

Journey of Discovery Mathematics

Investigative, Intuitive Learning on a Concrete Basis



Enthralling, Inspiring, Involving

The Impulse Presentations and Workshops are customised to the needs of the organiser in relation to school type (Nursery, Primary, Secondary), content and complexity/level.

Summary

Active discovery, group synergy, natural differentiation, joy, success. Enthralling, inspiring, involving activities including research and very many games, puzzles, challenges. No need for textbooks, worksheets, conventional exercises.

Explanation

Effective learning modelled on the pre-school child's learning approach, neurodidactic research results, E-I-L¹ and SINUS²-conditions and syllabus process competences³. The wonderful world of Mathematics is investigated with concrete resources and activities including research and very many games, puzzles, challenges. No need for illustrative and written material, e.g. textbooks, worksheets, conventional exercises.

Interaction, namely:

- **Doing:** experiencing, experimenting, investigating and discovering
- **Thinking:** choosing, imagining, reasoning, analysing, anticipating and solving.
- **Talking:** commentating, stating, questioning and discussing.

is a natural part of each activity and does not need to be specially organised.

Typically it only takes a few minutes to introduce a new impulse activity and children are often investigating for hours on end. The children quickly get used to deciding on their own learning level – concrete, illustrative, written – and also their activities. Success is assured.

Learning progress example

By the age of six most, if not all, children can calculate, e.g. $485 + 239$; $536 - 179$; 36×24 ; $486 \div 13$ with concrete resources (that is without needing to write). Many are well on their way to abstraction.

Research areas for the children on the above basis (from a complete school solution)

Include: Quantity, Counting system, Arithmetic, Space and Shape, Probability & Representation (Stochastic), Time and Distance, the use of Algebra.

Comprehensive, practical solution for organisation; child office; child-based assessment and the "can do" time-saving Progress Development Reference System for preparation, recording and child-based reflection to determine learn programmes can also be included.

Quotes Translated from the original German

"Learning by doing, grasping understanding, lots of fun, experimentation instead of studying, joyful anticipation for the next maths lesson, experiencing success, small amount of material with many uses, alternative to dusty books, from hands-on to abstract, differentiation in learning"

Participants at a Mathematics conference for Pre-School und Primary School staff, Holzminden, Germany, 2010.
Translated from the original German

"It's a pity that nobody showed this approach to me 30 years ago. I would have taught Mathematics quite differently and my pupils would have experienced success much faster and much easier."

A Primary School Head Teacher speaking to Frau Andrea Peter-Wehnert, Sachsen-Anhalt State Co-ordinator, SINUS Project, Germany

"In visiting many Primary Schools I am very frequently informed of the intention to adopt the approach Andy Reed showed (at the Primary Head Teachers' conference) – a Journey of Discovery in the World of Mathematics for all pupils."

Frau Andrea Peter-Wehnert, Sachsen-Anhalt State Co-ordinator, SINUS Project, Germany

¹ Jerome Bruner

² Projekt SINUS: German project for the improvement in Maths and Science at Primary level. EU-funded

³ Primary Mathematics Syllabus for the State of Lower Saxony, 2006

Referent: Andy Reed

Author, In-Service Teacher Trainer, English Trainer, Entertainer and Caller

He has taught all age groups and was previously Primary School Head Teacher, Comprehensive School Head of Mathematics Department, International School Secondary Co-ordinator

Andy Reed – Biosketch

After becoming Head of Mathematics in a Comprehensive school in England in 1981, Andy Reed became very involved in developing *Investigative, Intuitive Learning on a Concrete Basis*. He created new concrete environments and supported his department with teacher handbooks containing suitable activities. After ten years of development, about 90% of lesson time for the first three secondary years involved this approach to learning, wherein printed material such as textbooks and printed sheets had no or very little use.

The nationally set G.C.S.E. examinations (England) for 16 year olds produced 61% with a grade A, B or C (the top three grades) when the national average was 35%.

In Germany, he has continued to develop *Investigative, Intuitive Learning on a Concrete Basis* – as Middle school teacher for almost all subjects and as Junior School Head teacher.

Active as In-service Teacher Trainer since 2004 with approximately 40 units a year he offers presentations and workshops at Pre-School, Primary, Secondary levels for Mathematics, English, Learning to Read, Language, Dance, Co-operative Games all of which are based on *Investigative, Intuitive Learning on a Concrete Basis*.

Publications

Books

2001 Singing Songs and Dancing Teacher Handbook

2003 Fun 1 Singing Picture Story Book with CD

2003 Fun 1 Reading Book

2004 Absolutely English Dancing Teacher Handbook with Dance-CD (English & German)

2007 Absolutely English Comprehensive Toolkit – Teacher Handbook

2007 Fun 2 Singing Picture Story Book with CD

2010 Absolutely Mathematics Teacher Handbook A (English & German)

2012 Absolutely Mathematics Teacher Handbook – Probability Plus

2012 Absolutely Mathematics Teacher Handbook B – in preparation

2012 Investigative, Intuitive Learning in Africa in preparation

Papers

2007 Absolutely English an innovative solution; in FFF Ausgewählte Tagungsbeiträge
Nürnberg 2007 Ed. Böttger

2011 “Blanket English: Learning everything and anything” easily eclipses conventional goal-orientated learning progress; in FFF Ausgewählte Tagungsbeiträge Eichstatt 2011 Ed. Böttger

Article

2011 Handelndes, Intuitives Lernen auf 3D Basis in MNU Primar (Journal Heft 4)

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