ISED
Institute for the Study of Education and Human Development

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Overview ISED courses researchmaster
University of Amsterdam
2014

Introductory course

Name: Bioecological models: State-of-the-art

Lecturers: prof. dr. D.A.V. van der Leij (coordinator)

ECTS, period: 6 credits, September - October

Objectives: *Knowledge and understanding*
The students gather profound theoretical knowledge of:
- recent developments in bioecological models
- the findings of relevant examples of studies supporting a model;
- and the designs and instruments used.

Applying knowledge and understanding
- Discussing the theoretical and methodological qualities of the various studies improves the understanding of the assumptions underlying the research of pedagogical or educational topics.

Making judgments
- In addition to ethical aspects of studying sensitive topics (e.g. child abuse, psychopathological development), the implications of research results for the practice of child rearing and education will be discussed in order to improve the judgment of practical relevance.

Communication
- During and at the end of the course, the students report and present reviews and critical reflection of research in English to the participants of the course.

Learning skills
- Discussing the theoretical and methodological assumptions of research in a bio-ecological perspective aims to improve the students' ability to develop research proposals.

Content: Recent developments with respect to models that describe the interaction between individual characteristics, environment and development are discussed. 'Classical' bioecological models are compared to genetic behaviour and dynamic systems models. Attention will be paid to both individual characteristics such as learning (dis)ability, temperament, developmental disorders, and the relevant variables of the proximal and distal environment (parents, peers, teachers, family, school class, child care, youth care, school). The models will be illustrated by findings of twin studies, observation studies, ERP-studies, intervention studies, etc.

Literature: Academic journal articles. For example:
- Bronfenbrenner, U., & Ceci, S. J. (1994). Nature-nurture reconceptualised in developmental perspective: A bioecological model. *Psychological Review, 101*, 568-586.
- Walker, S. O., Petrill, S. A., & Plomin, R. (2005). A genetically sensitive investigation of the effects of the school environment and socioeconomic status on academic achievement in seven-year-olds. *Educational Psychology, 25*, 55-73.

Format: Eight-week tutorial with one meeting each week.

Examination: Weekly assignments, final paper, and presentation

Disciplinary course 1

Name:	Childhood education, family support and development
Lecturers:	Dr. H.M.W. Bos (coordinator) and others
ECTS, period:	6 credits, February - March
Objectives:	*Knowledge and understanding*

Students gather knowledge of:
- recent developments in theories about the interaction between individual development and child rearing;
- interventions and facilities aimed at improvement;
- the findings of relevant examples of studies supporting a model;
- the designs and instruments used.

Applying knowledge and understanding

Students are able to formulate a research question and formulate hypotheses about one of the topics in the research group 'Childhood Education, Family Support and Development'.

Communication
- This should result in a paper in which students integrate their research question and hypotheses in theoretical frameworks used on the research in the research group. The paper will be presented in the group.

Content: In this course students will get involved into the research projects of the programme 'Childhood Education, Family Support and Development'. Aims, means, results, and theoretical and social background of various projects will be discussed with the lecturing researchers and PhD students.

Topics that are covered are: the meaning of having children; differential susceptibility to parenting; research on lesbian, gay, and bisexual youth; growing up in same-sex families; professional child care; sexual development of children and the role of parents.

Literature: Academic journal articles.

Format: Eight-week tutorial with one meeting each week

Examination: Paper and presentation

Disciplinary course 2

Name:	Learning and social-emotional disorders in educational contexts
Lecturers:	Prof. dr. P.F. de Jong (coordinator), dr. H.M.Y. Koomen, and others
ECTS, period:	6 credits, February - March
Objectives:	*Knowledge and understanding*

- Knowledge and understanding of important concepts (disorders, special educational needs, comorbidity, treatment integrity and effectiveness) related to learning, socio-emotional, and behavioral problems in an educational context
- Knowledge and understanding of main theories, empirical findings and research methods on learning disorders, socio-emotional problems, and teacher-student interactions c.q. relationships

