

THE INTERACTIONS BETWEEN RESEARCH AND TEACHING

ANNEX G

Bibliography and literature review

lead author

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Andre, R. & Frost, P. J. (Eds) (1997). Researchers Hooked on Teaching. Noted Scholars Discuss the Synergies of Teaching and Research. Foundations for Organizational Science Series, California: Sage.

Abstract: This collection of 19 essays is organized into a narrative of the teaching-research dilemma. The essays include: (1) "Struggling With Balance" (Cynthia V. Fukami); (2) "My Career as a Teacher: Promise, Failure, Redemption" (Howard E. Aldrich); (3) "Teaching and Research: A Puzzling Dichotomy" (Barbara A. Gutek); (4) "If It's Not Teaching and Research, What Is It?" (Rae Andre); (5) "On Publish or Perish, Pedagogy, and Getting a Life--Synergies and Tensions: An Interview with Bill Van Buskirk"; (6) "From Outcast to Postmodernist" (David M. Boje); (7) "Learning to Teach: Lessons From a Life in Business and Academia" (Peter J. Frost); (8) "Scholarship as a Career of Learning Through Research and Teaching" (Thomas A. Mahoney); (9) "In Search of Myself in the Context of Russian and American Humanitarian Culture" (Nikita Pokrovsky); (10) "Learning to Teach: An Ongoing Process" (Beverly J. Cameron); (11) "Teaching in the Real World" (Jeff Mello); (12) "Teaching From the Heart" (Afsaneh Nahavandi); (13) "Between Text and Context: Restoring Connections in the Organizational Behavior Classroom" (Pushkala Prasad); (14) "Anatomy of a Colleagueship: Collaborations in and out of the Classroom" (Marcy Crary and Duncan Spelman); (15) "Teaching as Leading" (Donald C. Hambrick); (16) "Meditations on a Poet's Overalls" (Peter B. Vaill); (17) "The Teaching Experience as Learning in Public" (Karl E. Weick); (18) "The Power of Dialogue: Celebrating the Praxis of Teaching and Research" (Darlyne Bailey); and (19) "Conclusion" (Rae Andre and Peter J. Frost).

Andresen, L. W. (2000) "Teaching Development in Higher Education as Scholarly Practice: a reply to Rowland et al "Turning Academics into Teachers?" Teaching in Higher Education 5(1) 23-29.

Antczak, F. (1994). "Learning and the Public Research University: Twenty-Two Suggestions for Reducing the Tension between Teaching and Research". Paper presented at the Conference on College, Composition and Communication: Nashville, TN.

Abstract: This paper advances 22 ideas for reducing the conflict between teaching and research demands of faculty at public research universities, based on suggestions generated by an *ad hoc* group of professors at the University of Iowa. Departments should try to make teaching as documentable as research, make teaching accomplishments as "portable" as research accomplishments, critically evaluate teaching, use multiple evaluation instruments, provide "teaching leaves" for curricular improvement, resist the notion of "released time" from teaching, have students complete midterm course evaluations, promote team teaching, foster contacts with other departments and institutions, develop a departmental alumni association, do exit interviews with departmental majors and alumni, prepare doctoral students in college-level teaching, and establish a teaching chair to honor distinguished teachers. The university as a whole should develop a campus teaching journal, emphasize quality over quantity in promotion decisions, allow groups of first-year students to take certain classes as a cohort, avoid quick-fix solutions, develop a teaching center, and use the teaching center to seek funds for guest lecturers and visiting teachers.

Astin, A., Chang, W. & Mitchell, J. (1995). "Colleges That Emphasize Research and Teaching: Can You Have Your Cake and Eat It Too?" Change. 27(5), 44-49.

Abstract: A national survey of 212 colleges and universities investigated the strategies and characteristics of institutions that are able to maintain a strong emphasis on both research and undergraduate teaching. Results indicate those that are successful are unique in certain respects that distinguish them from research universities and liberal arts institutions, with selective residential liberal arts colleges typifying those distinctions.

Austin, A. E. (1996). "Institutional and Departmental Cultures: The Relationship Between Teaching and Research". New Directions for Institutional Research. 90, 57-66.

Abstract: The influence of institutional and departmental cultures on the relationship between college teaching and research is discussed, and suggestions for assessing these factors and nurturing a positive relationship between them are made. Approaches include making reward systems more equitable, strengthening administrative leadership, encouraging communication and networks within the institution, and implementing better policies and practices.

Baker, P. J. (1986). "The Helter-Skelter Relationship Between Teaching and Research: A Cluster of Problems and Small Wins". Teaching Sociology. 14(1), 50-66.

Abstract: Contrasts the culture and social structure of research and teaching; demonstrating significant differences in these two spheres of academic work. Explores the question of how scholarship related to teaching can be fostered in a fashion similar to research and identifies six strategies for making gains in this endeavor.

Barnett, R. (1992). "Linking Teaching and Research: A Critical Inquiry". Journal of Higher Education. 63(6), 619-36.

Abstract: Arguments are presented which suggest that, although higher education cannot be offered entirely separately from research, institutions of higher education do not need to conduct research to justify their title. However, faculty need time and resources to keep up with their fields. If higher education is serious about promoting quality, it must emphasise teaching.

Batty, M. & Matthews, S.A. (1988). "Relationships between Teaching and Research" Area. 20(2), 158-162.

