

Dataset Documentation

Section 1: Overview

Study Information

Report Title:	Encouraging families to visit a literacy website: A randomized study of the impact of email and text message communications
REL:	REL Southwest
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Authors:	Candace Hester, Andrew Jaciw, Anja Kurki, Jenna Zacamy, Ashley Pierson, Garrett Lai, Amy Feygin
Report Abstract:	<p>The Arkansas Department of Education partnered with the Regional Educational Laboratory Southwest to study the feasibility and effectiveness of using brief email and text message communications to increase the number of parent and guardian visits to the Reading Initiative for Student Excellence (R.I.S.E.) state literacy website. In November 2021 the department sent test messages to families to determine the percentage of households with children in kindergarten–grade 6 in Arkansas public schools that had a working email address or cell phone number and whether the percentage differed by school locale (rural or nonrural) or demographic composition (percentage of economically disadvantaged students, Black students and Hispanic students, or English learner students). Subsequently, the department randomly assigned 700 Arkansas public elementary schools to one of eight conditions, which varied the mode of communication (email only or email and text message), the presentation of information (no graphic or with a graphic), and the type of sender (generic sender or known sender). In January 2022 households with children in these schools were sent three rounds of communications with information about literacy and a link to the R.I.S.E.</p>

website. The study examined the impact of these communications on whether parents and guardians clicked the link to visit the website (click rate) and conducted an exploratory analysis of differences in how long they spent on the website (time on page). The study found that nearly all households had a working email address or cell phone number. Households with children in rural schools or schools with higher percentages of economically disadvantaged students were less likely than other households to have a working email address. The percentage of households that had a working cell phone number did not vary by school locale or demographic composition. Nearly one in five households opened at least one email, and nearly 80 percent of households received at least one text message. The click rate was highest among households assigned to receive both emails and text messages with a graphic from a known sender. The higher click rate can be attributed to adding text messages and to sending communications from a known sender. The impact on the click rate was similar for schools in different locales and with different demographic compositions. The Arkansas Department of Education can use the findings from this study to inform decisions about how best to communicate with families about literacy and other evidence-based resources. The findings can also be used by other state and local education agencies to inform decisions about using email or text message communications to share resources with families.

URL for IES Publication Page:

<https://ies.ed.gov/ncee/rel/Products/Publication/100918>

URL for Study Pre-Registration:

If consent form(s) was/were signed by study participants or caregivers, is the form reproduced as appendix to report?

If not, include as appendix to this template

Not applicable, consent forms were not required for this study.

Administrative Data Provider #1:

Agency and Office:	Arkansas Department of Education (ADE) Division of Elementary and Secondary Education (DESE) Office of Information Technology
Key Point of Contact:	Arijit Sarkar, Chief Information Officer
Summary of agreed-upon confidentiality provisions or restrictions on data sharing:	ADE and AIR (REL Southwest) entered into a Data Sharing Agreement (DSA) in April 2019 in which AIR agreed that: <i>“Under the Agreement AIR agrees that no personally identifiable (either using direct identifiers or indirect identifiers) student or parent data will be publicly displayed, or shared with any other entity, agency, school/school district, or other individuals or organizations unless specifically allowed by the Department.”</i>
Additional information, if applicable (e.g., provider IRB number, MOU reference number, or other project identifiers):	Not applicable

Administrative Data Provider #2:

Agency and Office:	Catalyst Consulting Group
Key Point of Contact:	Jess Talwar, Senior Manager
Summary of agreed-upon confidentiality provisions or restrictions on data sharing:	REL Southwest does not have permission from the Arkansas Department of Education to share these data.
Additional information, if applicable (e.g., provider IRB number, MOU reference number, or other project identifiers):	Not applicable

Administrative Data Provider #3

Agency and Office:	National Center for Education Statistics (NCES), Common Core of Data
Key Point of Contact:	Patrick Keaton, Statistician Administrative Data Division: Elementary and Secondary Branch, NCES

Summary of agreed-upon confidentiality provisions or restrictions on data sharing:

Not applicable, publicly available data

Additional information, if applicable (e.g., provider IRB number, MOU reference number, or other project identifiers):

Not applicable, publicly available data

Section 2. Data Sources

Source #1

Source Name:	Student K–6 Household IDs
Administrative Data Provider, if applicable, from Section 1	Arkansas Department of Education (ADE) (<i>Data Provider #1</i>)
Provider File Name(s):	<i>Student K-6 HouseholdID.csv</i>
Brief Description of Source:	Unique household IDs for households of students enrolled in Arkansas public schools in grade K–6. Each household is linked to a School ID, District ID, and includes the primary home language.
Unit of Analysis:	Household
Brief Description of Collection:	Unique household ID for all students enrolled in K–6 as of Fall 2021 pulled from ADE’s Statewide Information System
If applicable, is a copy of the instrument reproduced in report? <i>If not, include as appendix to this template</i>	Not applicable; enrollment data

Source #2a

Source Name:	School-level demographic data
Administrative Data Provider, if applicable, from Section 1	Arkansas Department of Education (ADE) (<i>Data Provider #1</i>)
Provider File Name(s):	<i>File 1: School Grade Range 2021-2022.xlsx</i> <i>File 2: School-Level Enrollment By Grade By Race 2020-2021.xlsx</i> <i>File 3: School Assessment 2018-2019.xlsx</i> <i>File 4: School Status 2021-2022.xlsx (ADE Magnet/Charter)</i>
Brief Description of Source:	These files include the following school-level information for Arkansas public schools: <ul style="list-style-type: none"> • Size (enrollment) by grade level • Percentage of students by racial/ethnic category • Percentage of students eligible for the National School Lunch Program

