QRM 2023 Conference Program

Program Schedule

Monday, 12 June 2023

09:30-12:00	Conference registration	
10:00-12:00	Workshop A (AK2 134)	Workshop B (AK2 135)
12:00-13:00	Lunch	
13:00-14:00	Keynote presentation (AK2 136, K-G Stukát)	
14:00-14:30	Coffee	
14:30-16:00	Session 1A (AK2 134)	Session 1B (AK2 135)
16:00-16:30	Coffee and snacks	
16:30-18:00	Poster session (AK2 136, K-G Stukát)	
19:00	Conference dinner	

Tuesday, 13 June 2023

09:00-10:30	Session 2A (AK2 134)	Session 2B (AK2 135)
10:30-11:00	Coffee	
11:00-12:30	Session 3A (AK2 134)	Session 3B (AK2 135)
12:30-13:15	Lunch	
13:15-14:30	Panel discussion (AK2 136, K-G Stukát)	
14:30:15:00	Coffee	
15:00-17:00	Workshop C (AK2 134)	

Contents

Program Overview

Keynote: Using Geometric Data Analysis to Reveal Fields of Education
Monday, 12 June 2023, 13:00-14:00

Speaker: Mikael Börjesson, Professor of Educational Sociology at the Department of Education, Uppsala University
Room: AK2 136 (K-G Stukát)

Session 1A: Exploring Classroom Dynamics: Teacher-Student Interactions and Support in Schooling
Monday, 12 June 2023, 14:30-16:00

Chair: Bert Jonsson
Room: AK2 134
Abstract pages: 10-12

Teacher Visual Behaviour in Relation to Student Self-Regulation Profile in Secondary School Classroom

The Relationships Between Student-Perceived Academic Self-Concept, Teacher's Instructional Practices and Mathematics Achievement

Insecurity, Lack of Support, and Frustration: A Sociological Analysis of How Three Groups of Students Reflect on Their Distance Education During the Pandemic in Sweden

Positive Behavior Support in School – The Causal Mechanisms and Interactive Processes. A Study Protocol

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Session 1B: Uncovering Complexities in Educational Equity: Exploring Measurement, Paradoxes, and Intersectionality in Academic Achievement
Monday, 12 June 2023, 14:30-16:00

Chair: Erika Majoros
Room: AK2 135
Abstract pages: 12-14

Measurement Invariance Across Educational Systems in the First and Second International Science Studies

The Paradoxical Relations Between Students' Self-Concept, Self-Efficacy, and Achievement in Mathematics

Interdisciplinarity in Higher Education

Applying Quantitative Intersectional Approach to Studying Social Inequalities in Academic Achievement

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Conference Dinner

The conference dinner takes place at OGBG Bar & Restaurang, within ten minutes walking distance from the conference venue. Vegetarian buffet will be served to those who wish to join and indicate it when registering.

Poster Session

Room: AK2 136 (K-G Stukát)
Abstract pages: 24-27

Session 2A: Exploring Literacy in the Digital Age: Insights and Evaluations from Swedish and International Studies

Tuesday, 13 June 2023, 09:00-10:30

Chair: Monica Rosén
Room: AK2 134
Abstract pages: 15-17

Evaluating the Simple View of Reading Model: Longitudinal Testing and Applicability to the Swedish Language

The Role of Early Literacy Skills, Fluid Intelligence, and Socioeconomic Status in Word Reading for Beginning Readers with Intellectual Disability

The Relationship Between Students' Paper-based And Digital Reading Literacy: Insights from PIRLS 2016

Session 2B: Advancing Equity and Understanding Learning: Investigations into Standard Setting, Cooperative Learning, and Application Behavior in Education

Tuesday, 13 June 2023, 09:00-10:30

Chair: Hanna Eklöf
Room: AK2 135
Abstract pages: 17-19

Towards Fairer and More Equitable National Tests? – A Focus on Standard Setting and Equating

Parental Support and Students' Reading Achievement in Sweden: The Mediating Role of Students' Ambition to Succeed in Schooi

Exploring the Differential Effects and Mediators of a Cooperative Learning Intervention in Fifth Grade Classrooms

Determinants and Consequences of Application Behavior to Higher Education

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Session 3A: Unpacking Pathways to Academic Achievement: Longitudinal Relationships, School Markets, Student Mobility, Resilience, and Well-being

Tuesday, 13 June 2023, 11:00-12:30

Chair: Håkan Forsberg
Room: AK2 134
Abstract pages: 19-21

Exploring Longitudinal Relationships Between School Achievement, Self-Beliefs and Mastery Goals Using UGU-Data

The Mediating Influence of School Markets on the Relationship Between Parental Education and GPA's in Grade 9

The Socially Selective Participation in Erasmus+ Student Mobility in Higher Education: The Swedish Case

The Relationship Between Academic Resilience and Psychological Well-Being – Analysis of Swedish PISA 2018 Data

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Session 3B: Perspectives on Education: Exploring Global, Regional, and National Configurations of International Students, Political Discourse, and Teacher Distribution

Tuesday, 13 June 2023, 11:00-12:30

Chair: Kajsa Yang Hansen
Room: AK2 135
Abstract pages: 22-23

The Space of International Students. Analyses of Global, Regional and National Configurations.

Open Climate for Political Discussions and Ideological Diversity in Russia Based on the ICCS

Evidence From Longitudinal Register Data From 2013 to 2020 on the Distribution of Teacher Quality in Swedish Secondary Schools

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Panel discussion: Digitization of High-Stake Tests

Tuesday, 13 June 2023, 13:15-14:30

QRM Moderator: Bert Jonsson

Room: AK2 136 (K-G Stukát)

> Panelists:
>
> Anna Lind Panzare, Department of Applied Educational Science, Umeå University
>
> Christina Wikström, Department of Applied Educational Science, Umeå University
>
> Erik Winerö, Department of Applied IT, Division of Learning, Communication & IT, University of Gothenburg
>
> Jens Anker Hansen, Swedish National Agency for Education

Abstracts

Workshops

Workshop A: A Longitudinal Approach – Is It Possible? Yes!

Workshop leaders: Alli Klapp[1] and Victoria Rolfe[1]
[1]Department of Education and Special Education, University of Gothenburg

Room: AK2 134

The workshop is targeted towards researchers (in a wide sense!) interested in using a longitudinal design. Of course, this approach requires data that is longitudinal, offering repeated measures over time. The database Evaluation through Follow-up (UGU) is a longitudinal database meaning that we follow the same individuals through the educational system and repeat almost the same questionnaires in Grade 6, 9 and 12. We also have repeated measures of tests and grades through the education system which makes it possible to estimate growth over time. The workshop will start in basic prerequisites for longitudinal analyses and use the study Does grading affect educational attainment? A longitudinal study as an example on how to go about it! Taking part in this workshop will hopefully inspire you to design a longitudinal study of your own. A warm welcome!

