MONITORING LEARNER DISENGAGEMENT

TEAM 21

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Introduction

Learner disengagement and school dropout are persistent challenges in South Africa's basic education system, especially in under-resourced communities like Langa. According to Statistics South Africa, in 2021, approximately 29.3% of 18-year-olds and 46.3% of 19-year-olds had dropped out of school (Statistics South Africa, 2022). The primary reasons cited for school dropout include illness and disability (22.7%), poor academic performance (21.2%) – all of which contribute to disengagement long before a learner formally leaves school (Department of Basic Education, 2022).

In Langa specifically, the statistics are especially concerning. Only 41% of youth hold a matric certificate or equivalent, and just 6% have a tertiary qualification. Youth unemployment in the area is approximately 53%, while 43% of young people are not in education, employment, or training (NEET) (Just Grace, 2021). These figures indicate that many learners are unable to meaningfully transition into further education or the workforce, reinforcing cycles of poverty and marginalisation.

The COVID-19 pandemic further intensified learner dropout rates across the country. In 2021, 2.9% of 15-year-olds and 8.9% of 17-year-olds had dropped out of school, and by age 18, more than a quarter (29.3%) of learners had exited the education system entirely (Statistics South Africa, 2022). While dropout is often seen as a singular event, research shows it is typically the result of a gradual disengagement process that begins with inconsistent attendance, behavioural challenges, and declining academic performance.

To address these challenges, Just Grace—a non-profit organisation based in Langa—has implemented the Phuhlisa! Learner Engagement Programme, which uses an early warning system and structured interventions (e.g., life skills groups, home visits, and psychosocial support) to reintegrate or retain learners at risk of dropping out. Impressively, 85% of learners participating in the programme have been reclassified as low- or no-risk by the end of their intervention (Just Grace, 2021).

Despite such targeted efforts, many schools still lack practical, low-cost tools to detect early signs of disengagement. Teachers, social workers, and administrators are often stretched thin, without systems in place to consolidate and respond to attendance, behavioural, and emotional indicators. This project, undertaken by Team 21 in collaboration with the UCT Financial Innovation Hub, seeks to address that gap. The solution aims to provide a scalable and context-sensitive monitoring system that supports early intervention by integrating input from teachers, learner mentors, and school staff—ensuring that risk is identified in time for meaningful support to be delivered.

Project Charter

A project charter is a document that provides a clear summary of a project's purpose, scope, objectives, stakeholders, and approach. It serves as an agreement between the project team and its stakeholders, outlining the project's goals, responsibilities, expected outcomes, and timeline. The charter provides direction and accountability, helping ensure that everyone involved understands what the project aims to achieve and how it will be carried out.

This project charter outlines the **structure and scope** of the project. It includes:

- **Background and Reasoning**

  An explanation for addressing the issue of school dropout and learner disengagement in South Africa.

- **Business and Project Objectives**

  Clear articulation of goals, including specific outcomes that align with the needs of educators and the broader educational system.

- **Project Phases**

  A breakdown of each phase, from research to prototype development and stakeholder feedback.

- **Timeline and Milestones**

  A detailed schedule showing how the project will progress from start to completion.

- **Stakeholder Analysis**

  An overview of stakeholders and their roles, including a visual context diagram.

- **Expected Final Deliverables**

  A summary of the deliverables, including a prototype, intervention recommendations, and a written report.

Business Objectives

These describe the long-term goals or benefits that the sponsor (Just Grace) hopes to achieve as a result of collaboration with UCT Financial Innovation Hub, and by extension, this student project. They are often strategic, broad in scope, and focused on creating positive, lasting impact - such as reducing school dropout rates, improving learner retention, and supporting community development efforts.

They answer the question:
"Why are we doing this project?"

- **Improve long-term educational outcomes** for high school learners in underserved communities like Langa, by reducing dropout rates and promoting learner success.
- **Empower educators and schools** with tools, support, and systems that help them respond to the needs of at-risk learners.
- **Strengthen community development** by addressing the root causes of educational disengagement, such as poverty, social instability, and lack of psychosocial support.
- **Promote scalable, evidence-based solutions** that can be adapted across other communities and schools facing similar challenges.

Stakeholder Analysis

External Stakeholder Analysis

The table below provides a summary of the key individuals and groups involved in the current school-based early intervention process aimed at reducing student dropout rates. It outlines each stakeholder's role, level of interest, influence, and responsibilities in supporting the process.

