Qualitative and Quantitative Research Methods in Psychology

In Brief

Course time: 8 ECTS units (credits), September 2017 to March 2018.

Location: HSE Psychology department. Volgogradsky prosp. 46B (Tekstilshiki), room 227.

Teachers:

- **Lectures**: Evgeny Osin (Ph.D., Associate Prof.), e-mail: evgeny.n.osin@gmail.com, phone (urgent matters) +7 (916) 631-5719. Office: Room 219, Volgogradsky prosp. 46B; hours: Monday 18.00-19.30.
- **Seminars**:
  - **Applied Social Psychology**: Tatyana Ryabichenko (tanarimail@gmail.com);
  - **Cognitive Science**: Ivan Pozdnyakov (e-mail: bucherr@ya.ru);
  - **Counselling Psychology, Personology**: Victoriya Ovsyannikova (v.ovsyannikova@gmail.com).

Place of the Course in the Program Structure

The course reviews the principal steps taken during a psychological research study and aims to provide students with the knowledge and competencies necessary to plan and conduct research projects of their own leading to M.Sc. dissertation and scientific publications.

This course is required as part of three M.Sc. programs, “Applied Social Psychology”, “Cognitive Sciences and Technologies: From Neuron to Cognition”, and “Consulting Psychology, Personology.” This course is a general introductory part of the integral research training constituted by an ensemble of courses provided within the scope of each program:

A) **Research Seminars** are practical hands-on sessions aimed to develop the most indispensable research skills. They are provided within each M.Sc. program and do not constitute a part of this course. At the Research Seminars you will learn how to:

- do literature search using the electronic resources available at the HSE,
- use reference managers and mind-maps to structure the research material,
- structure and write theoretical reviews and research proposals,
- prepare your papers for publication according to the APA standards.

B) **Advanced Courses** are aimed to develop practical skills of using advanced quantitative and qualitative research methods specific to the context of each program (e.g., latent variable modeling, working with large-scale databases and hierarchically structured data for Applied Social Psychology, or using time series analysis and spatial visualization of data for Cognitive Science).

Some of the topics of research seminars and advanced courses will be given a brief review within this course to give you some preliminary guidance to practical research steps and general understanding of the aims and scope of advanced methods, as much as is necessary to understand other people's research and to start planning your own research projects.

Course Objectives

Within this course you will:

- learn about the principal steps of a research project in Psychology, as well as the choices that each step involves and the different possibilities that exist;
- learn about the possibilities and limitations of quantitative, qualitative, and mixed-methods approaches in application to different research questions;
- learn to formulate research questions and develop them into testable hypotheses;
- explore the possibilities of data collection and different approaches to sampling, learn to choose an appropriate sampling approach for your research question;
- learn about the different paradigms of measurement in psychology and ways to apply the essential psychometric criteria to evaluate the quality of a quantitative measurement approach;
- study the common experimental, quasi-experimental, and non-experimental plans and learn to evaluate research plans, discover and prevent the associated threats to data validity;
- practice in preparing your quantitative data for analysis, evaluating data quality, working with missing data;
- learn about the possibilities and limitations of conventional statistical hypothesis testing approaches and criteria, as well as some contemporary multivariate statistical methods;
- learn to choose and apply in practice a set of appropriate statistical tests for your research question.

Prerequisites

You are expected to have some knowledge of basic statistics and research methods at an undergraduate level. Though the course includes a review of some undergraduate material, it is assumed that the students already have a basic understanding of the key concepts (such as probability, distribution, sampling, reliability, validity). Please plan your time to allow for extra reading in case you do not have an undergraduate background in social sciences.

Curriculum Overview

Course Units	Approx. number of academic hours[x]		
	Lectures	Seminars & Practice	Coursework (on your own)
Module 1 (September – October)	10	20	70
1. Human being as a challenge: Research paradigms in psychology	2 26.09	2	8
2. Planning your research: Reviews, hypotheses, and ethical pitfalls	2 03.10	4	8
3. Getting your data: Sources and samples	2 10.10	4	12
4. Psychological measurement: Psychometrics and psychophysics	4 17-31.10	6	16
Module 2 (November – December)	12	16	60
5. Research plans 1: Experiments	3 7-14.11	4	12
6. Research plans 2: Quasi-experimental and non-experimental plans	3 14-21.11	4	16
7. Quantitative methods 1: Testing statistical hypotheses	3 28-05.12	6	22
8. Quantitative methods 2: Comparing samples and looking for associations	3 05-12.12	6	22
Module 3 (January – March)	18	24	74
9. Quantitative methods 3: Analysis of variance and regression models	6	6	20
10. Quantitative methods 4: Multivariate exploratory and confirmatory methods	6	8	24
11. Qualitative Methods[*]	4	8	24
12. Mixed-methods research	2	2	6
Total course time	40	60	204