Previous knowledge requirements: familiarity with large-scale data

Workshop B: Getting Started with R in R Studio

Workshop leaders: Håkan Forsberg[1] and Erika Majoros[2]
[1]Department of Education, Uppsala University
[2]Department of Education and Special Education, University of Gothenburg

Room: AK2 135

The workshop provides an introduction to R, which is an increasingly used statistical environment maintained by an international team of developers, as well as RStudio, a software application that makes R easier to use. The overall aim is that participants will acquire knowledge and understanding of the basic elements of the statistical environment R, data management operations, and basic statistical analyses.

Previous knowledge requirements: working knowledge of basic statistics

Workshop C: Performing Geometric Data Analysis (GDA)

Workshop leaders: Mikael Börjesson[1], Emil Bertilsson[1], and Tobias Dalberg[1]

[1]Department of Education, Uppsala University

Room: AK2 134

The workshop Performing Geometric Data Analysis (GDA) is consecrated to learning how to perform Geometric Data Analysis on two types of materials, contingency tables and survey data (individuals x variables). Geometric Data Analysis is a family of statistical methods originating from the work of French mathematician Jean-Paul Benzécris in the 1960s and 1970s. Best known are simple correspondence analysis, multiple correspondence analysis and Euclidean classification. More recently, the leading French representatives have been Henry Rouanet and Brigitte Le Roux. It is sufficient with basic statistical knowledge. The course targets researchers, PhD-students and teachers.

Previous knowledge requirements: basic statistical knowledge

Paper Sessions

Session 1A: Exploring Classroom Dynamics: Teacher-Student Interactions and Support in Schooling
Monday, 12 June 2023, 14:30-16:00

Chair: Bert Jonsson
Room: AK2 134

Teacher Visual Behaviour in Relation to Student Self-Regulation Profile in Secondary School Classroom

Kateryna Horlenko[1]
[1]Vytautas Magnus University (Kaunas, Lithuania)

Support of student self-regulated learning (SRL) has been identified as important for preparing students for lifelog learning. Still, studies have shown that it is rather rare for teachers to consider SRL as an integral part of learning and to assess student SRL involvement. One of the observable indicators of student SRL involvement is their learning-related behaviour.

This study is a first stage of investigation of teacher professional vision for SRL in the authentic classroom. The aim of this study was to identify secondary students' self-regulated learning profiles, as well as to explore how teachers distributed their visual attention to learners with regard to these profiles during a lesson.

The sample included secondary school teachers (N=4) and their students (N=57). K-means cluster analysis was applied to identify student SRL profiles based on student self-reports and teacher ratings. Teachers' visual behaviour was investigated based on their eye movement recorded by mobile eye tracker worn by each teacher in the lesson. ANOVA test was applied to compare the number and duration of teachers' gazes between the identified student groups.

The analyses showed that 3 student profiles could be identified as the most interpretable, and they varied based on the degree of the overlap between student self-reports and teacher ratings of SRL behaviour. For some teachers, larger amounts of gaze were attributed to students whom teachers reported as more self-regulated, and least attention was directed to the less regulated student profile.

These findings contradict the theoretical assumptions that teachers would monitor students who potentially need more help during teaching. Considerations regarding teacher and student characteristics in the present sample are discussed in relation to previous studies with mobile eye tracking in the classrooms, as well as study limitations are presented.

Keywords: Self-regulated learning; Teachers' gaze; Mobile eye tracking; Cluster analysis

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The Relationships Between Student-Perceived Academic Self-Concept, Teacher's Instructional Practices and Mathematics Achievement

Lena Asp[1]
[1]University of Gothenburg

Teachers' instructional practices are expected to provide students with learning opportunities and promote students' motivation, academic self-concept, and achievement. Learning is not an individual process but occurs in a social context. Students are nested with their peers in classrooms managed by the teacher and the classroom environment influences students' learning. However, empirically, there is a need for research on these presumed relations. Using data selected from TIMSS 2019, this study was designed to explore classroom differences in student-perceived teachers' instructional practices, students' self-concept, and their relations to students' outcomes.

This study aimed to investigate the relationships between student-reported mathematics self-concept, their perceptions of the teacher's instructional practices and achievement using TIMSS 2019 data from the context questionnaire of 3,965 fourth graders in 224 mathematics classrooms in Sweden.

This study used a latent structural equation modelling approach to investigate how the relationships between teachers' instructional practices, assessed by the students, were associated with students' mathematics confidence, and how these, in turn, influence mathematics achievement. The multidimensional latent structure of the construct of

mathematics confidence was investigated by using a bifactor approach to the scale. A model with one general factor and two specific factors was found to fit the data well. The two specific factors constituted the positively and negatively worded items.

Results from this study show significant negative relationships between the general factor of mathematics confidence and achievement. The less confident the student is in mathematics, the lower the achievement. Classroom management predicted achievement significantly, but not instructional clarity. However, perceived instructional clarity showed high and positive significant relationships with positive mathematics confidence. Yet, students with teachers who lack instructional clarity have lower confidence and achievement. Finally, students with teachers less able to manage their classrooms have significant negative associations with both the positive, the negative and the general mathematics confidence.

Results from this study show the influence of teachers' instructional practices on both students' mathematics confidence and mathematics achievement. Implications from these findings emphasize the importance of teachers' instructional practices for students' mathematics confidence and achievement. Especially the large positive association found between positive mathematics confidence from teachers who were reported as being instructionally clear. However, there are limitations. First, the study is limited to the Swedish context. Second, cross-sectional data do not allow for causal inferences. Third, the data has a limitation as it is self-reported by ten-year-old students.

Insecurity, Lack of Support, and Frustration: A Sociological Analysis of How Three Groups of Students Reflect on their Distance Education During the Pandemic in Sweden

Ida Lidegran[1], Elisabeth Hultqvist[1], Emil Bertilsson[1], and Mikael Börjesson[1]
[1]Uppsala University

This article investigates the situation of Swedish upper secondary school students who have been subject to distance education during the COVID-19 pandemic crisis. We understand the transition from onsite education to distance education as a recontextualization of pedagogical practice, our framing follows loosely concepts from Bernstein. Given that the field of upper secondary education is highly socially structured it is relevant to enquire into the social dimensions of distance education. For this purpose, we have analysed answers to an open-ended question in a survey answered by 3,726 students, and related them to a cluster analysis distinguishing three main clusters of students: urban upper-middle-class, immigrant working-class, and rural working-class. The urban upper-middle-class students experienced problems decoding new requirements and were troubled by blurred boundaries between school and home. This group invests the most in schooling, and therefore expresses comparatively more anxiety for reaching anticipated achievements. Immigrant working-class students were comparatively more discontented by a lack of school support and request clearer instructions. In this new educational situation, characterized by a weak framing, they have difficulties decoding the requirements. The rural working-class students appear comparatively more disconnected from the school situation. Unlike urban upper-middle-class students, for whom the school invades the home and private sphere, the rural working-class students seldom experienced that the school intruded their home; accordingly, their studies collapsed into sleep-in-mornings and a holiday feeling. Artikeln med abstract är publicerad i European Journal of Education, 56(4), 2021.

