

# Informatic models in vocational training for teaching standard software

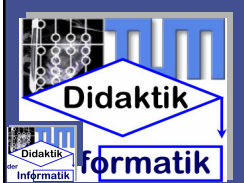
Is it possible that  
**Informatic Models**  
can help users to understand

## Text Processing?

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## 1 Modeling in informatics education

At Bavarian grammar schools ...

### Informatic models

- are the basis of the curriculum of the subject informatics
- Particularly in **form 6 and 7**, all pupils learn to analyse textdocuments in an object-oriented manner.

**Pupils will be offered a view on text-processing-tools, which are no longer dependent on their ever-changing surfaces.**



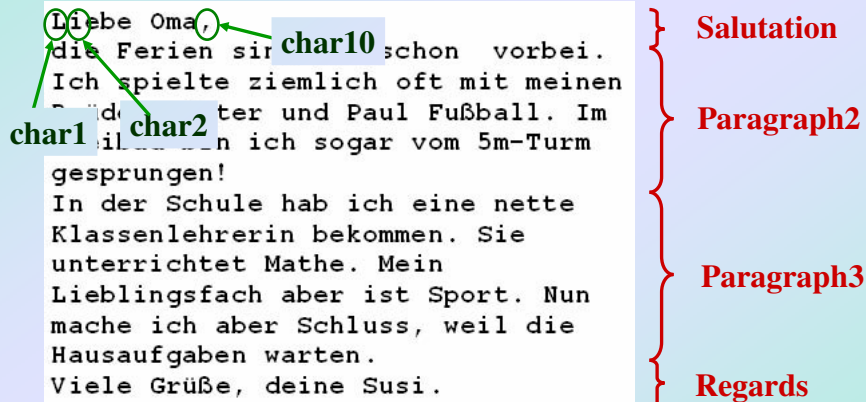
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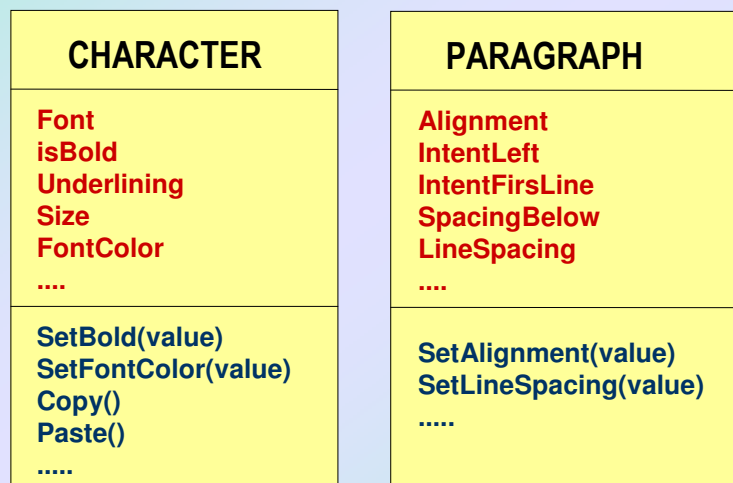
## Part of the curriculum informatics in form 6

