

# SW 9410 Quantitative Research Methods in Social Work 3 Credits

# Master Syllabus

### I COURSE DOMAIN AND BOUNDARIES

This research course equips students with the knowledge and competence in quantitative research methods needed to conduct independent research in social work practice or social welfare policy. The purpose of this course is to prepare students to select and implement research designs that are appropriate and adequate for answering contemporary social work practice and social welfare policy research questions.

# II KNOWLEDGE AND SKILL OBJECTIVES

By the end of the semester, students will demonstrate advanced knowledge and skill in their understanding and articulation of the following:

- 1. Fundamental aspects of epistemology relevant to social work;
- 2. Application of the basic elements and phases of research design;
- 3. Ability to evaluate the quality of research conducted by others;
- 4. Facility in designing research, especially in aspects preceding data analysis.
- 5. Use criteria related to validity, reliability, feasibility, and practicality in designing a research study;
- 6. Application of basic sampling concepts, designs and decisions within research designs;
- 7. Ability to identify and to strengthen weaknesses in research logic and design;
- 8. Ability to apply ethical principles in the conduct of research, including human subjects protection, and their relationship to the social work value base;
- 9. Familiarity with gender and ethnic sensitivity in conducting research;

10. Ability to provide as well as to accept constructive and productive critiques on research issues and decisions.

### III PERFORMANCE CRITERIA

Students are expected to demonstrate their progress in basic comprehension, integration, analysis, and application of the course material through class assignments, e.g., papers, presentations, discussions, and draft/final versions of research proposal).

# IV COURSE TEXTS AND READINGS

- Fowler, F.J. (2002). Survey research methods. (3rd ed.). Newbury Park, CA: Sage Publications.
- Rubin, A. & Babbie, E. (2005). Research methods for social work (5<sup>th</sup> ed.). Belmont, CA: Wadsworth.
- Shadish, W.R., Cook, T.D. & Campbell, D.T. (2002). Experimental and quasi-experimental designs for generalized causal inference. Boston: Houghton Mifflin.

Additional Required Readings are identified in Section VIII.

# Mandatory On-Line Training on the Protection of Human Research Participants

All students will be required to complete all modules of the University's on-line training for the protection of human research participants and to submit documentation substantiating completion. Human Investigation Committee, Wayne State University. Internet WWW page at URL: http://www.hic.wayne.edu.

# V ORGANIZATION OF THE COURSE

Students are introduced to all aspects of research design preceding data analysis. Our class sessions will include informal lectures, class discussions, and student presentations. We will use a seminar format and will critique student assignments, papers and published articles. Nonetheless, this course integrates a heavy experiential learning component whereby students will learn by applying what has been studied, by receiving critical feedback on what you have done, and by attempting to improve your performance in light of that feedback.

# VI ROLE OF THE STUDENT

Students are expected to attend all class sessions; absence from class may affect student

grades, particularly excessive absences and tardiness. More than two absences will result in students being asked to withdraw from the class. Students are expected to arrive for class on time and stay until the end of the class session. Students are expected to be prepared at class time for discussions pertaining to assigned readings and in-class presentations. As a courtesy to all, cell phone use should be restricted to vibrations – no rings. Please limit beeper use to emergencies only. For further details, see the University Statement of Obligations of Students and Faculty Members of the teaching-learning process.

### VII GRADING POLICY

Final grades will be determined in the following manner:

<u>Assignment</u>	Value of Assignment (% of Total Grade)
Written Assignments	25
On-Line HIC Training	-10 points if not completed
In-Class Presentations	15
Draft of Research Proposal	20
Final Version of Research Proposal	40
Total Points	100

The following grading scale will be used to determine your final grade.

A = 95-100 A- = 90-94 B+ = 87-89 B = 83-86 B- = 78-82 E = 77 or below

# 1. Written Assignments

There are six writing assignments, each of which pertains to the development of a research proposal. The first three assignments relate to the development of a researchable question, development of hypotheses and while the second three assignments relate to the development of hypotheses and a suitable research design.