Baum, R. Worthy, W. (1990). "Teaching vs. Research: Tide Begins to Turn toward Teaching". Chemical & Engineering News. 68(16), 4.

Abstract: Summarizes two cases emphasizing teaching in major research universities: (1) an address by the president of Stanford University and (2) efforts of the Alliance for Undergraduate Education.

Becher, T. (1989). Academic Tribes and Territories: intellectual enquiry and the cultures of disciplines. Buckingham: SRHE and Open University Press.

The Bett Report (1999). Independent Review of Higher Education Pay and Conditions. London: HMSO.

Bourdieu, P. (1984). Homo Academicus. Cambridge: Polity Press.

- Boyer, E. (1990). *Scholarship Reconsidered*. Washington, D.C.: Carnegie Foundation.
Abstract: An influential commentary on contemporary US higher education. Recommends that four aspects of scholarship should underpin a diverse yet complementary higher education system (teaching, integration, application and discovery).
- Braxton, J. M. (1996). "Contrasting Perspectives on the Relationship Between Teaching and Research". New Directions for Institutional Research, 90, 5-14.
Abstract: Three perspectives on the link between college faculty research and teaching effectiveness (null, conflict, and complementarily) are discussed, and empirical support for each is examined. Both null and complementarily perspectives receive modest affirmation, whereas the conflict perspective garners little support.
- Breen, R. & Lindsay, R. (1999). "Academic Research and Student Motivation" Studies in Higher Education, 24(1), 75-89.
- Brew, A. & Boud, D. (1995). "Teaching And Research - Establishing The Vital Link With Learning". Higher Education, 29(3), 261-273.
Abstract: Much time and effort has gone into trying to demonstrate an empirical link between research activity and teaching performance. In general, the correlations between these factors have been shown to be low. This paper argues that the attempt to find such a link will always be confounded by different conceptions of the two enterprises. The debate about the relationships between teaching and research as presently conceived is not fruitful. If there is a link between the two it operates through that which teaching and research have in common; both are concerned with the act of learning, though in different contexts. Greater emphasis needs to be placed on the ways in which knowledge is generated and communicated. Those aspects of teaching which lead to learning and the learning which occurs through research provide the vital link. This is important if the debate is to progress beyond a political defence of the status quo and be of practical use to considerations of whether, in higher education, teaching without research is to be encouraged.
- Brew, A. (1999). "Research and Teaching: changing relationships in a changing context" Studies in Higher Education, 24(3), 291-302.
Abstract: All research, scholarship, teaching and learning activities taking place in academic contexts are dependent on prevailing discourses regarding the nature of knowledge. These have been turbulent, with ideas about knowledge being seriously challenged. This article examines ways in which research and teaching have been changing and shows links with the crisis in ideas about knowledge. It then re-examines debates about the relationship between research and teaching in relation to this context, arguing that in order to understand their relationship it is important to view it in the context of these changes.
- Brown, R. B. & McCartney, S. (1998). "The link between research and teaching: its purpose and implications". Innovations In Education And Training International, 35(2), 117-129.
- Carrotte, P. (1999). 'Turning Academics into Teachers: S. Rowland *et al*' Teaching in Higher Education, 4(3), 411-413.

- Clark, B. R. (1994). "The research-teaching-study nexus in modern systems of higher education". Higher Education Policy. 7(1), p 11-17.
- Clark, B. R. (1997). "The Modern Integration of Research Activities with Teaching and Learning", Journal of Higher Education, 68(3), 241-255.
Abstract: Advances a broad compatibility thesis that asserts that research activity can and does serve as an important mode of teaching and a valuable means of learning at the undergraduate and graduate level. Instead of a dichotomous distinction between research and teaching, it distinguishes types of institutions and educational levels in which research, teaching, and learning are closely linked.
- Coate, K., Court, S., Gillon, E., Morley, L., Williams, G. (2000). Universities and the Knowledge-Based Economy. Association of University Teachers Report, London: AUT and Institute of Education, University of London.
- Colbeck, C. L. (1998). "Merging in a Seamless Blend. How Faculty Integrate Teaching and Research", The Journal of Higher Education, 69(6), 647-671.
Abstract: Using direct observation and detailed activity accounts, this study documented how faculty in two disciplines at two universities simultaneously accomplished teaching and research. Individual faculty integrated teaching and research between 8 and 34 per cent of their work time. English faculty integrated research more with classroom teaching; physicists integrated research more with training students to conduct inquiry.
- The Dearing Report (1997). Higher Education in the Learning Society. The National Committee of Inquiry into Higher Education. London: HMSO.
- Elton, L. "Research and Teaching: Symbiosis or Conflict" Higher Education 15 pp 299 – 304.
Abstract: Existing research into the correlations between teaching and research in higher education is criticised for its inadequacies, which readily account for the uncertainty of the results obtained. Arguments are then presented to show that for such a correlation to exist it is necessary for it to be mediated through scholarship. The extent to which this effect is subject dependent is discussed. The conclusion is reached that there is a strong case for continuing the present practice of pursuing both teaching and research in the same institution to the mutual benefit of both.
- Feldman, K. A. (1987). "Research productivity and scholarly accomplishment of college teachers as related to their instructional effectiveness: A Review and Exploration". Research in Higher Education, 26(3), 227-298.
Abstract: The meaning and dimensions of the construct of scholarship are explored, using a four-function paradigm as an analytic framework for deducing four basic categories of scholarship (teaching, service, research and graduate training, academic citizenship). The paradigm helps explain the nature and functions of college faculty work. Comparisons are made with other analyses; potential expansions and limitations are discussed.
- Fox, M. F. (1992). "Research, Teaching, and Publication Productivity: Mutuality Versus Competition in Academia". Sociology of Education. 65(4), 293-305.

