaves, and Monserrat (2009) stated that the establishment of collaborative research could be one of the strategies to improve the research.

1.2 Research Methodology

The ex post facto An ex-post facto research design was considered appropriate because, it examines the cause-and-effect relationship between one variable and the other, it describes the relationship that exist between research collaborations and academic performance of faculties. involves the study of a large population, data were collected by using the simple random sampling through the use of structured and validated questionnaire, to elicit information from respondent on the impact of collaborative research on academicians' performance. Total 500 questionnaires were circulated among the respondents Out of 500 only 427, (were received back, yielding a response rate of 84.6%). On further scrutiny of the collected responses, only 413 (all total) were found valid for further analysis as rest were incomplete and hence it was decided to remove. The respondents comprised academicians from higher educational institutions located at Delhi NCR, India. Where top 30 institutions were selected for the study on the basis of their faculty strength (population).

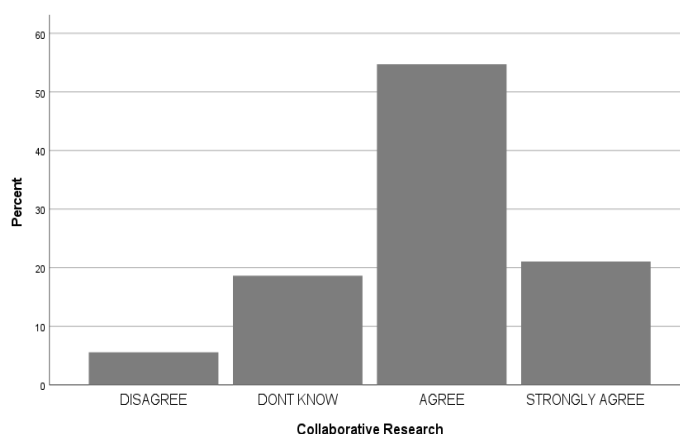
The research instrument was validated with the help of experts in during the pilot analysis. The reliability of the instrument was determined using test-re-test methods. It gave a coefficient of 0.85 which was considered high enough.

1.3 Data Analysis

Descriptive statistics of determinants influencing academic environment in HEI.

(Likert Scale: Strongly disagree = 1, disagree = 2, don't know = 3, agree = 4, strongly agree = 5)

Construct	Item	Mean	Standard deviation	Skewness	Kurtosis
Collaborative Research (COR)	The work environment of institute is conducive for research work.	4.11	1.426	-.076	-1.300
	Develop knowledge translation and exchange	4.18	1.397	.001	-1.278
	Get enough time and resources from the institute for collaborative research.	4.29	1.454	-.034	-1.382
	Addressing Disciplinary and Sectoral Issues	4.22	1.368	-.057	-1.185



The mean participant score for different items of Collaborative Research i.e., “infrastructure of institute is conducive for research work”, “enough time for collaborative research”, “receiving grants from the institute for collaborative research” and “inspired by the senior /colleagues for research” were 4.11, 4.18, 4.29 and 4.22 respectively. The result indicates that “receiving grants from institute for collaborative research” (4.29) was the most important factor influencing academic environment, followed by “addressing disciplinary and sectoral issues” (4.22), “enough time for collaborative research” (4.18) and “infrastructure of the institute” (4.11). The previous studies carried out under wide range of collaborative research revealed that, receiving grants from the institute or funding agencies was the important motivating determinants collaborative research. The collaborative research approach (i.e., participation of different stakeholders) has been acknowledged to benefit the breadth and depth of research in the field by integrating different perspectives, methods, and experiences (Annerstedt, 2010; Matso, Dix, Chicoski, Hernandez, & Schubel, 2008; Podestá, Natenzon, Hidalgo, & Toranzo, 2013) as well as contributing to the relevancy and usability of the research (Campbell et al., 2015; Cook, 2008; Reed, 2008). Which influences the academic environment (Table 4.1).

