

## Schools Team

### Candidate assignment

#### Overview

Thank you for taking the time to attempt the take-home assignment! This exercise aims to understand your ability to analyse and interpret data, and draw meaningful insights.

The information given below is intended to guide you through this process. Additionally, we request you to keep this assignment and the data confidential; and also to "timebox" this task to a few hours as we wish to be respectful of your time.

#### How to submit the task

You may submit a written report or presentation (commonly done in PPT) along with an excel sheet/codebook through Greenhouse  
For the candidates who qualify in this assignment round, there will be a panel presentation and interview.

#### Frequently Asked Questions

We've created a list of FAQs below to help our candidates know what to expect and prepare:

##### 1. What if I have questions about the dataset?

Completing this exercise will require you to critically examine the dataset and possibly make some assumptions. This is perfectly fine and normal - just be sure to outline the assumptions & decisions you made around the treatment of the data.

##### 2. How will the assignments be evaluated?

Overall we will be assessing candidates' ability to work with the data and draw meaningful information to support data driven decisions. Criteria that are important to us include your approach to problem solving, as well as communication of these findings.

##### 3. How much time should I expect to spend on this exercise?

It is potentially possible to spend a really long time going down deep in many directions. Please do not do this. We are expecting you to spend a few hours on this, produce some meaningful numbers, and provide somewhat insightful answers.

#### Context

Khan Academy India has been working with the State Government of Algeria since April 2023. In the state, our programme has been running in all the 15 districts, covering 155 schools and reaching 23,583 students across Gr 6-8.

Across all these schools, our programme focuses on getting teachers and students to use KA content as a supplement to classroom teaching to help students practice and improve mastery on mathematical concepts. Based on research and evidence, we work to ensure that students spend at least 20 minutes per week on KA platform to practice. Specifically, teachers are directed to assign KA exercises every week to their students, in schools where infrastructure is available, a KA period (45 minutes) has been provided in the time table for each grade (Gr 6-8) during which students use KA on a computer device to practice the content/exercises assigned by their teacher. In schools where infrastructure is not available, teachers assign KA content for students to practice at home using a device available in their house.

As part of the programme, Khan Academy conducted a training session for teachers where they are trained on using KA, including creating a classroom with their students, assigning content/exercises, checking student progress report, etc.

As the Senior State Program Lead for Algeria State, you are reviewing the Khan Academy programme data for last year to understand our programme's reach and engagement. Please refer to the 'Data set' tab for the complete data set. Please note this is illustrative data that has been put together for the purpose of this exercise.

For each district and school, the following data has been provided

1. Total number of students registered on Khan Academy: For each school, this data indicates the total number of students who have an account on Khan Academy.
2. Number of active students (month-wise): This data indicates, the number of students who have come on KA platform during a given month.
3. Average learning time per student: This data indicates the average time spent on Khan Academy platform in a given month by activated students.

#### Your Instructions

Suppose you are the Senior State Program Lead for Algeria State. Based on the given Data set,

- 1] Highlight 3-4 trends you are noticing in the data.
- 2] What are the hypotheses you think are contributing to these patterns? (Feel free to make any assumptions, and please list them down in your submission).
- 3] As the programme enters its second year (in April 2024), you are looking to strengthen the implementation and deepen usage of Khan Academy. Based on your responses to the previous two questions, what are some measures that you have identified to introduce in the coming year for (i) yourself, (ii) state officials, and (iii) teachers.

Please respond to the questions in a document/presentation (pdf) and name the document as 'Assign1\_First Name Last Name'. Please also share the excel file/codebook with your workings.