Abstract: Addresses the relationship between research and teaching in the social sciences. Explains that the study examined academic work from economics, political science, psychology, and sociology departments to determine work attitudes and practices. Concludes that teaching and research are not complementary roles but different conflicting dimensions.

Fram, E., Lau, H. & Gloria, H. (1996). "Research universities versus teaching universities: public perceptions and preferences". Quality Assurance in Education. 4(3), 27-33.

Gander, J. P. (1999). "Faculty gender effects on academic research and teaching". Research in Higher Education. 40(2), 171-184.

Abstract: This paper estimates the effects of faculty gender differences on research and teaching productivities, using a sample of 523 four-year-plus institutions of higher education for the academic year 1987-88. Female and male faculty inputs along with an administrative staff input are used to estimate three joint-product production functions for three outputs from undergraduate teaching, graduate teaching, and research. The main research results show that female faculty have significant marginal productivity in research at liberal arts institutions but not at institutions in other Carnegie categories. One explanation for this finding is the limitations with respect to employment and discipline patterns of using research expenditures to measure research output. The results are compared to earlier findings based on individual faculty survey responses.

Gibbs, G.(1995). "The Relationship Between Quality in Research and Quality in Teaching". Quality In Higher Education, 1(2), 147-157.

Abstract: This paper argues both that quality in research does not automatically produce quality in teaching and that industrial models of quality assurance involving strong central management control are inappropriate for universities. The link between research and teaching is in the kinds of mechanisms which support quality. Academics already know how to support quality in their research, where standards are already high. For every process which supports quality in research there is a parallel process which can be used to support quality in teaching. Universities should adopt all of these processes, the most important of which involves reward for excellence in teaching for both individuals and departments.

Gottlieb, E. & Yakir, R. (1995). "Perceptions of the Research-Teaching Nexus and Job Satisfaction: An Analysis from the Carnegie International Survey of the Academic Profession". Paper presented at the Annual Meeting of the American Educational Research Association: San Francisco, CA.

Abstract: This study used data from the 1991-93 Carnegie International Survey of the Academic Profession to examine the perceptions of college faculty in regard to the emphasis on research over teaching in advanced-industrialized higher education systems, the compatibility of research and teaching, and job satisfaction. It focused on data from 8 countries which included 13,984 faculty questionnaire responses. The study found that faculty with a research orientation (RO) generally spent more time on research, and that faculty with a teaching orientation (TO) spent more time on teaching. There was no significant difference in the mean job satisfaction of the two orientation groups, although higher ranking academics were found to be more satisfied than academics at lower ranks. A total of 43 per cent of the RO faculty thought that their research had a positive effect on

their teaching, whereas only 30 per cent of the TO faculty felt that their research had a positive effect on their teaching.

Gottlieb, E. & Keith, B. (1997). "The Academic Research-Teaching Nexus in Eight Advanced-Industrialized Countries". Higher Education. 34(3), 397-420.

Abstract: Examines the research-teaching relationship in faculty work in Germany, Sweden, United Kingdom, United States, Australia, Israel, Japan, and South Korea, drawing on an international survey of college and university faculty. Results indicate research and teaching are not mutually exclusive activities, but the two activities have differing effects on each other.

Gray, H. L. & Hoy, C. H. (1989). "University Development: The Balance between Research and Teaching". Higher Education Review. 22(1), 35-46.

Abstract The article raises concerns about changing patterns of departmental organization within British universities in such areas as staff development, departmental management structures, and conflict between the demands of teaching and research. It suggests steps to promote excellence in both research and teaching.

Gruner, C. R. (1995). "The Teaching/Research Symbiosis: A Two-Way Street". Paper presented at the Annual Meeting of the Southern States Communication Association: New Orleans, LA.

Abstract: Much has been said and written about the "conflict" between professional research and teaching. The claim is often made that the two fields of endeavor should complement each other since research can enliven and update a professor's teaching. Little attention has been directed to the converse, the possibility that a professor's teaching can enhance his/her research and consequent publication output. One veteran speech communication professor finds that his classroom experience has led directly to publication output. Student input or questions has led to research (on stage fright, humor, the content of a basic speech course, for example) motivated by real, immediate curiosity; later this research was used as the basis for journal articles or conference papers. A constant complaint among faculty is that heavy teaching loads take up time that could be used for research, but teaching can also enrich and diversify an instructor's list of publications.

Gupton, J.T. (1993). "The Teaching Versus Research Controversy - Is There More Than One Model To Examine?". Journal of Chemical Education, 70(1), 36-37.

Hattie, J. & Marsh, H. W. (1996). "The Relationship between Research and Teaching: A Meta-Analysis". Review of Educational Research. 66(4), 507-42.

Abstract: A review of various models of the relationship between research and teaching in universities is presented, and the evidence necessary to assess each model is outlined. A meta analysis of 59 studies demonstrates that the relationship is zero. Suggestions are provided for future research.