	<ul style="list-style-type: none"> • Percentage of English learner students • Percentage of students enrolled in special education • Charter or magnet school status • Assessment scores
Unit of Analysis:	School
Brief Description of Collection:	School-level demographic data pulled from ADE’s Statewide Information System
If applicable, is a copy of the instrument reproduced in report? <i>If not, include as appendix to this template</i>	Not applicable; school demographic data

Source #2b

Source Name:	School-level locale data
Administrative Data Provider, if applicable, from Section 1	National Center for Education Statistics, Common Core of Data (<i>Data Provider #3</i>)
Provider File Name(s):	<i>EDGE GEOCODE PUBLICSCH 1819.xlsx</i>
Brief Description of Source:	This file includes the geographic locale for each school in Arkansas.
Unit of Analysis:	School
Brief Description of Collection:	These data are from the Common Core of Data website .
If applicable, is a copy of the instrument reproduced in report? <i>If not, include as appendix to this template</i>	Not applicable; school locale data

Source #3

Source Name:	Household “contactability” and opt-out opportunity
Administrative Data Provider, if applicable, from Section 1	Catalyst Consulting Group (<i>Data Provider #2</i>)
Provider File Name(s):	<i>JT-FinalOptOut_211209G.xlsx</i>
Brief Description of Source:	This dataset includes results from the “contactability” tests which were carried out with households in schools in

	November 2021. The households were sent test messages via email and text message, and the records include information about which households had working contact information (email and/or cell phone for texts). The file also includes information on which households opted out of further messages.
Unit of Analysis:	Household
Brief Description of Collection:	Catalyst sent contactability test messages to all identified households in November 2021. The contactability tests provided households with the option to opt out of further messages.
If applicable, is a copy of the instrument reproduced in report? <i>If not, include as appendix to this template</i>	Emails/text messages sent from communication vendor; for images of the messages, see figures A1–A3 in report appendix A.

Source #4

Source Name:	Messaging campaign data: Implementation data
Administrative Data Provider, if applicable, from Section 1	Catalyst Consulting Group (<i>Data Provider #2</i>)
Provider File Name(s):	<i>File 1: OpensByCondition.xlsx</i> <i>File 2: TotalDelivered.xlsx</i>
Brief Description of Source:	These files include information about which households opened email messages or received the text messages for at least one of the three rounds of communications.
Unit of Analysis:	Household
Brief Description of Collection:	Households in each school, with the exception of the households that opted out, received three communications developed by the Arkansas Department of Education in January 2022.
If applicable, is a copy of the instrument reproduced in report? <i>If not, include as appendix to this template</i>	Emails/text messages sent from communication vendor; for images of the messages, see figures A1–A3 in report appendix A.

Source #5

Source Name:	Messaging campaign data: Click data
Administrative Data Provider, if applicable, from Section 1	Catalyst Consulting Group (<i>Data Provider #2</i>)
Provider File Name(s):	<p><i>File 1: FINAL_Condition1.xlsx</i></p> <p><i>File 2: FINAL_Condition2.xlsx</i></p> <p><i>File 3: FINAL_Condition3.xlsx</i></p> <p><i>File 4: FINAL_Condition4.xlsx</i></p> <p><i>File 5: FINAL_Condition5.xlsx</i></p> <p><i>File 6: FINAL_Condition6.xlsx</i></p> <p><i>File 7: v2_FINAL_Condition7.xlsx</i></p> <p><i>File 8: FINAL_Condition8.xlsx</i></p>
Brief Description of Source:	These files include information about which households clicked the link in an email or text message for at least one of the three rounds of campaign messaging.
Unit of Analysis:	Household
Brief Description of Collection:	Households in each school, with the exception of the households that opted out, received three communications developed by the Arkansas Department of Education in January 2022.
If applicable, is a copy of the instrument reproduced in report? <i>If not, include as appendix to this template</i>	Emails/text messages sent from communication vendor; for images of the messages, see figures A1–A3 in report appendix A.

Source #6

Source Name:	Google Analytics: Landing page data
Administrative Data Provider, if applicable, from Section 1	Arkansas Department of Education (ADE) (<i>Data Provider #1</i>)
Provider File Name(s):	<i>RISE-GA Campaign Data.xlsx</i>
Brief Description of Source:	This file includes records tracking visits to the R.I.S.E. initiative website from Google Analytics, including total website users and average session duration.
Unit of Analysis:	School

Brief Description of Collection:

R.I.S.E. initiative website analytics collected during the messaging campaign from ADE in January 2022.

If applicable, is a copy of the instrument reproduced in report?
If not, include as appendix to this template

Not applicable; website analytics

Section 3. Data File Descriptions

File #1

File Name:	<i>Student K-6 Household IDs.xlsx</i>
Related source, from Section 2	<i>ADE, Source #1</i>
Records:	<i>242,838 records</i>
Variables:	<i>4 variables</i>
Unique identifiers:	<i>HouseholdID</i>

<i>Variable Name (as it appears in the file)</i>	<i>Variable Definition</i>	<i>Renamed for analysis</i>
HouseholdID	Household identifier	Householdid
District.LEA	Arkansas district identifier	Districtid
School.LEA	Arkansas school identifier	Schoolid
Primary.Home.Language. Status	Primary language spoken at home	Primary Home Language Status

File #2

File Name:	<i>School Grade Range 2021-2022.xlsx</i>
Related source, from Section 2	<i>ADE, Source #2a, File 1</i>
Records:	<i>1,042 records</i>
Variables:	<i>5 variables</i>
Unique identifiers:	<i>School LEA</i>