Positive Behavior Support in School – The Causal Mechanisms and Interactive Processes. A Study Protocol

Martin Karlberg[1] and Nina Klang[1]
[1]Uppsala University

Aims
The aim of the project is to explore the complex interplay of factors on the school, classroom and individual levels that contribute to the effects of SW-PBIS on students' prosocial behaviors and academic achievement as well students' perceptions of school and classroom climate. The aim is specified in research questions: (a) What are the effects of

SW-PBIS program on students' prosocial behaviors and academic achievement as well students' perceptions of school and classroom climate? (b) To what extent do school-, classroom- and individual factors mediate and moderate the effects of the SW-PBIS program on the study outcomes over time?

Method

A process-person-context-time model is used as the overarching theory for the project. The model provides an explanatory analytical framework for the study of the interaction between different factors in the implementation of SW-PBIS in a school context. A quasi-experimental design is used as data on school-, classroom- and individual-level measures are collected in experimental and control schools over three consecutive years of SW-PBIS implementation. Eighty schools, catering for students in grades 4-9, which have expressed interest in the intervention, will be stratified in three groups, based on size, parent educational level, proportion of students with migrant background and students' average achievement rates.

The intervention is based on the Norwegian manualized program of SW-PBIS, N-PALS (Positiv Atferd, Støttende Læringsmiljø, og Sammhandling). The program's core components constitute: (a) positive behavior support strategies, including positive expectations and classroom rules, which are followed up with positive feedback and encouragement; (b) a system for monitoring student behavior, (c) school-wide corrections using consequences, (c) instruction in classroom management skills for teachers, and (e) strategies for collaboration with parents. These components are implemented through activities at school level and at classroom level.

Hierarchical regression analyses will be conducted to explore the effects of the SW-PBIS on study outcomes. Conditional process analyses, will be conducted to explore the mechanisms of how SW-PBIS (mediators) affects study outcomes and questions of when and for whom the SW-PBIS program works (moderators).

Preliminary findings

This is an ongoing project, and we can present preliminary descriptive results of baseline measurements and implementation of the IBIS program with regard to school contextual factors. We would like to present our future analysis plan for the data that will be retrieved from the project.

Keywords: intervention, positive behavior support, quasi-experimental design

Session 1B: Uncovering Complexities in Educational Equity: Exploring Measurement, Paradoxes, and Intersectionality in Academic Achievement

Monday, 12 June 2023, 14:30-16:00

Chair: Erika Majoros
Room: AK2 134

Measurement Invariance Across Educational Systems in The First and Second International Science Studies

Yuriko K. Sosa Paredes[1], Björn Andersson[1], and Sigrid Blömeke[1]
[1]Centre for Educational Measurement (CEMO)

The International Association for Evaluation of Educational Achievement conducted two studies, the First and Second International Science studies (FISS and SISS, respectively) in 1973-74 and 1983-84. In the past, researchers have examined how well the tests measure science achievement, their psychometric properties, and how students' science achievement changes. However, it is still unclear if the tests consistently measure the same construct across different educational systems and over time, which is an important aspect of creating and using tests.

We, therefore, aim to investigate measurement invariance across educational systems in both assessments in 10 years-old students, separately. The study applied classical item analysis and multiple group item response theory modeling. Our findings showed that some of the items in the assessments had negative point-biserial correlations in at least one educational system, so they had to be removed for the analyses. We also found that a unidimensional 2PL model fitted well in most educational systems in both studies, except for Chile, India and Iran in FISS and Nigeria in SISS. However, we detected a lack of strong and partial invariance across educational systems in both assessments. Additionally, we outline a supplementary analysis that examines the findings' robustness using two alternative methods for evaluating measurement invariance.

Keywords: FISS, SISS, Measurement invariance, ILSA

The Paradoxical Relations Between Students' Self-Concept, Self-Efficacy, and Achievement in Mathematics

Yi Ding[1]
[1]University of Gothenburg

Previous research showed self-concept and self-efficacy are closely associated with academic achievement (e.g., Bandura, 1997; Marsh, 1993). Researchers have since many years back noticed the paradoxical relation between self-concept and achievement (Marsh, 1984; Marsh et al., 2019; Marsh & Hau, 2004). The paradoxical relation refers to the phenomenon that the association between the non-cognitive factors and achievement is positive at the individual level but is often negative at the collective level (e.g., classroom, school and country). Marsh and Hau (2003) used data from PISA 2000 to investigate the big-fish-little-pond effect (BFLPE) across 26 countries. The results suggest that school-average achievement influences student self-concept negatively across various cultures. This paradoxical effect is supported by two studies later on with an increase in sample size and diverse cultures (Seaton et al., 2009, 2010).

It is important to note, however, that the existing literature has some limitations. For example, the indicators measuring the constructs may be not consistent and the measurement invariance of the constructs is not tested across certain groups. Meanwhile, as the closest factor to self-concept, whether the paradoxical relation applies to self-efficacy and achievement is rarely mentioned.

This study aims to evaluate the factor structure and measurement properties of the self-concept and self-efficacy constructs in mathematics on one hand and to investigate correlations between the two constructs and achievement at the student, school and country levels on the other.

Data from the PISA 2012 were used, consisting of more than 500 000 students of age 15 from 65 education systems. Multigroup confirmatory factor analysis (MGCFA) and correlation analysis were applied.

The results showed mathematics self-concept and self-efficacy constructs across these education systems held measurement invariance at the metric level. In line with previous research (e.g., Chen & Hastedt, 2022; Marsh & Hau, 2004), the paradoxical relation exists between mathematics self-concept and achievement, indicating that they are positively associated at the student level but negatively correlated at the school level (for a few countries, i.e., Albania, Argentina, Brazil, Indonesia, Israel and Thailand), and the country level. Mathematics self-efficacy, instead, is positively correlated with mathematics achievement at student, school (except for Albania) and country levels.

This study offers not only statistical testing and validation of the self-concept and self-efficacy constructs in mathematics in PISA 2012 but also provides empirical evidence in generalisability on the paradoxical relations, as well as in distinguishing these two factors.

References

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Interdisciplinarity in Higher Education

Lisa Backman[1]
[1]Uppsala University

Collaboration within academia in terms of interdisciplinarity has been extensively discussed when it comes to research (cfr. Thompson Klein 2021, Frodeman et al. (eds.) 2017, Porter 2009, Larivière and Gingras 2006, Weingart and Stehr (eds.) 2000). This paper turns attention to higher education at undergraduate level in Sweden. The overarching aim is to explore relationships between disciplines, and see if there are patterns in who is collaborating with whom that can say something about interdisciplinarity in undergraduate education. This is here explored through a case of Uppsala university and data collected from the university´s own course database (SELMA), specifically focused on courses classified as belonging to more than one subject. Social network analysis using RStudio has been the main approach to handling data. Preliminary findings include patterns of clusters where courses are linked together, and central nodes as courses with extensive relations to others. The paper is a work in progress, looking to further explore combinations of courses within undergraduate programs as well as data from student educational pathways. Social network analysis is concluded to be a valuable approach to explore relationships between disciplines and thus interdisciplinarity within higher education in Sweden.

