To do justice to the heterogeneity of a class through structuring learning
Pilot Project for joint instruction in Thuringia:

Teaching of pupils with Additional Learning Needs according to the teaching plans for primary and secondary schools. (26 schools are involved)
Learning processes can be prepared for learners with different starting positions in one class.
a greater heterogeneity

diversity:
biography, type of learner, predisposition, ability, creativity, level of development, pace of learning, ...
Differentiation in...

- use of learning aids
- topics
- methods
- level
- social criteria
- quantity
Based on the cognitive development stages of Jean Piaget and the orientation towards the structure and level of learning of Prof. Reinhardt Kutzer

MULTIDIMENSIONALITY OF LEARNING
### Stages of Internalisation

<table>
<thead>
<tr>
<th>Levels of the Cognitive Development</th>
<th>Piaget</th>
<th>Kutzer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3. Generalisation</td>
<td>Ability for abstract use of the findings gained from the particular learning material</td>
</tr>
<tr>
<td>abstract level</td>
<td>3. Generalisation</td>
<td></td>
</tr>
<tr>
<td>symbolic level</td>
<td>2. Generalisation</td>
<td>Letters or words, numbers</td>
</tr>
<tr>
<td>visualising the learning matter</td>
<td>1. Generalisation</td>
<td>Complete visualisation</td>
</tr>
<tr>
<td>practical handling of the learning matter</td>
<td>descriptive, practical</td>
<td>Partial visualisation</td>
</tr>
</tbody>
</table>

#### Anecdotes
- **abstract level**: ability for abstract use of the findings gained from the particular learning material
- **symbolic level**: letters or words, numbers
- **visualising the learning matter**: complete visualisation
- **practical handling of the learning matter**: partial visualisation

**Analogue**
Multidimensionality of learning by Kutzer

Dimension **complexity**: is derived from the different scientific components of a topic as well as the existing knowledge + experience of the pupils

Dimension **level**: starting point is current developmental status for the pupil, their abilities to abstract and generalise

Dimension **learning behaviour**:  
• learning through free association with objects, trial and error, demonstration and imitation  
• independent and self-determination  
• varies at the different stages of the learning process
**stages of the cognitive development**

- abstract level
- symbolic level
- complete visualisation of the learning matter
- partial visualisation of learning matter
- practical handling

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**differentiation-matrix**

- Complexity of subject matter
- Learning behaviour
## Industrialisation, secondary school, Rositz

<table>
<thead>
<tr>
<th>Abstract level</th>
<th>Presentation about inventions which promoted or accompanied the industrialisation</th>
<th>Explain the significance of the industrial revolution and compare it to other revolutions and their effects (discussion round)</th>
<th>Understand the significance of the industrial revolution and compare it to other revolutions and their effects (discussion)</th>
<th>Show the presentation about the regional development during the industrialisation</th>
<th>Reflect their own living and learning conditions in comparison with 14-year-olds during the industrialisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symbolic level</td>
<td>Assemble picture material in a time-line illustration of the associations in a flow-chart</td>
<td>Documentation of the development of railway traffic until today (power point or posters)</td>
<td>Prepare a presentation, sort and label picture material</td>
<td>Make up fictitious biographies in texts and pictures (people from different social backgrounds)</td>
<td></td>
</tr>
<tr>
<td>Complete visualisation</td>
<td>Describe inventions and identify their benefits</td>
<td>Learn about the causes of the beginning of the industrialization in GB, understand subsequent development (texts, talks)</td>
<td>Gather and interpret material about the development of railway traffic as the driving force of the industrialisation</td>
<td>Find material about a regional enterprise founded in the 19th century, use the media and archives</td>
<td>Derive information from different factual texts, gathering media about people’s lifes</td>
</tr>
<tr>
<td>Partial visualisation</td>
<td>Gather and name pictures of inventions from the 18./19. century</td>
<td>Use of the steam engine in the textile industry in GB, comparing pictures</td>
<td>Draw in maps: industrial towns, mineral resources, railway tracks</td>
<td>Make or draw a model of an industrial site</td>
<td>Come up with scenes to playact</td>
</tr>
<tr>
<td>Descriptive practical</td>
<td>Experiments with steam, light bulbs, pinhole camera</td>
<td>Do sewing by hand and by machine (compare)</td>
<td>Comparing photographs taken before and after 1930</td>
<td>Trips into the surrounding area (train stations, factory buildings, companies)</td>
<td>Watch original film material (movies)</td>
</tr>
<tr>
<td>New technologies</td>
<td>Preconditions and beginnings of the industrialisation</td>
<td>Industrialisation in Germany</td>
<td>Industrialisation in the region</td>
<td>Outcome of the industrialisation, social issues</td>
<td></td>
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</table>
Teamwork

Subject matter teacher and special education teacher work together!

The result:
Looking at poetry, 9th, grammar school, 1 pupil with a need for enhanced focus of mental development

<table>
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<th>Rhyming couplets and their effects</th>
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<tr>
<td>Create a poem with the found rhymes</td>
</tr>
<tr>
<td>Find rhymes</td>
</tr>
<tr>
<td>Listen to a poem, assigning images and words</td>
</tr>
<tr>
<td>Sound of words, see, listen, assembling picture material</td>
</tr>
</tbody>
</table>

Emanuel von Bodmann „Der Bodensee“
The matrix can help with...

- lesson planning
- working with parents
- differentiation
- cooperation between teachers
- illustrate the path of learning
- individual learning targets
- create learning environment
- supplementary support
- evaluation of performance
- documentation of achievement
The spirit of learning is the difference!

R. Kahl

Thank you for your attention!