<i>Variable Name (as it appears in the file)</i>	<i>Variable Definition</i>	<i>Renamed for analysis</i>
District LEA	Arkansas district identifier	Districtid
District Name	District name	Districtname
School LEA	Arkansas school identifier	Schoolid
School Name	School name	Schoolname
Grades Served	Lowest and highest grades taught	Gradesserved

File #3

File Name:	<i>School Level Enrollment By Grade By Race 2020-2021.xlsx</i>
Related source, from Section 2	<i>ADE, Source #2a, File 2</i>
Records:	<i>1,041 records</i>
Variables:	<i>21 Variables</i>
Unique identifiers:	<i>Location ID</i>

<i>Variable Name (as it appears in the file)</i>	<i>Variable Definition</i>	<i>Renamed for analysis</i>
Location ID	Arkansas school identifier	Schoolid
School Description	School name	Schoolname
Kindergarten	Count of students in kindergarten	KG
Grade 01	Count of student in grade 1	GR01
Grade 02	Count of student in grade 2	GR01
Grade 03	Count of student in grade 3	GR03
Grade 04	Count of student in grade 4	GR04
Grade 05	Count of student in grade 5	GR05
Grade 06	Count of student in grade 6	GR06
Asian Percentage	Percentage of students who are Asian	ASPct
Black Percentage	Percentage of students who are Black	BKPct
Hispanic Percentage	Percentage of students who are Hispanic	HSPct
Native American/Native Alaskan Percentage	Percentage of students who are Native American/Native Alaskan	AMPct
Native Hawaiian/Pacific Islander Percentage	Percentage of students who are Hawaiian/Pacific Islander	HIPct
White Percentage	Percentage of students who are White	WHPct
Gifted And Talented Percentage	Percentage of students who are gifted and talented	GiftedPct
Special Education Percentage	Percentage of students who are in special education	SpecEdPct
Section 504 Percentage	Percentage of students who fall under section 504 (other disabilities)	Disability504Pct
English Learner Percentage	Percentage of students who are English learner students	ENLearnerPct
Title I Percentage	Percentage of students who qualify for Title I	TitleOnePct
Eligible School Lunch Program Percentage	Percentage of students who are eligible for the National School Lunch Program	FRPLPct

File #4

File Name: *School Assessment 2018-2019.xlsx*

Related source, from Section 2 *ADE, Source #2a, File 3*

Records: *999 records*

Variables: *6 Variables*

Unique identifiers: *School LEA*

<i>Variable Name (as it appears in the file)</i>	<i>Variable Definition</i>	<i>Renamed for analysis</i>
District LEA	Arkansas district identifier	Districtid
District Description	District name	Districtname
School LEA	Arkansas school identifier	Schoolid
School Description	School name	Schoolname
ACT Aspire ELA Score	English language arts score in 2018/2019	ELA
ACT Aspire Math Score	Math score in 2018/2019	MATH

File #5

File Name: *School Status 2021-2022.xlsx*

Related source, from Section 2 *ADE, Source #2a, File 4*

Records: *1,055 records*

Variables: *7 Variables*

Unique identifiers: *School LEA*

<i>Variable Name (as it appears in the file)</i>	<i>Variable Definition</i>	<i>Renamed for analysis</i>
District LEA	Arkansas district identifier	Districtid
District Name	District name	Districtname
School LEA	Arkansas school identifier	Schoolid
School Name	School name	Schoolname
School Federal Program Status	School wide, target assisted, not applicable	Programstatus
Magnet School	Is school a magnet school? Y=YES, N=NO	Magnet
Charter School	Is school a charter school? Y=YES, N=NO	Charter

File #6

File Name: *EDGE_GEOCODE_PULICSCH_1819.xlsx*

Related source, from Section 2 *NCES CCD, Source #2b*

Records: *102,176 records*

Variables: *25 Variables*

Unique identifiers: *NCESSCH*

<i>Variable Name (as it appears in the file)</i>	<i>Variable Definition</i>	<i>Renamed for analysis</i>
NCESSCH	NCES school identifier	Ncessch
LEAID	NCES district identifier	Leaid
NAME	Name of school	Name
OPSTFIPS	FIPS state code for operating state	Opstfips
STREET	Reported location street address	Street
CITY	Reported location city	City
STATE	Reported location state	State
ZIP	Reported location zip code	Zip
STFIP	State FIPS	Stfip
CNTY	County FIPS	Cnty
NMCNTY	County name	Nmcenty
LOCALE	Locale code	Locale
LAT	Latitude of school location	Lat
LON	Longitude of school location	Lon
CBSA	Core based statistical area	Cbsa
NMCBSA	Core based statistical area name	Nmcbasa
CBSATYPE	Metropolitan or micropolitan statistical area indicator	Cbsatype
CSA	Combined statistical area	Csa
NMCSA	Combined statistical area name	Nmcsa
NECTA	New England city and town area	Necta
NMNECTA	New England city and town area name	Nmnecta
CD	Congressional district	Cd
SLDL	State legislative district lower	Sldl
SLDU	State legislative district upper	Sldu
SCHOOLYEAR	School year	Schoolyear

File #7

File Name:	<i>JT-FinalOptOut_211209G.xlsx</i>
Related source, from Section 2	<i>Catalyst Consulting Group, Source 3</i>
Records:	<i>180,534 records</i>
Variables:	<i>11 Variables</i>
Unique identifiers:	<i>HouseholdID</i>