1.4 Reliability and validity of measurement model

The confirmatory factor analysis (CFA) was performed to evaluate internal consistency, reliability and validity of conceptual / measurement model. The factor loading, cronbach alpha, composite reliability and average variance extracted for quality education, student background, professional capabilities of faculty, student/teacher ratio, faculty engagement, collaborative research, presence of quality assurance cell/agencies, policies of the institution industry- institution collaboration, Physical environment of the educational institute influencing academic environment are presented in Table 4.2. The factor loading of all items of quality education, student background, professional capabilities of faculty, student/teacher ratio, faculty engagement, collaborative research, presence of quality assurance cell/agencies, policies of the institution industry- institution collaboration, Physical environment constructs were statistically significant ($p \leq 0.01$) and ranged from 0.765 to 0.913; 0.763 to 0.953; 0.879 to 0.963; 0.714 to 0.865; 0.716 to 0.861; 0.643 to 0.797; 0.724 to 0.910; 0.698 to 0.885; 0.712 to 0.817 and 0.923 respectively (Table 4.2). The factor loading of all items of quality education, student background, professional capabilities of faculty, student/teacher ratio, faculty engagement, collaborative research, presence of quality assurance cell/agencies, policies of the institution industry- institution collaboration, Physical environment of the educational institute exceeded the minimum acceptable value of 0.60, hence all the items were included for the interpretation of the factors influencing academic environment (Hair et al., 2006; Hair et al., 2010). The cronbach alpha for quality education, student background, professional capabilities of faculty, student/teacher ratio, faculty engagement, collaborative research, presence of quality assurance cell/agencies, policies of the institution industry- institution collaboration, Physical environment of the educational institute ranged from 0.731 to 0.901, which exceeded the threshold value of 0.60 (Nunnally 1978). The composite reliability of quality education, student background, professional capabilities of faculty, student/teacher ratio, faculty engagement, collaborative research, presence of quality assurance cell/agencies, policies of the institution industry- institution collaboration, Physical environment of the educational institute constructs in context of academic environment exceeded the minimum recommended cut off point of 0.60 (Baggozi and Yi, 1988; Anderson and Garbing, 1991; Hair et al., 2010; Calvo-Porrall et al., 2013). The cronbach alpha and composite reliability obtained for quality education, student background, professional capabilities of faculty, student/teacher ratio, faculty engagement, collaborative research, presence of quality assurance cell/agencies, policies of the institution industry- institution collaboration, Physical environment of the educational institute constructs in context of academic environment revealed good internal consistency and reliability of the scale items (Hair et al., 2006; Hair et al., 2010). The average variance extracted is used to examine the validity of the constructs associated with academic environment. The average variance extracted for quality education, student background, professional capabilities of faculty, student/teacher ratio, faculty engagement, collaborative research, presence of quality assurance cell/agencies, policies of the institution industry- institution collaboration, Physical environment of the educational institute, influencing academic environment ranged from 0.610 to 0.834, which exceeded the threshold value of 0.50 (Hair et al., 1998; Tuu et al., 2008). The factor loading and average variance extracted values obtained from confirmatory factor analysis confirmed the convergent validity of the constructs (Fornell and Larcker, 1981; Hair et al., 2010; Contini et al., 2018).

The confirmatory factor analysis was performed to examine the overall fit of conceptual / measurement model. The Comparative fit index (CFI), Tucker -Lewis index (TLI), Goodness of fit index (GFI), Root mean square error of approximation (RMSEA) and standardized mean square residual (SRMR) indexes were used to assess the overall fit of conceptual / measurement model. The CFI was 0.913; TLI was 0.856; GFI was 0.842; RMSEA was 0.079 and SRMR was 0.048, which were within the recommended acceptable range (Table 4.2). The CFI, TLI, GFI, RMSEA and SRMR values revealed that the conceptual / measurement model was fitted good to respondents' score / data (Martens et al., 2005; Hair et al., 2006; O'Connor et al., 2017; Lu et al., 2015; Konuk, 2019; Shi et al. 2019).

Table 1 Factor loading, cronbach alpha, composite reliability and average variance extracted of determinants influencing academic environment.