# 2. In-Class Presentations

Students will prepare 10 minute oral presentations for each of their written assignments. Each student will be required to distribute copies to all classmates of each assignment.

3. Research Proposal Draft proposal due Week 11; Final proposal due Week 14

The final assignment, building on the individual written assignments, is the preparation of a research proposal, not to exceed 25 pages, suitable for submission to a federal agency for funding (e.g., NIH, NIMH, NIAAA, NIDA, NIA, etc.). You are asked to write a research proposal utilizing one of the following research designs: survey, experiment/quasi-experiment, mixed-method, or secondary data analysis. The overall purpose of the research proposal is for students to have a "hands on" experience of writing a feasible research plan in the student's domain of knowledge. Specific goals are to (1) familiarize students with the research literature and the theoretical frameworks that undergird research in the student's chosen area of study; and (2) to provide students with the opportunity to generate researchable questions and hypotheses, select an appropriate research design; and describe the data collection methods and analysis strategies that are best for conducting research on the chosen topic.

Use the suggested outline described below.

I. <u>Abstract</u> (One page maximum). This is NIH's Description of the Study II. <u>Specific Aims</u> (Two page maximum). What are the objectives of the research? What is (are) the research question(s) that will be addressed? Why is this/are these (an) important question(s)?

The problem statement should be concise and at the same time provide the reviewer with enough information to make an informed judgment about the significance of the problem. Questions to keep in mind as you prepare the problem statement include:

- Does the problem statement convince the reviewer of the importance of the study and its broad utility for the profession?
- Does the problem have generality beyond the proposed study or the local setting?
- Has the problem been defined so that it is clear what part of the problem is being studied and what part has been excluded?
- Have you balanced the need for brevity with the need for a complete exposition of the problem?
- III. <u>Background and Rationale</u> (Five pages maximum). What previous work has been conducted related to this question? What are other relevant theoretical developments and issues? What is the conceptual framework that will be employed in your study? What is the justification or relevance for it?
- IV. Research <u>Design and Methods</u> (11 pages maximum):

- a. Hypotheses. What are the specific research hypotheses that you will test? Provide a rationale for each hypothesis.
- b. Operational Definitions. Provide operational definitions of variables. Discuss the reliability/validity of your measures.
- c. Research Design. What is the general strategy that you will employ in your research? If the research design is experimental, how will experimental/control groups be formed? If a treatment protocol is used, how will you assure that it is followed? If a survey design is used, how will data be collected. If using a mixed-methods design, describe your plan for collecting both quantitative and qualitative data. Be sure to explicitly discuss how your research plan is capable of answering your research questions. Also, discuss any threats to validity and how you will attempt to control for them.
- d. Sampling. What is your sampling plan? What are the results of your power analysis? What will you do to maximize participation/response rate? How will the sample affect external validity?
- e. Data Analysis. Describe how the data will be analyzed. Provide specific information about how each question or hypothesis will be tested.
- V. <u>Description of Project Timeline</u> (One page maximum). What are the proposed tasks and timetable for completing them.
- VI. <u>Protection of Research Participants.</u> (Two page maximum). What are the risks, if any, to study participants? What are the benefits, if any, to study participants? How will informed consent be obtained? How will you protect participant confidentiality?

In the Conceptual Framework section you should explicate the conceptual elements of your proposed study and the hypotheses, variables, and their operational definitions. Be sure to include control variables or other features that are required for the proposed research. Provide a conceptual rationale for each hypothesis. Make clear connections between this section and the problem statement.

The Measurement section of this assignment should flow smoothly from the operational definitions and should not be repetitive of them. In the measurement section, go into detail about the nature of any scales to be employed, how it is scored, what subscales it contains, and its reliability and validity. If you are proposing to measure change from

pretest to posttest, you should also include information about the sensitivity of scales.

### VIII COURSE CONTENT

# Session 1 Introduction to Course How Scientific is Social Work Research?

# <u>Readings</u>

Rubin & Babbie, Chs. 1-2

Gambrill, E. (1999). Evidence-based practice: An alternative to authority-based practice. Families in Society, 80, 341-350.

