

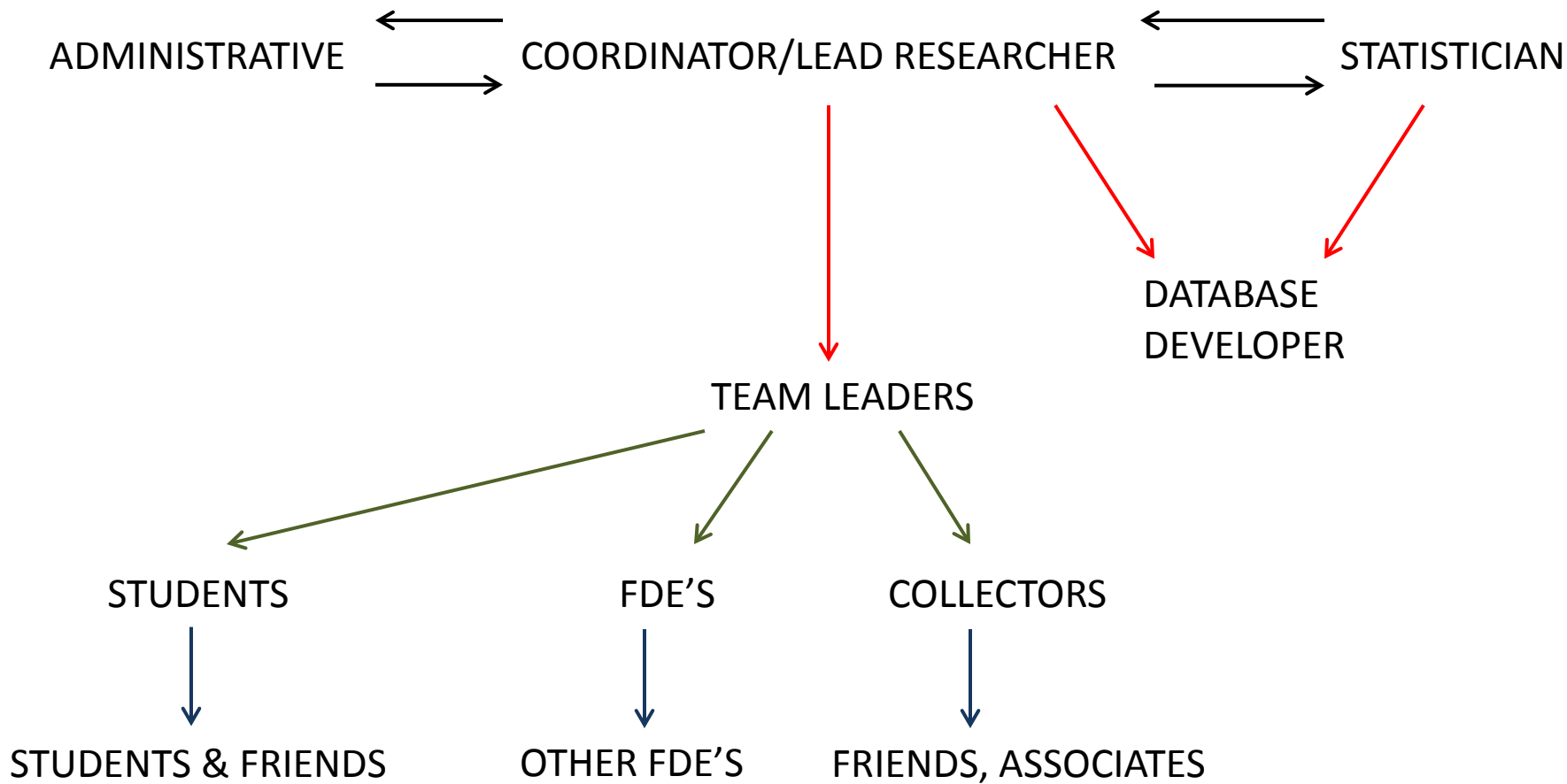
FREQUENCY OCCURRENCE IN HANDWRITING AND HAND PRINTING CHARACTERISTICS

STEP 1 – Development of Idea

- Need
- Purpose and Fit with Need (Limitations)
- Outline of Procedure (very general)
- Discussion with Peers (Refinement Process)