(Likert Scale: Strongly disagree = 1, disagree = 2, don't know = 3, agree = 4, strongly agree = 5)

Construct	Item	Factor loading (β)	p value	Cronbach alpha	Composite reliability (CR)	Average variance extracted (AVE)
Collaborative Research (COR)				0.845	0.919	0.610
	• COR 1	0.658	***			
	• COR 2	0.765	***			
	• COR 3	0.797	***			
	• COR 4	0.643	***			

2. Hypothesis

The hypothesis H6 that proposed **positive relationship between collaborative research and faculty performance in higher education institution** was accepted (Table 4.3), because the standardized estimate of the path was significant ($B = 0.684$, S.E. = 0.033, z -value = -1.384, $p \leq 0.01$). The results of the present study revealed that in collaborative research the work environment of institute, developing knowledge translation and exchange, getting enough time and resources from the institute for collaborative research, addressing disciplinary and sectoral issues, influencing faculty performance in higher education institution. This is due to fact that in India the governing body of higher education gives more emphasis on collaborative research. Therefore, the role of collaborative research on maintaining academic environment in higher education institution was significant. The information regarding collaborative research which is the major factor influences faculty performance. However, collaborative research may build a sense of greater equity in decentralized higher education environments which influences faculty performance (Siemens et al., 2014; Misra et al., 2017).

Impact of collaborative research on faculty performance

Collaborative Research

Mean (Σ) = 3.5Standard Deviation (σ) = 1.235

Sample size(n)= 413

Faculty Performance

Mean (Σ) = 4.3Standard Deviation (σ) = .828

Sample size(n)= 413

Cohen's $d = (4.3 - 3.5) / 1.0513 = 0.760903$

The average effect size of Cohen's $d = 0.7$, with 0.2, 0.5 and 0.8 considered small, medium and large effects. This is the large effect of collaborative research on overall faculty performance. The association among the collaborative research and faculty performance is related with the commitment toward the organization. The employees who were engaged highly with their work and job tasks, they also emphasize on their physical efforts and the task relevant goals, but they were also rational and emotionally linked to the organization (Kahn, 1999). Aldieri and Vinci (2016) and Aldieri, Kotsemir and Vinci (2017), stated that the model of collaboration on the research leads to best performance of the faculties in Russian universities.

3. Major Findings

The mean participant score for different items of Collaborative Research i.e. "infrastructure of institute is conducive for research work", "enough time for collaborative research", "receiving grants from the institute for collaborative research" and "inspired by the senior /colleagues for research" were 4.11, 4.18, 4.29 and 4.22 respectively. The result indicates that "receiving grants from institute for collaborative research" (4.29) was the most important factor influencing academic environment, followed by "addressing disciplinary and sectoral issues" (4.22), "enough time for collaborative research" (4.18) and "infrastructure of the institute" (4.11).

4. Conclusions

The scientific openness is an important aspect for the development of research and academics. Recent researches also revealed that higher educational institutions are becoming more important in the analysis of knowledge flows between researchers and academicians. Collaborative research become important in modern era to foster productivity and faculty performance. We approach this issue both theoretically and empirically. In particular, the rationale behind the model is that the scientific publications published by collaborations generate positive externalities for all the universities involved in the economic process, as introduced through the theoretical model. The analyzed data revealed the importance of research collaborations for academic performance. Furthermore, it also shows that the knowledge flows that arise among researchers enhancing the quality of research as well as academic performance of faculty members.