<i>Variable Name (as it appears in the file)</i>	<i>Variable Definition</i>	<i>Renamed for analysis</i>
HouseholdID	Household identifier	Householdid
SchoolID	Arkansas school identifier	Schoolid
DistrictID	Arkansas district identifier	Districtid
English	Does household speak English? 0=NO, 1=YES	English
Spanish	Does household speak Spanish? 0=NO, 1=YES	Spanish
Other	Does household speak other language (not English and not Spanish)? 0=NO, 1=YES	Other
EmailStatus	Does household have functional email? Active=YES, Held=YES, Bounced=NO, Unsubscribed=NO, Blank=No email address was available	EmailStatus
MobileStatus	Does household have functional mobile number? Active=YES, OptedOut=YES, CouldntBeReached1=NO, CouldntBeReached2=NO, CouldntBeReached3=NO, blank=No cell number available	MobileStatus
MMSDeliv	MMS sent first. Was MMS delivery successful? Delivered=YES, Undelivered=NO	MMSDeliv
SMSDeliv	Failing MMS, SMS sent. Was SMS delivery successful? Delivered=YES, Undelivered=NO	SMSDeliv

File #8

File Name:	<i>OpensByCondition.xlsx</i>
Related source, from Section 2	<i>Catalyst Consulting Group, Source 4, File 1</i>
Records:	<i>34,300 records</i>
Variables:	<i>2 Variables</i>
Unique identifiers:	<i>HouseholdID</i>
Note:	<i>This table is a transformation of 8 tabs in the original excel workbook. Each tab in the workbook had a list of HouseholdIDs that opened any of the three messages sent during the messaging campaign. Each condition (C1–C8) had a tab. We added a column (cond) to each of the tabs and gave it the condition of the tab they were in. We then took the union of all the tabs.</i>

<i>Variable Name (as it appears in the file)</i>	<i>Variable Definition</i>	<i>Renamed for analysis</i>
HouseholdID	Household identifier if they opened at least one of the 3 messages sent	Hhid
TabName	Condition tab they originally came from	Cond

File #9

File Name:	<i>TotalDelivered.xlsx</i>
Related source, from Section 2	<i>Catalyst Consulting Group, Source 4, File 2</i>
Records:	<i>73,890 records</i>
Variables:	<i>2 Variables</i>
Unique identifiers:	<i>HouseholdID</i>

<i>Variable Name (as it appears in the file)</i>	<i>Variable Definition</i>	<i>Renamed for analysis</i>
HouseholdID	Household identifier	Householdid
Status	Status: All “delivered” (indicator for text or email delivered)	

File #10

File Name: *FINAL_Condition1.xlsx*

Related source, from Section 2 *Catalyst Consulting Group, Source 5, File 1*

Records: *162 records*

Variables: *10 Variables*

Unique identifiers: *HouseholdID*

Note: *This table is a transformation of three tabs in the original excel workbook. Each tab in the workbook had householdid, schoolid, clickdate, and clicktime. The values for the records were linked via HouseholdID.*

<i>Variable Name (as it appears in the file)</i>	<i>Variable Definition</i>	<i>Renamed for analysis</i>
HouseholdID	Household identifier	Householdid
schoolid1	School identifier for message 1 email	Schoolid1,2,3 all turn into “schoolid” as they are the same for each household
clickdate1	Date the click occurred for message 1 email	Date1email
clicktime1	Time the click occurred for message 1 email	Time1email
schoolid2	School identifier for message 2 email	Schoolid
clickdate2	Date the click occurred for message 2 email	Date2email
clicktime2	Time the click occurred for message 2 email	Time2email
schoolid3	School identifier for message 3 email	Schoolid
clickdate3	Date the click occurred for message 3 email	Date3email
clicktime3	Time the click occurred for message 3 email	Time3email

File #11

File Name:	<i>FINAL_Condition2.xlsx</i>
Related source, from Section 2	<i>Catalyst Consulting Group, Source 5, File 2</i>
Records:	<i>517 records</i>
Variables:	<i>10 Variables</i>
Unique identifiers:	<i>HouseholdID</i>
Note:	<i>This table is a transformation of three tabs in the original excel workbook. Each tab in the workbook had householdid, schoolid, clickdate, and clicktime. The values for the records were linked via HouseholdID.</i>

<i>Variable Name (as it appears in the file)</i>	<i>Variable Definition</i>	<i>Renamed for analysis</i>
HouseholdID	Household identifier	Householdid
schoolid1	School identifier for message 1 email	Schoolid (schoolid1,2,3 are all the same per household, so only one schoolid used)
clickdate1	Date the click occurred for message 1 email	Date1email
clicktime1	Time the click occurred for message 1 email	Time1email
schoolid2	School identifier for message 2 email	Schoolid
clickdate2	Date the click occurred for message 2 email	Date2email
clicktime2	Time the click occurred for message 2 email	Time2email
schoolid3	School identifier for message 3 email	Schoolid
clickdate3	Date the click occurred for message 3 email	Date3email
clicktime3	Time the click occurred for message 3 email	Time3email

File #12

File Name:	<i>FINAL_Condition3</i>
Related source, from Section 2	<i>Catalyst Consulting Group, Source 5, File 3</i>
Records:	<i>137 records</i>
Variables:	<i>10 Variables</i>
Unique identifiers:	<i>HouseholdID</i>
Note:	<i>This table is a transformation of three tabs in the original excel workbook. Each tab in the workbook had householdid, schoolid, clickdate, and clicktime. The values for the records were linked via HouseholdID.</i>

