Writing a storyboard:

1. Organize data & locate trends.
2. Select figures that best represent trends.
3. Write bullet points for each figure.
4. Integrate figures into "storyboard:"
   - Assess how each figure contributes to the major theme
   - REVISE figures to focus on the major theme.
   - REVISE bullet points to focus on the major theme.
   - Add/remove figures.
5. Write supporting text.

Reading a storyboard:

1. Read a single figure to assess accuracy and completeness of the data description.
2. Read a series of figures to assess the main theme or "story" of the research article. Assess the logical sequencing of the images.

Challenge 1: Reading a single figure.

1. What does this visual show? (results)
2. What conclusions can be drawn from this visual? (discussion)
3. What does each bar show? (caption)
4. How might these data have been obtained? (methods)
5. What questions do you still have about this visual?

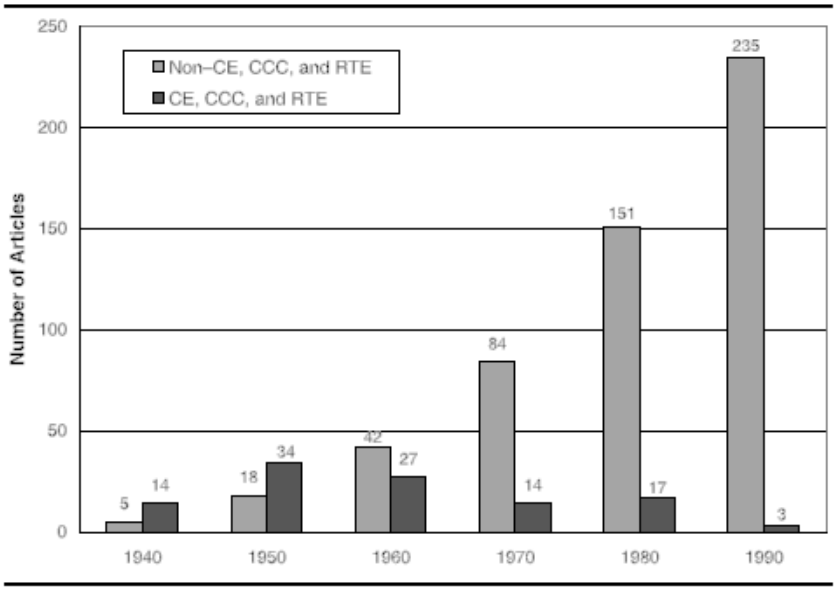


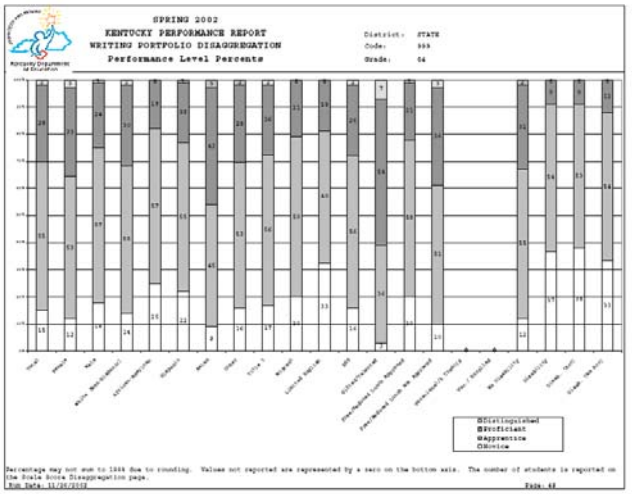
Figure 1. Journal Articles on the Research Paper Assignment
NOTE: CE = College English; CCC = College Composition and Communication; RTE = research in the teaching of English.

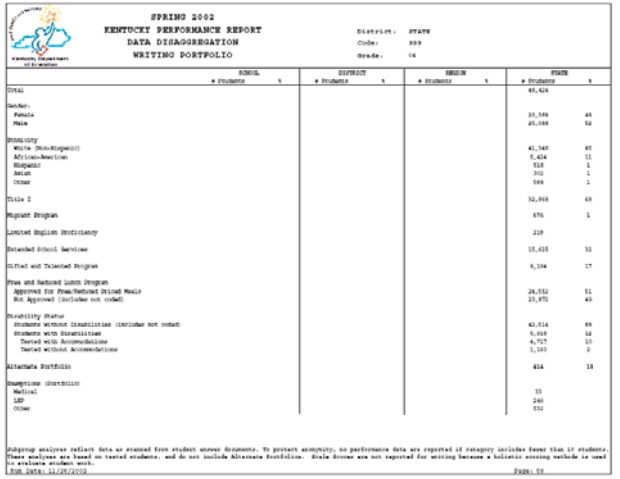
Note: CE, CCC, and RTE are the journals with the highest impact factor in the field of Writing Studies.