[x] In Russia, one unit of study time ("academic hour") equals 40 minutes.
[*] For "Cognitive Science…" students the last two units of the course may be replaced by program-specific material.

The table lists the number of lecture and practical session hours per each unit (topic). The approximate number of hours you will need for reading and completing home assignments on your own is given in the last column. Please allow more time if you do not have an undergraduate research methods background.

Course Content

Each unit supplied with a description of material to be covered in the lectures, a list of sources that cover that material (recommended reading), and some additional sources (supplementary reading for advanced study or focusing on specific issues); complete references are provided in the Course Literature section.

Because students have very different background, you are recommended to choose the material that is most appropriate to your existing level of knowledge. Skim through the pages that contain the things you are already familiar with and focus on the things you don't understand well. What you need is a working knowledge of the key concepts that would allow you to apply them while performing practical assignments and then in your actual research. In case of doubt, please refer to your seminar leaders for advice.

The reading materials are to be found on Google Drive in the Course Reader folder. The files are labelled by author & year. There are also references to chapters from collected volumes: 1) Reis & Judd, 2000; 2) Schinka & Velicer, 2003; 3) Robins et al. (Robins, Fraley, & Krueger), 2007; 4) Smith, 2009; 5) Davis, 2003; 6) Camic et al. (Camic, Rhodes & Yardley), 2003; 7) Marks & Yardley, 2004.

1. Human being as a challenge: Research paradigms in psychology

Scientific method and the criteria of science in psychology. The complexity of human beings: humans as evolving biological, social, and cultural beings. A systemic multilevel perspective on human behavior. Holism and reductionism in psychology. Complexity of research methods as a function of degrees of freedom of the reality studied. Psychology and the problem of free will.

The problem of 'objectivity' and the evolution of research paradigms in psychology. Positivist and alternative (postpositivist) paradigms: philosophical assumptions and consequences for methodology. Nomothetic, hermeneutic, and idiographic approaches to research and explanation. Qualitative and quantitative methods.

Recommended reading:

Sheldon, 2004, Chapter 2 (p. 14-33).
McGrath & Johnson, 2003 (Chapter 3 in Camic et al., 2003).
Ponterotto, 2005.

Supplementary reading:

Michell, 2003.
Madsen, 1988, p. 571-577.

2. Planning your research: Theories, hypotheses, and potential pitfalls

The stages of scientific research process and types of research studies. Where do research questions come from? Levels of scientific theories and the place of theory in psychological research. Formulating good hypotheses. Operationalizing your research question: seven methodological steps.

Doing literature reviews: choose keywords, find material, structure it, write it up. How to find out quickly what's happening in a field of research: three practical ways to do it. Types of research publications: which ones can we trust? Five questions to assess the quality of a literature review.

Research ethics. Academic integrity and its violations. Plagiarism and ways to avoid it. Ethical guidelines for psychological research involving human participants or animals. Ethical guidelines for scientific publications.

Recommended reading:

Madsen, 1988, p. 25-29, 47-51, 56-61 (Structure of scientific theories)
Miller, 2003 (Chapter 7 in Davis, 2003) (Ethics in experiments).
APA, 2010, pp. 11-20 (Publication ethics).

Supplementary reading:

Madsen, 1988, p. 30-39, 43-47, 51-56.
Eisenberg, 2000 (Chapter 2 in Stenberg, 2000)
Sternberg, 2006: Chapter 3 (Quality criteria for a theory article).
International Test Commission, 2014 (Guidelines on ethical test use in research).

3. Getting your data: Sources and samples

Sources of psychological data: behavior, physiological processes, activity products, self-reports, peer reports, biographical and archival data. A review of data collection methods: observation, interviews, focus groups, surveys, objective physiological measurements, using archival data.