Keywords: Interdisciplinarity, Higher education, Social network analysis, Uppsala University

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Applying Quantitative Intersectional Approach to Studying Social Inequalities in Academic Achievement

Anna Soloveva[1]
[1]Department of Education, Uppsala University

The influence of different dimensions of students' social background on their academic achievement has been well-documented in both quantitative and qualitative studies. However, despite the extensive research in this area, quantitative research has barely addressed how different dimensions of social background intersect with each other. The intersectional perspective, originating from qualitative research, has not been sufficiently adopted in quantitative analysis yet, which can be partly explained by a lack of suitable methodology. The majority of studies using regression-based analysis account only for the additive effects of different dimensions of social inequalities. And even if it is possible to account for the intersectional multiplicative effect in the regression by adding interaction terms, it is still problematic to model complex multi-dimensional interactions. However, recently, a more suitable method for quantitative intersectional analysis has been developed, the Multilevel Analysis of Individual Heterogeneity and Discriminatory Accuracy (MAIHDA).
The current paper analyses inequalities in compulsory school final grades from the intersectional perspective using the MAIHDA approach. The aim of the paper is to explore whether different dimensions of social inequalities intersectionally affect the final grades of Swedish compulsory school graduates. The analysis is based on register data from Swedish compulsory school graduates in 2015 and focuses on the intersection of gender, immigration status, geographical location, attending public or private school, as well as parental immigration status, education, and income. The results suggest that intersectional strata based on the social background variables explain up to 30 percent of the variation in the compulsory school grades; however, the additive component of the influence of the different dimensions of social background is much more prominent than the intersectional component, as the analysis suggests the presence of a smaller to moderate intersectional effect. Overall, the key finding of the analysis is that adopting an intersectional approach allows us to discover some intersectional patterns in how different dimensions of social background affect the grades of Swedish school graduates, which are not detectable by the traditional additive approach. However, the traditional additive approach seems to largely account for an essential part of the variation in school grades.

Keywords: Compulsory school grades, Intersectional analysis, MAIHDA

Tuesday, 13 June 2023, 09:00-10:30

Chair: Monica Rosén
Room: AK2 134

Evaluating the Simple View of Reading Model: Longitudinal Testing and Applicability to the Swedish Language

Thomas Nordström[1], Henrik Danielsson[2], and Linda Fälth[3]
[1]Department of Psychology, Linnaeus university, Växjö, [2]Department of Behavioural Sciences and Learning, Linkoping University, Campus Valla, [3]Department of Pedagogy and Learning, Linnaeus University, Växjö

This study investigates the challenges associated with statistically evaluating the Simple View of Reading model (SVR) and its applicability to the Swedish language. The SVR model, a widely-accepted and popular framework, posits that reading comprehension (RC) is a product of two independent factors: decoding (D) and language comprehension (LC), expressed as RC = D x LC. While various statistical approaches have been employed to validate the model in English, a deep and non-transparent orthography, a consensus on a formal testing method has not been reached. Additionally, the model's functionality in other languages, such as Swedish, which has a semi-transparent orthography, remains unclear.
This study has two primary objectives: 1) to longitudinally test the SVR model's validity from year 1 to 3, examining the relative contributions of decoding and language comprehension factors to reading comprehension over time using a latent variable approach, and 2) to assess the model's applicability to the Swedish language. To achieve these goals, we utilize an extensive dataset from the LegiLexi foundation, comprising data from 43,127 students across 2,666 schools and 18,006 classes.
The presentation will discuss methodological and statistical considerations necessary for evaluating the SVR model, as well as the contributions of decoding and language comprehension factors to reading comprehension during primary school's learning-to-read process.

Keywords: Validity testing, latent variable, the Simple view of reading

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The Role of Early Literacy Skills, Fluid Intelligence, and Socioeconomic Status in Word Reading for Beginning Readers with Intellectual Disability

Lisa Palmqvist[1,2], Mikael Heimann[2], Jenny Samuelsson[3, 4, 5], Gunilla Thunberg[3, 4], Monica Reichenberg[1], and Emil Holmer[2]
[1]Department of Education and Special Education, University of Gothenburg, Sweden, [2]Department of Behavioural Sciences and Learning, Linköping University, Linköping, Sweden, [3]Speech and Language Pathology Unit, Department of Health and Rehabilitation, University of Gothenburg, Gothenburg, Sweden, [4]Dart - Centre for AAC and Assistive Technology, Sahlgrenska University Hospital, Gothenburg, Sweden, [5]Region Västra Götaland, Habilitation & Health, Habilitation Children and youth, Gothenburg, Sweden"

Being able to read is crucial for both academic success and societal participation. Children with intellectual disability (ID) exhibit reading difficulties and many never become fluent readers. Literature investigating the underlying mechanisms is sparse. In typically developing children, reading development is highly dependent on early literacy skills and contextual factors, such as socioeconomic status (SES). In addition, fluid intelligence is also important, especially when learning to read. The aim was to investigate how fluid intelligence and SES contribute to early literacy skills and reading in beginning readers with ID. Method: 136 children with ID were included. The participants were assessed on fluid intelligence, letter-sound knowledge, phonological awareness, and word recognition. Structural equation modeling was used to investigate the aim. Three different models were built and tested against each other for best fit (using the Vuong test indicated by a significant p-value). The first model included two latent variables. 1. Word Reading: two reading tests and a teacher's estimate of the student's reading ability, and 2. Early Reading Skills: letter-sound knowledge and two tests assessing phonological awareness. Early Literacy Skills was set to predict Word Reading. In a second model, Fluid Intelligence was included to predict Word Reading and Early Reading Skills. In the

third model, SES was added to predict Word Reading and Early Reading Skills. Findings: The first model provided a good fit to the data, $\chi 2(8) = 9.714$, p = 0.286. The second model provided a better fit than the first model, p < .001. The third model did not provide a better fit than the second model, p = .162. The path between Word Reading and Early Reading Skills, and the path between Early Literacy Skills and Fluid Intelligence were significant, p < .001. However, the path between Word Reading and Fluid Intelligence (p = .366), the path between Early Literacy Skills and SES (p = .098), and the path between Word Reading and SES (p = .587) were not significant. Conclusion: Our results showed that Early Literacy Skills explained almost all variance in Word Reading (.98) and that Fluid Intelligence contributed indirectly to Word Reading via Early Literacy Skills (.62). SES did not predict either Early Literacy Skills or Word Reading. Thus, in beginning readers with ID, Word Reading ability is explained by Early Reading Skills, which in turn is supported by Fluid Intelligence. However, SES does not contribute to reading skills in this group.