District Name	School Name	Total Number of Students Registered	Number of active students (per month)												Average learning time (in KA per active student (in minutes per month))																
			M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12					
District1	ZPP1	133	2	0	7	44	37	4	7	0	4	2	1	1	0	0	0	472	537	191	314	0	0	208	129	15	0				
District1	ZPP2	135	5	2	12	59	23	8	13	11	6	12	5	0	0	0	248	30	242	18	234	343	345	295	238	0	0				
District1	ZPP3	137	5	0	4	31	32	38	4	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
District1	ZPP4	106	5	1	12	9	24	24	23	10	15	9	1	0	0	0	141	294	36	434	461	319	31	317	423	0	0				
District1	ZPP5	175	23	3	0	66	1	23	2	0	0	0	0	0	0	0	111	0	0	0	0	0	0	0	0	0	0				
District1	ZPP6	188	18	4	3	38	2	33	1	3	6	0	1	0	0	0	259	214	307	47	25	72	153	224	0	0	0				
District1	ZPP7	155	6	1	6	35	37	34	1	1	0	1	0	0	0	0	202	208	188	218	13	7	19	13	7	0	0				
District1	ZPP8	149	9	4	18	32	44	60	41	22	7	3	3	21	1	0	55	318	416	406	451	177	229	77	35	47	168	47			
District1	ZPP9	85	11	2	20	32	29	52	26	2	1	1	1	1	0	0	196	416	149	135	44	67	15	0	0	146	111	46			
District1	ZPP10	134	11	3	23	48	53	51	42	40	22	22	2	0	0	0	151	199	659	204	249	97	96	39	0	0	0	0			
District1	ZPP11	171	49	44	39	92	77	42	34	15	7	3	1	0	0	0	194	405	418	151	73	75	73	28	73	49	0	0			
District1	ZPP12	171	49	44	39	92	77	42	34	15	7	3	1	0	0	0	194	405	418	151	73	75	73	28	73	49	0	0			
District1	ZPP13	171	49	44	39	92	77	42	34	15	7	3	1	0	0	0	194	405	418	151	73	75	73	28	73	49	0	0			
District1	ZPP14	174	13	18	33	99	43	70	91	34	10	1	7	2	0	0	541	204	214	138	81	39	67	5	21	8	162	34			
District1	ZPP15	101	10	1	19	73	61	57	41	13	6	25	2	0	0	0	124	388	57	18	26	34	33	3	49	38	0	0			
District1	ZPP16	155	16	5	6	49	71	64	44	34	18	7	1	0	0	0	104	463	32	131	107	107	115	49	147	04	87	41			
District1	ZPP17	114	6	15	50	43	36	49	59	51	30	46	5	1	0	0	14	881	414	332	404	539	431	272	272	169	07	59			
District1	ZPP18	82	18	5	50	60	54	5	35	38	42	34	5	4	0	0	189	451	517	405	322	374	327	404	365	101	112	251			
District1	ZPP19	134	11	3	23	48	53	51	42	40	22	22	2	0	0	0	29	313	29	361	282	27	24	149	39	206	46	0			
District1	ZPP20	124	11	5	5	37	44	20	8	5	1	2	0	0	0	0	10	193	506	39	254	166	47	215	73	0	0	0			
District1	ZPP21	162	23	7	9	46	57	49	33	22	2	0	0	0	0	0	212	206	277	262	27	65	42	16	0	0	0	0			
District1	ZPP22	134	10	4	51	72	87	32	20	2	14	6	0	0	0	0	99	13	159	184	33	72	398	212	56	14	0	0			
District1	ZPP23	132	11	19	47	46	66	52	66	55	52	62	2	1	0	0	63	132	602	481	232	408	357	339	287	71	12	224			
District1	ZPP24	129	35	41	97	105	88	49	37	31	66	61	5	8	0	0	267	267	232	147	74	112	81	108	31	45	71	69			
District1	ZPP25	208	2	11	9	14	71	66	31	5	1	0	1	0	0	0	632	272	379	378	311	126	88	0	0	0	0	0			
District1	ZPP26	167	9	15	13	25	32	22	23	14	8	5	0	0	0	0	435	571	649	954	1236	1257	855	435	265	0	0	0			
District1	ZPP27	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