### Object associations in textdocuments

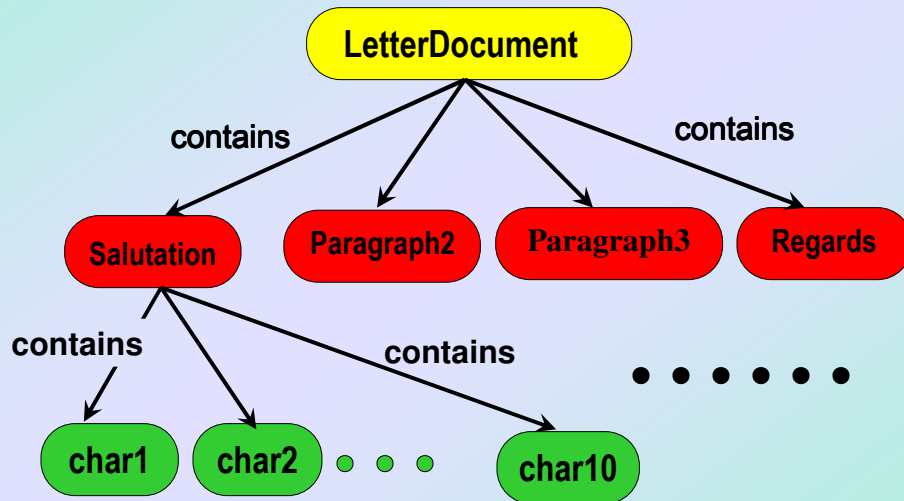


## Part of the curriculum informatics in form 6

### Object associations in textdocuments



## Part of the curriculum informatics, form 6 Object diagramm of a textdocument and its elements

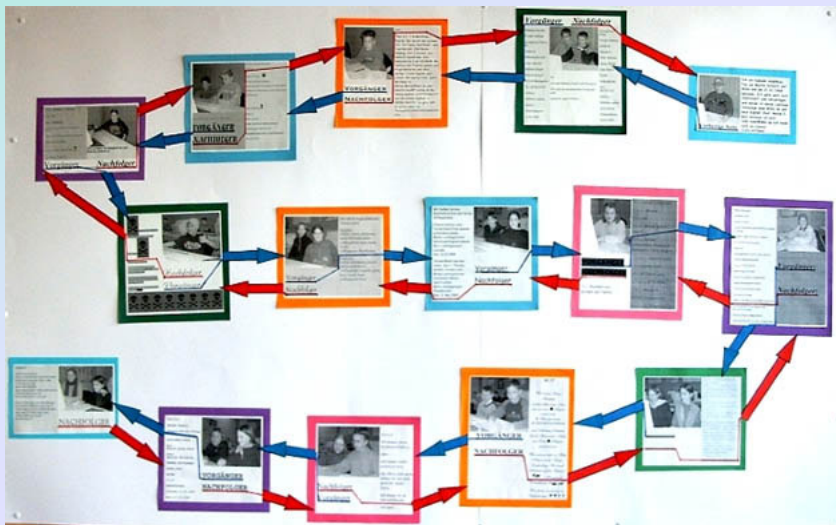


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## Part of the curriculum informatics in form 7 Constructing various Hyper-Structures

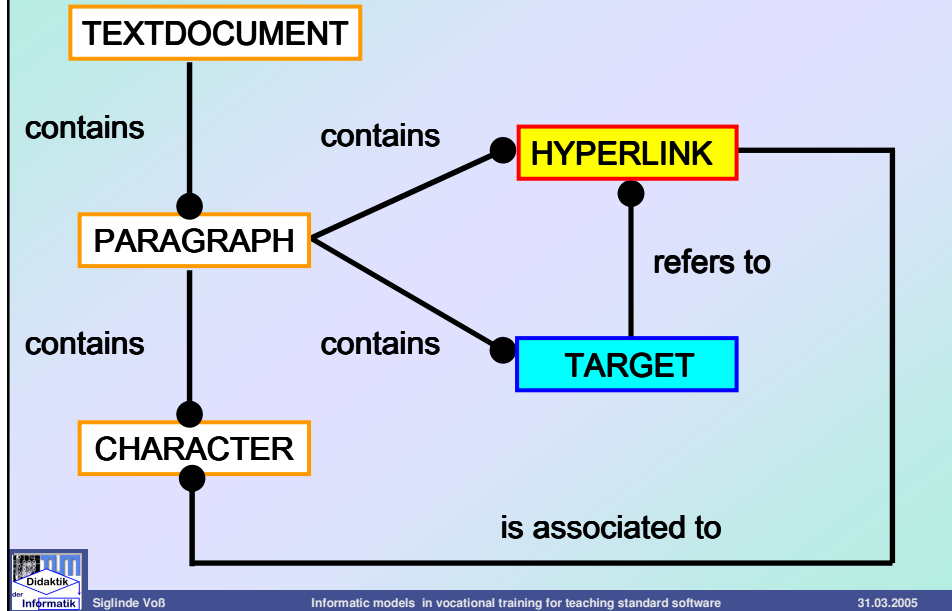


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## Part of the curriculum informatics in form 7 Class Diagram of Hyperdocuments



