

Technical English, Lecture 10: Visuals

Hossam A. H. Fahmy

© Hossam A. H. Fahmy

Data, information, and knowledge

- “The amount is 12 237.38.” is a piece of *data*.
- “The amount on your phone bill this month is 12 237.38.” is a piece of *information*.
- “This amount is too high.” is *knowledge*.
- “I should notify the phone company and investigate the matter.” is *wisdom*.

We should try to convey the information by presenting the data in the best way possible.

In most of our technical writing we resort to

- tables,
- graphs,
- schematics,
- figures,
and
- drawings.

Why do we do that?

1/23

Are your aids visual?

Take a look at this table for the proportions of occupational groups who would choose similar work again

PROFESSIONAL AND WHITE-COLLAR OCCUPATIONS	PERCENT	SKILLED TRADES AND BLUE-COLLAR OCCUPATIONS	PERCENT
University professors	93	Skilled printers	52
Mathematicians	91	Paper workers	42
Physicists	89	Skilled auto workers	41
Biologists	89	Skilled steelworkers	41
Chemists	86	Textile workers	31
Firm lawyers	85	Blue-collar workers	24
School superintendents	85	Unskilled steelworkers	21
Lawyers	83	Unskilled auto workers	16
Journalists	82		
Solo lawyers	75		
White-collar workers	43		

Questions

Contrast the two main groups (white-collar versus blue-collar).

1. What is the trend in job satisfaction for both groups as presented in the table?

Is the job satisfaction of both groups similar?

Is there any blue-collar occupation that is more satisfied than a white-collar occupation?

4/23

Questions

Contrast the two main groups (white-collar versus blue-collar).

1. What is the trend in job satisfaction for both groups as presented in the table?
2. Is the job satisfaction of both groups similar?
3. Is there any blue-collar occupation that is more satisfied than a white-collar occupation?

6/23

Questions

Contrast the two main groups (white-collar versus blue-collar).

1. What is the trend in job satisfaction for both groups as presented in the table?

2. Is the job satisfaction of both groups similar?

Is there any blue-collar occupation that is more satisfied than a white-collar occupation?

5/23

Improved table

PROFESSIONAL AND WHITE-COLLAR OCCUPATIONS	PERCENT	SKILLED TRADES AND BLUE-COLLAR OCCUPATIONS	PERCENT
University professors	93		
Mathematicians	91		
Physicists	89		
Biologists	89		
Chemists	86		
Firm lawyers	85		
School superintendents	85		
Lawyers	83		
Journalists	82		
Solo lawyers	75		
White-collar workers	43	Skilled printers	52
		Paper workers	42
		Skilled auto workers	41
		Skilled steelworkers	41
		Textile workers	31
		Blue-collar workers	24
		Unskilled steelworkers	21
		Unskilled auto workers	16

7/23

1. Are there sub-classes within each group?

What is the order of satisfaction within lawyers?

Are auto workers satisfied more than steelworkers?

1. Are there sub-classes within each group?

2. What is the order of satisfaction within lawyers?

3. Are auto workers satisfied more than steelworkers?

1. Are there sub-classes within each group?

2. What is the order of satisfaction within lawyers?

Are auto workers satisfied more than steelworkers?

PROFESSIONAL AND WHITE-COLLAR OCCUPATIONS	PERCENT	SKILLED TRADES AND BLUE-COLLAR OCCUPATIONS	PERCENT
University professors	93		
Mathematicians	91		
Physicists	89		
Biologists	89		
Chemists	86		
School superintendents	85		
Firm lawyers	85		
Lawyers	83		
Journalists	82		
Solo lawyers	75		
White-collar workers	43	Skilled printers	52
		Paper workers	42
		Skilled steelworkers	41
		Skilled auto workers	41
		Textile workers	31
		Blue-collar workers	24
		Unskilled steelworkers	21
		Unskilled auto workers	16

Data-ink

A large share of the ink on a graphic should represent the data.
Data-ink is the non-redundant ink arranged to represent the data.

$$\begin{aligned} \text{Data-ink ratio} &= \frac{\text{data-ink}}{\text{total ink used}} \\ &= \text{portion of the ink devoted to the} \\ &\quad \text{non-redundant display of data} \\ &= 1.0 - \text{portion of graphic that can be erased} \\ &\quad \text{without loss of information.} \end{aligned}$$

(Note the use of the words data and information.)