NCTE/CCCC's Recent War on Scholarship
2005; 22; 198 *Written Communication*
Richard H. Haswell

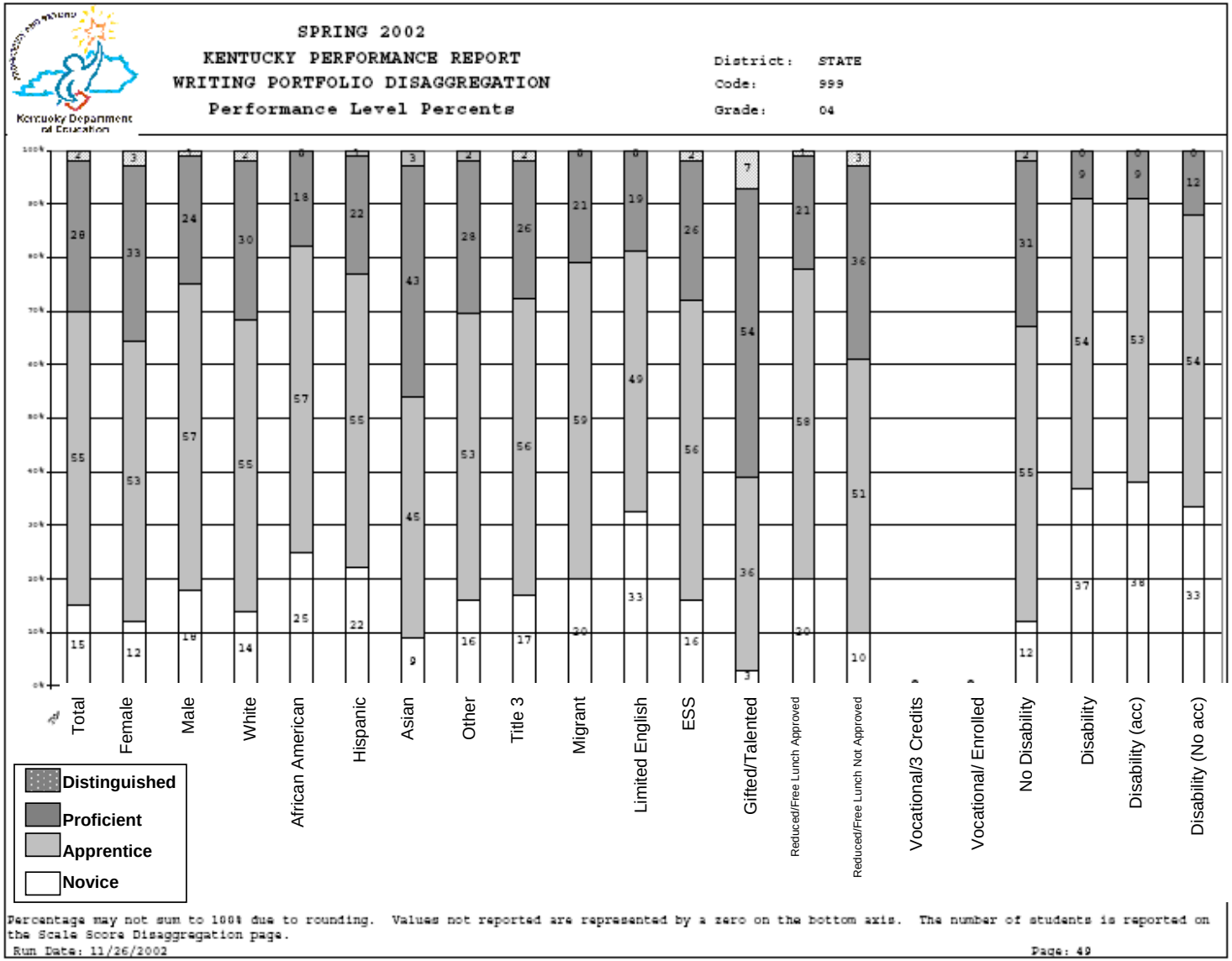
Challenge 2: Reading a series of figures.