Healey, M. (in press). "Developing the scholarship of teaching in higher education: a discipline-based approach", Higher Education and Research Development.

HEFCE (1999). HEFCE Estate Management Statistics project (HEFCE, report 99/18).

Hughes, C. & Tight, M. (1995). "Linking university teaching and research". Higher Education Review. 28(1), 51-65.

Abstract: A discussion of the relationship between college teaching and faculty research looks at different forms the link between the two might take, how policy might reflect the relationship, emerging trends, and mechanisms for encouraging joint development of teaching and research.

Jenkins, A., Blackman, T., Lindsay, R., & PatonSaltzberg, R. (1998). "Teaching and research: student perspectives and policy implications", Studies In Higher Education, 23(2), 127-141.

Abstract: Previous research on the vital but vexed relationship between teaching and research is reviewed and criticised for an overemphasis on correlational studies and for largely neglecting student perspectives on staff research. This paper analyses the results of focus groups of undergraduate students from a range of disciplines in one institution. Students perceived clear benefits from staff research, including staff enthusiasm and the credibility of staff and their institution. Students did perceive disadvantages from staff involvement in research, particularly staff availability to students. A central conclusion was that students did not perceive themselves as stakeholders in staff research. Many of these perceived disadvantages could be resolved by the effective management of research by individuals, departments, institutions and funding bodies.

Jenkins, A. (1988). "Teaching And Research Revisited." Area, 20(2). 151-153.

Jenkins, A (2000) 'The Relationship between teaching and research: where does geography stand and deliver?'. Journal of Geography in Higher Education. (in press).

Jensen, J. J. (1988). "Research and teaching in the universities of Denmark: does such an interplay really exist?". Higher Education. 17(1), 17-26.

Abstract: A survey of Danish university faculty concerning the real relationship between faculty research and teaching found that most see an important interplay between the two, depending to some extent on the level of instruction and the discipline. None expressed a preference for working in a pure research institution.

Johnes, G. (1996). "Evaluating Universities' Preferences for Teaching and Research". Journal of Education Finance. 22(2), 212-19.

Abstract: Develops a theoretical model to evaluate universities' preference for teaching or research, using data from 25 British research universities for 1985-86 and 1991-92. Universities' utility functions have changed slightly; the relative weight attached to research has risen, whereas that attached to teaching has fallen. Institutional specialisation in either teaching or research may increase in the future.

Johnston, R.J. (1994). "Is There A Correlation Between Department Research And Teaching Quality: Environment And Planning" Area, 26(10), 1491-1496.

Keep, E., Storey, J., & Sissons, K. (1996). "Managing the Employment Relationship in Higher Education: Quo Vadis?", in Cuthbert, R. (Ed), Working in Higher Education. Buckingham: SRHE and Open University Press.

Knight, P.G. (1987). "The Relationship between Teaching and Research". Area, 19(4), 350-352.

Kramer, M. F. (1991). "Dynamics of the Relationship between Teaching, Research, and Health Care". Higher Education Management. 3(1), 15-19. (C)
Abstract: Some problems in the changing pattern of relationships between bedside teaching, clinical research, and provision of medical services in academic hospitals are examined, including patient types, sophistication of medical intervention, and specialization. Four elements of government policy that might favor desirable development in these areas are discussed.

Kreber, C. (1999). "A Course-based Approach to the Development of Teaching-scholarship: a case study" Teaching in Higher Education. 4(3), 309-317.

Kreber, C. (2000) "How University Teaching Award Winners Conceptualise Academic Work: some further thoughts on the meaning of scholarship". Teaching in Higher Education 5(1), 61-78.

Kyvik, S. & Smeby, J-C. (1994). "Teaching And Research - The Relationship between the Supervision Of Graduate-Students And Faculty Research Performance". Higher Education, 28(2), 227-239.

Abstract: This article examines the relationship between the supervision of graduate students and university faculty research performance. We find that the supervision of Ph.D. students who have projects related to their supervisor's research has an independent effect on faculty members' scientific productivity in the natural and medical sciences and technology, but not in the humanities and social sciences. The relationship between the supervision of project-related, major subject students and the faculty members' productivity is only significant in the social sciences. These results are generally supported by data on faculty attitudes toward the supervision of graduate students. Those who supervised Ph.D. students gave a considerably more favourable assessment of the importance of supervision for their own research than those who only supervised major subject students, and the proportion of faculty members who answered that supervision of Ph.D. students was part of their own research to a great extent, was very much higher in the natural and medical sciences and technology than in the humanities and social sciences.

Lagowski, J.J. (1989). "Research as Teaching". Journal of Chemical Education. 66(4), 273.

Leary, M.R. & Williams, J.E. (1988). 'A system for balancing departmental teaching and research'. Journal of Social Behavior and Personality. 3(2), 119-123.

Lee, R. (1992). "Teaching versus Research: a tale of the giant panda, the bread fruit and the banana". Journal of Geography in Higher Education. 16(1), 3-5.

Legg, J. I. (1988). "Research and Teaching: Reinforcing their Relationship". Chemical and Engineering News. 66(47), 35.

Leslie, P.L., Harvey, L.K. & Leslie, G.J. (1998). "Chief academic officers' perceptions of the relationship between faculty research and undergraduate teaching". Sociological Spectrum, 18(2), 185-199.