Stakeholders	Roles	Interest Level	Influence Level	Responsibilities
School Principals	Project sponsor	High	High	Helps with funding and policy alignments
Teachers	Invigilates the learners	High	Medium	Inputs the attendance and grades
Students	Beneficiaries of the system	High	Low	Be monitored
Social Workers	Psychosocial supporter	High	Medium	Get alerts and intervene with psychosocial support
School Administrative Staff	Data manager	Medium	Low	Ensure data is accurately entered and managed
NGO(Just Grace)	Supporter	Medium	Low	Provide external support and resources

Table 1: Stakeholder table

The Context Diagram below visually represents how these stakeholders interact with the current early intervention process. It shows the flow of data and responsibilities. This diagram helps illustrate how information is shared, and support is coordinated to assist vulnerable students.

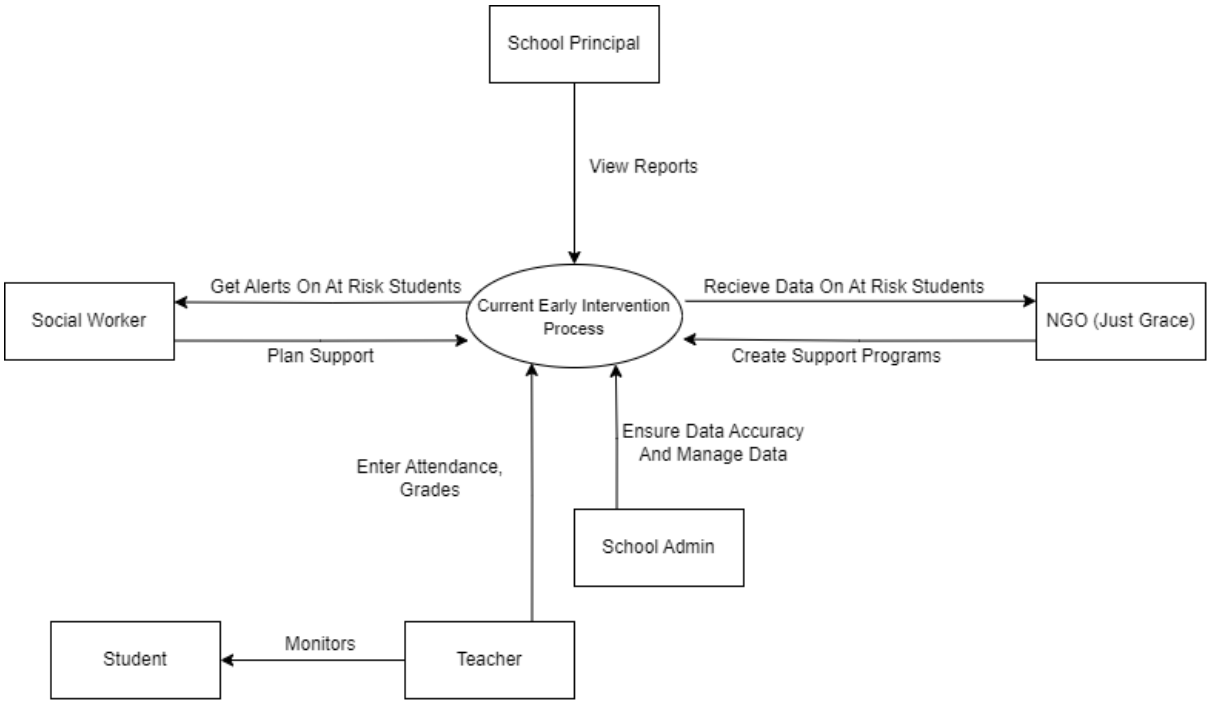


Figure 1: External Stakeholders Context Diagram

Situation of Concern

A concise overview of the real-world problem or challenge that the project seeks to address. This section provides the contextual background, identifies the root causes of the issue, and explains why the project is necessary. It frames the urgency and relevance of the intervention and guides the development of appropriate solutions.

This section provides an overview of the current situation Just Grace faces.

