Journey of Discovery in Mathematics

Investigative, Intuitive Learning on a Concrete Basis

Enthralling, Inspiring, Involving

Summary

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

Explanation

Effective learning modelled on the pre-school child's learning approach, neurodidactish research results, E-I-L[1] and SINUS[2]-conditions and process competences[3]. The wonderful world of Mathematics is investigated with concrete resources and activities including research and very many games, puzzles, challenges.

Interactivity, 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 x 24; 486 ÷ 13 with concrete resources (that is without needing to write). Many are well on their way to abstraction.

School Solutions

For all see www.absolutelyLEARINING.de → English → Mathematics

- Presentations and Workshops
- Handbooks
- Concrete Resources
- Simple Print Resources (Note: no need for textbooks, worksheets, software)
- Progress Development Reference System

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 Nursery und Primary School staff, Holzminden, Germany, 2010.

"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 (EU-sponsored), 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

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, 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' 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 for 16 year olds in England 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

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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