Abstract: The purpose of this article is to examine chief academic officers' perceptions of the relationship between faculty research and faculty undergraduate teaching effectiveness. We contend that chief academic officers are instrumental in establishing institutional definitions of scholarship and in creating faculty reward patterns. Data were gathered through a mail questionnaire sent to 300 chief academic officers. A stratified random sampling technique was used to establish a representative sample. The data indicate that chief academic officers often use a conventional standard - a research-publication standard - to measure the effectiveness of teaching. We call this process regressive determination and suggest that it occurs when there is a need to evaluate others in the presence of developing or conflicting norms for scholarly assessment. Implications for the definitional processes of scholarship and faculty reward are discussed.

Lips, H. M. (1999). "Issues of power and risk at the heart of the teaching/research nexus". Psychology of Women Quarterly, 23(1), 215-217

Lunde, J., Povlacs, B. & Leverne, A. (1994). "Impact of An Intervention To Improve the Rewards for Teaching at a Research-Oriented University". Paper presented at the Annual Meeting of the American Educational Research Association: New Orleans, LA.

Abstract: A study was done to discover whether a program to change the reward structure for teaching at the University of Nebraska-Lincoln, a research-oriented university, had an impact on faculty members' perceptions of the importance of teaching. Results indicated that faculty in some departments are now more likely to perceive that somewhat less weight is given to research and publication and more to teaching in the university's tenure system. Members of some departments were more likely to agree that a climate favorable to teaching now exists in their college; that their department head spends more time talking about teaching in annual reviews; and that the evaluation system and the measure of effective teaching are adequate and valid.

Mangan, K. S. (1987). "Research Universities Urged to Upgrade Status of Teaching". Chronicle of Higher Education, 34(10), 19-23.

Abstract: The Carnegie Foundation for the Advancement of Teaching report, "The Academic Life," finds that too often teaching is undervalued on college campuses. Teachers and teaching need to be elevated in the hierarchy of the academic profession.

Martin, G. (1997). "Teachers or researchers? The perceptions of professional role among university lecturers". Innovations In Education And Training International, 34(2), 154-159.

Abstract: This paper reports on a small scale investigation into the way lecturing staff at a well established, medium-sized English university perceive their role in relation to the two main functions of teaching and research. Results are discussed in relation to three Faculty Boards and some attempt is made to establish the source of factors which influence personal perceptions.

Melland, H.I. (1996). "Great researcher ... good teacher?" Journal of Professional Nursing, (12)1, 31-38.

Abstract: The purpose of this study was to investigate the relationship between the research productivity and teaching effectiveness of baccalaureate nurse educators. This was a non-experimental, correlational, retrospective study. Sixty baccalaureate nurse educators completed a questionnaire that assessed their research productivity and administered a teaching effectiveness questionnaire to all students in their classes in a given week. No relationship of significance was found between faculty research productivity and teaching effectiveness. No significant difference was found in the teaching effectiveness between faculty employed at research, comprehensive, or liberal arts institutions. Recommendations included (1) broadening the definition of research to include the scholarship of integration, discovery, application, and teaching; (2) implementation of two career tracks for faculty in higher education, with different reward structures for each; and (3) allowing the academic department as opposed to individual faculty to be the basic unit of evaluation.

Merriam, R. W. (1988). "A Function in Trouble, Undergraduate Science Teaching in Research Universities". Journal of College Science Teaching. 18(2), 102-06.

Abstract: Discusses the standards by which professors are evaluated for advancement and the reasons why these standards are antithetical to fostering a good learning environment for students. Gives some insights into what can be done to create an atmosphere in which teaching is not the lowest priority.

Mitchell, J.E. & Rebne, D.S. (1995). "Nonlinear effects of teaching and consulting on academic research productivity". Socio-Economic Planning Sciences, 29(1), 47-57.

Abstract: This study tests the proposition that moderate amounts of faculty time spent in the non-research roles of teaching and consulting are, in fact, facilitative of research productivity; and establishes values for the point at which such activities cease to have a facilitating effect. This was done by fitting continuous piecewise-linear regression models to 1980 data pertaining to a national sample of 5605 faculty. The study illustrates the effectiveness of piecewise-linear methods relative to polynomial techniques for problems of this kind and suggests that the former approach should be more prevalent. The results indicate that up to 4 hr p/wk of consulting and up to 8 hr p/wk of teaching are indeed facilitative of research productivity. Policy implications are discussed.

Moses, I. (1990), "Teaching, Research And Scholarship In Different Disciplines". Higher Education, 19(3), 351-375.

Abstract: Australian institutions are developing and using performance indicators (number of publications, research grants, and of Ph.D. graduates) to distribute resources. Some of these are disadvantaging the Humanities. This paper addresses differences in chemistry, engineering, English, and law as they are described by other researchers.

Mullen, C. A. (2000). "Linking research and teaching" Teaching in Higher Education. 5 (1), 5-22.

Murray, J. (1998). "Integration or dichotomy of teaching and research? A case study of primary initial teacher educators". Teachers and Teaching: theory and practice. 4(1), 143-160.

Mwamwenda, T. S. (1996). "Research and publication and teaching in the promotion of university academic staff". Psychological Reports. 79(2), 599-602.