STEP 2 – From Idea to Drawing Board

- More Detailed Plan of Action
- Personnel Needed
- Team Structure
- Funding
- Administrative Activity



STEP 3 – FROM DRAWING BOARD TO ACTION

- Integration of Parts to One System
- Pilot Studies of Each Methodology Within Study
- Testing of Software and Equipment
- Pilot Test of Integrated System

Statistician Driven

Methodologies

Handwriting Form

From: Jim Eldis

CURSIVE SPECIMENS FORM 969

829 Loop Street, Apt. 300

AGE 48

SEX Female

Allentown, New York 14707

ETHNICITY white

RIGHT/LEFT HANDED right handed

EDUCATION LEVEL Trade School

LOCATION 2ND/3RD GRADE Fridley, MN

To: Dr. Bob Ray Grant

602 Queensberry Parkway
Omar, West Virginia 25638

We were referred to you by Kera Cohen at the University Medical Center. This is regarding my friend, Kate Zack.

It all started about six months ago while attending the "Rubeg" Jazz Concert. Organizing such an event is no picnic, and as President of the Alumni Association, a co-sponsor of the event, Kate was overworked. But she enjoyed her job and did what was required of her with great zeal and enthusiasm. However, the extra hours affected her health; halfway through the show she passed out. We rushed her to the hospital, and several questions, X-rays and blood tests, later, were told it was just exhaustion. Kate's been in very bad health since. Could you kindly take a look at the results and give us your opinion?

Thank you.

Jim

Statistician Driven

Methodologies

Handwriting Form

Pilot Studies

Pilot Studies

Write-On 2

Copies of Specimens

Attribute Agreement Analyses

Statistician Driven

Handwriting Form

Methodologies

Pilot Studies

Population Sampling

Population Sampling

Headrick/Huber – Intrinsic and Extrinsic Factors

Random Based (not totally random)

Stratified Sampling

To Be Tested/Verified After Completion of Project

FACTORS INFLUENCING HANDWRITING Huber & Headrick (H&H)				OUR SAMPLING PROCESS	
Section in H&H	Reference in H&H	Extrinsic or Intrinsic factor	Factors in H&H	How handled in our sample?	Information requested
Extrinsical Factors					
8.37	A	E	Writing systems: National, cultural, and occupational	People who are in the US (including foreigners travelling), able to write in English (not necessarily speaking English)	Location of 3rd grade schooling
8.37	B	E	Physiological constraints:		
		B1	Foot & Mouth	Do not accept in sample	
		B2	Use of artificial aids (protheses)	Accept in sample	Do you have any physical impairies or injuries?
		B3	Deafness and/or sightlessness	Do not include blind people in sample, accept deaf people if communication is possible	Do you have any physical impairies or injuries?
8.37	C	E	Genetic factors: Sex	Familial relationship and multiple birth are of no interest in this study. Ignore	Record Gender
8.37	D	E	Physical (Normal)		
		D1	Maturity, Practise, and Development	Accept only people 18 years old or older	Record age
		D2	Handedness	No control of which hand should write in the case of ambidexterity.	Record hand doing the writing. Do not record Grasp
8.37	E	E	Physical (Abnormal state of health)		
		E1	Handwriting as a diagnostic tool	Not relevant to our study - ignore	
		E2	Illnesses organically related	Accept in sample	Do you have any physical impairies or injuries?
8.37	F	E	Medications	No control, no asking	No information asked
8.37	G	E	Infirmity		
		G1	Senility	Do not accept in sample	
		G2	Guided hands	Do not accept in sample	
8.37	H	E	Mental State of Writer (Emotional stress, nervousness, instability)	Accept in sample	No information requested or noted
8.37	I	E	Injury	Accept in sample	Do you have any physical impairies or injuries?
Intrinsic Factors					
9.38	A	I	Imitation	Not relevant to our study - ignore	
9.38	B	I	Circumstantial	Control environment	Provide pen and paper; Provide "comfortable position for the person to write with adequate support level"
9.38	C	I	Temporal states of the writer		
		C1	Alcohol	Accept in sample	
		C2	Hallucinogens and hard drugs	Accept in sample	
		C3	Hypnosis	Accept in sample	
		C4	Fatigue & physical stress	Accept in sample	Flip-flop printing and cursive writing - record order
9.38	D	I	Literacy and Education		Record information on education level