## 2 Object models can be used to explain and illustrate informatic phenomena in word processing

### Facts: processing

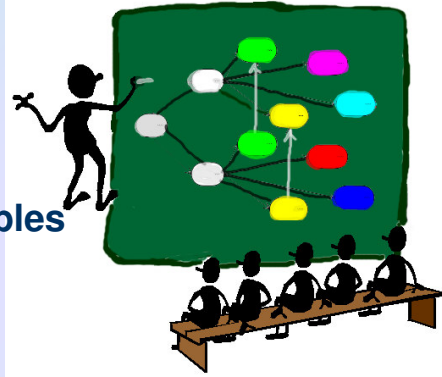
- Office-Software-tools are getting more and more complex
- Generally, users don't have any basic knowledge in informatics

**Consequence: We need to develop training-concepts**

- of long-term use, which can be used irrespective of a special software
- that illustrates inner structure and processing methods of text-documents

### 3 Carrying out two vocational training courses

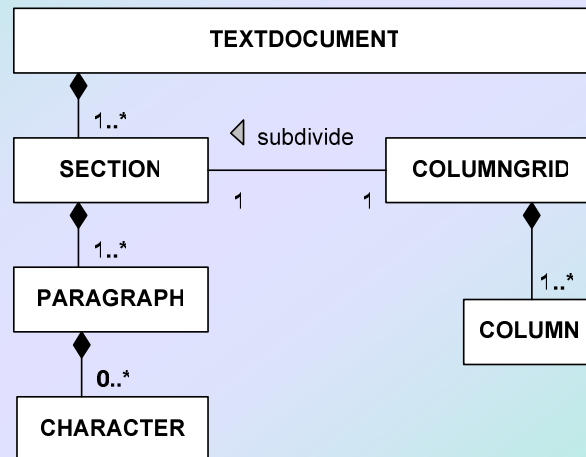
- Session 1:  
Basics
- Session 2:  
Graphics and Tables
- Session 3:  
Format Styles
- Session 4:  
Text fields and Cross references
- Session 5:  
Headers and Footers



### 4 Examples of the realization of single contents

Topic "Basics – inserting columns"

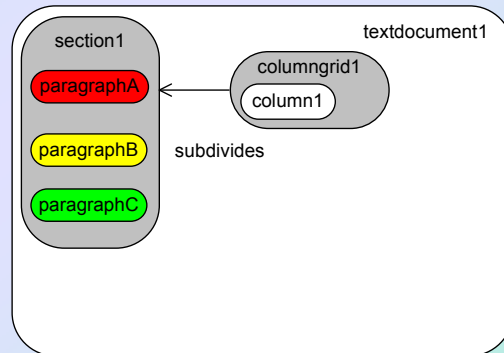
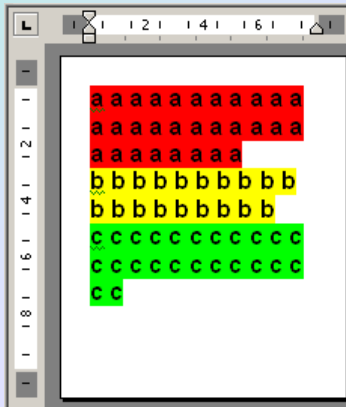
Class diagram of a simple structure of a text document



## 4 Examples of the realization of single contents

### Topic "Basics – inserting columns"

Example of a text document containing one section and the corresponding object diagram



