

DEVELOPING A COMPETENCY-BASED TUTORING TRAINING USING A VISUALIZED-MODEL-CENTERED INSTRUCTION - EXPERT MODELING APPROACH

Clemens Jaeger (JKU Linz, Austria)

Abstract: In all countries and economies that participated in PISA 2018, socio-economic status still has a large influence on students' performance in science, reading, and mathematics. The gap in science scores between socio-economic disadvantaged and advantaged 15-year-old students represents the equivalent of about three full years of schooling. One suggested approach to help mitigate the problem is that people in local communities provide after-school tutoring support for students in need in close cooperation with the schools.

The development of such an intervention is the aim of this Educational Design Research project.

To provide the voluntary tutors with the best training in the least possible time, an innovative competency-based training that uses Visualized-Model-Centered Instruction was developed. At the beginning of the training, an expert model of teaching and learning is introduced.

The model was developed using the concept of Deliberate Practice, which was drawn up and improved by K. Anders Ericsson (2018), as a basis. The insights of his studies of professional expertise range from the characteristics of ideal training environments with teachers and coaches, to the methods of fostering motivation by providing emotional support and attainable training tasks of a suitable difficulty level. The framework was compared with the concept of Visual Learning (Hattie 2012), the implications for educational practice of the Science of Learning and Development (SoLD) (Darling-Hammond et al. 2019), the RaPID approach (Preciado-Babb et al. 2020), which is used in the Canadian education initiative JUMP Math, and the pedagogical approach of the education initiative Teach For All (Farr 2010).

The expert model is then used as a reference for lesson-planning, practicing tutoring-sequences in a realistic training-environment with student-actors, and reflecting on the experiences.

The evaluation of the pilot-phase showed that the tutors feel very well prepared for their task by the end of the basic training course. This assessment was also shared by observing education-leaders and -specialists.

References

- Darling-Hammond, Linda; Flook, Lisa; Cook-Harvey, Channa; Barron, Brigid; Osher, David (2019): Implications for educational practice of the science of learning and development. In: *Applied Developmental Science* 109 (1), S. 1–44. DOI: 10.1080/10888691.2018.1537791.
- Ericsson, K. Anders (2018): The Differential Influence of Experience, Practice, and Deliberate Practice on the Development of Superior Individual Performance of Experts. In: Karl Anders Ericsson, Robert R. Hoffman, Aaron Kozbelt und Mark A. Williams (Eds.): *The Cambridge Handbook of Expertise and Expert Performance*. Second edition. Cambridge: Cambridge University Press, S. 745–769.
- Farr, Steven (2010): *Teaching as leadership. The highly effective teacher's guide to closing the achievement gap*. First edition. San Francisco: Jossey-Bass.
- Hattie, John (2012): *Visible learning for teachers. Maximizing impact on learning*. London: Routledge.
- Preciado-Babb, Paulino; Metz, Martina; Davis, Brent; Sabbaghan, Soroush (2020): Transcending Contemporary Obsessions. In: Olive Chapman (Ed.): *The international handbook of mathematics teacher education*. Second edition. Leiden, Boston: Brill Sense, S. 361–390.

Tutoring; Deliberate Practice; Model-Centered Instruction; Expert Modeling; Educational Design Research;

Presenters e-mail address: clemens.jaeger@gmx.at

THE SELF-REGULATION OF MOTIVATION IN CASE OF PRIMARY SCHOOL PUPILS

Edina-Timea Erdei (Babeş-Bolyai University, Romania)