- Knowledge and understanding of the role of teacher-student interactions in (academic, socio-emotional, and behavioral) school adjustment, especially for students with learning disorders and socio-emotional problems
- Knowledge and understanding of assessment methods and measuring instruments for various learning disorders and aspects of teacher-student interactions c.q. relationships
- Knowledge and understanding of effective treatments of various learning disorders and socio-emotional problems and of interventions to promote teacher-student interactions c.q. relationships

Application of knowledge and understanding
- Ability to apply different theoretical perspectives and findings from empirical research to (the assessment and treatment of) learning and socio-emotional problems of children and interactions with teachers in specific educational contexts

Judgment
- Ability to judge assessment quality and effectiveness of treatment methods for various learning disorders and aspects of teacher-student interactions c.q. relationships

Content:
- Teacher-student interactions and relationships and academic and social-emotional adjustment
- Interventions in teacher-student relationships
- Comorbidity of developmental (learning) disorders
- Language acquisition and language disorders
- Models of reading acquisition
- Early markers, diagnosis and treatment of dyslexia

Literature: Academic journal articles.

Format: Eight-week tutorial with one meeting each week.

Examination: Assignments and exam

Disciplinary course 3

Name: Developmental and parenting problems: Aetiology and intervention

Lecturers: Prof. dr. S.M. Bögels (coordinator) and others

ECTS, period: 6 credits, November - December

Objectives: Knowledge of:
categorical and dimensional assessment of developmental psychopathology
current theories and models with respect to the etiology, secondary prevention, and treatment of developmental psychopathology;
evidence-based intervention into developmental psychopathology;
current developments of research into developmental psychopathology;
ability to critically evaluate a research paper and a research proposal into the area of developmental psychopathology.

Content: This course focuses on developmental psychopathology, such as anxiety, behavioural disorders, sleep problems, childhood chronic illness, and

addiction and its interaction with parenting. We will focus on recent theoretical developments in this field, such as cognitive developmental models of childhood psychopathology, differential susceptibility for rearing influences, and the specific role of the father in the intergenerational transmission of psychopathology. Furthermore, we will focus on recent trends in gene-environmental interactions in relation to psychopathology. New developments in the intervention of developmental and rearing problems, like Family Cognitive Behaviour Therapy and Mindful Parenting, are outlined. Specific attention will be paid to evidence-based youth care.

Literature:	Sternberg, R.J. (2005). Reviewing scientific works in psychology. APA-books, ISBN: 1-59147-281-4 and academic papers.
Format:	Eight-week tutorial with one meeting each week.
Examination:	Weekly assignments and review of research proposal

Disciplinary course 4

Name:	Micro-processes at school and learning
Lecturer:	dr. T.T.D. Peetsma (coordinator), prof. dr. M.L.L. Volman
ECTS, period:	6 credits, November - December
Objectives:	*Knowledge and understanding*

- Knowledge of (recent developments in) theories and models of the influence of school, teaching practices and society on the micro-level of student learning and development
- Knowledge of interventions aimed at the improvement of motivation for school and at meaningful learning in diverse learning contexts.
- Knowledge of the findings of relevant examples of studies and the designs and instruments used
- Understanding of the assumptions underlying the study of micro-processes in education.

Applying knowledge and understanding
- Ability to apply this knowledge in research on interventions at school (e.g. interventions in teaching practices, motivation for learning and inclusion of sen students).

Making judgments
- Ability to judge the relevance and implications of research results for further research on education and for the practice of education

Communication
- Ability to develop research proposals, and to design research and develop instruments to be used in this domain of research.
- Ability to report a research proposal and to present critical reflections on the research and research proposals in English to the participants of the course.

Content:	In this course on micro-processes, recent developments in studies on student learning and development in the context of the school and the classroom will be reflected upon.

The focus will be on the complex interplay of cognitive, social, motivational and emotional development in the context of the school, families, peers and

society at large. The critical roles played by the characteristics of schools, like student grouping, pedagogical approaches, curriculum, school climate and the teachers, in mediating individual and cultural characteristics of students will also be a focus of the course.

(Quasi) experimental studies, intervention studies, and review studies will be discussed.