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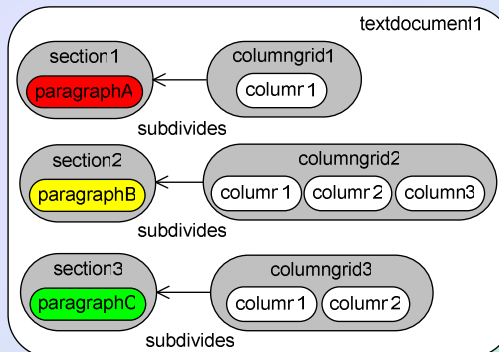
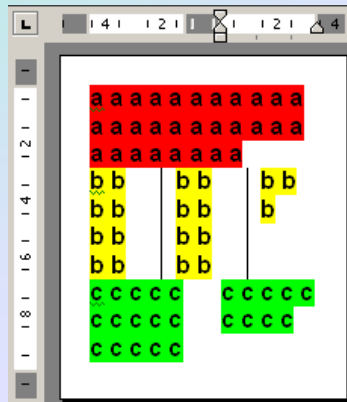
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## 4 Examples of the realization of single contents

### Topic "Basics – inserting columns"

Example of a text document containing three sections with various column grids and the corresponding object diagram



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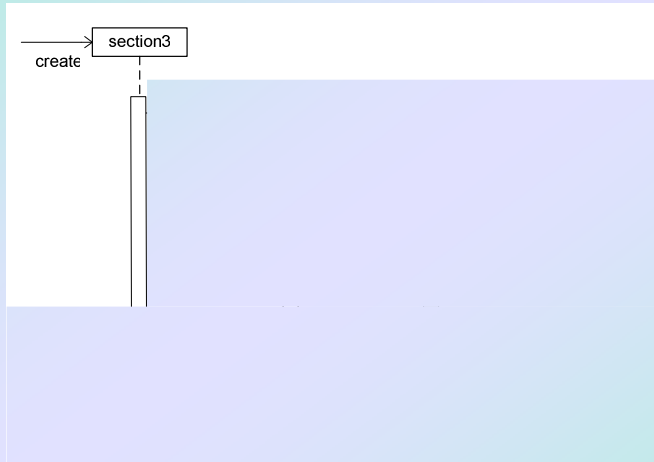
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## 4 Examples of the realization of single contents

Topic "Basics – inserting columns – Sequence Diagram"

After the creation of a section, the column grid is immediately available.



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## 4 Examples of the realization of single contents

The state-attribute *Textwrapping* has accepted the value *rectangular*

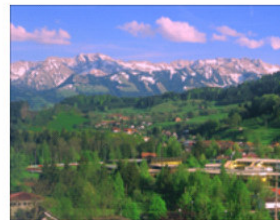
→ All four textspace-attributes can be changed

image1 : PIXELGRAPHIC

**Width** = 7 cm  
**Height** = 5 cm  
**RotationAngle** = 0°  
**Brightness** = 50%  
**Contrast** = 50%  
**Textwrapping** = rectangular  
**TextspaceRight** = 0,3 cm  
**TextspaceLeft** = 0,3 cm  
**TextspaceAbove** = 0,5 cm  
**TextspaceBelow** = 0,5 cm  
 ...

### Immenstadt im Allgäu

ndschaft der nördlichen Alpen und des Alpenvorlands, zwischen  
 Seit dem Zeitalter Napoleons I. gehört der größere östliche Teil z  
 e westliche Teil zum heutigen Baden-Württemberg. Im Südosten  
 bis nach Österreich hin  
 nach Süden ist die Land  
 nd, Allgäuer Vor  
 Alpen gegliedert,  
 (2 037 Meter), Hohe  
 Mädelegabel Gottesacker  
 (2 593 (2 645  
 ter) und Meter), Neb  
 Mädelegabel beträchtliche  
 erden. Das Alpenvorland  
 i eher gemäßigtes  
 nd mit Höhen über 1 100 Meter im Bergland des Adelegg we  
 nd Jungmoränenlandschaften an Iller, Lech und Wertach.