References

- 1) Allen, J., & Shockley, B. B. (1998). Potential engagements: Dialogue among school and university research communities. In B. S. Bisplinghoff & J. Allen (Eds.), *Engaging teachers: Creating teaching/researching relationships* (pp. 61-71). Portsmouth, NH: Heinemann.
- 2) Anderson, G. (2002). Reflecting on research for doctoral students in education. *Educational Researcher*, 31(7), 22-25.
- 3) Apple, M. (1985). Teaching and “women’s work”: A comparative historical and ideological analysis. *Teachers College Record*, 86, 455-73
- 4) Apple, M. (1987). The de-skilling of teachers. In F. Bolin & J. M. Falk (Eds.), *Teacher renewal: Professional issues, personal choices* (pp. 59-75). New York: Teachers College Press.
- 5) Apple, M., & Teitelbaum, K. (1986). Are teachers losing control of their skills and curriculum. *Journal of Curriculum Studies*, 18, 177-84.
- 6) Britzman, D. (2003). *Practice makes practice: A critical study of learning to teach*. Albany: State University of New York Press.
- 7) Bullough, R. H., & Pinnegar, S. (2001). Guidelines for quality in autobiographical forms of self-study research. *Educational Researcher*, 30(3), 13-21.
- 8) Buchberger, F., & Buchberger, I. (2004). Problem-solving capacity of a teacher education system as a condition of success? An analysis of the “finish Case.” In F. Buchberger & S. Berghamer (Eds.), *Education policy analysis in a comparative perspective* (pp. 222-237). Linz, Austria: Trauner.
- 9) Cafferty, H., & Clausen, J. (1998). What’s feminist about it? Reflections on collaboration in editing and writing. In E. G. Peck & J. S. Mink (Eds.), *Common ground: Feminist collaboration in the academy* (pp. 81-98). New York: State University of New York Press.
- 10) California Legislature. (2004). Senate Bill 2042. Sacramento, CA: California Department of Education.
- 11) Castle, J. (1997). Rethinking mutual goals in school-university collaboration. In H. Christiansen, L. Goulet, C. Krentz, & H. Maeers (Eds.), *Recreating relationships: Collaboration and educational reform* (pp. 59-67). Albany, Mary Christianakis 121 Volume 19, Number 2, Fall 2010 NY: State University of New York Press.
- 12) Christianakis, M. (2008). Teacher research as a feminist act. *Teacher Education Quarterly*, 35(4), 99-115.
- 13) Chuan, G. K., & Gopinathan, S. (2001). Recent changes in primary teacher education in Singapore: Beyond design and implementation. Paper presented at the International Educational Research Conference, University of Notre Dame, Freemantle, Western Australia, December 2-6. Retrieved April 17, 2010, from <http://www.aare.edu.au/01pap/goh01512.htm>
- 14) Clayton (Missouri) Research Review Team: Beck, C., Dupont, L, Geismar-Ryan, L, Henke, L, Pierce, K. M., & Von Hatten, C. (2001). Who owns the story? Ethical issues in the conduct of practitioner research. In J. Zeni (Ed.), *Ethical issues in practitioner research* (pp. 45-58). New York: Teachers College Press.
- 15) Cochran-Smith, M., & Lytle, S. L. (1990). Research on teaching and teacher research: The issues that divide. *Educational Researcher*, 19(2), 2-11.