Abstract: Motivation is the basis of all human activities, which facilitates learning and, through this, the development of skills. Pupils' perceptions of their own abilities, their relationship to each subject, their short- and long-term goals for learning, their previous learning experiences and results play an important role in their learning motivation. But for a successful learning it is not enough to be motivated to solve a learning task, but also self-regulation processes for maintaining motivation during learning are important. In many cases the difference between success and failure in learning or problem solving is given by the level of self-regulation of the motivation and persistence. The development of these self-regulation processes has to be started at young age, and their importance is even higher after ones finish formal education, as nowadays life-long learning is a must not only in some carriers, but also in everyday life. The aim of this paper is to present a research on primary school pupils' self-regulation strategies to arise interest for learning and maintain motivation during the learning activity. The research tool was the self-regulated learning questionnaire developed by Bacsá (2012), which contains affirmations measured on a 5-level Likert scale. 16 items related with self-regulation of the motivation were selected and grouped in three categories: self-efficacy motivation, strategies for maintaining motivation, and strategies to maintaining persistence. The obtained data was quantitatively analyzed.

The results show that the persistence in learning is above average in the participant pupils followed by motivational strategies and self-efficacy motivation which was below average. These results highlight the necessity of using teaching methods which arise interest for learning, help pupils to maintain their motivation during the class activity, ensure an active learning, so that pupils could develop self-regulation processes for self-motivation.

Keywords: self-regulation, motivational strategies, self-efficacy motivation, persistence, primary school.

Presenters e-mail address: edina_eet1@yahoo.com

REPRESENTATIONS OF KINDERGARTEN TEACHERS ABOUT THE PRACTICES THEY FOLLOW DURING THE IMPLEMENTATION OF ACTIVITIES BY THE NATURAL SCIENCE.

AIKATERINI DRAGANOUDI (UNIVERSITY OF PATRAS, GREECE) KONSTANTINOS LAVIDAS
& KONSTANTINOS RAVANIS

Abstract: In recent years there has been a growing interest in the field of education in exploring Kindergarten teachers' representations and their association with practices and teaching strategies. After all, the way that the teaching strategies and the educational practices are selected and shaped depends on the teachers' representations of various educational issues and how they interpret and understand the world themselves. The teaching strategies followed by the kindergarten teachers in the classroom are an organized set of teaching and learning activities, based on pedagogical and teaching principles and aim to achieve the intended teaching goals of teaching.

In the area of Early Childhood Education, the main teaching strategies for the Physical and Natural Sciences come from important streams that approach learning and teaching phenomena and can be classified into the following four categories: (a) empiricist strategy that is influenced by behaviouristic theoretical streams is particularly popular amongst teachers and is based on the idea that intelligence is developed through the senses (Szöke-Milinte, 2013), (b) Piagetian teaching strategy which is based on Genetic Psychology and Epistemology and the construction of intelligence and knowledge take place through the individual involvement and interaction of children with teaching materials, objects and the wider environment as they create individual action plans (Kamii, 1970), (c) socio-cognitive strategy, which claim that the development of the intellect is not only the result of the active involvement of the subjects with the objects, but it also results from the relationship between individuals, who collaborate and share reasoning, so they communicate and interact with each other. According to this approach, one of the main aspects of teachers' practices, is the educative use of children's experiential mental representations of concepts, phenomena and materials of the natural world as a starting point for their instructional design and implementation (Ravanis & Bagakis, 1998) and finally (d) cultural-historical teaching strategy. This is a new trend in science teaching and is based on Vygotski's theory. This strategy places emphasizes the intellectual conception of children's thinking based on a historical, social and cultural context and also on the relationships that are developed not only between peers, but also between children and adults in any communication situation (Fleer, 2015. Fragkiadaki & Ravanis, 2016).

The aim of this paper is to investigate the traces of socio-cognitive influences in Kindergarten teacher's representations about the practices they follow during the implementation of activities concerning the Physical and Natural Sciences in Kindergarten. The research question is what practices of the socio-cognitive approach are detected in the Kindergarten teacher's representations in the practices they follow. The method used for this research was the quantitative approach and the research tool was an online questionnaire that was supplemented online by 94 kindergarten teachers working at public kindergartens. The questionnaire was initially checked through a pilot survey and then the main survey was conducted. Statistical processing was performed in the first stage using descriptive statistics, while in the second stage of statistical data processing the factor analysis method was used. Finally, the reliability and validity of the research were checked.