McNeece, C.A. & Thyer, B.A. (2004). Evidence-based practice and social work. Journal of Evidence-Based Social Work, 1, 7-24.

# Session 2 Epistemological Debates in the Development of Social Work Knowledge

### Readings

Heineman-Pieper, J., Tyson, K. & Heineman-Pieper, M. (2002). Doing good science without sacrificing good values: Why the heuristic paradigm is the best choice for social work. Families in Society: The Journal of Contemporary Human Services, 83, 15-28.

Thyer, B. (2001). Point/Counterpoint: What is the role of theory in research on social work practice? Journal of Social Work Education, 37, 9-25.

Gomory, T. (2001). A fallabilistic response to Thyer's theory of theory-free empirical research in social work practice. Journal of Social Work Education, 37, 26-50.

See also Fall 2002 issue of Journal of Social Work Education, 38(3).

Bolland, K. & Atherton, C. (2002). Heuristic versus logical positivism: solving the wrong problem. Families in Society: The Journal of Contemporary Human Services, 83, 7-13.

Atherton, C. & Bolland, K. (2002). Postmodernism: A dangerous illusion for social work. International Social Work, 45, 421-433.

Riger, S. (1992). Epistemological debates, feminist voices: Science, social values, and the study of women. American Psychologist, 47, 730-740.

# Assignment 1

Write a one page description of a research question that interests you (You might discuss this with your adviser). What is the question? Why is this a problem? What is the relevance of this question to social work theory, practice or policy? In general, what do you know about this question and how do you know it? Be prepared to do a 10 minute class presentation.

Session 3 Formulating a Research Question, Hypotheses; Variables and Operation Definitions

Present Assignment 1

## Readings

Rubin & Babbie, Chs. 4-6 (Ch. 6 through p. 182) Fowler, Chs. 5-6

Somlai, A.M., Kelly, J.A., Wagstaff, D.A., & Whitson, D.P. (1998). Patterns, predictors, and situational contexts of HIV risk behaviors among homeless men and women. Social Work, 43, 7-20.

Buttell, F. P. & Carney, M. M. (2005). Do batterer intervention programs serve African American and Caucasian batterers equally well? An investigation of a 26-week program. Research on Social Work Practice, 15, 19-28.

### Assignment 2

Briefly describe a potential conceptual/theoretical framework that you might employ in your proposed study (1-2 para.) Write the research question(s) investigated to be investigated in the study. Draw a flow chart to indicate how study constructs are related to each other. Include constructs that are related to the phenomenon being studied but which may not be investigated in the study. Write the hypotheses for the study. What are the experiential, empirical, or theoretical bases for these hypotheses? Be prepared to do a 10 minute class presentation.

Session 4 Measurement and Instrumentation; Reliability and Validity; Cultural Sensitivity in Measurement

Present Assignment 2

# Readings

Rubin & Babbie, Chs. 6 (p. 182-205), 7 Shadish, Cook & Campbell, Chs. 2-3

Pike, C. K. (2002). Measuring video gambling: Instrument development and validation. Research on Social Work Practice, 12, 389-407.

Kumar, K. & Blyerlein, M. (1991). Construction and validation of an instrument for measuring ingratiatory behaviors in organizational settings. Journal of Applied Psychology, 76: 619-627.

Tyson, E. H. & Glisson, C. (2005). A cross-ethnic validity study of the shortform assessment for children (SAC). Research on Social Work Practice, 15, 97-109.

O'Hare, T. & Sherrer. M. V. (2005). Assessment of youthful problem drinkers: Validating the context scale (DCS-9) with freshman first offenders. Research on Social Work Practice, 15, 110-117.

# Assignment 3

Revise the research question(s) that you will be using for your research proposal. List your major concepts. Diagrammatically represent the hypothesized relationships among these concepts. Write the hypotheses that you would predict for this research question. Provide a concise description of any instrument or scales that you would propose to use in your study. What are the major potential threats to internal and external validity in your study? How will you address these threats? Discuss the validity and reliability of the proposed measures. Briefly describe the ways in which your proposed measures are sensitive to the particular needs/concerns of the population you propose to study.