The Relationship Between Students' Paper-based And Digital Reading Literacy: Insights From PIRLS 2016

Elpis Grammatikopoulou[1], Stefan Johansson[1], and Monica Rosén[1]
[1]University of Gothenburg

Nowadays, for many people worldwide, much reading takes place in digital form. The widespread use of digital devices in schools has revolutionized the way students read and acquire information (Mullis & Martin, 2019). Research has compared paper-based and digital reading and revealed unique characteristics of each that may affect reading. Digital reading lacks physical boundaries and includes pop-up windows, moving images, and sound (Chen, 2017; Kress, 2013). It also requires different skills and affects memory, concentration, comprehension, and performance differently (Gilster, 1997; Schmar-Dobler, 2003; Delgado et al., 2018; Baron, 2021; Clinton, 2019; Backes & Cowan, 2019). Despite the dominance of digital devices, previous studies have shown that paper-based reading offers advantages in terms of better concentration, memory, and deeper understanding (Delgado et al., 2018; Baron, 2021). However, little is known about how each mode affects student achievement and what factors promote higher achievement in either mode.

To address this gap in knowledge, this study aims to investigate the relationship between paper-based and digital reading literacy skills among 4th-grade students in 14 countries using data from the 2016 Progress in International Reading Literacy Study (PIRLS) and its digital counterpart, ePIRLS. The study aimed to identify factors such as students' digital use in their free time and for schoolwork as well as digital means' frequency of use, that may affect achievement in each mode. Our research questions are:

1. What is the association between paper-based and digital reading literacy skills for 4th grade students and classrooms in 14 countries?
2. How are students' and classrooms' digital use related to their achievement on the paper-based and digital reading test and can they account for the difference between them?

The sample consisted of 14 countries participating in both PIRLS and ePIRLS in 2016. Students' scores in both assessments were used to calculate relative strength and weakness for each student.

Two-level regression analysis using Mplus revealed a high association between PIRLS and ePIRLS scores at both student and classroom levels. Nevertheless, differences in factors were noted only at classroom level. Preliminary results showed that in many countries students' digital habits in their free time and specifically chatting and surfing at the internet, as well as digital means' frequency of use have a significant positive effect on the difference of the two modalities, in favour of digital reading achievement.

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Session 2B: Advancing Equity and Understanding Learning: Investigations into Standard Setting, Cooperative Learning, and Application Behavior in Education

Tuesday, 13 June 2023, 09:00-10:30

Chair: Hanna Eklöf
Room: AK2 135

Towards Fairer and More Equitable National Tests? – A focus on Standard Setting and Equating

Anna Lind Pantzare[1]

[1]Department of Applied Educational Science, Umeå university

The Swedish national tests are currently undergoing a major reform work concerning fairness and equity. Validity is the guiding star, and the goal is to have tests that are digital, more reliable, and fairer to the test takers. One issue concerns the process of setting cut scores for different test grades and whether that they are equivalent over time. In this study the cut scores from the regular standard-setting before test administration is validated through a comparison with equated cut scores after the test administration to answer the question if the proposed cut scores are fair and equal. This is important since teachers are to pay special attention to the results when grading the students. Standard setting, the process of establishing reliable and valid cut scores, has been a concern for the last 50 years (Berk, 1986). This might be due to that standard setting has been – and still is – seen as a rather complicated process that usually must rely on subjective judgments regarding test items and/or test takers.

The often-mentioned solution is equating (Kolen & Brennan, 2014). However, equating requires information that connects the different test forms, either the test takers or common items, i.e., anchor items. New test forms of the Swedish national tests in mathematics for upper secondary school are administered once every semester. These test forms are not equated, instead cut scores are defined for each new test form using a modified Angoff method (Hambleton & Pitoniak, 2006).

The data in the consists of a random sample of student results from the regular administration of three consecutive administrations of the national tests in mathematics course 3c for upper secondary school. The cut scores are defined through a well-defined process following the recommendations in the literature (Cizek & Bunch, 2007). The equating analyses were performed in R using several different equating methods. It is not possible to assume that the groups taking the different test forms are equivalent. Therefore, due to the lack of anchor items, other methods with covariates, propensity scores and anchors with similar items were used.

The results from the comparison of the cut scores from the standard-setting in relation to the equated levels will be presented. In addition, drawing on the results, a more general discussion about equating in a criterion-referenced system and the possibilities to collect reliable data to use when equating tests in a decentralized system like the Swedish.

Keywords: Validity, equating, standard setting

Parental Support and Students' Reading Achievement in Sweden: The Mediating Role of Students' Ambition to Succeed in Schooi

Panagiotis Patsis[1]
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Parental involvement has been documented in many different studies in the past to be one of the most important factors to positively influence students' achievement at school regardless of academic level, ethnicity, or living environment. Additionally, research has shown that parental support influences students' attitudes and ambitions towards school and their academic success. Students' ambitions are considered important as they can influence key choices and outcomes, such as academic achievement.Previous studies have separately explored the impact of parents' academic support and students' ambitions on students' academic achievement. However, few studies have explored the common impact of these two factors simultaneously. The purpose of this study is to examine the influence of parental support on students' reading achievement through the mediating effect of students' ambitions in the Swedish context. The study uses cross-sectional secondary data from the PISA 2015 cycle, with a sample of 4995 Swedish students. The quantitative methods of confirmatory factor analysis (CFA) and structural equation modeling (SEM) are employed in the study. The results showed a significant direct effect of parental support on students' reading achievement. Moreover, it was found that there is a small, but significant indirect effect of parental support to students' reading achievement through the students' ambitions. Based on these findings we can conclude that parental involvement and support towards their children has an impact on their performance and that it can influence their children's ambition towards academic success.

Keywords: Parental support, student ambition, academic achievement, CFA, SEM

Exploring the Differential Effects and Mediators of a Cooperative Learning Intervention in Fifth Grade Classrooms

Nina Klang[1,2]
[1]Uppsala University, [2]Mälardalen University

Aims
The aim of the project was to investigate the effects of the instructional approach of cooperative learning (CL) on classroom inclusion, operationalized as children's peer acceptance and learning gains in reading and mathematics.
Methods
Participants were 958 fifth-grade students and 56 teachers in heterogeneous classes in fifth grade. The study utilized a cluster-randomised experimental design in which students in the experiment group received instruction according to the CL approach and students in control group received instruction as usual. The intervention lasted for 15 weeks and included CL approach in general with focus on group-building exercises as well as a specific component in which CL approach was embedded in activities of reading comprehension and mathematical problem-solving. The teachers in intervention group received 5 days of training in both components and the teachers in control group received 2 days of training in reading comprehension and mathematical problem-solving not including CL approach.
Before and after the intervention data on peer nominations, students' perceptions of classroom climate and tests of reading comprehension and mathematical problem-solving were collected. Data were analyzed using multilevel mixed linear regression with the R program for statistical computing, using lme4 package. In multiple models the results were analyzed for the whole sample and differential effects for students with pre-test scores above and below median at pre-test were studied. Furthermore, the impact of mediators (level of implementation, children's peer acceptance at pre-test) was studied.
Findings
The results revealed that the intervention had significant effects on total scores of students' mathematical problem-solving and especially on problem-solving in the area of geometry and small effects on peer acceptance. No effects on reading comprehension were revealed. No consistent results were found when the differential effects for students with varying pre-test scores were studied. Neither were the results consistent with regard to mediating effects of the level of teacher implementation. Students' pre-test peer acceptance scores were however significantly related to their gains in mathematical problem-solving.