Format:	Eight-week tutorial with one meeting each week.
Literature:	A compilation of journal articles on recent developments in the research field. The literature will be provided on Blackboard or during the meetings.

Disciplinary course 5

Name:	Foundations and philosophy of education
Lecturers:	prof. dr. M.S. Merry (coordinator)
ECTS, period:	6 credits, April - May
Objectives:	*Knowledge and understanding* • Students will encounter philosophical texts that examine complex and challenging issues within the domain of educational theory and practice. *Applying knowledge and understanding* • Students will learn to recognize the structure of argumentation and be able to condense longer and more complex arguments into syllogisms. *Making judgments* • Students will develop analytical skills through close reading of philosophical texts. These include the capacity to critically examine the arguments advanced by different authors, exposing potential weaknesses in the premises and conclusions. *Communication* • Students will learn how to argue their positions both verbally and in writing using argumentation and evidence. *Learning skills* • Students will take up an independent research project in which the aim is then to present the ideas in a philosophical manner using one of the following approaches: critical reflection, critique, or defence.
Content:	Philosophical readings will be assigned each week and seminar discussion will focus on these readings. Depending on the size of the enrolment, the content for this course may (partly) be determined based on student interest.
Literature:	Anthony Weston (2009) *A Rulebook for Arguments.* (4th edition) Indianapolis: Hackett, and articles.
Format:	Classes will be held once a week for the duration; individual supervision by appointment.
Examination:	Philosophical paper.

Disciplinary course 6

Name:	Criminal behaviour of juveniles
Lecturers:	dr. J.J. Asscher (coordinator) and others
ECTS, period:	6 credits, October - December
Objectives:	*Knowledge and understanding* The students gather theoretical and practical insight and knowledge on (1) recent theories on the development and aetiology of (severe) antisocial behaviour; (2) Knowledge and insight into antecedents and correlates of serious behaviour problems and juvenile delinquency; (3) on society's responses to juvenile delinquency; (3) judicial interventions and their effectiveness; (4) into risk, protective and promotive factors and on (4) what consequently 'works' for juvenile delinquent *Applying knowledge and understanding* (1) the ability to analyse trends and manifestation of juvenile delinquent behaviour; (2) to critically reflect on political decisions with regard to juvenile delinquency; (3) to critically examine prevention and intervention initiatives *Making judgments* (1) critical judgment of the state's policies regarding juvenile delinquency; (2) critical judgments on the effectiveness of interventions for juvenile delinquents *Communication* the ability to provide (1) an oral or written reflection on Forensic Youth Care Science topic and to adequately provide arguments pro and against the point of view *Learning Skills* the ability to (1) search and integrate literature on a Forensic Youth Care Science topic and to provide the scientific underpinning for future research and policy decisions
Content:	This course focuses on the prevalence and ethology, and the measurement of criminal behaviour of children and juveniles. Also, various explanatory theories and models of crime will be discussed with a special emphasis on developmental and life-course approaches. From a developmental perspective, various staff member will present recent research in the field of forensic child and youth care. Topics such as psychopathology, ethnic differences, effective interventions, alcohol and drug use, will be covered.
Literature:	Academic papers
Format:	Classes once a week
Examination:	Individual paper

Name:	Dyslexia*
Lecturers:	Prof. dr. P.F. de Jong (coordinator)
ECTS, period:	6 credits, October - December

Objectives:

Knowledge and understanding
- Knowledge and understanding of the main theories on reading acquisition and dyslexia
- Knowledge and understanding of biological and cognitive precursors of dyslexia
- Knowledge and understanding of the conceptual underpinnings of current practices in the diagnosis of dyslexia and its comorbid disorders
- Knowledge and understanding of the theories and aims of a broad range of school and clinical interventions for dyslexia
- Knowledge and understanding of the methods to determine the effectiveness of large and small-scale interventions for dyslexia

Applying knowledge and understanding
- Ability to apply various theories and empirical findings on dyslexia in the diagnosis of the disorder
- Ability to apply theories and empirical findings in the design of interventions for dyslexia and individual clinical treatment

Making judgments
- Being able to critically evaluate the various opinions on the proper diagnosis of dyslexia
- Being able to critically evaluate the levels of evidence for the multitude of interventions and individual treatments of dyslexia.