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## 4 Examples of the realization of single contents

The state-attribute *Textwrapping* has accepted the value *behindText*  
 → No textspace-attribute can be changed

image1 : PIXELGRAPHIC

Width = 7 cm  
 Height = 5 cm  
 RotationAngle = 10°  
 Brightness = 70%  
 Contrast = 30%  
**Textwrapping = behindText**  
 TextspaceRight = nil  
 TextspaceLeft = nil  
 TextspaceAbove = nil  
 TextspaceBelow = nil  
 ...

Immenstadt im Allgäu

der nördlichen Alpen und des Alpenvorlands, zwis  
 Zeitalter Napoleons I. gehört der größere östliche  
 ie Teil zum heutigen Baden-Württemberg. Im Süd  
 terreich hinein. Von Norden nach Süden ist die  
 uer Voralpen und Allgäuer Alpen gegliedert, wo  
 Ifen (2 230 Meter), Gottesacker (2 017 Meter), I  
 ogel (2 593 Meter), Nebelhorn (2 224 Meter)  
 Meter) beträchtliche Höhen erreicht werden. Das  
 gemäßigtes Hügel- und Bergland mit Höhen über  
 gg westlich von Kempten und Jungmoränenlandsch

Wäldern finden sich weitläufige Weidelandscha  
 ft gehören zu den Haupterwerbszweigen. Ein  
 auch der Fremdenverkehr. Das Land verfiel i



## 4 Examples of the realization of single contents

The state-attribute *Textwrapping* has accepted the value *likeBorder*  
 → Only two textspace-attributes can be changed

image1 : PIXELGRAPHIC

Width = 7 cm  
 Height = 5 cm  
 RotationAngle = 10°  
 Brightness = 50%  
 Contrast = 50%  
**Textwrapping = likeBorder**  
 TextspaceRight = 1 cm  
 TextspaceLeft = 1 cm  
 TextspaceAbove = nil  
 TextspaceBelow = nil  
 ...

Immenstadt im Allgäu

chaft der nördlichen Alpen und des Alpenvorlands, zwischen Bode  
 dem Zeitalter Napoleons I. gehört der größere östliche Teil zu Bay  
 stliche Teil zum heutigen Baden-Württemberg. Im Südosten reich  
 ch Österreich hinein. Von Norden nach Süden ist die Landschaft  
 ft in Alpenvorland, Allgäuer Alpen gegliedert, wo die Voralpen  
 Alpen gegliedert, wo die Voralpen am Fellhorn (2 230 Meter),  
 ohem Ifen (2 230 Meter), Gottesacker (2 017 Meter), Immenst  
 ogel (2 593 Meter), Nebelhorn (2 224 Meter), Krottenkopf (2  
 d Großen Krottenkopf (2 224 Meter) beträchtliche Höhen erreicht werden.  
 chliche Höhen erreicht werden. Das Gebiet liegt im Bergland  
 lagen ist ein eher gemäßigtes Hügel- und Bergland mit Höhen  
 r im Bergland des Adelegg westlich von Kempten und Jungmoränen  
 ndschaften an Iller, Lech und Wertach.

