

INFORMATION ABOUT THE MODULE

TITLE OF MODULE: Research Methods & Statistics
CODE OF MODULE: MA01
MODULE LEADER: Athanasios Papaioannou E-mail: sakispap@pe.uth.gr
OTHER LECTURERS: A. Hatzigeorgiadis, N. Zourbanos, M. Goudas
TEACHING MODE: 3-hour meetings
MODULE ID: Module of the 1st semester

Key-words: Research methodology, quantitative, statistics, validity, reliability, normal curve, z-scores, ANOVA, t-test, correlation analysis, qualitative, assumptions, paradigms, approaches, trustworthiness.

AIM OF THE MODULE

Students will acquire basic knowledge and competencies that will enable them to (a) understand (b) design and (c) implement scientific research in the area of sport and exercise psychology.

LEARNING OUTCOMES

At the end of this module students should:

- Understand the fundamental principles of research methods and design.
- Be able to generate research questions and design studies to answer these questions
- Understand the basic concepts of statistics
- Understand the concepts of Validity and Reliability
- Plan a small research project and investigate the validity and reliability of the research methods using statistics
- Understand the principles of qualitative research
- Understand the different approaches (quantitative – qualitative) that sport psychology research uses and have the skills to approach research questions with the most suitable research paradigm
- Be able to write a scientific research proposal

TEACHING METHODS

Lectures, labs, presentations, research project, assignment

TIMETABLE & PLANNING

	Lecturer	Topic
1.	Hatzigeorgiadis	Introduction to research methods I
2.	Hatzigeorgiadis	Introduction to research methods II
3.	Hatzigeorgiadis	Experimental Research
4.	Papaioannou	Normal Curve and assessment of distribution and standardized scores.
5.	Papaioannou	Introduction to Statistics, measurement concepts, scales of measurement, data presentation. Central tendency. Hypothesis testing
6.	Zourbanos	T-tests
7.	Zourbanos	Correlations
8.	Zourbanos	One-way ANOVA
9.	Goudas	Philosophical assumptions, paradigms and interpretive frameworks
10.	Goudas	Designing a qualitative study
11.	Goudas	Five qualitative approaches
12.	Goudas	Trustworthiness

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EVALUATION

Students will be evaluated based on:

1. A research abstract (25%) that will evolve through the simulation of a small scale project. This involves: (a) Collecting data, (b) Manipulating data, (c) Analyzing data, and (d) Writing a 250 words research abstract.

Deadline: 13/12/2013.

2. A dual **Research Proposal** (75%) presenting how a particular research problem can be addressed using both a quantitative and a qualitative approach (2500 words). This should include:

1. **Introduction** stating (a) the purpose and significance of your study and (b) the importance of using both quantitative and qualitative methodological approaches for the investigation of the research question (25%; 5% for 'a' and 20% for 'b')
2. **Methods**
 - a. **Quantitative Part:** Outline the quantitative methods that will be used describing (a) sampling and participants, (b) measures and instruments, and (c) procedures. (25%)
 - b. **Qualitative part:** (a) Outline the qualitative approach that will be used, including the major research question(s) you plan to ask, the data you wish to collect and analyze, your relationship to the topic and the participants being studied; (b) the challenges you anticipate to face when conducting the study (25%)

Please follow the APA 6th edition guidelines for writing your research proposal.

Deadline: 7/2/2014.

LITERATURE

- Thomas, J. R. & Nelson, J. K. (2003). *Research methods in physical activity*. Champaign, Ill: Human Kinetics.
- Dyer, C. (2006). *Research in Psychology*. MA: Blackwell.
- Duda, J. L. (1998). *Advances in sport and exercise psychology measurement*. Morgantown, W.Va. : Fitness Information Technology.
- Ferguson, G.A., & Takane, Y. (1989). *Statistical analysis in psychology and education*. NY: McGraw-Hill.
- Salkind, N.J. (2nd Edition, 2004). *Statistics for people who (think they) hate statistics*. Thousand Oak: Sage.
- Ntoumanis, N. (2001). A step-by-step guide to SPSS for sport and exercise studies. London: Routledge.
- Patton, M.Q. (2002). *Qualitative research and evaluation methods* (3rd ed.) Thousand Oaks, CA: Sage.
- Lincoln, Y.S., & Guba, E. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage.
- Sparkes, A.C. (1992). *Research in physical education and sport: Exploring alternative visions*. London: Falmer Press.
- Creswell, J.W. (2009). *Research design* (3rd ed.). London: Sage.
- Creswell, J.W. (2010). *Qualitative inquiry and research design: Choosing among five approaches* (2nd ed.). London: Sage.