Learning skills
- To obtain a knowledge base and understanding of the main topics in the etiology, diagnosis and treatment of dyslexia that enables independent future study on the scientific development of dyslexia needed to function as a science practitioner.

Content:

Current (computational) models of skilled reading will be discussed as well as recent theories about the neurobiological and cognitive foundations of the normal and deviant development of reading. Attention is paid to the influence of genetics, to behavioural manifestations of dyslexia and the possible reasons for its comorbidity with other disorders, such as ADHD and dyscalculia. The extensive research on the prevention and treatment of dyslexia will be critically examined.

Literature:

Examples:
- Coltheart, M. (2005). Modeling reading: The dual-route approach. In S. J. & C. Hulme (Eds.), *The science of reading: A handbook* (pp. 6-23). Oxford, UK: Blackwell.
- Torgesen, J. K. (2005). Recent discoveries from research on remedial interventions for children with dyslexia. In M. J. Snowling & H. C. (Eds.), *The science of reading: A handbook*. Oxford, UK: Blackwell.
- Ziegler, J. C., & Goswami, U. C. (2005). Reading acquisition, developmental dyslexia, and skilled reading across languages: A psycholinguistic grain size theory. *Psychological Bulletin, 131*, 3-29.

- de Jong, P.F, & van der Leij, A. (2003). Developmental changes in the manifestation of a phonological deficit in dyslexic children learning to read a regular orthography. *Journal of Educational Psychology, 95*, 22-40.

Format:	Classes once a week; individual supervision by appointment
Examination:	Individual paper

* With reservation.

Disciplinary course 8

Name:	Distal and proximal processes in educational research
Lecturers:	Dr. H. Kosar-Altinyelken (coordinator)
ECTS, period:	6 credits, September - October
Objectives:	*Knowledge and understanding* To gain knowledge and understanding of recent developments in theories and models of the influence of institutional and school factors on learning and development (e.g. assessment policies, standardization, accountability systems, and school and classroom composition). *Applying knowledge and understanding* To apply this knowledge and showing problem solving abilities in common interventions at school and local level (e.g. school improvement interventions, class size reduction, introduction of merit pay, professionalization activities). *Making judgments* To encourage and support analytical reading and academic writing and analysis, to reflect critically on the impact of globalisation and global education reforms on various national education systems, and making judgments of pros and cons of certain interventions based on research evidence. *Communication* To practice communicative skills such as reporting, presenting, discussing and negotiating. Moreover, to develop competences to address professional, political and lay audiences about the merits of certain interventions and the research evidence related to those interventions. *Learning skills* Having the learning skills to improve both one's own practice and the research community, i.e. being able to design research and develop instruments that can be of use in this domain.
Content:	The central focus of the course will be on the global, national and local processes that influence learning and development. Each session is focused on one of these levels.
Literature:	Academic articles
Format:	Eight-week tutorial with one meeting each week
Examination:	Presentations, classroom participation, individual paper

Name:	Methods and statistics in educational research
Lecturers:	dr. A. Zand Scholten (coordinator) and dr. R. Ligtvoet
ECTS, period:	12 credits, September - December
Objectives:	*Knowledge and understanding*

Knowledge and understanding
… have profound knowledge and understanding of:
• the most commonly used statistical (GLM) techniques in educational research
• how these techniques form a family all subsumed under the Generalised Linear Model,
• how data should be prepared before applying these techniques, and finally,
• under what conditions these techniques may or may not be applied.

Applying knowledge and understanding
… can apply this knowledge and understanding to:
• prepare data files for statistical analysis (data cleaning, transforming variables),
• evaluate required assumptions, and
• analyze empirical data from correlational and experimental designs.
• read, understand, and interpret scientific articles using these techniques.

Judgments
… can formulate judgments concerning:
• ethical considerations of data preparation and selection of multivariate statistical analyses.
• your own limitations as to your statistical knowledge and skill and when to call upon the expertise of others or refrain from action.