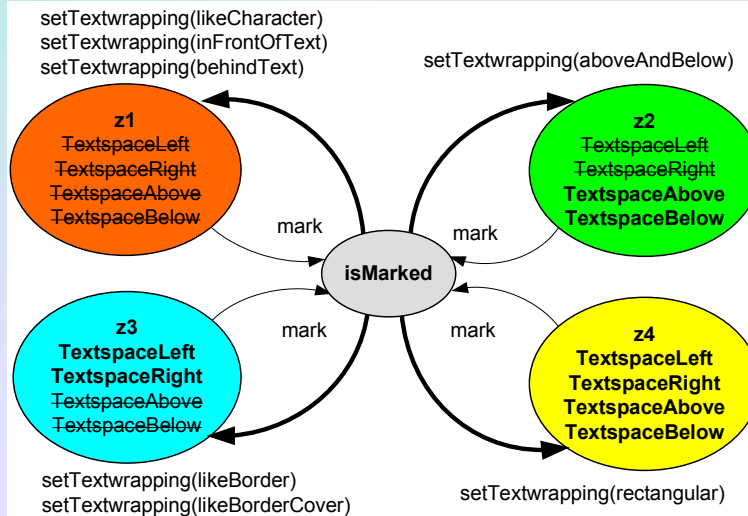




## 4 Examples of the realization of single contents

### Topic "Graphics"

States of a graphic-object and its respective attribute values



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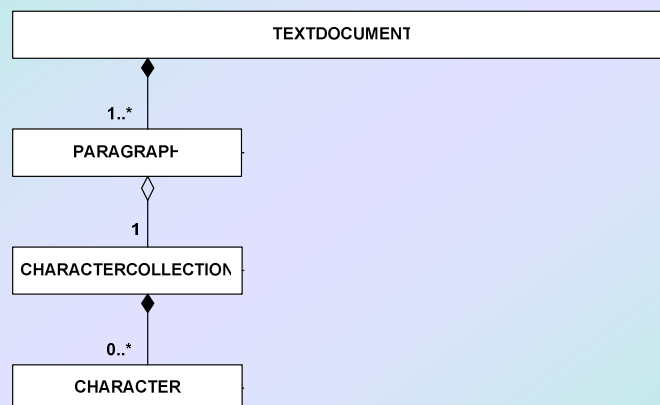
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## 4 Examples of the realization of single contents

### Topic "Format styles"

### contents

Class diagram of a text document format styles included



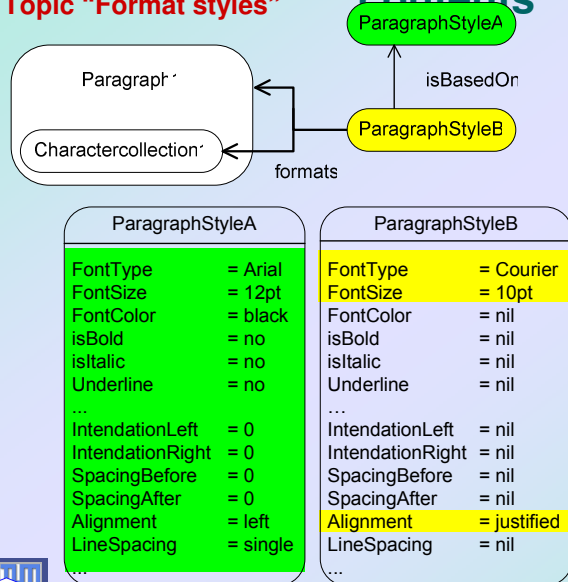
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## 4 Examples of the realization of single contents

### Topic "Format styles"



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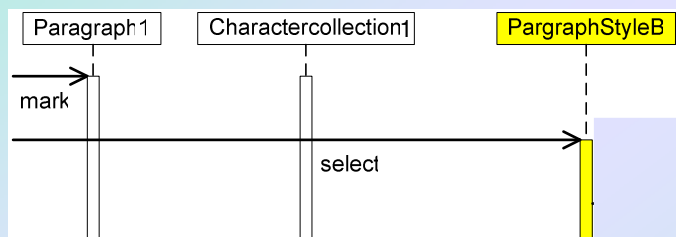
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## 4 Examples of the realization of single contents