The analysis of the questionnaire revealed that kindergarten teachers' representations of their teaching strategies are that they largely follow practices that belong to the socio-cognitive teaching strategy. The practices that they state that they follow are mainly related to the teaching usage of students' mental representations, their students' active involvement in the educational process and the change of their initial mental representations through experimentation. It has also been revealed that related to the use of the teaching materials, they follow practices that belong to the socio-cognitive teaching strategy, such as providing materials to students in order to control their mental representations through experimentation.

Key-words

kindergarten teachers' presentations, teaching practices, empiricist teaching strategy, piagetian teaching strategy, socio-cognitive teaching strategy, cultural-historical teaching strategy teaching strategy, teaching material

BIBLIOGRAPHY

Fleer, M. (2015). A Cultural-Historical view of child development: Key concepts for going beyond a universal view of the child. *Asia Pacific Journal of Research*, 9 (1), 19-37.

Fragkiadaki, G., & Ravanis, K. (2016). Genetic research methodology meets Early Childhood Science Education research: A Cultural-historical study of child's scientific thinking. *Cultural-Historical Psychology*, 12,(3), 310-330. doi: 10.17759/chp.2016120319

Kamii, C. (1970). An application of Piaget's theory to the conceptualization of a Preschool Curriculum. Paper prepared for presentation at a conference sponsored by the Department of Educational Psychology May 22-24, 1970. City University of New York, New York.

Ravanis, K., & Bagakis, G. (1998). Science Education in Kindergarten: Sociocognitive Perspective. *International Journal of Early Years Education*, 6,(3), 315-327.

Szőke-Milinte, E. (2013). Didactic teaching strategies for successful learning. *Pedacta*, 3(2), 49-58.

Presenters e-mail address: draganoudi@gmail.com

THE EVALUATION OF TEACHER PERFORMANCE IN HIGHER EDUCATION

AYE MYINT LAY (Eotvos Lorand University Budapest, Hungary) No

Abstract: THE EVALUATION OF TEACHER PERFORMANCE IN HIGHER EDUCATION

Aye Aye Myint Lay

Department of Education, Faculty of Education and Psychology, Eötvös Loránd University

Abstract

The teacher performance evaluation is complex, and its application may be different according to the regions and political systems. Benítez, Cabay & Encalada (2017) as cited in Suarez & Toro, (2018) state that the teaching performance is understood as the observable pedagogical practice and it depends on different factors related to quality and initial training of teachers in order to achieve levels of excellence in education. The importance and usage of performance evaluation in higher education have grown over the past 45 years (Murphy & Cleveland, 1995) and nowadays it has become a popular approach in educational management all over the world.

This study explores the knowledge and perception of teachers on performance evaluation with special regard to the quality of education. Furthermore, the research intends to identify the most important competencies for teachers in Myanmar. Qualitative method is conducted in this study. The researcher conducted semi-structured interviews to three education experts and seven teachers who are currently working at Universities of Education in Myanmar.

The interview results revealed that teacher evaluation can improve teachers' professional development by providing them with an understanding of both how they are performing based on the expectations and what needs to be done to perform better. Professional values and skills of teachers are important in order to grow and develop in their professional service and practice. A well-built evaluation system should help teachers identify strengths and weaknesses, omissions, and errors, and thus able to improve their practice and generate a higher quality teaching practice.