Communication
… are able to:
• report the findings of the analysis conform the standards of journals in the field of educational research, and
• how to explain and present these results to your peers.

Learning skills
… are able and willing to:
• (re)consider arguments and conclusions in the light of methodological and statistical aspects of empirical results or valid counter-argumentation.

Content: The course starts with a short review of common experimental and quasi-experimental research designs, and associated types of analysis of variance (ANOVA). The general linear model is introduced as the general model that subsumes both ANOVA and regression analysis. Multiple regression analysis and MANOVA are treated extensively. Next, the generalised linear model is introduced as an even more general model that also subsumes logistic regression analysis and log linear modelling. These techniques are also treated extensively. Profile analysis will also be treated. Effect size indices and statistical power will be discussed for all of these techniques. Through practical assignments, you not only learn how to apply the

statistical techniques, but also how to prepare and screen data, and how to handle commonly encountered problems such as missing values, outliers, non-normality, heteroscedasticy, multicollinearity, inflated family-wise error rates, etc. Articles from educational research journals are used to illustrate how the statistical techniques are applied and described in the scientific literature, and how the results can be reported and interpreted.

Literature: Tabachnick, B.G. & Fidell, L.S. (2012). Using Multivariate Statistics, 6th ed. Boston: Allyn & Bacon. (ISBN-10: 0205849571 ISBN-13: 978-0205849574) Applied papers: Academic journal articles with applications of multivariate statistical techniques to substantive research questions in educational research. Instructive papers: Academic journal articles about methods and statistics in educational research.

Format: Lectures and practical sessions

Examination: Practical assignments, writing assignments

Course 2 in methods and statistics

Name: Structural equation modelling

Lecturers: Prof. dr. F.J. Oort (coordinator) and others

ECTS, period: 12 credits, September - December

Objectives: *Knowledge and understanding*
- Students obtain thorough knowledge of structural equation modelling (SEM) and its special cases path analysis and factor analysis. Understanding of the statistical theory on which SEM is based.
- In addition to the common applications of SEM to cross-sectional, continuous, multivariate-normally distributed data, students also learn how to apply SEM to multigroup data, longitudinal data, non-normal data, and (other) discrete data.
- Students learn to use a computer program for the application of SEM and the skill to use it with various sets of data (small and large; cross-sectional, multigroup, and longitudinal; correlational and experimental; continuous and discrete).

Applying knowledge and understanding
- Technically, students learn how to apply SEM to various sets of data with various characteristics. Substantively, students learn how to apply SEM to substantive research questions in the behavioural and social sciences, specifically in child development and education.

Making judgments
- Students learn when and how to apply SEM and how to interpret SEM results, but they also learn the pitfalls of SEM, and to question the application and results of SEM.

Communication
- Students learn how to write the statistical analysis and results sections in scientific papers, and how to report their SEM results in text, tables and figures.

Learning skills
- Students learn to read, understand, and interpret scientific articles in which SEM is applied. They are also able to critically evaluate and criticise the way in which SEM is applied to investigate substantive

research questions.

Content: The course starts with a separate treatment of path analysis and factor analysis of covariance structures. Subsequently, the full structural equation model with latent variables is treated in depth. This includes modelling mean structures, and models for multiple group data and longitudinal data. Special attention is given to the topic of measurement invariance. Model specification, identification, estimation, goodness of fit, and interpretation will be discussed. In addition, sample size considerations, effect size indices, and statistical power are discussed for testing hypotheses of overall goodness of fit, as well as for testing hypotheses regarding specific model parameters. Through practical assignments, students learn how to prepare their data, how to handle missing data, and how to use a computer program for structural equation modelling (OpenMx). Articles from educational and psychology research journals are used to illustrate how SEM is applied and described in the scientific literature, and how to reported and interpret the results.