<i>Variable Name (as it appears in the file)</i>	<i>Variable Definition</i>	<i>Renamed for analysis</i>
HouseholdID	Household identifier	Householdid
schoolid1	School identifier for message 1 email	Schoolid (schoolid1,2,3 are all the same for a given household. Only one used)
clickdate1	Date the click occurred for message 1 email	Date1email
clicktime1	Time the click occurred for message 1 email	Time1email
schoolid2	School identifier for message 2 email	Schoolid
clickdate2	Date the click occurred for message 2 email	Date2email
clicktime2	Time the click occurred for message 2 email	Time2email
schoolid3	School identifier for message 3 email	Schoolid
clickdate3	Date the click occurred for message 3 email	Date3email
clicktime3	Time the click occurred for message 3 email	Time3email

File #13

File Name:	<i>FINAL_Condition4</i>
Related source, from Section 2	<i>Catalyst Consulting Group, Source 5, File 4</i>
Records:	<i>366 records</i>
Variables:	<i>10 Variables</i>
Unique identifiers:	<i>HouseholdID</i>
Note:	<i>This table is a transformation of three tabs in the original excel workbook. Each tab in the workbook had householdid, schoolid, clickdate and clicktime. The values for the records were linked via HouseholdID.</i>

<i>Variable Name (as it appears in the file)</i>	<i>Variable Definition</i>	<i>Renamed for analysis</i>
HouseholdID	Household identifier	Householdid
schoolid1	School identifier for message 1 email	Schoolid (schoolid1,2,3 all the same for a given household. Only one used)
clickdate1	Date the click occurred for message 1 email	Date1email
clicktime1	Time the click occurred for message 1 email	Time1email
schoolid2	School identifier for message 2 email	Schoolid
clickdate2	Date the click occurred for message 2 email	Date2email
clicktime2	Time the click occurred for Message 2 email	Time2email
schoolid3	School identifier for message 3 email	Schoolid
clickdate3	Date the click occurred for message 3 email	Date3email
clicktime3	Time the click occurred for message 3 email	Time3email

File #14

File Name:	<i>FINAL_Condition5</i>
Related source, from Section 2	<i>Catalyst Consulting Group, Source 5, File 5</i>
Records:	<i>1,405 records</i>
Variables:	<i>19 Variables</i>
Unique identifiers:	<i>HouseholdID</i>
Note:	<i>This table is a transformation of six tabs (three for email and three for text message) in the original excel workbook. Each tab in the workbook had householdid, schoolid, clickdate and clicktime. The values for the records were linked via HouseholdID.</i>

<i>Variable Name (as it appears in the file)</i>	<i>Variable Definition</i>	<i>Renamed for analysis</i>
HouseholdID	Household identifier	Housed
schoolid1email	School identifier for message 1 email	Schoolid(schoolid1,2,3 all the same for a given household. Only one used)
clickdate1email	Date the click occurred for message 1 email	Date1email
clicktime1email	Time the click occurred for message 1 email	Time1email
schoolid2email	School identifier for message 2 email	Schoolid
clickdate2email	Date the click occurred for message 2 email	Date2email
clicktime2email	Time the click occurred for message 2 email	Time2email
schoolid3email	School identifier for message 3 email	Schoolid
clickdate3email	Date the click occurred for message 3 email	Date3email
clicktime3email	Time the click occurred for message 3 email	Time3email
schoolid1sms	School identifier for message 1 SMS	Schoolid
clickdate1sms	Date the click occurred for message 1 SMS	Date1txt
clicktime1sms	Time the click occurred for message 1 SMS	Time1txt
schoolid2sms	School identifier for message 2 SMS	Schoolid
clickdate2sms	Date the click occurred for message 2 SMS	Date2txt
clicktime2sms	Time the click occurred for message 2 SMS	Time2txt
schoolid3sms	School identifier for message 3 SMS	Schoolid
clickdate3sms	Date the click occurred for message 3 SMS	Date3txt
clicktime3sms	Time the click occurred for message 3 SMS	Time3txt

File #15

File Name:	<i>FINAL_Condition6</i>
Related source, from Section 2	<i>Catalyst Consulting Group, Source 5, File 6</i>
Records:	<i>1,580 records</i>
Variables:	<i>19 Variables</i>
Unique identifiers:	<i>HouseholdID</i>
Note:	<i>This table is a transformation of six tabs (three for email and three for text message) in the original excel workbook. Each tab in the workbook had householdid, schoolid, clickdate and clicktime. The values for the records were linked via HouseholdID.</i>

<i>Variable Name (as it appears in the file)</i>	<i>Variable Definition</i>	<i>Renamed for analysis</i>
HouseholdID	Household identifier	Householdid
schoolid1email	School identifier for message 1 email	Schoolid (schoolid1,2,3 are all the same for a given household. Only one used)
clickdate1email	Date the click occurred for message 1 email	Date1email
clicktime1email	Time the click occurred for message 1 email	Time1email
schoolid2email	School identifier for message 2 email	Schoolid
clickdate2email	Date the click occurred for message 2 email	Date2email
clicktime2email	Time the click occurred for message 2 email	Time2email
schoolid3email	School identifier for message 3 email	Schoolid
clickdate3email	Date the click occurred for message 3 email	Date3email
clicktime3email	Time the click occurred for message 3 email	Time3email
schoolid1sms	School identifier for message 1 SMS	Schoolid
clickdate1sms	Date the click occurred for message 1 SMS	Date1txt
clicktime1sms	Time the click occurred for message 1 SMS	Time1txt
schoolid2sms	School identifier for message 2 SMS	Schoolid
clickdate2sms	Date the click occurred for message 2 SMS	Date2txt
clicktime2sms	Time the click occurred for message 2 SMS	Time2txt
schoolid3sms	School identifier for message 3 SMS	Schoolid
clickdate3sms	Date the click occurred for message 3 SMS	Date3txt
clicktime3sms	Time the click occurred for message 3 SMS	Time3txt