Abstract: Research, publication and teaching are among the criteria used for considering academics for promotion at institutions of higher education. 300 faculty at the University of Transkei were asked to indicate which one of the two was more important for promotion. While some indicated that teaching was more important, others indicated that both should be considered, implying perhaps they were equally important. Such results are contrary to the common practice of highly valuing research and publication for purposes of promotion in many institutions of higher education.

Neumann, R. (1992). Perceptions of the Teaching-Research Nexus: A Framework for Analysis. Higher Education, 23(2), 159-71.

Abstract: Interviews with senior academic administrators in Australian research universities concerning the relationship of teaching and research components of academic work revealed a strong belief in a symbiotic relationship with important but subtle interconnections. A three-level (tangible, intangible, and global) nexus between the two components is suggested.

Neumann, R. (1994). "The Teaching-Research Nexus: A framework for analysis", Higher Education, 23(2).

Neumann, R. (1996). "Researching the teaching-research nexus: A critical review". Australian Journal Of Education, 40(1), 5-18.

Abstract: The question of whether or not a nexus exists between the teaching and research roles of academics is often contentious and has been the subject of much research and writing over this century. This paper critically examines a large portion of this body of literature. The first section provides a historical and an organisational perspective on the evolution of the teaching and research roles of academic work. It then reviews the higher education literature which reflects three approaches to examining the teaching-research nexus: personal commentaries and analyses; correlations of measures of teaching effectiveness as measured by student evaluations and measures of research productivity based predominantly on publication counts; and surveys of academics of their work preferences, time spent on teaching and research activities and perceptions of academic rewards. The paper then presents some recent investigations of the teaching-research nexus which have attempted to take different investigative approaches, and concludes by suggesting future research directions.

Niven, C. & Cutler, M. G. (1995). "The perception of occupational stress and its relation to research and teaching among academic staff". Work and Stress, 9(4), 540-543.

Abstract: A sample of full-time teaching staff from a former polytechnic participated in a study to examine the relationships between their perception of occupational stress and their involvement in research. Information was obtained from 60% of staff approached. The mean scores on the Occupational Stress Indicator (OSI) for job satisfaction and stress-related measures of mental health and physical health did not differ significantly from data obtained in previous studies on university academic personnel. Scores on these variables were not significantly related to research activity. The degree of satisfaction and degree of stress emanating from participation in research, in teaching and in administration were separately assessed in structured interviews.

Norbeck, J. S. (1998). "Teaching, research, and service: Striking the balance in doctoral education". Journal of Professional Nursing. 14(4), 197-205.

Abstract: The concept of balance across the multiple role expectations of faculty is a relative term that should be understood in the context of the mission of a particular institution and as it relates to the external environment. Various metaphors or visual images of balance carry symbolic meanings. During this dynamic period in higher education, images of balance that suggest that creativity and the capacity for change are preferable to static forms. Models for defining balance are presented that include two levels of analysis (the individual faculty member and the institutional level) and two temporal variations (continuous balance versus balance over a period of time). Strategies identified by faculty that enhance faculty productivity included both individual and institutional characteristics. Formal faculty development activities are also described. Those aimed at the individual level include orientation, mentoring, peer expertise, and use of sabbaticals or leaves. Institutional approaches to faculty development relate to the reward structure and recognition systems and use workshops and centers for providing faculty development. Based on changes occurring in the health care system and in higher education, implications for changes in faculty roles in the future are discussed.

Noser, T. C., Manakyan, H., & Tanner, J. R. (1996). "Research productivity and perceived teaching effectiveness: A survey of economics faculty", Research in Higher Education, 37(3), 299-321.

Abstract: A national study of university economics faculty (n=343) examined the relationship between self-reported research output and teaching evaluation scores. Findings indicated a very weak relationship between research productivity and classroom performance, but institutional and individual characteristics seemed to explain some differences.

Olsen, D. & Simmons, A. (1996). "The Research versus Teaching Debate: Untangling the Relationships". New Directions for Institutional Research. 90, 31-39.

Abstract: A study at a research university on the relationship between faculty research productivity, specific instructional practices, and faculty-student contact found that faculty with strong research profiles did not avoid teaching low-level undergraduate courses, rely on lecture over active learning techniques, or use multiple-choice tests more often than others, but they also did not show better pedagogical skills.

Patrick, W. J., & Stanley, F. C. (1998) "Teaching and Research Quality Indicators and the Shaping of Higher Education", Research in Higher Education, 39(1), 19-41.

Abstract: Research and teaching quality ratings have become established in the United Kingdom, influencing the level of government funding provided to higher education institutions. The correlation between the two indicators, and possible consequences of policies that reshape the higher education sector by concentrating research resources in a limited number of institutions, are considered. Comparisons are made with the United States.

Ramsden, P. & Moses, I. (1992) "Associations Between Research And Teaching In Australian Higher Education" Higher Education, 23(3), 273-295.

Abstract: This article describes results of an empirical investigation of the relationship between research and undergraduate teaching in Australian higher education. Two

research indexes (weighted number of publications, and number of research activities) were used. Scores on a Likert-type scale of reported commitment to teaching undergraduate students formed the main criterion of teaching effectiveness. This was supplemented by student ratings in one of the aggregate-level analyses. The results revealed typically no relation or a negative relation between teaching and research at the level of the individual and at the level of the department, across all subject areas. The only exceptions concerned one group of former colleges of education. Further analysis by staff self-rating of academic quality showed that there existed one group of staff, mainly in the universities, who were committed to teaching and highly active researchers. However, the data did not support a causal interpretation of the association. The conclusion argues that there is no evidence in these results to indicate the existence of a simple functional association between high research output and the effectiveness of undergraduate teaching. Some implications for policy and student course choice are discussed.