Conclusions
Cooperative learning intervention appeared to have positive effects on children's mathematical problem-solving and peer acceptance, thus giving some support for use of the intervention to promote inclusion. However, the study encountered several challenges with regard to teachers' implementation of the intervention, teacher drop-out and choice of outcome measures, which may limit the possibilities to draw conclusions.Keywords: experimental design, multilevel regression, mediator

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Determinants and Consequences of Application behavior to Higher Education

Emil Bertilsson[1], Astrid Collsiöö[1], and Yann Renisio[1]
[1]Uppsala University

Higher education is a central step in the production of social stratification and the transfer of social advantage from one generation to the next. We know from a large body of research that there is strong and persistent influence of gender and social origin on access to higher education. Most studies on inequalities in higher education focus on differences related to attainment. In this study, we propose a complementary way to untangle the process of entrance to higher education by studying how gender and inherited resources influence each of several cumulative and essential steps: 1) acquiring the necessary requirements in upper secondary education, 2) applying once having the requirements, 3) being accepted after application, and finally 4) the social outcome of the choice of higher education program. By using data on a full cohort of upper secondary graduates, their grades and accomplishments in school, and data on applications to higher education, we are able to recreate a "space of reachable programs" of each potential applicant, i.e. what they could have reached at the time of their application. We show that the size of this space of reachable programs is heavily influenced by gender and social origin. But also when controlling for this effect, the propensity to apply, being accepted, and registering as well as the field and level of the programs that applicants opt for are strongly related to sociodemographic variables. By comparing differences in the strength of this association, we are able to highlight were in this process of entrance to higher education, the influence of gender and inherited resources are the strongest.

Keywords: Higher education, Social stratification, Applications

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Session 3A: Unpacking Pathways to Academic Achievement: Longitudinal Relationships, School Markets, Student Mobility, Resilience, and Well-being
Tuesday, 13 June 2023, 11:00-12:30

Chair: Håkan Forsberg
Room:

Exploring Longitudinal Relationships Between School Achievement, Self-Beliefs and Mastery Goals Using UGU-Data

Anders Hofverberg[1], Hanna Eklöf[1], and Eva Knekta[1]
[1]Umeå University

The present study aimed to investigate whether students' self-beliefs and mastery goals have an impact on later achievement over and above that of previous achievement and cognitive ability, and also whether there are signs of reciprocal relationships. To achieve this aim, data from the longitudinal "Evaluation Through Follow-up" (UGU) project were used. More specifically, the study utilized a data set with 2,256 students assessed at three time points over six years (grades 6, 9, and 12). National test scores in math and the Swedish language and more general tests of verbal and quantitative ability were included in the analyses as were measures of students' self-beliefs and mastery goals. An autoregressive cross-lagged panel path model with control variables was used to investigate relationships between the different variables over time. Findings showed that earlier motivational beliefs predicted later motivational beliefs, and earlier performance predicted later performance, but also that motivational beliefs may affect later performance

and vice versa. This suggests that the skills and knowledge the students bring to school need not be decisive of later performance, but that motivational variables can be significant predictors over and above that of previous performance. Findings may have implications for how student motivation and attitudes should be acknowledged in everyday learning situations and in a changing assessment system with changed assessment practices.

Keywords: self-beliefs, mastery goals, school achievement, UGU

The Mediating Influence of School Markets on the Relationship Between Parental Education and GPA's in Grade 9

Tommie Petersson[1]
[1]Uppsala University

School markets and their influence on grades have been a topic of much discussion both in academia and beyond. Discussions regarding grade inflation has for example been a topic on documentary TV-shows as well as in different academic contexts. The related question of how school markets function in relation to the reinforcement of the influence of social background on school performance has however not been investigated at length. This paper aims to shed light on this question: "To what extent can the connection between social background and GPA's in year 9 in compulsory school be explained by the emergence of school markets?". To help to answer this question data from the UGU-database from Gothenburg University was analysed using Structural Equation Modeling (SEM). Cohorts born in 1992, 1998 and 2004 was examined to be able to trace the influence of the expansion of school markets in Sweden over time. A mediation model was constructed utilizing a definition of school markets as the share of private school students' in a given municipality. The mediating function of this variable was measured in relation to the relationship between parental education background and the GPA for year 9-students in compulsory school. Gender and migration background were included as control variables. The resulting model was shown to have an acceptable model fit: I $\chi 2$ = 332,747, df = 6 (p = <.001). CFI = .955, NFI = .955. RMSEA = .043 (95 % C.I. .039-.047, p = .998). The main results include a 200.87 percent increase in mediation from the 1992-cohort to the 2004-cohort, suggesting that the emergence of school markets acts as a progressively stronger reinforcing agent in the relationship between social background and GPA's. This in turn suggests that the school market expansion plays a larger and larger role in enhancing the socially reproductive component of the school system.

Keywords: Private Schools, School Markets, Social Background, Grade Research, Structural Equation Modeling

The Socially Selective Participation in Erasmus+ Student Mobility in Higher Education: The Swedish Case

André Bryntesson[1]
[1]Uppsala university

Exchange studies have long been known to have an overrepresentation of students from more privileged backgrounds. However, given the egalitarian ethos of the Swedish education system, along with high levels of English language proficiency, relatively generous general student financial aid and the availability of Erasmus+ scholarships for exchange study periods abroad, there ought to be comparatively few obstacles to participations even for less privileged groups. Based on full population data for all students in higher education in Sweden, and on all outbound participants in the Erasmus+ student mobility programme in higher education during two application years, I have conducted a logistic regression analysis to try to disentangle the role of social and demographic variables from grades and study choices in estimating the likelihood of Erasmus+ participation. The results seem to indicate that upper secondary school grades and language studies explain large parts of the overrepresentation of students from well-educated families, while the choice of study in higher education helps explain some of the overrepresentation of students from financially more well-to-do families. Since I have little experience with this type of analysis, and have come across arguments against comparing odds ratios between different models in logistic regression analyses, I am interested in getting feedback on how the analysis could be improved and if there are other types of statistical methods that would be more suitable for the intended purpose.

The Relationship Between Academic Resilience and Psychological Well-Being – Analysis of Swedish PISA 2018 Data

Deborah Siebecke[1]
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Research suggests that students from socioeconomically disadvantaged backgrounds, in general, demonstrate lower academic achievement (e.g., Sirin, 2005). However, resilience theory is grounded in the recognition that individuals' responses to adversity differ (Rutter, 2012) and some students demonstrate positive adaptation despite adversity. The present study focuses on academically resilient students in Sweden, defined as those who "beat the odds" and achieve high despite their socioeconomic disadvantage.

The main aim of the study is to explore the relationship between academic resilience and psychological well-being. This relationship requires further investigation, as both positive and negative associations have been found in previous literature. For instance, it was found that academically resilient students reported higher life satisfaction than non-resilient students (OECD, 2019). Life satisfaction is one important component of psychological well-being, but more research is needed to understand this complex construct. Other research highlighted that resilient children often experienced internal distress (Luthar, 2006). This may indicate a trade-off between psychological well-being and academic resilience where students who show positive academic adaptation may suffer in other areas of life.