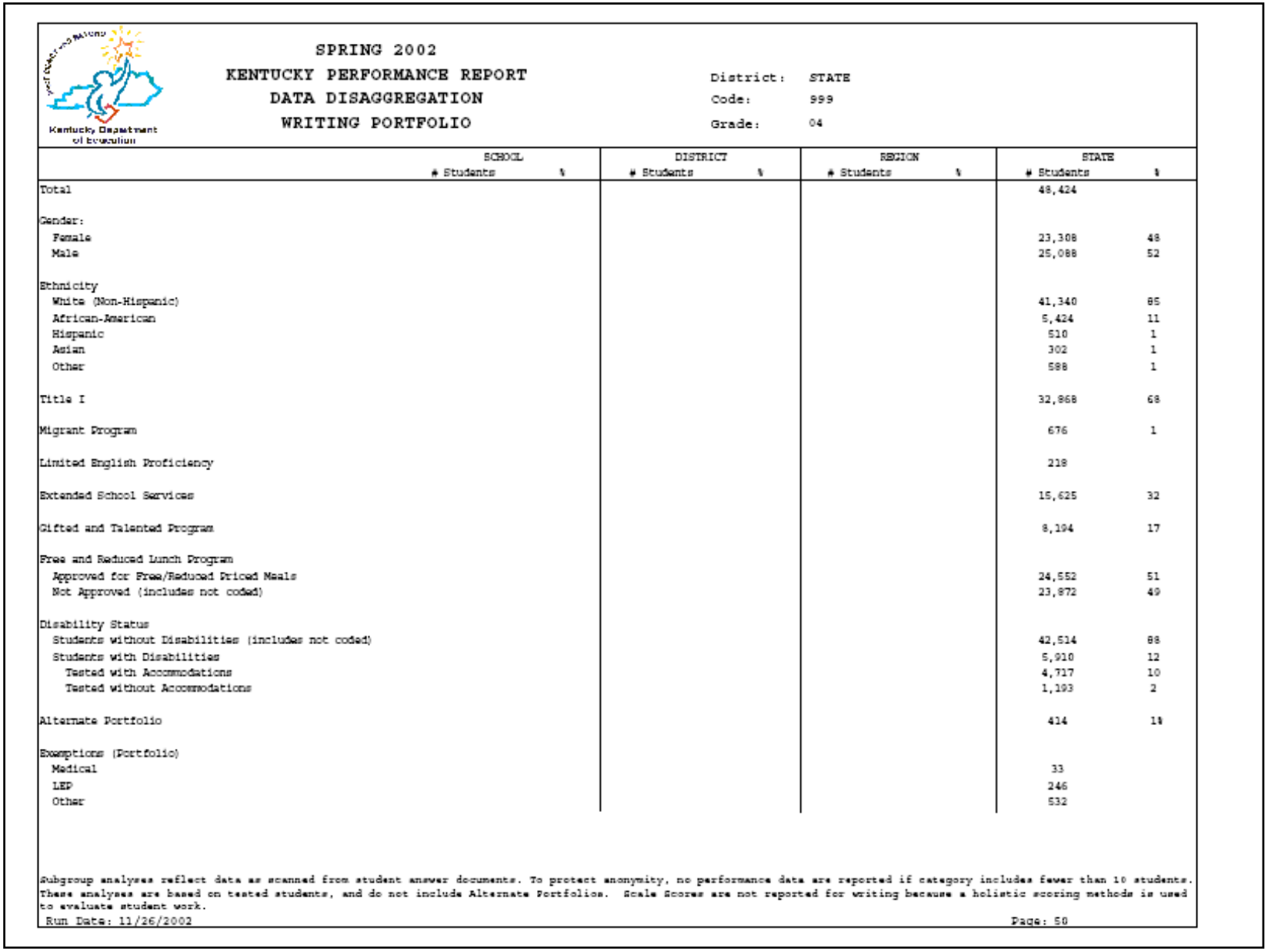
1. What do these visuals show?
2. What conclusions/trends can be drawn from these visuals?
3. How do these visuals relate to each other? Do they support each other, contradict each other, or ….?
4. What other data might you want to see in addition to these?





Kentucky Department of Education. (2003). Kentucky Performance Report. [WWW Document] URL http://app1.kde.state.ky.us/secure_cats_reports_03/index.cfm?action=display_regionstate (visited 2004, Jan 4).