Be prepared to do a 10 minute class presentation.

Session 5 Sampling Methods Across Different Research Designs; Recruitment and Retention of Minority and Oppressed Populations; Effect Size; Statistical Power

Present Assignment 3

#### Readings

Rubin & Babbie, Chs. 8 Fowler, Chs. 2-3 Shadish, Cook & Campbell, Ch. 9-10

Hoenig, J.M. & Heisey, D.M. (2001). The abuse of power: The pervasive fallacy of power calculations for data analysis. The American Statistician,

55, 19-24.

Hsieh, F.Y., Block, D.A., & Larsen, M.D. (1998). A simple method of sample size calculation for linear and logistic regression. Statistics in Medicine, 17, 1623-1634.

Areán, P.A., Alvidrez, J., Nery, R., Estes, C. & Linkins, K. (2003). Recruitment and retention of older minorities in mental health services research. The Gerontologist, 43, 36-44.

Watters, J.K. & Biernacki, P. (1989). Targeted sampling: Options for the study of hidden populations. Social Problems, 36, 416-430.

# Assignment 4

Prepare a two-page paper describing the sampling method and sampling strategy to be used in your proposed study. Please provide the rationale for the selection of your sampling design. Also, consider the generalizability (external validity) of study results based on your proposed sampling design.

# Session 6 Conducting Ethical and Culturally Competent Research

Present Assignment 4

### Readings:

Rubin & Babbie, Ch. 3, 16 Fowler, Ch. 9

IRB Process at Wayne State University

# Assignment 5

<u>Completion of WSU On-Line Training for the Protection of Human Research Participants</u>. Students must submit documentation of completion of all modules.

# Session 7 Choosing an Appropriate Research Design

#### Readings:

Rubin & Babbie, Chs. 9-11

### Assignment 6

Prepare a two-page description of the research design that you propose to utilize in your study. Please provide the rationale for the selection of your research design. Also, consider the generalizability (external validity) of

study results based on your proposed research design.

Session 8 Non-Experimental Research: Surveys

Present Assignment 6

Readings:

Fowler, Chs. 1,4,7,8

# Assignment 7:

For students proposing survey research: Write a five-page paper describing your research question, hypotheses, study variables, procedures used to operationalize these variables, research design and data collection methods and procedures. What are the major potential threats to internal and external validity in the study? How do you propose to address these threats? Be prepared to do a 10 minute class presentation.

Session 9 Non-Experimental Research: Mixed Methods Research; Participatory Research; Meta-Analysis; Secondary Data Analysis

# Readings:

Babbie, Ch. 15

Select a meta-analysis from the Cochrane Collaborative on a topic of interest to you (http://www.cochrane.org/index.htm).

Ozawa, M.N. & Yoon, H. (2005). "Leavers" from TANF and AFDC: How do they fare economically? Social Work, 50, 239-249. Choi, N.G. (2003). Coresidence between unmarried aging parents and their adult children: Who moved in with whom and why? Research on Aging, 25, 384-404.

Choi, N.G. (1999). Determinants of frail elder's lengths of stay in Meals on Wheels. The Gerontologist, 39, 397-404.

Edmond, T., Sloan, L., & McCarty, D. (2004). Sexual abuse survivors' perceptions of the effectiveness of EMDR and eclectic therapy. Research on Social Work Practice, 14, 259-272.

### Assignment 7:

For students proposing mixed methods research, meta analysis or secondary data analysis: Write a five-page paper describing your research question, hypotheses, study variables, procedures used to operationalize these

variables, research design and data collection methods and procedures. . What are the major potential threats to internal and external validity in the study? How do you propose to address these threats? Be prepared to do a 10 minute class presentation.

# Session 10 Non-Experimental Research: Program Evaluation

Present Assignment 7

### Readings:

Babbie, Ch. 13

Lynam, D.R., Milich, R., Zimmerman, R., Novak, S.P., Logan, T.K., Martin, C., Leukefeld, C., & Clayton, R. (1999). Project DARE: No effects at 10-year follow-up. Journal of Counseling and Clinical Psychology, 67, 590-593.