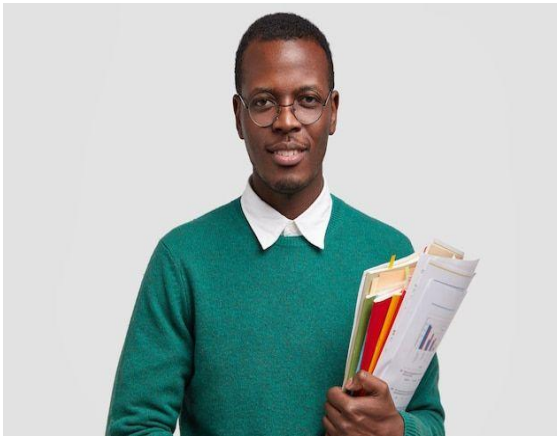
The schools that Just Grace works with have high learner dropout rates because of issues such as substance abuse, bullying, poverty, crime and more. Currently the schools rely heavily on the teachers to notice learner behavioural patterns that could lead to disengagement. When the teachers notice disengaged learners, social workers are contacted, and an intervention programme is created for the learners. This current process of monitoring learner disengagement is tedious, resulting in learners who are slowly disengaging, not being intervened with early enough. When learners are fully disengaged, it is difficult to bring them back into school, further increasing the dropout rates.

User Context

The team focused on understanding the problems faced by the teachers in these schools, since they are currently responsible for monitoring learners' disengagement. The teachers perform various tasks such as teaching, attending meetings, marking scripts, lesson planning, setting tests, facilitating extra-mural activities and interacting with learners. Teachers work from 7 am until 5 pm. The user persona below depicts an example of a teacher working at one of the schools Just Grace works with.

User Persona

Name	Mr Thabo Mokoena
Age	35 years old
Occupation	High School Grade 11 Mathematics Teacher
Location	Langa High School, Western Cape



Problem Definition and Scoping

This section outlines the current problems faced by the teachers at the schools Just Grace works with.

1. Monitoring learners requires considerable administrative work.
    - Many of these tasks involve large amounts of admin, which can overwhelm the teacher. Teachers use papers and notebooks to write down what they have noticed about the learners' behaviours, which can be tedious. The notes that they write may get lost, leading to a loss of valuable learner information. The teacher's handwriting may also be difficult for the social worker to read, further delaying their work in intervening. The large amount of paperwork may also overwhelm the social worker. This problem leads to a delay of action because while the teacher and the social worker are handling the paperwork, the learners' problems may be getting worse, causing them to disengage before intervention takes place.

2. Teachers cannot connect with all the learners on a personal level
    - Not all learners are open to sharing their personal circumstances with the teachers. This makes it difficult for the teacher to know if there is anything concerning happening in the learner's life before it gets out of hand. As the learner goes through difficult personal issues such as being bullied or being in a toxic home environment, the teacher cannot report on what is happening because they are not aware.

3. Teachers engage with many learners and cannot remember all learners' behaviours.
    - Our sponsor mentioned that teachers engage with around 60 learners in one class and have multiple classes in a day. This makes it difficult for teachers to recognise all the learners' behaviours at a given point. Teachers may forget to write down the behaviours that they noticed in class due to having to account for many learners. Again, this could lead to learners being unintentionally overlooked by the teachers.

A problem matrix was developed to quantify the impact and urgency of the problems identified.

Note:

Impact refers to how significant the effect that the problem has on the schools. This ranges from 1 being not too important to 5 being highly important.

Urgency refers to how quickly the problem needs to be addressed by the school. This ranges from 1 being low urgency and 5 being that immediate action needs to be taken.

Problem matrix:

Problem	Impact	Urgency	Relevant Stakeholders
1. Administrative overhead	5	3	Teachers, school administrators and social workers
2. Lack of personal connection	3	1	Teachers and learners
3. Many learners to monitor at once	5	4	Teachers and learners

Figure 2: Problem Matrix

Given the table above, the team focused on the problem of teachers monitoring too many learners at once. It was gathered that the teachers, who must write down many notes on learners' behaviours, need a way to organise what they observe in class efficiently. This way, learners can be helped before it is too late.

Critical assumptions

This section outlines the points believed to be true as the project continues.

- The teachers show strong dedication to the learners' well-being and academic success.
- The teachers have access to smartphones, laptops or desktop devices.
- Teachers and learners have limited proficiency with digital tools and technologies.
- Schools have limited access to the internet.

Constraints

This section outlines the limitations of the project.

- Since Just Grace is an NGO, working with underprivileged schools, they will not have the financial resources to fund this project. Therefore, the solutions must be low-cost.
- The solution must have minimal technical complexities because the schools do not have tech support to manage and maintain complicated software solutions.