LECTURE OUTLINES

Lecture 1 & 2

Title	Content	Key-words
Introduction to research methods	Types of research, Research designs, Research procedures, Research reports.	Variables, hypotheses, sampling, measures.
Readings / Assignments	Thomas, J. R. & Nelson, J. K. (2003). <i>Research methods in physical activity</i> . Champaign, Ill: Human Kinetics. Biddle, S.J.H., Markland, D., Gilbourne, D., Chatzisarantis, N.L.D., & Sparkes, A.C. (2001). Research methods in sport & exercise psychology: Quantitative and qualitative issues. <i>Journal of Sport Sciences</i> , 19, 777-809. Dyer, C. (2006). <i>Research in Psychology</i> . MA: Blackwell. Duda, J. L. (1998). <i>Advances in sport and exercise psychology measurement</i> . Morgantown, W.Va. : Fitness Information Technology.	

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Lecture 3

Title	Content	Key-words
Experimental Research	Research questions, Causality, Experimental designs, Quasi-experimental designs, Threats and limitations	Research groups, Treatment, experimental validity
Readings / Assignments	<p>Thomas, J. R. & Nelson, J. K. (2003). <i>Research methods in physical activity</i>. Champaign, Ill: Human Kinetics.</p> <p>Biddle, S.J.H., Markland, D., Gilbourne, D., Chatzisarantis, N.L.D., & Sparkes, A.C. (2001). Research methods in sport & exercise psychology: Quantitative and qualitative issues. <i>Journal of Sport Sciences</i>, 19, 777-809.</p> <p>Dyer, C. (2006). <i>Research in Psychology</i>. MA: Blackwell.</p> <p>Duda, J. L. (1998). <i>Advances in sport and exercise psychology measurement</i>. Morgantown, W.Va. : Fitness Information Technology.</p>	

Lecture 4

Title	Content	Key-words
Introduction to Statistics, measurement concepts, scales of measurement, data presentation. Central tendency.	Types of data, scales and variables. Population & Sample. Frequencies, Mean, Media, data presentation & graphs.	Variables, scale, frequencies, Mean, Median
Readings / Assignments	<p>Ferguson, G.A., & Takane, Y. (1989). <i>Statistical analysis in psychology and education</i>. NY: McGraw-Hill Publ.</p> <p>Salkind, N.J. (2nd Edition, 2004). <i>Statistics for people who (think they) hate statistics</i>. Thousand Oak: Sage.</p> <p>Ntoumanis, N. (2001). <i>A step-by-step guide to SPSS for sport and exercise studies</i>. London: Routledge.</p>	

Lecture 5

Title	Content	Key-words
Normal Curve and assessment of distribution and standardized scores. Hypothesis Testing.	Normal Curve, Standard Deviation, z-scores, skewness & kurtosis, data transformations to achieve normality. Error, Levels of Confidence, Degrees of Freedom, t-curves	Normal Curve, Standard Deviation, z-scores, normality, Hypotheses
Readings / Assignments	<p>Ferguson, G.A., & Takane, Y. (1989). <i>Statistical analysis in psychology and education</i>. NY: McGraw-Hill Publ.</p> <p>Salkind, N.J. (2nd Edition, 2004). <i>Statistics for people who (think they) hate statistics</i>. Thousand Oak: Sage.</p> <p>Ntoumanis, N. (2001). <i>A step-by-step guide to SPSS for sport and exercise studies</i>. London: Routledge.</p>	

Lecture 6

Title	Content	Key-words
Correlations	Testing validity and reliability with correlation analysis. Product moment correlations, magnitude & statistical significance.	Validity, reliability Correlation coefficient
Readings / Assignments	<p>Papaioannou, A., Kosmidou, E., Tsigilis, N., Milosis, D. (2007). Measuring perceived motivational climate in physical education. In J. Liukkonen (Ed.), <i>Psychology for physical educators</i> (Vol. 2) (pp. 35-56). Champaign, IL: Human Kinetics.</p> <p>Ntoumanis, N. (2001). <i>A step-by-step guide to SPSS for sport and exercise studies</i>. London: Routledge.</p> <p>Ferguson, G.A., & Takane, Y. (1989). <i>Statistical analysis in psychology and education</i>. NY: McGraw-Hill Publ.</p> <p>Salkind, N.J. (2nd Edition, 2004). <i>Statistics for people who (think they) hate statistics</i>. Thousand Oak: Sage.</p>	

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Lecture 7

Title	Content	Key-words
t-tests	Dependent & Independent Variables. Paired t-test & t-TEST for independent groups.	Dependent & Independent Variables, Paired t-test & independent t-test
Readings / Assignments	<p>Ntoumanis, N. (2001). A step-by-step guide to SPSS for sport and exercise studies. London: Routledge.</p> <p>Ferguson, G.A., & Takane, Y. (1989). <i>Statistical analysis in psychology and education</i>. NY: McGraw-Hill Publ.</p> <p>Salkind, N.J. (2nd Edition, 2004). <i>Statistics for people who (think they) hate statistics</i>. Thousand Oak: Sage.</p>	