Sample as an indicant of general population: representativeness and sample bias. Law of large numbers and the importance of sample size. Random variables and distributions. A review of descriptive statistics. Normal distribution as an ideal: properties of normal and standard normal distributions. Standard error (of the mean) as a function of sample size.

Sampling. The advantages and limitations of systematic approaches (random sample, systematic random sample, stratified sample, cluster sample, multi-stage strategies) and opportunistic approaches (snowball sample, convenience sample, self-selecting sample, theoretical sampling). Volunteer bias. Internet samples: limitations and possibilities. Developing an online study the easy way (using ready-made interface) and the hard way (from scratch): technical challenges vs. research possibilities.

Recommended reading:

Howitt & Cramer, 2011, p. 232-246 (Samples).

Supplementary reading:

Bakeman, 2000 (Chapter 7 in Reis & Judd, 2000) (Observation)
Cramer, 2007 (in Robins, Fraley, Krueger, 2007) (Archival method)
Diamond & Otter-Henderson, 2007 (in Robins, Fraley, Krueger, 2007) (Physiological measures)
Fraley, 2007 (in Robins, Fraley, Krueger, 2007) (Internet studies)
Wilkinson, Joffe, & Yardley, 2004 (Interviews and focus groups)

4. Psychological measurement: Psychophysics and Psychometrics

Subjective measurements in psychology and related sciences: psychophysics and psychometrics. The notion of scale and Stevens' classification (nominal, ordinal, interval, and ratio scales). A review of psychophysical methods. Threshold detection: method of adjustment, method of limits, method of constant stimuli, adaptive method. Signal detection theory. Representational theory of measurement as a basis for psychophysics and its critique: 'operational' and 'classical' approaches to measurement.

Psychometrics. Thurstone, Guttman, Likert scales. Varieties of rating scales and associated biases. Measurement result as a random variable. Random error. Inverse relationship of reliability and "standard error" (random error) in classical test theory (CTT). Assessing reliability: Cronbach's alpha and other methods. Assumptions and limitations of classical test theory. The concept of systematic error (bias). Rasch model and advantages of Item Response Theory.

Measurement validity: the notions of construct validity, operational validity, convergent and discriminant (divergent) validity, structural validity, criterial validity, predictive validity, face validity, expert validity. Ways to establish validity of a measure; multitrait-multimethod approach; nomological network. Formulating items to reduce random error. Varieties of systematic error (biases) in self-reports and ways to prevent them. Norms, standard scales, and conversion formulae. Steps to develop a psychometric instrument.

Recommended reading:

Ehrenstein & Ehrenstein, 1999
Michell, 1986
John & Benet-Martinez, 2000 (in Reis & Judd: Construct validation)
Paulhus & Vazire, 2007 (Self-report biases)

Supplementary reading:

Stevens, 1958
Michell, 2000
Kline, 2000, p. 29-40 (Reliability, Standartization), 41-45 (Psychophysics vs. psychometrics), 70-77 (Guttman, Thurstone, Likert scales)
John & Soto, 2007 (in Robins, Fraley, Krueger, 2007) (Alpha coefficient)
Simms & Watson, 2007 (in Robins, Fraley, Krueger, 2007) (Rating scales, IRT)

5. Research plans 1: Experiments

Causal and non-causal hypothesis. Necessary conditions for causal inference. The logic of experimentation. Variables: independent, dependent, and extraneous (confounding) variables; typical examples. Typical experimenter and respondent biases and ways to control them (double blind method, deception, hidden experiment, post-experimental control). Validity of experiments: ideal experiment as a validity reference point. Classification of experiments by goal, by setting, and by relation to practice.

Experimental designs and factors that jeopardize internal and external validity. Pre-experimental designs vs. true experimental designs. Between-groups designs and within-

groups designs. Experimental control in between-group designs: controlling group non-equivalence (randomization, matching, etc.). Experimental control in within-group designs: controlling time / position effects (randomization, counterbalancing, etc.).

Factorial experiments. Mixed plans: time-group interactions. Fixed and random factors. Theoretically predicted factors, factors as covariates (reducing error variance), factors to control for contextual effects. Intentional confounding: Latin squares. Statistical approaches to analyze experimental data.

Recommended reading:

Shadish, Cook, & Thomas, 2002, p. 3-18 (Causality)
Campbell & Stanley, 1963, p. 5-34 (Pre-experimental and experimental plans)
Smith, 2000 (in Reis & Judd, 2000).