File #16

File Name:	<i>V2_FINAL_Condition7</i>
Related source, from Section 2	<i>Catalyst Consulting Group, Source 5, File 7</i>
Records:	<i>2,920 records</i>
Variables:	<i>19 Variables</i>
Unique identifiers:	<i>HouseholdID</i>
Note:	<i>This table is a transformation of six tabs (three for email and three for text message) in the original excel workbook. Each tab in the workbook had householdid, schoolid, clickdate and clicktime. The values for the records were linked via HouseholdID.</i>

<i>Variable Name (as it appears in the file)</i>	<i>Variable Definition</i>	<i>Renamed for analysis</i>
HouseholdID	Household identifier	Householdid
schoolid1email	School identifier for message 1 email	Schoolid (schoolid1,2,3 are all the same for a given household. Only one used)
clickdate1email	Date the click occurred for message 1 email	Date1email
clicktime1email	Time the click occurred for message 1 email	Time1email
schoolid2email	School identifier for message 2 email	Schoolid
clickdate2email	Date the click occurred for message 2 email	date2email
clicktime2email	Time the click occurred for message 2 email	Time2email
schoolid3email	School identifier for message 3 email	Schoolid
clickdate3email	Date the click occurred for message 3 email	Date3email
clicktime3email	Time the click occurred for message 3 email	Time3email
schoolid1mms	School identifier for message 1 MMS	Schoolid
clickdate1mms	Date the click occurred for message 1 SMS	Date1txt
clicktime1mms	Time the click occurred for message 1 MMS	Time1txt
schoolid2mms	School identifier for message 2 MMS	Schoolid
clickdate2mms	Date the click occurred for message 2 MMS	Date2txt
clicktime2mms	Time the click occurred for message 2 MMS	Time2txt
schoolid3mms	School identifier for message 3 MMS	Schoolid
clickdate3mms	Date the click occurred for message 3 MMS	Date3txt
clicktime3mms	Time the click occurred for message 3 MMS	Time3txt

File #17

File Name:	<i>FINAL_Condition8</i>
Related source, from Section 2	<i>Catalyst Consulting Group, Source 5, File 8</i>
Records:	<i>1,870 records</i>
Variables:	<i>19 Variables</i>
Unique identifiers:	<i>HouseholdID</i>
Note:	<i>This table is a transformation of six tabs (three for email and three for text message) in the original excel workbook. Each tab in the workbook had householdid, schoolid, clickdate and clicktime. The values for the records were linked via HouseholdID.</i>

<i>Variable Name (as it appears in the file)</i>	<i>Variable Definition</i>	<i>Renamed for analysis</i>
HouseholdID	Household identifier	Householdid
schoolid1email	School identifier for message 1 email	Schoolid (schoolid1,2,3 are all the same for a given household. Only one used)
clickdate1email	Date the click occurred for message 1 email	Date1email
clicktime1email	Time the click occurred for message 1 email	Time1email
schoolid2email	School identifier for message 2 email	Schoolid
clickdate2email	Date the click occurred for message 2 email	Date2email
clicktime2email	Time the click occurred for message 2 email	Time2email
schoolid3email	School identifier for message 3 email	Schoolid
clickdate3email	Date the click occurred for message 3 email	Date3email
clicktime3email	Time the click occurred for message 3 email	Time3mail
schoolid1mms	School identifier for message 1 MMS	Schoolid
clickdate1mms	Date the click occurred for message 1 MMS	Date1txt
clicktime1mms	Time the click occurred for message 1 MMS	Time1txt
schoolid2mms	School identifier for message 2 SMS	Schoolid
clickdate2mms	Date the click occurred for message 2 MMS	Date2txt
clicktime2mms	Time the click occurred for message 2 MMS	Time2txt
schoolid3mms	School identifier for message 3 SMS	Schoolid
clickdate3mms	Date the click occurred for message 3 MMS	Date3txt
clicktime3mms	Time the click occurred for message 3 MMS	Time3txt

File #18

File Name:	<i>RISE-GA Campaign Data.xlsx</i>
Related source, from Section 2	<i>ADE, Source 6</i>
Records:	<i>1,747 records</i>
Variables:	<i>9 Variables</i>
Unique identifiers:	Campaign
Note:	None

<i>Variable Name</i> (as it appears in the file)	<i>Variable Definition</i>	<i>Renamed for analysis</i>
Message Date	Date spread from day A to day B	Message Date
Source/ Medium	Text message/SMS, SFMS/SMS, SFMS/email, MMS/SFMC (the lone MMS/SFMC should be converted to ext. message/MMS)	Source/Medium
Campaign	School identifier	Campaign
Users	Users who have initiated at least one session during the date range. Learn more here: https://support.google.com/analytics/answer/2992042?hl=en	Users
New Users	The number of first-time users during the selected date range	New Users
Sessions	Count of sessions	Sessions
Bounce Rate	The percentage of single-page sessions in which there was no interaction with the page. A bounced session has a duration of 0 seconds.	Bounce Rate
Pages/Session	Pages per session	Pages/Session
Avg. Session Duration	The average length of a session	Avg. Session Duration

Section 4. Statistical Code or Pseudo-Code

Identifiers

Householdid and Schoolid were consistent across files from the Arkansas Department of Education (ADE) and Catalyst. Data from the Common Core of Data were merged with ADE data by Schoolid.