Mulroy, E.A. & Lauber, H. (2004). A user-friendly approach to program evaluation and effective community interventions for families at risk of homelessness. Social Work, 49, 573-586.

### Assignment 7:

For students proposing a program evaluation design: Write a five-page paper describing your research question, hypotheses, study variables, procedures used to operationalize these variables, research design and data collection methods and procedures. What are the major potential threats to internal and external validity in the study? How do you propose to address these threats? Be prepared to do a 10 minute class presentation.

# Session 11 Experimental Designs

Present Assignment 7

### Readings

Shadish, Cook & Campbell, Chs. 1, 8, 14

Delva, J., Allgood, J., Morrell, R. & McNeece, C.A. (2002). A statewide follow-up study of alcohol and illegal drug use treatment. Research on Social Work Practice, 12, 642-652.

Foster, L., Brown, R., Phillips, B. & Carlson, B.L. (2005). Easing the burden of caregiving: The impact of consumer direction on primary informal caregivers in Arkansas. The Gerontologist, 45, 474-485.

Fraser, M.W., Day, S.H., Galinsky, M.J., Hodges, V.G., & Smokowski, P.R. (2004). Conduct problems and peer rejection in childhood: A randomized trial of the Making Choices and Strong Families Programs. Research on Social Work Practice, 14, 313-324.

Martsch, M.D. (2005). A comparison of two group interventions for adolescent aggression: High process versus low process. Research on Social Work Practice, 15, 8-18.

Gutheil, I.A. & Heyman, J.C. (2005). Communication between older people and their health care agents: Results of an intervention. Health and Social Work, 30, 107-116.

# Assignment 7

Describe the research question, study hypotheses, variables investigated in the study, and research design.

For students proposing an experimental design: Write a five-page paper describing your research question, hypotheses, study variables, procedures used to operationalize these variables, research design and data collection methods and procedures. What are the major potential threats to internal and external validity in the study? How do you propose to address these threats? Be prepared to do a 10 minute class presentation.

# Session 12 Quasi-Experimental Designs

Present Assignment 7

### Readings:

Shadish, Cook & Campbell, Chs, 4-6

Costello, E. J., Compton, S. N., Keeler, G., & Angold, A. (2003). Relationships between poverty ad psychopathology: A natural experiment. JAMA: Journal of the American Medical Association, 290, 2023-2029.

Lutwack-Bloom, P., Wijewickrama, R., & Smith, B. (2005). Effects on pets versus people visits with nursing home residents. Journal of Gerontological Social Work, 44, 137-159.

# Assignment 7:

For students proposing a quasi- experimental design: Write a five-page paper describing your research question, hypotheses, study variables, procedures

used to operationalize these variables, research design and data collection methods and procedures. What are the major potential threats to internal and external validity in the study? How do you propose to address these threats? Be prepared to do a 10 minute class presentation.

# Session 13 Writing a Research Proposal Session 14

Readings:

Babbie, Ch. 22

Final version of Research Proposal due Session 14

# IX BIBLIOGRAPHY

- Austin, D. M. (1999). A report on progress in the development of research resources in social work. Research on Social Work Practice, 9(6), 673-707.
- Berger, P. & Luckmann, T. (1967). The social construction of reality: A treatise in the sociology of knowledge. Garden City, NY: Anchor Books.
- Berger, R. (1997). The common logic of research and practice in social work. Social Work and Social Sciences Review, 7(2), 112-121.
- Bloom, M, Fisher, J. & Orme, J. (1996). Evaluating practice: Guidelines for the accountable professional (2<sup>nd</sup> ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Campbell, D. T. and Stanley, J. C. (1963). Experimental and quasi-experimental designs for research. Chicago: Rand McNally.
- Cohen, J. (1988). Statistical power analysis for the behavioral sciences. New York: Academic Press.
- DePoy, E., Hartman, A. & Haslett, D. (1999). Critical action research: A model for social work knowing. Social Work, 44(6), 560-568.
- DeVellis, R.F. (1991). Scale development: Theory and applications. Newbury Park, CA: Sage Publications.
- Fook, J. (Ed.). (1996). The reflective researcher. St. Leonards, Australia: Allen & Unwin.
- Fowler, F. J. (1995). Improving survey questions: Design and evaluation. Thousand Oaks, CA: Sage Publications.