Supplementary reading:

Goodwin, 2010, Ch. 5-8 (Experimentation explained in an easy way)
Saville & Buskist, 2003 (in Davis, 2003) (Small-N designs).

6. Research plans 2: Quasi-experimental and non-experimental plans

Quasi-experimental plans: manipulation without complete control. Typical plans and examples. Small-N designs: using idiographic approach in experimental settings.

Non-experimental (correlational) studies. Correlations: the place of correlational analysis in a correlational study. Cross-sectional (between-groups) designs, longitudinal (within-group) designs, and mixed (multiple cohort longitudinal) designs. Ex post facto designs.

Specific non-experimental plans. Twin studies: shared genes and shared environment as independent variables; heritability coefficients. Cross-cultural studies: culture as independent variable; the problems of equivalence and sources of bias.

Recommended reading:

Campbell & Stanley, 1963, p. 34-71 (Quasi-experimental plans)
Goodwin, 2010, Ch. 10 (Examples of quasi-experimental plans)
Benet-Martinez, 2007 (in Robins, Fraley, Krueger, 2007) (Cross-cultural studies and measurement equivalence).

Supplementary reading:

West, Biesanz, & Pitts, 2000 (in Reis & Judd) (More examples of quasi-exp.)
Krueger & Tackett, 2007, p. 62-67 (in Robins, Fraley, Krueger, 2007) (Twin studies).
Field, 2005. Ch. 4 (Correlation)

7. Quantitative methods 1: Testing statistical hypotheses

A review of statistical hypothesis testing. The null-hypothesis testing debate. Effect size and statistical power. Determinants of statistical power. Equations linking effect size and statistical significance. Meta-analysis: principles, steps, and examples.

Preparing your data for analysis. Checking data quality. Exploratory data analysis. Analyzing distributions: criteria of a normal distribution. Distribution problems and ways to cope with them. Dealing with outliers. Data transformations.

Handling missing data. MCAR, MAR, NMAR conditions. Traditional approaches (listwise, pairwise, mean substitution, single imputation) and robust approaches (model-based full-information maximum likelihood, data-based expectation maximization and multiple imputation).

Recommended reading:

Kirk, 2003, p. 83-90 (Critique of null-hypothesis testing approach), 98-100 (Example)
Rosenthal & DiMatteo, 2001 (Meta-analysis)
Tabachnik & Fidell, 2007, Chapter 4 (Preparing data for analysis, outliers)
Graham, Cumsille, Elek-Fisk, 2003 (in Schinka & Velicer, 2003) (Missing data).

Supplementary reading:

Behrens & Chong-ho Yu, 2003 (Chapter 2 in Schinka & Velicer, 2003)
Fidell & Tabachnick, 2003 (Screening data: More accessible)
Field & Gillett, 2010 (Practical meta-analysis in SPSS)
Wilcox, 2003 (in Schinka & Velicer) (Statistical power, robust estimators, bootstrapping)
McClelland, 2000 (in Reis & Judd: Detecting nasty data)

8. Quantitative methods 2: Comparing samples and looking for pairwise associations

A summary review of elementary statistical criteria and their assumptions. Criteria for nominal data (cross-tables), parametric sample comparisons (Student t, ANOVA), nonparametric sample conparisons (Mann-Whitney, Wilcoxon, Kruskal-Wallis), inter-rater agreement (reliability, Cohen's kappa), correlations (Guilford's phi, pont-biserial, Spearman, Pearson). The relationship between linear regression and Pearson product-moment correlation coefficients. Coefficient of determination. Comparing effect sizes in parametric and nonparametric tests. Recent developments in exploring associations: distance correlation and maximal information coefficient.

Writing up your results in APA style: the general structure of a quantitative research report. Presenting your data in the form of text, tables, and figures: useful suggestions. Visualizing different types of data.

Recommended reading:

Tabachnik & Fidell, 2007, Ch. 3 (Review of univariate and bivariate statistics)
APA, 2010, pp. 21-40 (Structure of a research paper), 125-160 (Displaying data).

Supplementary reading:

Field, 2005. Ch. 7 (Comparing means), 13 (Non-parametrics), 16 (Categorical data).
Reshef, 2011.
Clark, 2013.
Hallgren, 2012.