Additional Details of Design and Analysis

Defining randomized blocks. 700 schools were randomly assigned in blocks of 8 (with the exception of one larger block with 19 schools for which school-level demographic data were not available.) Blocks were formed using the “Blocktools” program in R. Mahalanobis distances were used to identify blocks within strata of urbanicity that maximized differences among schools between blocks and minimized differences among schools within blocks (see appendix B of report for full details). The following covariates were used:

'FRPLPct'	Percentage of students at the school qualifying for free or reduced price lunch from File #3: <i>School Level Enrollment By Grade By Race 2020-2021.xlsx</i>
'ENLearnerPct'	Percentage of students at the school designated as English language learners from File #3: <i>School Level Enrollment By Grade By Race 2020-2021.xlsx</i>
'PCellOnly'	Percentage of households to which text messages were delivered during the initial messaging tests from File #7: <i>JT-FinalOptOut_211209G.xlsx</i>
'PEmailOnly'	Percentage of households to which email messages were delivered during the initial messaging tests from File #7: <i>JT-FinalOptOut_211209G.xlsx</i>
'PBoth_Func'	Percentage of households to which email messages and texts were delivered during the initial messaging tests from File #7: <i>JT-FinalOptOut_211209G.xlsx</i>
'PSpanish'	Percentage of households to which messages were delivered in Spanish from File #7: <i>JT-FinalOptOut_211209G.xlsx</i>
'PEmail_OptOut'	Percentage of households opting out of email messaging in response to initial messaging tests from File #7: <i>JT-FinalOptOut_211209G.xlsx</i>
'PCell_OptOut'	Percentage of households opting out of text messaging in response to initial messaging tests from File #7: <i>JT-FinalOptOut_211209G.xlsx</i>

As illustrated in the CONSORT diagram (figure B1 in appendix B of the report), each of 700 schools were randomly assigned to one of 8 conditions:

1. 87 schools inclusive of 21,487 consenting households assigned to A0B0C0
2. 88 schools inclusive of 22,415 consenting households assigned to A0B0C1
3. 88 schools inclusive of 19,931 consenting households assigned to A0B1C0
4. 88 schools inclusive of 20,725 consenting households assigned to A0B1C1
5. 88 schools inclusive of 20,470 consenting households assigned to A1B0C0
6. 87 schools inclusive of 19,105 consenting households assigned to A1B0C1

7. 87 schools inclusive of 23,358 consenting households assigned to A1B1C0
8. 87 schools inclusive of 21,256 consenting households assigned to A1B1C1

A0 indicates email only, A1 indicates email and text
B0 indicates no graphic, B1 indicates graphic
C0 indicates generic sender, C1 indicates known sender

Research Question 1

Test communications: For text messages, this is if the message is received or not; for email, this is if the message does or does not bounce-back.

Relevant figures and tables: Figure 2–3 in the main report; tables C1–C4 in appendix C.

When messages were delivered and data were collected: For most of the sample of 180,531 households distributed among 700 schools, tests were conducted in December 2021. Approximately 650 households were left off and were contacted in early January 2022 instead.

Sample: 180,531 households in 700 schools

Level of Analysis: Household

File with test communication outcomes data: A dummy variable is coded 1 to indicate email delivered (no bounce back) and 0 if not delivered; and a dummy variable is coded 1 to indicate text message received and 0 otherwise (from File #7: *JT-FinalOptOut_211209G.xlsx*).

Variables files: Demographic characteristics were used to disaggregate contactability by school status as:

- Rural versus non-rural
- Higher versus lower percent economically disadvantaged
- Higher versus lower percent Black or Hispanic
- Higher versus lower percent English learner students

From File #6: *EDGE_GEOCODE_PULICSCH_1819.xlsx* and File #3: *School Level Enrollment By Grade By Race 2020-2021.xlsx*

Analysis: We calculated proportions of households successfully contacted for (1) all households in the sample, and (2) households belonging to specific categories of schools. School-level student groups were identified through from File #6: *EDGE_GEOCODE_PULICSCH_1819.xlsx* or were constructed using File #3: *School Level Enrollment By Grade By Race 2020-2021.xlsx*. We rank ordered the 700 schools in proportions of specific student groups (e.g., proportion Black or Hispanic), putting schools at or above the median into the “higher” group and the remainder into the “lower” group.

Research Question 2

Implementation: For text messages, this is if the message is received; for email, this is whether the email was opened during the messaging campaign.

Relevant figures and tables: Tables C6–C10 in appendix C.

When messages were delivered and data were collected: All messages were delivered in three rounds to all 168,747 non-opting-out households in 700 schools in January 2022.

Sample: 168,747 households in 700 schools.

Level of Analysis: Household

File with implementation outcomes data: A dummy variable is coded 1 to indicate email opened and 0 otherwise; and a dummy variable is coded 1 to indicate text message received and 0 otherwise. From File #8: *OpensByCondition.xlsx* and File #9: *TotalDelivered.xlsx*

Variables files: Demographic data from were used to disaggregate implementation by school status as:

- Rural versus non-rural
- Higher versus lower percent economically disadvantaged
- Higher versus lower percent Black or Hispanic
- Higher versus lower percent English learner students

From File #6: *EDGE_GEOCODE_PULICSCH_1819.xlsx* and File #3: *School Level Enrollment By Grade By Race 2020-2021.xlsx*

Analysis: We calculated proportions of households that (a) received a text message, and (b) opened an email. This was done for each of the eight study conditions. Emails were sent to households in schools in all conditions; therefore, proportions opening email were based on all households in all schools in the study sample. Text messages were sent to households in schools in only half the conditions (that is, schools assigned to receiving text in addition to email); therefore, proportions receiving texts were based on all households only in the schools in text messaging conditions.