Rogers, K.S. (1998). "Acquiring balance - Teaching, research, and reflection in the life of a practical man". Journal of Management Inquiry. 7(2), 101-108.

Romainville, M. (1996). "Teaching and Research at University: A Difficult Pairing". Higher Education Management. 8(2), 135-44.

Abstract: The assumption that the university's dual missions of research and teaching complement and stimulate one another and differentiate the university from other institutions is questioned. It is suggested that only a new way of managing the relationship between the two will enable universities to meet new challenges in growth of service tasks, cost and specialization of research, and mass education.

Rowland, S. (1996). "Relationships Between Teaching and Research". Teaching in Higher Education. 1(1), 7-20.

Abstract: Informal interviews with 12 British university department heads investigated attitudes about: the relative importance of research and teaching, both within the department and for individual faculty members; prestige associated with each; the utility of the categories "teaching" and "research" within the discipline; links between teaching and research; research directly related to teaching and learning; and implications for professional development.

Rowland, S. *et al* (1998). "Turning Academics into Teachers?" Teaching in Higher Education. 3(2), 133-141.

Rowley, J.(1996). "Developing constructive tension between teaching and research". International Journal of Educational Management. 10(2), 6-10.

Rugarcia, A. (1991). "The Link between Teaching and Research: Myth or Possibility?" Engineering Education. 81(1), 20-22.

Abstract: The idealistic picture of the professor as teacher and researcher is examined. Each section of this article presents an argument against the overemphasis on research that is widespread at universities.

Scott, P. (1991). "Beyond the Dual-Support System: Scholarship, Research and Teaching in the Context of Academic Autonomy". Studies in Higher Education. 16(1), 5-13.

Abstract: The British dual-support system for teaching and research in universities is out of date in both administrative and normative senses. Reform proposals, such as a three-tier higher education system in which only top-tier institutions would receive research support, should be assessed for their administrative and intellectual consequences.

Schachter, H. L. (1991). "Teaching versus Research: A 1910 Perspective". College Teaching. 39(2), 85-86.

Abstract: A 1910 report by Morris Cooke for the Carnegie Foundation for the Advancement of Teaching provides a historical perspective on the current debate on the role of teaching, research, and publication by college faculty. Cooke analyzed physics department efficiency in eight institutions, applying to college administration insights from the new field of factory shop management.

Serafin, A. G. (1993). "Teaching, Research, and Service: The Satisfiers of Education Faculty at Western Michigan University". Paper presented at the Research Convocation of the College of Education, Western Michigan University: Kalamazoo, MI.

Abstract: This report investigated a random sample of 54 full-time regular education faculty actively engaged in classroom activities at Western Michigan University in Venezuelan postsecondary education to learn: (1) their satisfaction levels with their role functions of teaching, research, and service; and (2) if there were differences between male and female respondents regarding teaching, research, and service. Data were collected using the English version of the Faculty Satisfaction Questionnaire. Significant differences were found between female and male respondents when they were asked about their satisfaction with teaching with males expressing more satisfaction with their teaching role.

Smeby, J. C. (1998). "Knowledge production and knowledge transmission: The interaction between research and teaching at universities". Teaching in Higher Education. 3(1), 5-20.

Abstract: Even though the interaction between teaching and research at universities is a well-studied topic, it is difficult on the basis of available studies to draw any definite conclusions concerning the character of this relationship. This study, which is based on survey data and interviews, shows that university faculty believe that their research influences their teaching and that their teaching activities have a positive effect on their teaching. They find, however, that research is more important for teaching than vice versa. The characteristics of the interaction vary between teaching on various levels and between disciplines. In general, the interaction is stronger at a graduate than at an undergraduate level. At an undergraduate level the relationship is stronger in the humanities and the social sciences than in other fields of learning, while there are no such differences at a graduate level. The finds are discussed on the basis of differences between disciplines and types of teaching.

Smith, B. & Brown, S. (Eds.) (1995). Research Teaching and Learning in Higher Education. Staff and Educational Development Series. London: Kogan.

Abstract: This collection of 18 essays are based on sessions and keynote speeches at the Staff and Educational Development Association (SEDA) Conference held at Dyffwrwn House, Cardiff (Wales) in November 1993. They represent the reworked and distilled thoughts of the presenters after they had had the experience of leading a workshop on a related topic. The papers address the conflicting demands of teaching and research faced by many faculty members, including both theoretical perspectives and accounts of