9. Quantitative methods 3: Analysis of variance and regression models

Models of associations of 3 variables. Multiple regression: purpose, assumptions and limitations, steps, presenting results. Dummy coding and effect coding. Simultaneous and sequential (hierarchical) linear regression.

General linear model as a general framework for ANOVA and regression. ANCOVA: purpose, assumptions and limitations, steps, interpreting results, presenting results. MANOVA: purpose, assumptions and limitations, steps, interpreting results, presenting results. Using (M)AN(C)OVAs to analyze repeated-measures experimental data. Nesting.

Testing for simple moderation using GLM/ANOVA and hierarchical linear regression. Mediation: criteria and ways to establish. Complex hypotheses (moderated mediation and mediated moderation). Path analysis. Regression and causality.

Recommended reading:

Tabachnik & Fidell, 2007, Ch. 5 (Multiple regression).
Tabachnik & Fidell, 2007, Ch. 6 (ANCOVA), 7 (MANOVA).

Supplementary reading:

Tabachnik & Fidell, 2007, Ch. 10 (Logistic regression).
Field, 2005 (if Tabachnik & Fidell are too hard).
Wegener & Fabrigar, 2000 (in Reis & Judd), p. 433-439 (Modelling causality).

10. Quantitative methods 4: Multivariate exploratory and confirmatory methods

Establishing dimensions. Principal components analysis and factor analysis: assumptions & limitations, requirements, caveats, steps, and data interpretation. Criteria for choice of the number of factors: Kaiser's criterion, scree plot, parallel analysis, minimum average partial. Canonical correlation analysis, multidimensional scaling: aims and possibilities. Exploratory factor analysis tools for dichotomous and ordinal data.

Classification. Hierarchical cluster analysis: algorithms, metrics, challenges & limitations. K-means classification. Person-oriented approach: analyzing individual patterns of change in longitudinal data. Latent profile analysis, latent class analysis, and latent transition analysis: general idea. The notion of discriminant analysis.

Advanced modelling approaches. Structural equation modeling: aims and possibilities, limitations & caveats. Path models and latent variable models. Model specification, model fit assessment, nested models, modification indices. Applications of confirmatory factor analysis

in psychology. Artifacts resulting from data aggregation. Intraclass correlation. Addressing hierarchically structured data using multilevel models: regression-based and latent variable-based approaches.

Recommended reading:

Tabachnick & Fidell, 2007, Ch. 13 (PCA and FA).
Milligan & Hirtle, 2003 (in Schinka & Velicer, 2003) (Cluster analysis).

Supplementary reading:

Tabachnik & Fidell, 2007, Ch. 9 (Discriminant analysis), 12 (Canonical correlation).
Bartholomew et al., 2008, Chapter 3 (Multidimensional scaling).
Geiser, 2013, Ch. 3 (CFA), Ch. 5 (Multilevel regression), Ch. 6 (Latent class analysis).
Wegener & Fabrigar, 2000 (in Reis & Judd).

11. Qualitative Research

Advantages of qualitative approach. Steps of a qualitative study: choosing material, selection principle, analysis approach. Extracting meaning at different levels: descriptive phenomenological analysis, interpretative phenomenological analysis, thematic analysis and qualitative content analysis, quantitative content analysis. Software for content analysis and thematic analysis. Critical discourse analysis. Procedures for establishing validity of qualitative data.

Strengths and limitations of quantitative, qualitative, and mixed-methods approaches. Aims of mixed-methods approaches. Ways to unite the two paradigms. Examples of integration of qualitative and quantitative approaches: repertoire grids, ultimate concerns technique. The current directions and nearest perspectives of research methods in psychology.

Recommended reading:

Yardley, 2008 (in Smith, 2008) (Validity of qualitative data)
Willig, 2008b, p. 150-152 (What makes a good qualitative study)

Supplementary reading:

Giorgi & Giorgi, 2008 (Descriptive phenomenological analysis)
Smith & Osborn, 2008 (Interpretative phenomenological analysis)
Charmaz, 2008 (Grounded theory)
Willig, 2008a (Discourse analysis)
Hsieh & Shannon, 2005 (Content analysis varieties)
Braun & Clarke, 2006 (Thematic analysis)

12. Mixed-Methods Research

Strengths and limitations of quantitative, qualitative, and mixed-methods approaches. Aims of mixed-methods approaches. Ways to unite the two paradigms. Examples of integration of

qualitative and quantitative approaches: repertoire grids, ultimate concerns technique. The current directions and nearest perspectives of research methods in psychology.