SPRING 2002
KENTUCKY PERFORMANCE REPORT
WRITING PORTFOLIO DISAGGREGATION
Performance Level Percents
District: STATE
Code: 999
Grade: 04
Kentucky Department of Education
All
Total
Female
Male
White
African American
Hispanic
Asian
Other
Title 3
Migrant
Limited English
ESS
Gifted/Talented
Reduced/Free Lunch Approved
Reduced/Free Lunch Not Approved
Vocational/3 Credits
Vocational/ Enrolled
No Disability
Disability
Disability (acc)
Disability (No acc)
Distinguished
Proficient
Apprentice
Novice
Percentage may not sum to 100% due to rounding. Values not reported are represented by a zero on the bottom axis. The number of students is reported on the Scale Score Disaggregation page.
Run Date: 11/26/2002
Page: 49



Kentucky Department of Education

SPRING 2002
KENTUCKY PERFORMANCE REPORT
DATA DISAGGREGATION
WRITING PORTFOLIO

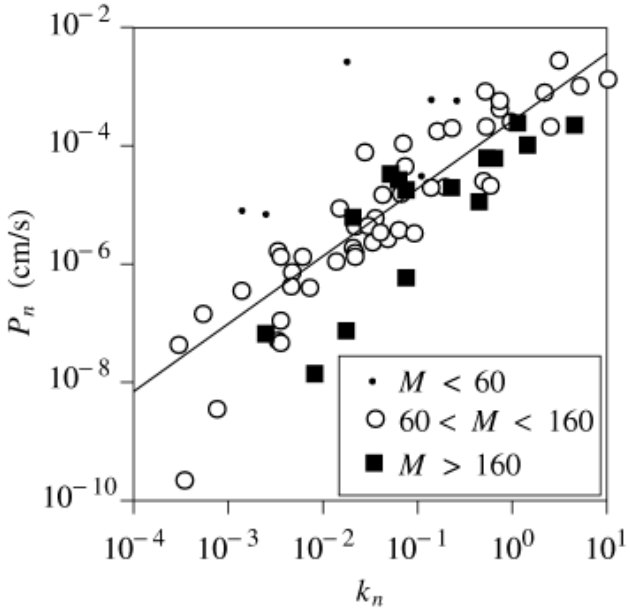
District: STATE
Code: 999
Grade: 04

	SCHOOL # Students	SCHOOL %	DISTRICT # Students	DISTRICT %	REGION # Students	REGION %	STATE # Students	STATE %
Total							48,424	
Gender:								
Female							23,308	48
Male							25,088	52
Ethnicity								
White (Non-Hispanic)							41,340	85
African-American							5,424	11
Hispanic							510	1
Asian							302	1
Other							588	1
Title I							32,868	68
Migrant Program							676	1
Limited English Proficiency							218	
Extended School Services							15,625	32
Gifted and Talented Program							8,194	17
Free and Reduced Lunch Program								
Approved for Free/Reduced Priced Meals							24,552	51
Not Approved (includes not coded)							23,872	49
Disability Status								
Students without Disabilities (includes not coded)							42,514	88
Students with Disabilities							5,910	12
Tested with Accommodations							4,717	10
Tested without Accommodations							1,193	2
Alternate Portfolio							414	1%
Exemptions (Portfolio)								
Medical							33	
LEP							246	
Other							532	

Subgroup analyses reflect data as scanned from student answer documents. To protect anonymity, no performance data are reported if category includes fewer than 10 students. These analyses are based on tested students, and do not include Alternate Portfolios. Scale Scores are not reported for writing because a holistic scoring methods is used to evaluate student work.

Run Date: 11/26/2002 Page: 50

Challenge 3: Write 2-3 bullet points for each figure.



Methods
- measuring P_n
- measuring k_n
- fitting straight lines to data
- calculating correlation coefficients

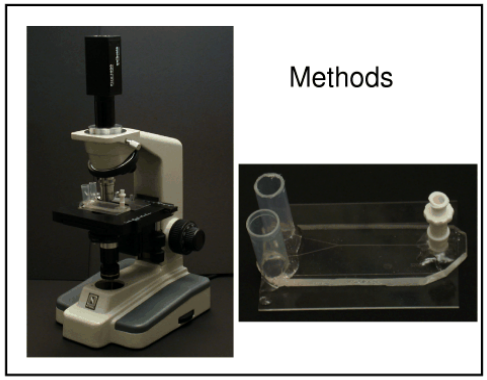
Results
- each dot represents ... } caption
- the lines represent ... } caption
- large range of P_n
- large range of k_n
- regression line: $P_n = 1.14 \log k_n - 3.58$ → caption?
- correlation coefficient = 0.8
- most of $M > 160$ below line ; all of $M < 160$ above line

Discussion
- correlation → clear support for dissolve and diffuse theory
- scatter → dissolve/diffuse not the whole story
- outliers → solutes transported by other mechanisms

Challenge 4: Integrate figures into a storyboard.