Lecture 8

Title	Content	Key-words
One-way ANOVA	Differences in one dependent variable when the independent has more than two levels (groups)	Mean differences, groups differences, analysis of variance.
Readings / Assignments	<p>Ntoumanis, N. (2001). A step-by-step guide to SPSS for sport and exercise studies. London: Routledge.</p> <p>Ferguson, G.A., & Takane, Y. (1989). <i>Statistical analysis in psychology and education</i>. NY: McGraw-Hill Publ.</p> <p>Salkind, N.J. (2nd Edition, 2004). <i>Statistics for people who (think they) hate statistics</i>. Thousand Oak: Sage.</p>	

Lecture 9

Title	Content	Key-words
Philosophical assumptions, paradigms and interpretive frameworks	Philosophical assumptions paradigms or worldviews interpretive frameworks	Qualitative research, Sport psychology
Readings / Assignments	<p>Creswell, J.W. (2007). Philosophical, paradigms and interpretive frameworks (pp. 15-34). <i>Qualitative inquiry and research design: Choosing among five approaches</i> (2nd ed.). London: Sage.</p> <p>Munroe-Chandler, K.J. (2005). A Discussion on Qualitative Research in Physical Activity. <i>Athletic Insight: The Online Journal of Sport psychology</i>, 5. Accessed at http://www.athleticinsight.com/Vol7Iss1/QualitativePDF.pdf</p> <p>Dale, G.A. (1996). Existential phenomenology: Emphasizing the experience of the athlete in sport psychology research. <i>The Sport Psychologist</i>, 10, 307-321.</p> <p>Krane, V. & Baird, S.M. (2005). Using Ethnography in Applied Sport Psychology. <i>Journal of Applied Sport Psychology</i>, 17, 87 – 107</p> <p>Smith, B. & Sparkes, A.C. (2009). Narrative inquiry in sport and exercise psychology: What can it mean, and why might we do it? <i>Psychology of Sport and Exercise</i>, 10, 1-11.</p>	

Lecture 10

Title	Content	Key-words
Designing a qualitative study	Its characteristics and use Process and structure Its stages	qualitative research.
Readings / Assignments	<p>Creswell, J.W. (2007). Designing a qualitative study (pp. 35-52). <i>Qualitative inquiry and research design: Choosing among five approaches</i> (2nd ed.). London: Sage.</p> <p>Creswell, J.W. (2009). Qualitative procedures. <i>Research design</i> (3rd ed.). London: Sage.</p> <p>Kvale, S. & Brinkmann, S. (2009). Thematizing and designing an interview study (pp. 97-122). <i>Interviews: Learning the craft of qualitative research interviewing</i>. London: Sage.</p>	

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Lecture 11

Title	Content	Key-words
Five qualitative approaches	Narrative research Phenomenological research Grounded theory research Ethnographic research Case study research	Qualitative methods, approaches
Readings / Assignments	Creswell, J.W. (2007). Five qualitative approaches to inquiry (pp. 53-84). <i>Qualitative inquiry and research design: Choosing among five approaches</i> (2 nd ed.). London: Sage.	

Lecture 12

Title	Content	Key-words
Trustworthiness	Standards of validation Credibility Transferability Dependability Confirmability Criteria to attain trustworthiness in qualitative research	Trustworthiness, qualitative research
Readings/ Assignments	<p>Creswell, J.W. (2007). Standards of validation and evaluation (pp. 201-222). <i>Qualitative inquiry and research design: Choosing among five approaches</i> (2nd ed.). London: Sage.</p> <p>Patton, M.Q. (1990). Enhancing the quality and credibility of qualitative analysis (pp.460-506). <i>Qualitative evaluation and research methods</i> (2nd ed.) London: Sage.</p> <p>Lincoln, Y.S. & Guba, E.G. (1985). Establishing trustworthiness (pp. 289-331). <i>Naturalistic Inquiry</i>. London: Sage</p> <p>Morse, J.M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification Strategies for Establishing Reliability and Validity in Qualitative Research. <i>International Journal of Qualitative Methods</i>, 1 (2).</p> <p>Hassandra, M., & Goudas, M. (2003). Criteria for establishing validity and reliability in qualitative - hermeneutic research. <i>Scientific Annals of the Psychological Society of Northern Greece</i>, (2), 31-47. (http://www.pseve.org/volume2_info_en.asp).</p> <p>Sparkes, A.C. (1998). Validity in qualitative inquiry and the problem of criteria: Implications for sport psychology. <i>The Sport Psychologist</i>, 12, 363-386.</p>	