### Topic "Format styles"

### contents

The user formats Paragraph1 with the help of ParagraphstyleB



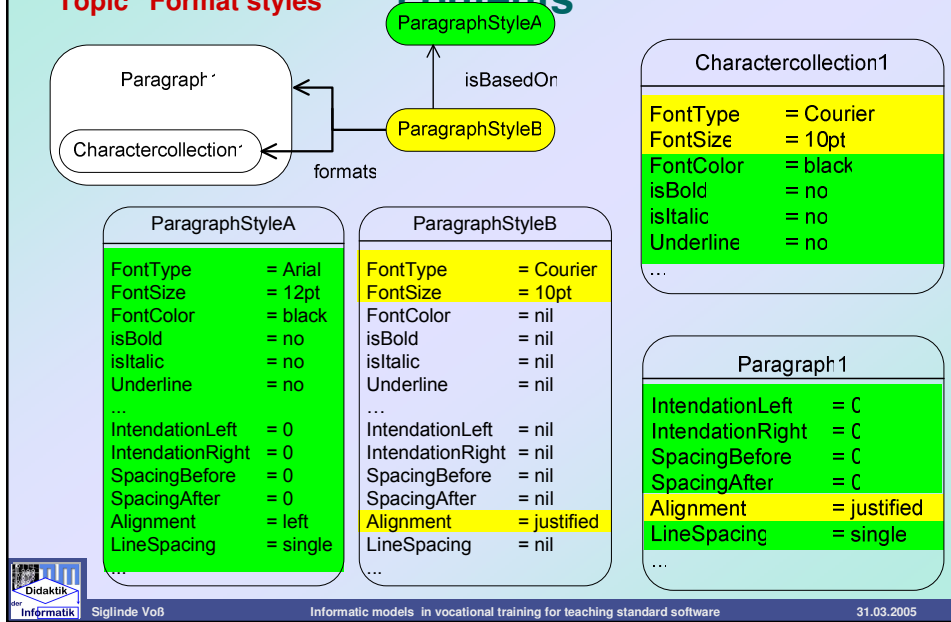
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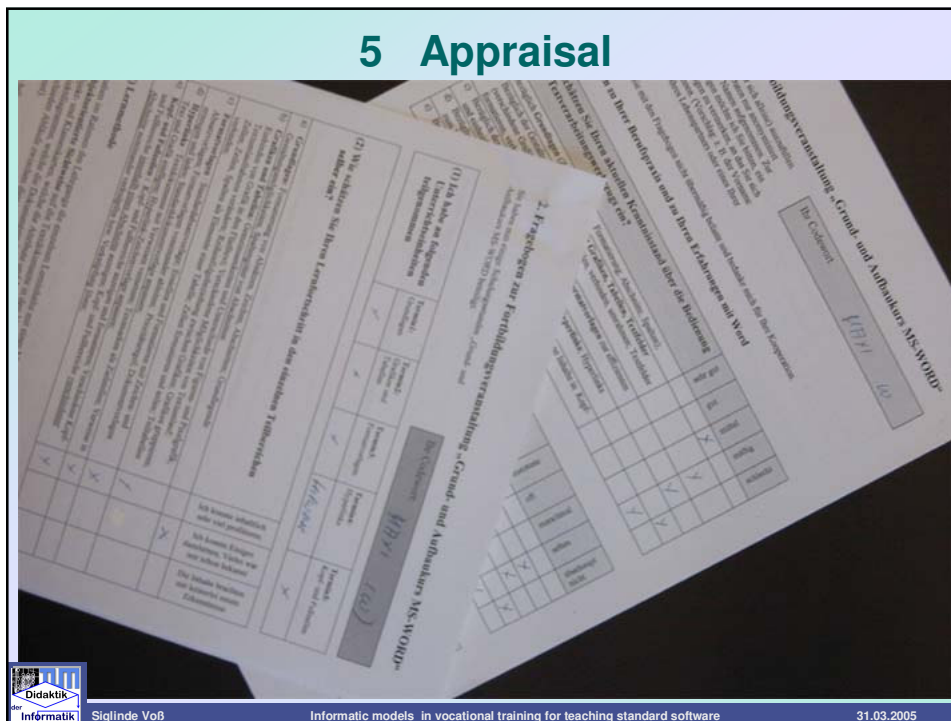
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## 4 Examples of the realization of single contents

### Topic "Format styles"



## 5 Appraisal



## 5 Appraisal

### Two questionnaires

- immediately before the course  
participants assessed their own knowledge  
in five levels;
- after the course  
participants mentioned the progress they  
had made;