- Assemble figures into a “storyboard”
- Assess how each figure contributes to the major theme
- REVISE figures to focus on the major theme
- REVISE bullet points to focus on the major theme
- Add figures to fill in gaps
- Remove figures to eliminate redundancy

Sample Draft Storyboard

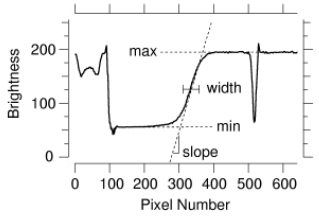


Changes with Mixing Distance

frame	min	max	slope	width
1	115.0	241.3	0.684	73.42
2	120.8	228.9	0.547	91.86
3	126.0	217.5	0.449	111.75
4	130.5	209.3	0.379	132.44
5	134.1	202.9	0.333	150.88
6	138.0	197.5	0.294	170.43
7	139.9	189.5	0.245	204.99
8	142.0	184.8	0.210	238.30
9	144.2	184.6	0.193	259.32
10	145.8	180.7	0.188	266.26
11	147.9	179.0	0.156	320.40
12	149.5	176.7	0.122	411.88
13	150.2	175.8	0.108	462.03
14	151.3	173.3	0.099	504.47
15	152.5	172.0	0.090	554.74
16	153.3	171.2	0.082	609.39

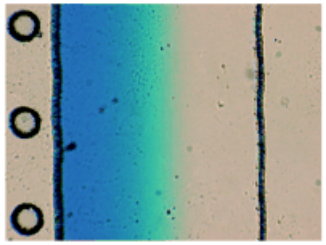
- tabulate blurring statistics
- frames separated by 1 mm

Characterizing Concentrations



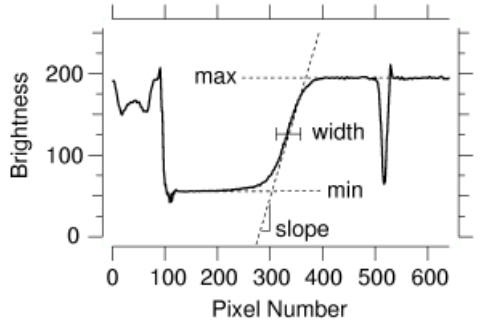
- line = brightness through center row
- brightness ↑ where dye ↓
- measure width from min, max, and slope

Sample Image



- circles are distance markers (250 μm)
- blue dye in left channel, none in right
- blurring of dye in center → diffusion

Characterizing Concentrations



- line = brightness through center row
- brightness ↑ where dye ↓
- measure width from min, max, and slope

Changes with Mixing Distance

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13	150.2	175.8	0.108	462.03
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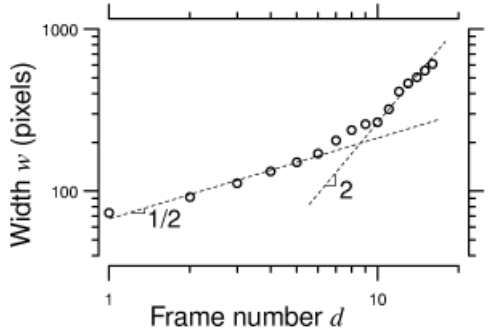
15	152.5	172.0	0.090	554.74
16	153.3	171.2	0.082	609.39

- tabulate blurring statistics
- frames separated by 1 mm

Width Versus Mixing Distance



- log-log plot of w versus d
- $w \propto \sqrt{d}$ → consistent with theory
- $w \propto d^2$ → "edge effects" ?

Challenge 5: Translate bullet points into report text.

a. Use “storyboard” as an “outline” of your report.
b. Develop bullets into well-supported arguments. Integrate figures with text.
c. Read and revise to fill in gaps.
d. Add abstract, references, and other supporting material.