Reference in H&H	Stratification variable	Strata definition	Strata proportion in U.S. (confirmed except writing system)	Minimal quota specification (80% per factor)
A	Writing Systems	Location of 3rd grade schooling in U.S.	80.0%	>70%
		Location of 3rd grade schooling NOT in U.S.	20.0%	>10%
C	Gender	Male	49.0%	>40%
		Female	51.0%	>40%
D	Age	18-30	33.0%	>20%
		>30-50	36.0%	>30%
		>50	41.0%	>30%
D	Handedness	R	90.0%	>75%
		L	10.0%	>5%
C	Temporal state	Night (after 8pm)		>20%
		Day (before 8pm)		>60%
D	Education	HS or less	49.0%	>30%
		>HS	51.0%	>50%
N/A	Race	W	63.7%	>55%
		B	12.6%	>10%
		H	16.3%	>11%
		A	4.8%	>4%
N/A	US Region (where samples are taken)	North West		>15%
		North East		>15%
		Midwest		>15%
		South West		>15%
		South East		>15%
N/A	Location	College and universities		>20%
		Religious places		>20%
		Social and non-social gathering areas (e.g., malls, night entertainment, jury waiting rooms, restaurants, fast food places)		>40%

Population Sampling

Age

Sex

Ethnic Background

Area of Elementary Schooling

Handedness

Time of Day

Sampling Taken From Regions of U.S.

Minimal Directions to Collectors

Data Collection in Database

File Home Create External Data Database Tools

View Paste Cut Copy Format Painter Filter Filter Sort & Filter Refresh All Save Spelling More Find Go To Select Replace Go To Select Window Size to Fit Form Windows Switch Text Formatting

All Tables
Search...
CLCA
Cursive
Printed

Cursive

Writer	CLCC	CLCD	CLCE	CLCF	CLCG	CLCH	CLCI	CLCJ	CLCK	CLCL	CLCM	CLCN	CLCO	CLCP	CLCQ	CLCR	CLCS	CLCT	CLCU	CLCV	CLCW	CLCX	CLCY	CLCZ	CUCA	CUCB	CUCC	CUCD	CUCE	CUCF	CUK
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Find/Edit Specific ID

Writer Number:

Age:

Sex:

Ethnicity:

Right or left handed:

Educational Level:

Location of 2nd and 3rd grade education:

All Tables

Search...





CLCA

- Cursive
- Printed

Cursive

Writer CLCC CLCD CLCE CLCF CLCG CLCH CLCI CLCJ CLCK CLCL CLCM CLCN CLCO CLCP CLCQ CLCR CLCS CLCT CLCU CLCV CLCW CLCX CL

Writer #: 232 Character not present

-  1. Upper portion is an enclosed loop
-  2. Upper portion is single direction stroke
-  3. Upper portion is retrace (open or closed)
- 4. Internal or terminal letter connected to previous letter
-  5. Upper portion is a retrace (open or closed)
- 6. Upper portion is clearly narrower

Record: 1 of 1 No Filter Search

Results

Frequency – Occurrences per Number of Writers

Interdependency

Maximum Number of Common Results

Validation of Intrinsic and Extrinsic Effects

Cautionary Alerts

Not an “end all”. It is a tool.

Careless application of product rule

THANK YOU