Making use of Swedish data from the Programme for International Student Assessment (PISA) from 2018, the study defines academically resilient students as those who achieve at or above Level 3 in all three PISA domains (mathematics, science, and reading), despite being in the bottom quartile of the Swedish distribution of the Index of Economic, Social, and Cultural Status (Agasisti et al., 2018). Psychological well-being is measured using indicators of life satisfaction, eudaimonia (meaning and purpose in life), and hedonia (experience of positive and negative emotions) (Borgonovi, 2020). Preliminary analyses were carried out using SPSS 29 and Mplus 8. Firstly, confirmatory factor analysis was conducted to test the measurement properties of the well-being constructs of eudaimonia and hedonia, which resulted in a good overall model fit. Secondly, structural models were developed to connect the psychological well-being dimensions with the endogenous resilience variable. Preliminary results hint at a positive relationship between academic resilience and life satisfaction, but a negative relationship between academic resilience and eudaimonia. The results suggest that the relationship between the two concepts is not straightforward and requires further discussion.

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Session 3B: Perspectives on Education: Exploring Global, Regional, and National Configurations of International Students, Political Discourse, and Teacher Distribution
Tuesday, 13 June 2023, 11:00-12:30

Chair: Kajsa Yang Hansen
Room: AK2 135

The Space of International Students. Analyses of Global, Regional and National Configurations

Mikael Börjesson[1]
[1]Uppsala University

This paper draws on OECD data on international student flows between regions of origin and countries of destination. On basis of a correspondence analysis (CA), the global space of international student flows, 2018, is depicted as having three main poles: one Pacific linking students from Asian regions to predominantly Anglo-Saxon countries of destination including the US, Australia, New Zeeland, and Canada, as well as Japan and South Korea, one European pole combining European countries of destination with European regions of origin, and one Franco-Iberian pole, where France, Portugal and Space are the countries of destination and Africa and Latin America are the main regions of origin. These three poles correspond to three different logics of student mobility: logics of marketisation, geographical proximity, and colonial heritage. They also are dominated by different languages: English, German and Slavic languages, and Latin languages. The Nordic countries primarily position themselves in the middle, in between the different poles.
At a more detailed level, the space contains further differentiations. The European countries of destination are dispersed according to the axes, and, for instance, the eastern and western European countries are opposed in the third axis. Along the forth axis, Latin American as region of origin is polarised to the Arab region. Asian regions of origin are dispersed along the fifth axis. This implies the importance of analysing the national, regional and global levels in relation to each other. The overall results indicate that the global space is composed of regional subspaces with important patterns of flows between regions and countries, which follow different logics. Geopolitical dimensions, including language and culture, are crucial for forming linkages, but also for raising barriers.
Development over time is also analysed. Most striking is the stability of the space. The three main poles are consistent over time. However, certain countries can move in the space over time. This can be the result of changing policies, such as the introduction of student fees and increasing pressure to marketize the system.

Keywords: Correspondence Analysis, Geometric Data Analysis, Student Mobility,Regions, Nation States

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Open Climate for Political Discussions and Ideological Diversity in Russia Based on the ICCS

Evgenia Efimova[1]
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Open classroom climate for political discussions holds a central place in civic education literature and relates to a range of positive civic outcomes (Knowles Torney-Purta & Barber, 2018). However, as any deliberative space, an open classroom is embedded in a social and political context. Teachers consider classroom composition in their professional decision-making (Hess & McAvoy, 2015), and some evidence suggests that an open climate is less likely to occur in more "complicated" ideologically and socioeconomically diverse classrooms (Knowles, 2020).
The lack of discussion opportunities for already marginalized students is not the only problem here. Although the open climate in quantitative literature is often reduced to the procedure, it is clear that the meaning is at least as important the form. If political discussions systematically happen in classrooms dominated by certain sets of political beliefs, it challenges the notion of an open classroom as an exercise in democracy.
This study focuses on Russia as a case to explore the role of classroom ideological composition in open climate perception and civic learning based on the International Civic and Citizenship Education Study. The Russian context is characterized by the absence of free public debate, criminalization of dissent, and the expansion of patriotic agenda in media and education, so this article uses mean patriotism level in the classroom and within-class differences in it to operationalize ideological composition.

This study shows that students in more patriotic and like-minded classes perceive the classroom climate as more open, but it does not change its effect on knowledge. There is a negative relationship between ideological diversity and civic knowledge. These effects in Russia are neither unique nor the strongest among the ICCS participants. These findings implicate that reality of an open classroom might be far from the idealized notion of balanced deliberation, and its diversity remains a challenge rather than an opportunity. More research is needed on the quality of reasoning in social studies classrooms in times of polarization and political turmoil.

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Evidence From Longitudinal Register Data from 2013 to 2020 on the Distribution of Teacher Quality in Swedish Secondary Schools

Eun Jeong Lee[1]
[1]University of Gothenburg

The opportunity to learn (OTL) models are crucial for students to achieve their intended outcomes within a school context. One aspect of the OTL framework is access to quality teachers, which has been shown to increase students' successful learning and address the student achievement gap between different groups. However, students with low SES consistently have less access to teachers with high educational qualifications than their more advantaged peers. In a Swedish context, there has been a significant variation in the number of qualified teachers among schools, with respect to the student-teacher ratio and the number of teachers whose teaching subjects were not matched with their teacher education. Scholars argue that this is influenced by decentralization and marketization reforms, which allowed municipalities and schools greater freedom in employing teachers. The government introduced two teacher education reforms in 2001 and 2011 to increase flexibility, autonomy, and teacher education quality. However, it is still unknown whether these reforms have successfully increased teacher quality and distributed it across schools in pursuing equivalent education. This study aims to answer research questions regarding the proportion of teachers with a teaching certificate, the proportion of teachers with a matched position relevant to their education, and differences in distribution across subjects, schools and regions. The study will use data from the Teacher Register and Student Register from 2013 to 2020, focusing on student cohorts born between 1997 and 2004, and will conduct longitudinal analyses of teacher characteristics at the school level, taking into account student characteristics. Descriptive statistics and regression techniques will be used for analysis. All data were derived from Statistics Sweden and analyzed within the MONA (Microdata Online Access) system.

On Constructing a Plausible Value for Epistemic Knowledge in Science

Johan Espenberg[1]
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Epistemic knowledge in science, or knowledge about the nature of science (NOS), is a desired goal in K-12 science education. NOS are connected to epistemic beliefs, and can play an important part to counter problems with knowledge resistance. There are claims that NOS, besides being a fundamental part of a scientific literacy, can alter students' interest in science and facilitate learning in science. But, these claims needs a stronger empirical base. My dissertation aims for exploring empirical evidence, both for positive impact of NOS on science learning (measured as outcomes), and of countering knowledge resistance.
One study is intended du use data from PISA 2015, being the latest LSA with science focus that also explicitly measures epistemic knowledge in science. There is, although, a problem with a matrix sampled dataset and relatively few items measuring epistemic knowledge. PISA does not provide a plausible value for epistemic knowledge, which I need for analysis of correlations with achievement, as well as interest and epistemic beliefs – both measured by the student questionary.
The poster will provide some initial analysis of Swedish data from PISA 2015 using classical test theory and item response theory and highlight some issues on the computation of a plausible value for epistemic knowledge in science.