District1	ZPP28	204	0	13	42	42	43	24	29	47	24	48	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
District1	ZPP29	111	3	1	37	31	42	38	4	11	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
District1	ZPP30	159	23	27	53	50	50	43	33	36	30	33	2	2	0	0	489	579	499	337	175	199	321	324	133	32	1	78			
District1	ZPP31	150	18	40	56	71	76	85	74	58	45	46	5	0	0	0	358	695	134	141	111	87	92	71	1	306	62	0	0		
District1	ZPP32	159	32	1	1	47	33	53	34	26	5	1	0	0	0	0	208	49	15	3	19	2	12	18	1	0	0	0	0		
District1	ZPP33	169	7	2	4	73	43	78	31	30	3	11	2	1	0	0	92	143	301	23	223	284	84	202	171	182	126	0	0		
District1	ZPP34	167	10	3	1	65	46	54	41	14	23	15	2	0	0	0	177	334	503	384	156	163	143	115	67	177	26	0	0		
District1	ZPP35	134	1	17	15	1	30	34	26	5	10	0	0	0	0	0	67	28	39	44	23	165	17	15	9	0	0	0	0		
District1	ZPP36	154	1	21	18	29	70	32	9	2	0	5	3	0	0	0	384	705	614	532	353	253	24	0	0	299	159	186			
District1	ZPP37	169	7	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
District1	ZPP38	151	17	7	5	49	42	100	63	61	40	60	2	1	0	0	171	144	306	293	28	103	24	145	213	39	28	0	0		
District1	ZPP39	90	3	5	2	47	61	52	77	27	34	14	0	0	0	0	221	67	448	461	185	13	134	145	94	0	0	0	0		
District1	ZPP40	144	25	4	27	46	51	41	42	30	5	12	31	1	0	0	67	28	39	34	34	45	11	144	115	11	143	83	0	0	
District1	ZPP41	138	4	2	9	7	3	4	10	4	5	3	1	1	0	0	317	48	258	45	47	61	144	115	11	143	83	0	0		
District1	ZPP42	123	21	38	32	34	79	59	53	52	47	52	23	18	0	0	313	984	1192	1292	1391	1201	1248	1166	855	1205	3002	742	0	0	
District1	ZPP43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
District1	ZPP44	172	8	5	4	2	0	0	0	0	0	0	0	0	0	0	56	437	1137	0	0	0	0	0	0	0	0	0	0	0	0
District1	ZPP45	251	37	58	53	50	42	45	38	32	27	22	15	8	0	0	1088	1584	1276	1330	1472	1562	1300	1321	99	380	300	330	0	0	
District1	ZPP46	191	46	12	34	39	35	24	36	26	5	1	0	0	0	0	176	194	39	485	243	208	265	176	32	152	202	19	0	0	
District1	ZPP47	214	13	10	7	7	6	0	12	4	1	0	0	0	0	0	376	182	327	528	0	0	0	216	249	0	0	0	0	0	0
District1	ZPP48	125	16	1	7	2	7	1	2	0	0	0	0	0	0	0	207	76	432	137	7	12	15	9	0	0	0	0	0	0	
District1	ZPP49	119	14	9	22	14	11	2	3	0	1	0	0	0	0	0	52	197	465	306	184	516	0	0	0	0	0	0	0	0	0
District1	ZPP50	123	18	30	30	4	16	12	22	7	4	10	2	0	0	0	14	177	354	248	194	309	289	55	399	5	56	0	0	0	
District1	ZPP51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District1	ZPP52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District1	ZPP53	301	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District1	ZPP54	208	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District1	ZPP55	247	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District1	ZPP56	171	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District1	ZPP57	39	7	4	0	8	1	22	16	4	1	1	0	0	0	0	118	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District1	ZPP58	88	27	14	29	11	1	47	44	11	2	0	4	3	0	0	37	369	333	4	382	301	196	8	0	0	0	0	0	0	0
District1	ZPP59	142	9	8	2	6	5	23	17	3	17	3	0	0	0																