successful approaches in practice in the United Kingdom. They include: (1) "Research Teaching and Learning: Issues and Challenges" (Brenda Smith and Sally Brown); (2) "Research into Student Learning" (Graham Gibbs); (3) "Research and Learning in Higher Education" (Angela Brew and David Boud); (4) "Effect of Funding Council Policies on Teaching Quality" (Lewis Elton); (5) "Research, Teaching and Learning: A Symbiotic Relationship" (David Garnett and Roy Holmes); (6) "The Importance of Applied Research" (Peter Smith and Marshall Elliott); (7) "On Improving Learning Processes" (Frank Walkden); (8) "Competent Research: Running Brook or Stagnant Pool?" (Phil Race); (9) "A Broader Education for Research Students: Changing the Culture" (Lin Thorley and Roy Gregory); (10) "A Staff Development Programme for Supervisors of Research Students" (Ivan Moore); (11) "Research-Related Staff Development: An Approach" (Irene Harris); (12) "What Makes a Good Lecturer in Higher Education? Outcomes of a SCED/SEDA Small-Grant Project" (Sally Brown and others); (13) "Towards a Model of the Learner in Higher Education: Some Implications for Teachers" (Mike O'Neil); (14) "The Accreditation of Work-Based Research: An Action Research/Action Learning Model" (Michael Gregory); (15) "How Students Acquire Research Skills: Shaping a Degree at Bangor" (Della and John Fazey); (16) "Research Learning on the Essex MBA" (Sean McCartney and Reva Berman Brown); (17) "Towards Empowering Undergraduate Students as Action Researchers into Student Learning" (Tom Wengraf); and (18) "The Relationship between Staff and Educational Development" (Terri Kelly).

Tang, T. L. & Chamberlain, M. (1997). "Attitudes Toward Research and Teaching: Differences Between Administrators and Faculty Members". Journal of Higher Education. 68(2), 212-27.

Abstract: Factor analysis of survey data from 209 administrators and 384 faculty at six Tennessee state universities identified six distinctive attitudes concerning research orientation; teaching orientation; rewards influence research; rewards influence teaching; personal interest; and mission of the university. Analysis revealed that administrators disagreed with professors on three of these: teaching orientation, rewards influence teaching, and mission of the university.

Terenzini, P.T. & Pascarella, E.T. (1994). "Living with Myths: undergraduate education in America", Change Jan/Feb.

Turns, S. R. (1991). "Faculty Research and Teaching--A View from the Trenches". Engineering Education. 81(1), 23-25.

Abstract: An understanding of the motives behind teaching and research is developed and the harmonies and dissonances they can create are described. The relationship between intrinsic and external motives for both research and teaching are discussed.

Volkwein, J. F., & Carbone, D. A. (1994). "The Impact of Departmental Research and Teaching Climates on Undergraduate Growth and Satisfaction", Journal of Higher Education, 65(2), 147-167.

Abstract: A study at one research university investigated whether differences in departmental teaching and research climates are associated with differences in student outcomes. Results suggest departments with a balanced orientation toward research and teaching have the most favourable impact on students in terms of intellectual growth, disciplinary skills, and academic satisfaction.

Weimer, M. (1997). "Integration of Teaching and Research: Myth, Reality, and Possibility". New Directions for Teaching & Learning. 72, 53-62.

Abstract: The prevailing notion of integration of college teaching and research is more myth than reality. To make the relationship more productive, educators must change the terms, redefine research, and reorient thinking about teaching, understanding that teaching and research are distinct and not automatically linked. Institutions must implement policies reflecting broader definitions of research and more intellectual orientations to teaching.

Westergaard, J. (1991). "Scholarship, Research and Teaching: A View from the Social Sciences". Studies in Higher Education. 16(1), 23-28.

Abstract: This paper challenges British proposals to concentrate research funding in select universities. Such a policy would reinforce social inequalities of opportunity thus frustrating the purpose of widening student access. Quality teaching, especially in the social sciences, requires teacher engagement in research. Universities should reappraise the teaching/research relationship within their institutions.

Williams, R. J. P. (1991). "Science in Universities: Teaching, Research, and Autonomy". Studies in Higher Education. 16(1), 15-22.

Abstract: The interrelationship between science teaching and research in British universities is examined and such proposals as eliminating research at some universities or focusing on only those research areas which promise financial returns are criticized. Ways in which science research run by government or industry can threaten university autonomy are noted.

Wilson, R. (1998). "Report Blasts Research Universities for Poor Teaching of Undergraduates". Chronicle of Higher Education. 44(33), A12-A13.

Abstract: A commission created by the Carnegie Foundation for the Advancement of Teaching has issued a harsh indictment of undergraduate instruction at research universities in its report, "Reinventing Undergraduate Education: A Blueprint for America's Research Universities." The report suggests ten ways to improve undergraduate education. Some fear the report will have little role in causing improvements.

Woodhouse, D. (1998). "Auditing research and the research/teaching nexus". New Zealand Journal of Educational Studies , 33(1), 39-53.

Abstract: In New Zealand, there is a legal requirement that university research and teaching be closely interdependent and that most teaching be done by people who are active in advancing knowledge. In carrying out its quality audits of universities, the Academic Audit Unit (AAU) is required to audit not only the research policies and procedures of the university, but also how, it links research and teaching, and the effect of this link. This article describes the background to the establishment of the AAU and how it operates. It reviews literature relating to the research/teaching link, and notes that auditing the research/teaching link is problematic because the evidence of such a link, or its effect, is ambivalent. The AAU implements a four-step process: (i), checking that the teaching is done mainly by people involved in research; (ii), investigating whether there are policies to encourage a research/teaching link (iii), investigating whether these policies are effective; and (iv), investigating the effect of the link, in the first cycle of audits, the AAU has audited a range of academic activities, in addition to research and research-plus-

teaching. Each audit has resulted in a public report that includes comments and recommendations. The effect of the AAU in either enhancing the research/teaching link, or demonstrating its absence, will only become clear as universities respond to the AAU's audit reports as well as to other changes and influences.