- 14) Cochran-Smith, M., & Lytle, S. L. (1993). *Inside outside: Teacher research and knowledge*. New York: Teachers College Press.
- 15) Cochran-Smith, M., & Lytle, S. L. (1999). Relationships of knowledge and practice: Teacher learning in communities. In A. Iran-Nejad & P.D. Pearson (Eds.), *Review of research in education*, Vol. 24. Washington, DC: American Educational Research Association.
- 16) Cochran-Smith, M. & Lytle, S. L. (2001). Beyond certainty: Taking an inquiry stance on practice. In A. Lieberman & L. Miller (Eds.), *Teachers caught in the action: Professional development that matters* (pp. 45-58). New York: Teachers College Press.
- 17) Cochran-Smith, M., & Lytle, S. L. (2009). *Inquiry as stance: Practitioner research for the next generation*. New York: Teachers College Press.
- 18) Comber, B. (2005). Making use of theories about literacy and justice: teachers researching practice. *Educational Action Research*, 13(1), 43-55.
- 19) Connelly, F. M., & Clandinin, J. (1994). The promise of collaborative research in the political contexts. In S. Hollingsworth & H Sockett (Eds.), *Teacher research and educational reform* (pp. 86-102). Chicago: National Society for the Study of Education.
- 20) Darling-Hammond, L. (1989). Accountability for professional practice. *Teachers College Record*, 91(1), 59-80.
- 21) Darling-Hammond, L. (2010). *The flat world and education: How America's commitment to equity will determine our future*. New York: Teachers College Press.
- 22) Davis, S. (2008). *Research and practice in education: The search for common ground*. Lanham, MD: Rowman & Littlefield.
- 23) Donovan, S., Wigdor, S., & Snow, C. (Eds.) (2003). *Strategic education research partnership*. Washington, DC: National Academy Press.
- 24) Doolittle, G., Sudeck, M., & Rattigan, P. (2008). Creating professional learning communities: The work of professional development schools. *Theory Into Practice*, 47(4), 303-310.
- 25) Dyson, A. H. & The San Francisco East Bay Teacher Study Group. (1997). *What difference does difference make?* Urbana, IL: National Council of Teachers 122 Collaborative Research and Teacher Education Issues in Teacher Education of English.
- 26) Ede, L., & Lunsford, A. (1990). *Singular texts/plural authors: Perspectives on collaborative writing*. Carbondale, IL: Southern Illinois University Press.
- 27) Fischer, J. C., & Weston, N. (2001). Teacher research and school reform: Lessons from Chicago. In G. Burnaford, J. Fischer, & D. Hobson (Eds.), *Teachers doing research: The power of action through inquiry* (pp. 345-366). Mahwah, NJ: Lawrence Erlbaum Associates.
- 28) Fenstermacher, G. D. (1986). Philosophy of research on teaching: Three aspects. In M. C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed.) (pp. 37-49). New York: Macmillan.
- 29) Fenstermacher, G. D. (1987). Prologue to my critics, and A reply to my critics. *Educational Theory*, 37(4), 357-360, 413-421.
- 30) Fenstermacher, G. D. (1988). The place of science and epistemology in Schön's conception of reflective practice. In P. P. Grimmett & G. L. Erickson (Eds.), *Reflection in teacher education* (pp. 39-46). New York: Teachers College Press.
- 31) Fox, N. (2003). Practice-based evidence: Towards collaborative and transgressive research. *Sociology*, 37(1), 81-102.

- 32) Friedrich, L., Tateishi, C., Malarkey, T., Simons, E.R., & Williams M. (Eds.). (2005). Working toward equity: Writings and resources from the Teacher Research Collaborative. Berkeley, CA: National Writing Project.
- 33) Gage, N. (1978). The scientific basis of the art of teaching. New York: Teachers College Press.
- 34) Gage, N. (1985). Hard gains in the soft sciences: The case of pedagogy. Bloomington, IN: Phi Delta Kappa.
- 35) Giroux, H. A. (1988). Teachers as intellectuals: Toward a critical pedagogy of learning. Westport, CT: Bergin & Harvey.
Giroux, H. (1994). Teachers, public life and curriculum reform. *Peabody Journal of Education*, 69(3), 35-47.
- 36) Goswami, D., & Stillman, P. (Eds.) (1987). Reclaiming the classroom: Teacher research as an agency for change (pp. 87-93). Portsmouth, NH: Boynton/ Cook Publishers.
- 37) Graham, P., & Hudson-Ross. (1999). Teacher mentor: A dialogue for collaborative learning. New York: Teacher's College Press and National Council of Teachers of English.
- 38) Hammack, F. (1997). Ethical issues in teacher research. *Teachers College Record*, 99(2), 247-265.
- 39) Hammer, D., & Schifter, D. (2001). Practices of inquiry in teaching and research. *Cognition and Instruction*, 19(4), 441-478.
- 40) Hargreaves, A. (1994). Changing teachers, changing times: Teachers work and culture in the postmodern age. New York: Teachers College Press.
- 41) Hiebert, J., Gallimore, R., & Stigler, J.W. (2002). A knowledge base for the teaching profession: What would it look like and how can we get one? *Educational Researcher*, 31(5), 3-15.
- 42) Hollingsworth, S. (1994). Teacher research & urban literacy education: Lessons and conversations in a feminist key. New York: Teachers College Press.
- 43) Hollingsworth, S., & Miller, J. (1994). Rewriting "gender equity" in teacher research. In S. Hollingsworth & H. Sockett (Eds.), *Teacher research and Mary Christianakis* 123 Volume 19, Number 2, Fall 2010 educational reform (pp. 121-141). Chicago: National Society for the Study of Education.
- 44) Hollingsworth, S., & Sockett, H. (1994). Positioning teacher research in educational reform. In S. Hollingsworth & H. Sockett (Eds.), *Teacher research and educational reform* (pp. 1-21). Chicago: National Society for the Study of Education.
- 45) Holmes Group. (1990). Tomorrow's schools: Principles for the design of professional development schools. East Lansing, MI: Author.
- 46) Huberman, M. (1996). Focus on research moving mainstream: Taking a closer look at teacher research. *Language Arts*, 73(2), 124-140.
- 47) Jungck, S. (2001). How does it matter? Teacher inquiry in the traditions of social science research. In G. Burnaford, J. Fischer, & D. Hobson (Eds.), *Teachers doing research: The power of action through inquiry* (pp. 329-344). Mahwah, NJ: Lawrence Erlbaum Associates.
- 48) Kapuscinski, P. (1997). The collaborative lens: A new look at an old research study. In H. Christiansen, L. Goulet, C. Krentz, & H. Maeers (Eds.), *Recreating relationships: Collaboration and educational reform* (pp. 3-12). Albany, NY: State University of New York Press.
- 49) Keffer, A., Wood, D., Carr, S., Mattison, L., & Lanier, B. (1998). Ownership and the well-planned study. In B. S. Bisplinghoff & J. Allen (Eds.), *Engaging teachers: Creating teaching/researching relationships* (pp. 27-34). Portsmouth, NH: Heinemann.
- 50) Kennedy, M. M. (1990). Professional development schools. *NCRTE Colloquy*, 3(2). Kilbourn, B. (1987). The nature of data for reflecting on teaching situations. *Educational Theory*, 37(4), 377-382.