- Gibbs, A. (2001). The changing nature and context of social work research. British Journal of Social Work, 31(5), 687-704.
- Gibbs, L. E. (1991). Scientific reasoning for social workers: Bridging the gap between research and practice. New York: Merrill.
- Gil, E. F., & Bob, S. (1999). Culturally competent research: An ethical perspective. Clinical Psychology Review, 19(1), 45-55.
- Gilsson, C., & Gillespie, D. F. (1993). Toward the development of quantitative methods in social work research. Journal of Social Service Research, 16(1/2), 1-10.
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- Jaccard, J. & Becker, M. (2002). Statistics for the behavioral sciences (4<sup>th</sup> ed.). Belmont CA: Wadsworth/Thomson Learning.
- Kerlinger, F.N. & Lee, H.B. (2000). Foundations of behavioral research (4<sup>th</sup> ed.). New York: Holt, Reinhart and Winston.
- Kirk, S.A. & Reid, W. J. (2002). Science and social work. New York: Columbia University Press.
- Koeske, G.F. (1994). Some recommendations for improving measurement validation in social work research. Journal of Social Service Research, 18(3/4), 43-73.
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- Lipsey, M.W. (1990). Design sensitivity: Statistical power for experimental research. Newbury Park, CA: Sage Publications.
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- Massat, C. & Lundy, M. (1997). Empowering research participants. Affilia Journal of Women and Social Work, 12, 33-56.
- McDunn, C. & Chadwick, G. (1999). Protecting study volunteers in research: A manual for investigative sites. Boston: Center Watch, Inc.

- Meehl, P.E. (1997). Credential persons, credentialed knowledge. Clinical Psychology: Science in Practice, 4, 91-98.
- Mertler, C.A. & Vannatta, R.A. (2005). Advanced and Multivariate Statistical Methods: Practical Application and Interpretation (3<sup>rd</sup> ed.). Los Angeles: Pyrczak Publishing.
- Miller, D.C. & Salkind, N. J. (2002). Handbook of research design and social measurement (6<sup>th</sup> ed.). Newbury Park, CA: Sage Publications.
- Morris, T. (1994). Alternative paradigms: A source for social work practice research. Arete, 18(2), 31-44.
- Ogles, B.M., Lunnen, K.M., & Bonesteel, K. (2001). Clinical significance: History, application, and current practice. Clinical Psychology Review, 21, 421-446.
- Orcher, L.T. (2005). Conducting research: Social and behavioral science methods. Glendale, CA: Pyrczak Publishing.
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- Patten, M.L. (2005). Proposing empirical research. (3<sup>rd</sup> ed.). Los Angeles: Pyrczak Publishing.
- Potocky, M. & Rodgers-Farmer, A. Y., Eds. (1998). Social work research with minority and oppressed populations. Binghamton, NY: Haworth Press.
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- Safyer, A.W., Griffin, M.L., Colan, N.B., Alexander-Brydie, E., & Rome, J.Z. (1998). Methodological issues when developing prevention programs for low income, urban adolescents. Journal of Social Service Research, 23(3/4), 23-46.
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- Tyson, K. (1995). New foundations for scientific social and behavioral research: The heuristic paradigm. Boston: Allyn and Bacon.
- Uehara, E., Sohng, S., Bending, R., Seyfried, S., Richey, C., Morelli, P., Spencer, M., Ortega, D. Keenan, L., & Kanuha, V. (1996). Towards a value-based approach to multicultural social work research. Social Work, 41(6), 613-621.
- Weinbach, R.W. (2005). Evaluating social work services and programs. Boston: Pearson Education, Inc.
- Westerfelt, A., & Dietz, T.J. (2005). Planning and conducting agency-based research (3<sup>rd</sup> ed.). Boston: Pearson Education, Inc.