Recommended reading:

Johnson & Onwuegbuzie, 2004 (Strengths & Weaknesses of different approaches)
Cresswell & Clark, 2011, Ch. 4 (Mixed-methods research plans)

Supplementary reading:

Creswell, 2006, Ch. 1 (History and examples of mixed-methods research)

Educational Technologies

The lectures include brief discussions and active student feedback. The seminar hours include the following forms of work:

- Problem discussions, based on the literature recommended by the seminar leader;
- Exercises:
- Cases: discussion of best practices and flaws of
- Practical sessions using statistical software (SPSS, Mplus, MatLab, R)
- Sudden quizzes.

There are a number of suggestions for discussion and practical activities during the seminars. The seminar leader may choose to use some of them or not, depending on the M.Sc. program content, the requirements of the students, and time.

Evaluation and Grading

The general criteria for ongoing evaluation:

1) S: activity at the seminars (evaluated by the seminar leader at the end of the module based on seminar attendance & participation);

2) H: home assignments: the student is expected to complete 2 (out of 3) home assignments per module, which are scored by the seminar leaders, resulting in an average score. If the student submits fewer than 2 homeworks in a module, the missing ones are rated 0 (→ it is better to try & submit an imperfect work than nothing);

Detailed descriptions of home assignments and evaluation criteria are given in a separate file “Home Assignments Module 1/2/3” on the Google Drive. The deadlines are set by your seminar leader. Late homework submissions are accepted at any moment before the final grades are published, but a penalty of up to 2 grade points on a 10-point scale for late submissions may be applied.

3) T: end-of-the-module test (40 multiple-choice questions);

4) Final Exam: at the end of the final module, 30 multiple choice questions (weighted .5 of the total grade) + 2 case questions (each weighted .25 of the total grade).

The formulae for evaluation:

Coursework = 0.5 * H + 0.3 * T + 0.2 * S.

Final Score = 0.6 * Coursework + 0.4 * FinalExamScore.

The scores S, H, and T are not rounded. The total score is rounded to the nearest integer.

"Automatic" pass policy:

Option 1) Those students whose average score on the end-of-module tests equals 7.5 or above, have the option of having this score counted as final exam score.

Option 2) Those students whose Coursework score (H, T, S combined) equals 7.5 or above, have the option of having this score counted as course final score.

No-fail exam policy: If a student who is eligible to get an "Automatic pass" (Option 1 or Option 2) chooses to take the final exam, his/her exam score will only be counted in case it makes the exam / course total score higher, compared to the "automatic pass" score.

Learning Resources

Because there does not seem to be a single graduate-level textbook providing sufficient coverage of the course material, you are provided with an electronic reader containing all of the course materials (recommended and supplementary literature). Most of the books, chapters, and papers provided in the reference list are available either electronically or in paper versions at the library.

The lists provided above mainly assume that you are familiar with the basics of psychological research methods. If you do not have an undergraduate background in social sciences and have difficulty understanding the recommended literature, you can start by skimming through an undergraduate-level textbook (Howitt & Cramer's, Goodwin's, Coolican's, Newby or any other). If you do not trust your undergraduate statistics course and/or do not have any experience with SPSS, you are recommended to study Field's book before attempting Tabachnik & Fidell, which is more in-depth.

The materials are provided on Google Drive.

Course Literature

APA (2010). Publication Manual of the American Psychological Association. 6th Ed. Washington, DC: APA.

Bakeman, R. (2000). Behavioral observation and coding. In: H. T. Reis & C. M. Judd (Eds.), Handbook of Research Methods in Social and Personality Psychology (pp. 138-159). Cambridge: Cambridge University Press.

Bartholomew, D. J., Steele, F., Moustaki, I., & Galbraith, J. (2008). Analysis of Multivariate Social Science Data. 2nd Ed. Chapman & Hall / CRC.

Behrens, J. T., & Chong-ho Y. (2003). Exploratory data analysis. In: J. A. Schinka & W. F. Velicer (Eds.), Handbook of Psychology. Vol. 2. Research Methods in Psychology (pp. 33-64). Hoboken, NJ: Wiley.

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Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77-101.

Camic, P. M., Rhodes, J. E., & Yardley, L. (Eds.) (2003). Qualitative Research in Psychology: Expanding Perspective in Methodology and Design. Washington, DC: APA.