- 51) Kincheloe, J. L. (2003). *Teachers as researchers: Qualitative inquiry as a path to empowerment*. London, UK: Falmer Press.
- 52) Lareau, A. & Walters, P. B. (2010). What counts as credible research? *Teachers College Record*, March 1. Accessed April 9, 2010 from <http://www.tcrecord.org>, ID Number: 15915.
- 53) Levin, B., & Rock, T. (2003). The effects of collaborative action research on preservice and experienced teacher partners in professional development schools. *Journal of Teacher Education*, 54, 135-49.
- 54) Lewis, C., Guerrero, M., Makikana, L., & Armstrong, M. (2002, Spring). Exploring language identity, and the power of narrative. *Bread Loaf Teacher Network Magazine*, 8-10.
- 55) Loughran, J., Hamilton, M., LaBoskey, V., & Russell, T. (Eds.). (2004). *International handbook of research of self-study of teaching and teacher education practices*. Amsterdam, The Netherlands: Kluwer.
- 56) McGlynn-Stewart, M. (2001). Look how we've grown. In G. Wells (Ed.), *Action, talk, & text: Learning and teaching through inquiry* (pp. 195-200). New York: Teachers College Press.
- 57) Meier, D., Kohn, A., Darling-Hammond, L.,Sizer, T. R., & Wood, G. (2004). *Many children left behind: How the no child left behind act is damaging our children and our schools*. Boston: Beacon Press.
- 58) Munby, H. (1987). The dubious place of practical argument and scientific knowl124 Collaborative Research and Teacher Education Issues in Teacher Education edge in the thinking of teachers. *Educational Theory*, 37(4), 361-368.
- 59) Nelson, L. (2009). Duncan urges colleges to help underperforming schools more. *The Chronicle of Higher Education*, September.
- 60) Nesbitt, P., & Thomas, L. (1998). Beyond feminism: An intercultural challenge for transforming the academy. In E. G. Peck & J. S. Mink (Eds.), *Common ground: Feminist collaboration in the academy* (pp. 31-49). New York: State University of New York Press.
- 61) Nias, J. (1991). How practitioners are silenced, how practitioners are empowered. In H. K. Letiche, J. C. Verder Wolf, & F. X. Plooj (Eds.), *The practitioners' power of choice in staff development and inservice training* (pp. 19-36). Amsterdam, The Netherlands: Swets & Seitlinger.
- 62) No Child Left Behind Act of 2001. (H.R. 1), 107 Cong., 110 (2002). Enacted. Olson, M. (1997). Collaboration: An epistemological shift. In H. Christiansen, L. Goulet, C. Krentz, & H. Maeers (Eds.), *Recreating relationships: Collaboration and educational reform* (pp. 13-25). Albany, NY: State University of New York Press.
- 63) Pine, G. (2009). *Teacher action research: Building knowledge democracies*. Thousand Oaks, CA: Sage.
- 64) Ritchie, J. S., & Wilson, D. E. (2000). *Teacher narrative as critical inquiry: Rewriting the script*. New York: Teachers College Press.
- 65) Ravitch, D. (2010). *The death and life of the great American school system*. New York: Basic Books.
- 66) Rock, T., & Levin, B. (2002). Collaborative action research projects: Enhancing preservice teacher development in professional development schools. *Teacher Education Quarterly*, 29, 7-21.
- 67) Russell, C., Plotkin, R., & Bell, A. (1998). Merge/emerge: Collaboration in graduate school. In E. G. Peck & J. S. Mink (Eds.), *Common ground: Feminist collaboration in the academy* (pp. 141-153). New York: State University of New York Press.
- 68) Russell, T. L. (1987). Research, practical knowledge, and the conduct of teacher education. *Educational Theory*, 37(4), 369-375.
- 69) Rust, F., & Meyers, E. (2003). Introduction. In E. Meyers & F. Rust (Eds.), *Taking action with teacher research* (pp. 1-16). Portsmouth, NH: Heinemann.