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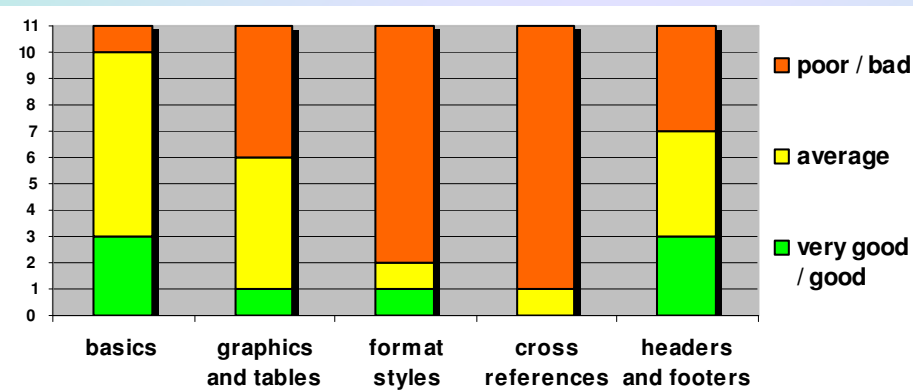
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## 5 Appraisal

### Appraisal of the participant's knowledge before the course

Question:

How do you consider your knowledge in the particular topic?



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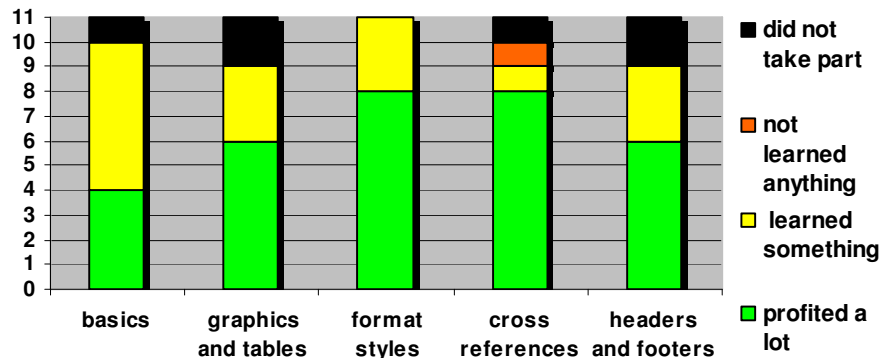
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## 5 Appraisal

Learning progress after the course knowledge before the course dependent on the respective lesson item

Question:

How do you consider your learning progress in each topic?



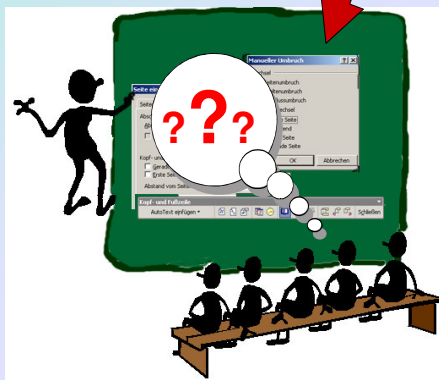
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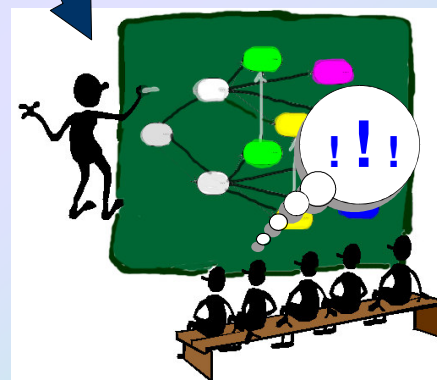
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## Which way?

Learning the *ever-changing* user-interface and menu items....



Learning *long-lasting* inner structure and working methods ...



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**Many thanks for your attention!**

**Siglinde Voß**

**Fachgebiet**

**Didaktik der  
Informatik**



**Prof. Dr. Peter Hubwieser  
Fakultät für Informatik der  
Technischen Universität München**