Campbell, D. T., & Stanley, J. C. (1963). Experimental and quasi-experimental designs for research. Boston: Houghton Mifflin.

Charmaz, K. (2008). Grounded theory. In: J. A. Smith (Ed.), Qualitative Psychology: A Practical Guide to Research Methods (pp. 81-110). 2nd Ed. London: Sage.

Clark, M. (2013, May 2). A comparison of correlation measures. URL: http://www3.nd.edu/~mclark19/learn/CorrelationComparison.pdf (Accessed at 21.08.14)

Cramer, P. (2007). Mining archival data. In: R. W. Robins, R. C. Fraley, & R. F. Krueger (Eds.), Handbook of Research Methods in Personality Psychology (pp. 114-129). N.Y.: Guilford Press.

Cresswell, J. W. (2006). Designing and Conducting Mixed Methods Research. Sage.

Cresswell, J. W., & Clark, V. L. P. (2011). Designing and Conducting Mixed Methods Research. Sage.

Davis, S. F. (Ed.) (2003). Handbook of Research Methods in Experimental Psychology. Malden, MA: Blackwell.

Diamond, L. M., & Otter-Henderson, K. D. (2007). Physiological measures. In: R. W. Robins, R. C. Fraley, & R. F. Krueger (Eds.), Handbook of Research Methods in Personality Psychology (pp. 370-388). N.Y.: Guilford Press.

Dickson-Swift, V., James, E., & Liamputtong, P. (2008). Undertaking Sensitive Research in the Health and Social Sciences. Cambridge: Cambridge University Press.

Ehrenstein, W. H., & Ehrenstein, A. (1999). Psychophysical methods. In: U. Windhorst & H. Johansson (Eds.), Modern Techniques in Neuroscience Research (pp. 1211-1242). Berlin: Springer.

Fidell, L. S., & Tabachnick, B. L. (2003). Preparatory data analysis. In: J. A. Schinka & W. F. Velicer (Eds.), Handbook of Psychology. Vol. 2. Research Methods in Psychology (pp. 115-142). Hoboken, NJ: Wiley.

Field, A. (2005). Discovering Statistics Using SPSS (and sex, drugs and rock'n'roll). London: Sage.

Field, A. P., & Gillett, R. (2010). How to do a meta-analysis. British Journal of Mathematical and Statistical Psychology, 63, 665-694.

Fraley, R. C. (2007). Using Internet for personality research. In: R. W. Robins, R. C. Fraley, & R. F. Krueger (Eds.), Handbook of Research Methods in Personality Psychology (pp. 130-148). N.Y.: Guilford Press.

Geiser, C. (2013). Data Analysis with Mplus. N.Y.: The Guilford Press.

Giorgi, A., & Giorgi, B. (2008). Phenomenology. In: J. A. Smith (Ed.), Qualitative Psychology: A Practical Guide to Research Methods (pp. 26-52). 2nd Ed. London: Sage.

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Graham, J. W., Cumsille, P., & Elek-Fisk, E. (2003). Methods for Handling Missing Data. In: J. A. Schinka & W. F. Velicer (Eds.), Handbook of Psychology. Vol. 2. Research Methods in Psychology (pp. 87-114). Hoboken, NJ: Wiley.

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Hsieh, H.-F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. Qualitative Health Research, 15(9), 1277-1288.

International Test Commission (2014, April 10). ITC Statement On the Use of Tests and Other Assessment Instruments for Research Purposes.

John, O. P., & Benet-Martinez, V. (2000). Measurement: Reliability, construct validation, and scale construction. In: H. T. Reis & C. M. Judd (Eds.), Handbook of Research Methods in Social and Personality Psychology (pp. 339-369). Cambridge: Cambridge University Press.

John, O. P., & Soto, C. J. (2007). The importance of being valid: Reliability and the process of construct validation. In: R. W. Robins, R. C. Fraley, & R. F. Krueger (Eds.), Handbook of Research Methods in Personality Psychology (pp. 461-494). N.Y.: Guilford Press.

Johnson, R. B., & Christensen, L. (2008). Mixed research: mixed method and mixed model research. In: R. B. Johnson & L. Christensen, Educational Research: Quantitative, Qualitative, and Mixed Approaches. Sage.

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. Educational Researcher, 33(7), 14-26.

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