- 70)** Senese, J. C. (2001). The action research laboratory as a vehicle for school change. In G. Burnaford, J. Fischer, & D. Hobson (Eds.), *Teachers doing research: The power of action through inquiry* (pp. 307-325). Mahwah, NJ: Lawrence Erlbaum Associates.
- 71)** Shockley, S. L. (2001). "A root out of dry ground": Resolving the research/researched dilemma. In J. Zeni (Ed.), *Ethical issues in practitioner research* (pp. 61-71). New York: Teachers College Press.
- 72)** Urban, W. J. (1990). Historical studies of teacher education. In W. R. Houston (Ed.), *Handbook of research on teacher education* (pp. 59-71). New York: Macmillan.
- 73)** U.S. Department of Education. (2004). *No child left behind: A toolkit for teachers*. Washington, DC: U.S. Department of Education, Office of the Deputy Secretary.
- 74)** Wayne, M. (2003). Our unfinished story: Rising to the challenge of high stan Mary Christianakis 125 Volume 19, Number 2, Fall 2010 dards. In E. Meyers & F. Rust (Eds.), *Taking action with teacher research* (pp. 17-40).
- 75)** Portsmouth, NH: Heinemann. Wells, G. (2001). The development of a community of inquirers. In G. Wells (Ed.), *Action, talk, & text: Learning and teaching through inquiry* (pp. 1-22). New
- 76)** York: Teachers College Press.
- 77)** Wells, G., Bernard, L., Gianotti, M., Keating, C., Konjevic, C., Kowal, M., Maher, A., Mayer, A., Moscoes, T., Orzechowska, E., Smieja, A., & Swartz, L. (1994). *Changing schools from within: Creating communities of inquiry*, Taylor-made for de-skilling teachers. Retrieved August 1, 2005 from <http://www.ncte.org/about/issues/slate/117626>
- 78)** Wilson, S., Floden, R., & Ferrini-Mundy, J. (2001). *Teacher preparation research: Current knowledge, gaps, and recommendations*. Washington, DC: Center for the Study of Teaching and Policy.
- 79)** Zeichner, K. (2003). Teacher research as professional development P-12 educators in the USA. *Educational Action Research*, 11(2), 301-328
- 80)** Zeni, J. (2001). Reflections on school-based research. In J. Zeni (Ed.), *Ethical issues*
- 81)** in practitioner research (pp. 55-58). New York: Teachers College Press.