Keywords: teacher performance, evaluation, competencies, higher education

References

1. Murphy, K. R., & Cleveland, J. (1995). *Understanding performance appraisal: Social, organizational, and goal-based perspectives*. Thousand Oaks, CA: Sage Publications.
2. Suarez, E. G., Toro, R. M. (2018). Teaching Performance Evaluation Model: Preparation for Student Learning within the Framework for Teacher Good Performance. *Journal of Educational Psychology-Propósitos y Representaciones*, Vol. 6(2): pp.431-452.
<http://dx.doi.org/10.20511/pyr2018.v6n2.236>

teacher performance, evaluation, competencies, higher education

Presenters e-mail address: ayeayemyintlaysuoe@gmail.com

FACTORS AND PARAMETERS AFFECTING THE SUCCESS OF STUDENTS' ACHIEVEMENTS IN THE FIELD OF MATHEMATICS: A COMPARATIVE STUDY BETWEEN ISRAEL AND FINLAND.

Shirly Cohen (babes-bolyai university, cluj napoca) Guided by Dr. veres valer

Abstract: For many years, there has been a crisis in Mathematics Education system in Israel. In the last PISA test conducted by the Organization for Economic Cooperation and Development in 2015, published a worrisome results. In the field of Mathematics, among the 72 OECD countries, Israel was ranked 39th with results below average (470 points compared to the average of 490 points with a score between 200 and 800 points). It was also found that the dispersion of the scores in Israel is one of the largest among the countries and economic entities participating, and the largest among OECD countries. The proportion of Israeli students that failed in the mathematics test was one of the highest in the OECD. The findings indicate that 32% of the students in Israel lack sufficient skills in mathematics to integrate into society and employment in the future, while on average in the OECD only 23% of the students failed the test (RAMA, 2016).

Contrary to that, The Finnish education system that began about 40 years ago as an encouragement to the economic rehabilitation program The results of the study showed that in Finland, the students were among the best readers in the world and three years later, they also led in mathematics, and in 2006 Finland was the first of 57 countries in science. In 2009, Finland was ranked 6th place in mathematics at the PISA test, out of almost half a million students worldwide. Today, Finland has about 5.5 million inhabitants and uses an education budget that is lower than the Israeli and reaches the highest achievements in the world. In the Finnish curriculum, there are no compulsory exams, except for one test at the end of the last year at high school. There is no ranking, comparison or competition between students, between schools or between regions. All schools have the same national goals, and the result is that all Finnish children have a good chance of receiving the same level of education regardless of where they live. The difference between weak and strong students is the smallest in the world, according to the most recent surveys conducted by the OECD.

It is important to note that today, the PISA test is considered the most comprehensive, important and innovative research conducted in the field of education. Its purpose is to examine the degree of readiness for adult life of 15 years old students after acquiring general tools of thinking and understanding that enable them to cope effectively with their environment.

From these findings, I decided to conduct a comparative study between Israel and the Finnish education system. This study focusses on examining the factors that influence student achievements and the parameters found in the mathematical learning methods studied in Finland that ranked higher in the PISA tests.

The research questions are:

1. What was the most essential factor in teaching methods that lead to a rapid success in mathematics achievements among Finland that were ranked higher in the PISA test.
2. What are the mathematics teaching methods that influence most students' achievements in mathematics in Israel?
3. What are the differences in the educational methods between Israel and one of the best educational systems in the world (Finland) that were ranked higher in the PISA tests in mathematics education.

This study is a qualitative based on research literature and examine the methods of mathematical

instruction commonly used in mathematics in Finland with an emphasis on the causes of gaps in heterogeneous classrooms and how this country cope with gaps.

To confirm the literature, I flew to Finland in order to visit in schools and to contact with teachers who agreed to be interviewed and to answer a questionnaire about the Finnish education system.