We calculated implementation data for the full sample of households, and for households belonging to specific categories of schools. School-level student groups were identified through from File #6: *EDGE_GEOCODE_PULICSCH_1819.xlsx* or were constructed using File #3: *School Level Enrollment By Grade By Race 2020-2021.xlsx* (that is, we rank ordered the 700 schools in proportions of specific student groups, putting schools at or above the median into the “higher” group and the remainder into the “lower” group.)

Research Question 3

Impact: This evaluates differences among the eight conditions in averages of school-level means of household proportions clicking on the link that was provided through email or text as part of the information campaign.

Relevant figures: Figures 4–6 in the main report; tables C12–C18 in appendix C; and tables D1–D7 in appendix D.

When messages were delivered and data were collected: All messages were delivered in three rounds to all 168,747 non-opting-out households in 700 schools in January 2022.

Sample: 168,747 households in 700 schools.

Level of Analysis: School

Outcomes file: Click status was obtained per household from Files #10–17 (FINAL Condition 1-8) and aggregated to the school level to obtain school proportions of households that clicked.

Variables files: Demographic data from were used to disaggregate schools by the following categories to allow analysis per school category:

- Rural versus non-rural
- Higher versus lower percent economically disadvantaged
- Higher versus lower percent Black or Hispanic
- Higher versus lower percent English learner students

From File #6: *EDGE_GEOCODE_PULICSCH_1819.xlsx* and File #3: *School Level Enrollment By Grade By Race 2020-2021.xlsx*

Analysis:

Transformation of data into final analytic final to support impact analysis. The main impact analysis used school level data for all 700 schools randomized. The impact analysis was conducted at the school level (e.g., school-average click rates, school-level demographics, and dummy variables indicating condition of random assignment). The main outcomes data (school-level click rates) were reported per household (0 = never clicked or 1 = ever clicked), and had to be transformed to the school level by averaging over household responses for each school (that is, to yield a click rate for each school).

For confirmatory analysis of the impact of the three messaging modalities on the outcome, school-level click rates (prop_clicked in SAS code below) were regressed against dummy variables indicating the level of each factor (condA coded 0 if school is assigned to A0 and 1 if school is assigned to A1, condB coded 0 if school is assigned to B0 and 1 if school is assigned to B1, and condC coded 0 if school is assigned to C0 and 1 if school is assigned to C1). School-level covariates include: school-proportion of students who are Black or Hispanic, school proportion of students who are eligible for the National School Lunch Program, school proportion of student qualifying for Title 1, dummy variable indicating if school is suburban,

dummy variable indicating if school belongs to a town, dummy variable indicating if school is rural, and block fixed effects. [School-level covariates were obtained from File #6: *EDGE_GEOCODE_PULICSCH_1819.xlsx* or were constructed using File #3: *School Level Enrollment By Grade By Race 2020-2021.xlsx*].

Narrative description of impact analysis. The impact of each messaging enhancement (that is, the added value impact of condA=1 versus condA=0, the added value impact of condB=1 versus condB=0, and the added value impact of condC=1 versus condC=0) was estimated as the coefficient associated with variables condA, condB and condC. There were no missing values for the outcome variable, for the indicators of experimental condition to which schools were randomly assigned, or for any covariate (with the exception of 19 schools without demographic data, which were excluded from analysis). The proc MIXED code for the analysis is as follows:

```
proc mixed data=AR noclprint covtest order=data method=ML;
  class block issub istown isrural ulocal1;
  model prop_clicked = condA condB condC BHprop FRPLprop
  Title1prop issub istown isrural block/solution covb;
  ods select ModelInfo FitStatistics Nobs solution
  CovParms tests3;
  ods output solutionf=solutionf;
run;
```

To estimate the impact of the “fully enhanced” (condA=1 and condB=1 and condC=1) condition relative to the base “non-enhanced” condition (condA=0 and condB=0 and condC=0), a school-level dataset was created consisting of schools belonging to either of these conditions. A school-level variable (condABC) was created, with value condABC=0 assigned to schools in the “non-enhanced” condition, and condABC=1 for schools in the “fully-enhanced” condition. The impact of full enhancement versus no enhancement was estimated as the coefficient associated with variable condABC. There were no missing values for the outcome variable, for the indicators of experimental condition to which schools were randomly assigned, or for any covariate (with the exception of 19 schools without demographic data, which were excluded from analysis). The proc MIXED code for the analysis is as follows:

```
proc mixed data=ARlimited noclprint covtest
order=data method=ML;
  class block issub istown isrural ulocal1;
  model prop_clicked = condABC BHprop FRPLprop
  Title1prop issub istown isrural block/solution covb;
  ods select ModelInfo FitStatistics Nobs solution
  CovParms tests3;
  ods output solutionf=solutionf;
run;
```

Impacts for student groups. To estimate impacts for school-level student groups, the same procedure was followed as for the full school sample, except the schools were limited to the category of interest.

Research Question 4

Descriptive/Exploratory: We evaluate differences between conditions 1–4 (email only) and conditions 5–8 (email and text) in time spent on R.I.S.E. website.

Relevant figures: Table C19

When messages were delivered and data were collected: All messages were delivered in three rounds to all 168,747 non-opting-out households in 700 schools in January 2022.

Sample: 168,747 households in 700 schools.

Level of Analysis: School

Outcomes file: Data for time spent on page were obtained from *RISE-GA Campaign Data.xlsx*

Analysis: Each school had three rounds of data for average time spent by households visiting the page, corresponding to the three rounds of messaging. These values were averaged within schools across the three occasions, then the following school-level outcomes were calculated:

- (1) the average of school averages of time spent on page,
- (2) the median of school averages of time spent on page,
- (3) the minimum of school averages of time spent on page,
- (4) the maximum of school averages of time spent on page.