Keywords: epistemic knowledge, nature of science, PISA, plausible value

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Are Teachers' Working Conditions Differentiated Between Schools with Different Assets?

Daniel Bolander Blomberg[1]
[1]Uppsala University

Teachers' working conditions is an important issue with implications for educational quality. Several countries including Sweden are facing teacher shortage driven in part by teachers choosing to leave the profession because of a stressful working environment. One aspect which has received little attention is how teachers' working conditions relate to school segregation and differences in assets between schools. By school assets I mean a broad construct of assets including student social and ethnic background, teacher background and experience and material assets in schools. This proposed research seeks to explore how teachers working conditions vary among schools with different assets. Using multiple correspondence analysis, a space of school assets can be constructed and teachers working conditions can be projected onto that space. The method makes it possible to use multiple indicators of school assets and study the dimensionality of how school assets are differentiated. This is important in order to understand how different phenomena of school differentiation relate to one another. These

results could have implications for how we understand teachers' working conditions and which school assets that are important for thriving teachers.

Swedish Shortened Mathematics Anxiety Rating Scale and its Relations to Math Performance and Attitude

Jonatan Finell[1]
[1]Umeå University

The current study examines the shortened version of the Mathematics Anxiety Rating Scale – Elementary (MARS-E) which was translated into Swedish. The original scale was conceptualized as a two-factor construct including a cognitive and affective component of math anxiety. The cognitive component assesses respondent's "worry" in certain math-related situations, the second component (affective) concern respondent's "nervousness". Drawing on previous theory from Henschel and Roick (2017), the current study investigates, in a sample of young Swedish students, whether a two-factor model fits the data or if a one-factor model is preferable as it may be more challenging to separate subcomponents of math anxiety at such a young age.

Reliability of the scale is assessed and contrasted to the original scale by Henschel and Roick (2017). The current study also evaluates relationships between the MARS-E and other associated criterion variables. These include math performance, test anxiety and math self-concept. Correlation analyses are employed for this evaluation as well as structural equational modelling. Effect sizes from these analyses are juxtaposed to previous findings.

The findings from this study will confirm or falsify the robustness and dimensionality of the MARSE in the context of a young Swedish population. Furthermore, conclusions of relationships with other variables will add substance to previous research and strengthen the understanding of the onset of math anxiety at young ages.

Questionnaire-Taking Motivation: Using Response Times to Assess Students' Motivation to Answer the PISA 2018 Student Questionnaire

Erik Lundgren[1]
[1]Department of Applied Educational Science, Umeå University

Test-takers' motivation to provide high-quality responses to questionnaires — their questionnaire-taking motivation (QTM) — is an important area of research in educational science that deserves attention. While QTM has clear validity implications for questionnaire responses, it could also serve as a proxy for test-taking motivation (TTM) — the motivation to do as well as one can on a test. Departing from the theory of satisficing in surveys, a hierarchical Bayesian finite mixture model of questionnaire response times was developed to infer test-takers' QTM and how QTM was related to test-taking performance. Reading fluency score and self-reported effort were incorporated as covariates to assess the relationship between QTM and test performance, addressing if reading efficiency was confounding the relationship and

determining if QTM complements self-reported effort in prediction of test-performance. Preliminary results indicate that test-takers generally have high QTM. There is a positive effect of QTM on test performance, partially attributable to reading efficiency (fluency). QTM and self-reported effort exhibit a low correlation but both contribute to test performance prediction, suggesting they capture different yet complementary aspects of test-taking motivation. In conclusion, results suggest that inferring QTM from response times may be a valuable complement to other TTM assessment methods. However, questions remain regarding the relationship between QTM and TTM and how accurately the finite mixture models capture test-takers' response processes on individual questionnaire items.

ELD CAMA Platform: Facilitating Meta-Analyses and Evidence-Based Practice in Education

André Kalmendal[1] and Lucija Batinovic[2]
[1]Linnaeus University, [2]Linköping University"

The increasing adoption of open science practices in disability research and education highlights the need for tools that facilitate FAIR (findable, accessible, interoperable, reusable) data sharing. Community-augmented meta-analysis (CAMA) platforms have emerged as promising solutions, enabling dynamic, interactive meta-analyses while ensuring reproducibility (Tsuji et al., 2014). However, evidence synthesis quality remains a challenge in educational research (Nordström et al., 2022).

We present the development of a CAMA platform for Evidence in Learning, Didactics, and Disability research, focusing on quantitative methods for conducting frequentist and Bayesian meta-analyses of educational interventions built with R and Shiny. The platform organizes studies into categories for typically developing students and students with intellectual disabilities, subdivided by educational domains: writing, reading, math, science, and others.

Our objectives are to develop a platform that enables sharing of high-quality meta-analyses, incorporating features such as publication bias assessment, effect size aggregation, and moderator analysis, with mandatory risk of bias assessments for dataset inclusion, and to design a versatile platform suitable as both a pedagogical and research tool. The platform will serve as a guide on evidence-based practices for practitioners and an easy-to-use tool for students and researchers aiming to conduct meta-analyses. During the poster session visitors will get a hands-on experience of the platform.

Showcasing Untapped Opportunities for Interdisciplinary Understanding through Bibliometrics in Learning Analytics and Educational Research

Natalie Hyltse[1] and Rickard Carlsson[1]
[1]Department of Psychology, Linnaeus University, Sweden

Bibliometrics is a quantitative approach to producing useful and content-rich overviews of fields of research, making it a highly relevant meta-methodology for any discipline. We posit that the methodology of bibliometrics is an excellent and underused way to conduct meta-science within

educational research. Within the larger context of an ongoing scoping review of data-driven decision making across research fields, we demonstrate how bibliometrics can be used to examine the field of learning analytics.

Our final sample of 1,008 systematic and scoping reviews is derived from an initial Scopus database search yielding 2,412 articles, which were screened using the PICOS (Population, Interventions, Comparisons, Outcomes, Study Type) framework. We employed the R-package bibliometrix (Aria & Cuccurullo, 2017) for an exploratory bibliometric analysis. The included reviews were clustered via a multiple correspondence analysis (MCA) based on author's keywords, forming the basis for subsequent research area analyses. This is where we are able to identify learning analytics and other educational applications of data-driven methodologies. These analyses consist of cross-citation (i.e., the extent to which they reference each other within-sample), co-citation (i.e., the extent to which they reference the same sources), and other word/phrase examinations of both titles and keywords.

The results clearly indicate an isolation of learning analytics within the sample. Our conclusion is that there is untapped opportunity for interdisciplinary development within learning analytics. By employing bibliometrics, we demonstrate its methodological potential to bridge research gaps and enhance education research in the context of learning analytics and beyond.

Keywords: learning analytics; meta-research; bibliometrics; multiple correspondence analysis (MCA)