12/23

Font issues

1. Is the use of capital letters in the headings needed? Shall it be small caps instead of regular capital letters?

- Contrast "SKILLED TRADES" to "Skilled Trades".

Shall we use "PERCENT" or just "%"?

How will these two issues affect the size of the table?

14/23

Better table

PROFESSIONAL AND WHITE-COLLAR OCCUPATIONS	PERCENT	SKILLED TRADES AND BLUE-COLLAR OCCUPATIONS	PERCENT
University professors	93		
Mathematicians	91		
Physicists	89		
Biologists	89		
Chemists	86		
School superintendents	85		
Firm lawyers	85		
Lawyers	83		
Journalists	82		
Solo lawyers	75		
White-collar workers	43		
		Skilled printers	52
		Paper workers	42
		Skilled steelworkers	41
		Skilled auto workers	41
		Textile workers	31
		Blue-collar workers	24
		Unskilled steelworkers	21
		Unskilled auto workers	16

13/23

Font issues

1. Is the use of capital letters in the headings needed? Shall it be small caps instead of regular capital letters?

- Contrast "SKILLED TRADES" to "Skilled Trades".

2. Shall we use "PERCENT" or just "%"?

How will these two issues affect the size of the table?

15/23

Font issues

1. Is the use of capital letters in the headings needed? Shall it be small caps instead of regular capital letters?

- Contrast “SKILLED TRADES” to “Skilled Trades”.

2. Shall we use “PERCENT” or just “%”?

How will these two issues affect the size of the table?

16/23

Space issues

Which is better?

Professional and white-collar occupations	%	Skilled trades and blue-collar occupations	%
University professors	93		

Professional and white-collar occupations	%	Skilled trades and blue-collar occupations	%
University professors	93		

Professional and white-collar occupations	%	Skilled trades and blue-collar occupations	%
University professors	93		

18/23

Yet a better table

Professional and white-collar occupations	%	Skilled trades and blue-collar occupations	%
University professors	93		
Mathematicians	91		
Physicists	89		
Biologists	89		
Chemists	86		
School superintendents	85		
Firm lawyers	85		
Lawyers	83		
Journalists	82		
Solo lawyers	75	Skilled printers	52
White-collar workers	43	Paper workers	42
		Skilled steelworkers	41
		Skilled auto workers	41
		Textile workers	31
		Blue-collar workers	24
		Unskilled steelworkers	21
		Unskilled auto workers	16

17/23

Best so far

Professional and white-collar occupations	%	Skilled trades and blue-collar occupations	%
University professors	93		
Mathematicians	91		
Physicists	89		
Biologists	89		
Chemists	86		
School superintendents	85		
Firm lawyers	85		
Lawyers	83		
Journalists	82		
Solo lawyers	75	Skilled printers	52
White-collar workers	43	Paper workers	42
		Skilled steelworkers	41
		Skilled auto workers	41
		Textile workers	31
		Blue-collar workers	24
		Unskilled steelworkers	21
		Unskilled auto workers	16

19/23

Why are we looking at two different columns?

Professional and white-collar occupations	%	Skilled trades and blue-collar occupations	%
University professors	93		
⋮	⋮	Skilled printers	52

Professional and white-collar occupations	%	Skilled trades and blue-collar occupations
University professors	93	
⋮	⋮	Skilled printers
	52	

Using one column will

- give the feeling of the same scale and
- increase the data-ink ratio.

20/23

A pictorial view?

Can you make this data into a

- pie chart,
- x-y graph, or
- bar graph?

Can we use colors (white versus blue or something else, why)?

- What is the background color?
- Is it viewed on screen or printed?
- Will it be printed in color?
- Shall we have a screen version and a print version?

22/23

Professional and white-collar occupations	%	Skilled trades and blue-collar occupations
University professors	93	
Mathematicians	91	
Physicists	89	
Biologists	89	
Chemists	86	
School superintendents	85	
Firm lawyers	85	
Lawyers	83	
Journalists	82	
Solo lawyers	75	
	52	Skilled printers
White-collar workers	43	
	42	Paper workers
	41	Skilled steelworkers
	41	Skilled auto workers
	31	Textile workers
	24	Blue-collar workers
	21	Unskilled steelworkers
	16	Unskilled auto workers

21/23

You can do better

- Above all else show the data *visually*.
- Maximize the data-ink ratio.
- Revise and edit.

23/23