Literature:
- Kline, R.B. (2011). *Principles and Practice of Structural Equation Modeling*, 3rd ed. New York: The Guilford Press.
- Oort, F.J. (2008). *Supplementary notes to Kline's principles and practices of structural equation modelling*. To be published via Blackboard; Department of Education, University of Amsterdam.
- Jak, S., van den Boer, M., Verdam, M.G.E. & Oort, F.J. (in preparation). *OpenMx compendium to Kline's principles and practices of structural equation modelling*. To be published via Blackboard; Department of Education, University of Amsterdam.
- Instructive papers: Academic journal articles about structural equation modelling.
- Applied papers: Academic journal articles with applications of structural equation modelling to substantive research questions in educational research.

Format: Twelve-week tutorial with two meetings each week.

Examination: Practical assignments, individual papers, and a written exam

Course 3 in methods and statistics

Name: Multilevel Data Analysis

Lecturers: dr. B.J.H. Zijlstra (coordinator)

ECTS, period: 6 credits, February - March

Objectives: *Knowledge and understanding*
- Knowledge of multilevel regression models.
- Understand how multilevel regression models can contribute to establishing a more valid connection between a model and the properties of observed data.

Applying knowledge and understanding
- How to apply multilevel regression models to real data sets using software.
- How to read, understand, and interpret scientific articles in which

multilevel regression analyses are applied.

Communication
- How to report multilevel regression analyses and the results in scientific articles.

Content: After explaining clustered data, multilevel models are introduced with random intercept models. Subsequently, the specification of more complicated models is discussed, with and without random slopes, and with and without interaction effects. Specification searches, the testing of fixed and random slopes, and the testing and interpretation of interaction effects are treated extensively. Time permitting, attention will be paid to multilevel models for the analysis of discrete data and proportions.

Through practical assignments, students learn how to use software (SPSS and R) for the analysis of multilevel data. Articles from educational research journals are used to illustrate how multilevel modelling is applied and described in the scientific literature, and how the results can be reported and interpreted.

Literature:
- Kreft, G.G. and De Leeuw, J. *Introducing Multilevel Modeling*. Sage Publications, London: 1998.
- Applied papers: Academic journal articles with applications of multilevel regression analysis to substantive research questions in educational research.
- Instructive papers: Academic journal articles about multilevel modelling in educational research.

Format: Eight-week tutorial with two meetings each week

Examination: Assignment and exam

Course 4 in methods and statistics

Name: Longitudinal Data Analysis

Lecturer: Dr. R. Ligtvoet (coordinator)

ECTS, period: 6 credits, February - March

Objectives: *Knowledge & understanding*
- Acquire knowledge and understanding of (M)ANOVA and multilevel techniques for the analysis of longitudinal data.

Applying knowledge & understanding
- Apply these techniques to real data using available computer software.

Making judgements & communication
- Judge the implications of the results for the research problem at hand, and
  report the results of the analysis in accordance with scientific journal standards.

Learning skills
- Being able to critically read scientific articles where these techniques have been applied.

Content: The course starts with a repetition of how longitudinal data are analysed through repeated measures analysis of variance. Next, various longitudinal

structures are explained by reviewing structural equation models for longitudinal data (e.g., compound symmetry models, autoregressive models, and latent curve models). For most part, the course focuses on multilevel analysis of longitudinal data. Attention will be divided equally between fixed occasion models and random occasion models (with linear and non-linear latent curves). For both types of models, specification searches are discussed, with and without time-varying covariates, and with different covariance structures. Application of multilevel logistic models to discrete data will also be discussed. Special attention will be paid to attrition of subjects in longitudinal studies and how this problem is addressed in multilevel analysis.

Through practical assignments, students learn how to use computer programs SPSS and MLWIN for the analysis of longitudinal data. Articles from educational research journals are used to illustrate how multilevel models for longitudinal data are described in the scientific literature, and how the results are reported and interpreted.

Literature:	• Selected chapters from Tabachnick & Fidell (2007), Kline (2004), and Snijders & Bosker (1999).
	• Applied papers: Academic journal articles with applications of longitudinal data analysis techniques to substantive research questions in educational research.
	• Instructive papers: Academic journal articles about longitudinal data analysis in educational research.
Format:	Eight-week tutorial with two meetings each week.
Examination:	Practical assignments, individual paper, and a written exam