Presenters e-mail address: shirlyc570@gmail.com

DATA FEEDBACK FOR INDIVIDUAL LEARNING PROGRESS PLANNING WITH QUOP - A QUALITATIVE RESEARCH PROJECT UNDERSTANDING FACTORS OF SUCCESSFUL TRANSFORMATION OF DATA FEEDBACK INTO DEVELOPMENT MEASUREMENTS IN UPPER AUSTRIAN PRIMARY SCHOOLS

Petra Ackerlauer (JKU, Austria)

Abstract: Diagnostic competence will lead teachers to better individualisation in classrooms - so the leading assumption of formative assessment. Teachers can improve their teaching by data feedback” (Black & Wiliam 1998). In the cooperation project W3 (“Wir wollen’s wissen”) of the Linzer Zentrum for educational research 28 primary schools have used the diagnostic tool quop (www.quop.de) to monitor students’ development in a longitudinal study. Souvignier and Förster (2014) who developed this tool, empirically investigated that progression diagnostics offer better possibilities for capturing and understanding students’ performance than status measurements. But studies proof that data feedback often does not lead to developmental measurements (Altrichter et al. 2016).

This research wants to better understand what changes and developmental concepts follow individual data feedback about learning improvement in a qualitative research design. The leading question is how the changes or adaptions can be explained. For that it will focus on the factors that seemed relevant in literature, such as supporting systems, personal traits such as openness to reforms (Zuber 2016), didactical repertoire (Dubs 2006) and intervening, secondary reforms. The process of interpreting datafeedback as well as the supporting or intervening factors i will investige by interviews, observation and group discussion. The material will be analysed in qualitative tradition acknowledging four dimensions of examination: time dimension, social dimension, governance dimension and individual dimension. In a crossanalysis I want in each section to better understand the circumstances of successfull accountability, that is the transformation of data feedback in useful action so the learner improves.

Accountability, formative assessment, qualitative research, learning progress diagnosis

Presenters e-mail address: petra.ackerlauer@ph-ooe.at

THE INVOLVEMENT OF ROMANIAN PRE-UNIVERSITY TEACHERS IN LIFELONG LEARNING: A COMPARATIVE ANALYSIS

Mădălina Cristea (Babes-Bolyai University, Romania) Lavinia Şuteu

Abstract: Formal education has to develop active and responsible learners who are prepared to encounter everyday life challenges and to overcome the potential professional difficulties in an increasingly complex environment. Students have to become lifelong learners to successfully face the challenges of personal and professional life. Lifelong learning seems to be essential nowadays, and teachers have to possess a lifelong learner attitude to align their teaching methods with the fast development of technology and knowledge. Taking into account the essential role of lifelong learning in students' and teachers' lives, this study analyzes teachers' beliefs and practices about lifelong learning. Specifically, we aimed to reveal what kind of lifelong learning programmes teachers attend to, what is the impact these programmes have on teachers' practices, what barriers teachers encounter when joining lifelong learning education and what kind of lifelong learning programmes teachers would like to follow. In this regard, we have used two sets of data. The first set of data has been gathered in 2011 from 110 pre-university teachers who completed an online self-reported scale. The second type of data has been collected in 2018 during the Teaching and Learning International Survey (TALIS). Data from the 2018 TALIS have been published online and made available to researchers worldwide. These two sets of data are presented in a comparative manner in this article, paralleling the differences and similarities between them taking into account the type and impact of the lifelong learning programmes teachers engage in, the main barriers they encounter when joining lifelong learning education and the kind of lifelong learning programmes they would like to follow. The data analysis revealed that teachers joined various lifelong learning programmes, such as conferences, workshops and observations, regardless of the obstacles they have encountered when engaging in continuous education. Some of the training courses that had the greatest impact on teachers' practices are observations of the school colleagues, individual or team research on a specific topic of interest and qualification programmes. Among the most evidenced training needs of teachers are teaching students with special needs, disruptive students' behaviours and ways of counselling students. Teachers mention a number of factors that make it difficult to participate in continuing education programmes, from financial resources to time resources. The study highlights the status-quo of Romanian teachers' lifelong learning practices, the measure to which nowadays programmes address this need, and also provides educational policy making guidelines concerning the improvement of these.

Presenters e-mail address: madalinarcristea@yahoo.com