User and Problem Analysis

The team used Design-Thinking techniques such as the Empathy Map and 5 Whys to understand the teachers' experience, problem and their needs.

User Persona

Name	Mr Thabo Mokoena
Age	35 years old
Occupation	High School Grade 11 Mathematics Teacher
Location	Langa High School, Western Cape

Context

Mr Mokoena is a high school mathematics teacher at Langa High School, one of the schools Just Grace works with. He works from 7am until 5pm. His day involves various activities such as teaching, marking, attending meetings, lesson planning, facilitating extra-mural activities, post-lesson reflections and most importantly, interacting with around 100 learners each day. During lessons, Mr Mokwena notices learners who are disengaged and writes down what he notices in his notebook. Sometimes, however, he forgets to write down what he noticed. Mr Mokwena is passionate about making a positive impact on the people he interacts with.

Proposed Solutions

Idea 1: Spreadsheet

This idea involves the use of a spreadsheet to monitor learner behaviour in the classroom setting.

- The sheet will be filled out by an educator daily.
- The educator comments on the behaviour of a student, via a behaviour dropdown
- These daily sheets will be summarised into a weekly sheet.

Key functionality of this idea:

The spreadsheet makes use of conditional formatting to flag a student into one of 2 categories:

- Red – Implies high-risk student
- Amber - Learner is on the edge, precautionary measures required.

Flagging is based on performance, attendance and the behavioural aspect added by the educator.
These spreadsheets are shared with the social worker, so that they can intervene when they see fit.

What does the spreadsheet look like?

Name	Surname	ID	Behaviour	Comments
John	Doe	908597868098	Deviant	Learner not attentive, losing focus easily
Tracy	McDonald	123456789997	Ambig…	
Chuck	Norris	123456789997	Typical	
Debby	Adam	123434789997	Typical	

Breakdown of behaviours:

- Deviant – Disruptive, out of the ordinary
- Typical – Normal for the learner (Default)
- Ambiguous – Educator is unsure

Evaluation of idea

Pros	Explanation
Inexpensive	Idea can be implemented as a google sheet. It's free, which will benefit our context of the quintile 1-3 schools
Easily accessible and convenient	Spreadsheet can be accessed from a simple technology form such as a mobile phone

Table 2: Pros of idea 1

Cons	Explanation
Onboarding friction	Educators may find it challenging to become accustomed to using it daily
Extra work for educators	Adds to the tasks that educators must do daily

Table 3: Cons of idea 1

Feasibility

- Technical Aspect:
    - Expertise required to created data bridge between in-place database that holds attendance & performance, to connect to spreadsheets
- Operational Aspect:
    - Flows into natural tasks which teachers do daily, implies user adoption
- Resource feasibility
    - Dependence on a device such as a laptop or mobile device to access spreadsheet

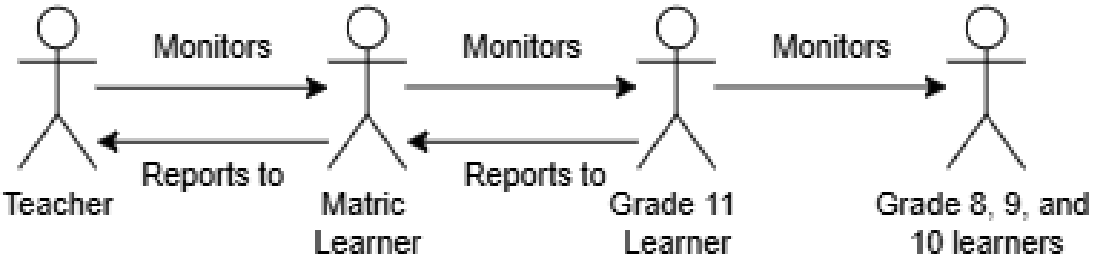
Viability

- Sustainability
    - Solution can work over a long period of time; spreadsheets are a basic tool that will evolve with technology
- Impact
    - Once onboarding friction is overcome, it lightens the memory strain of educators & makes their daily workload less.

Idea 2: Buddy System

This idea is focused on creating a community between learners. One where they can keep each other accountable, a safe space for each learner to be vulnerable and a fun breakaway from school-based activities.

How is this done?



From the figure above we can denote the following things:

- Educators monitor a group of matriculant students. Activity sheets[1] in the form of paper are distributed to these students.
- Matriculants have a group of 11 learners and so on
- There a line of command referred to as a buddy group[2]

These activity sheets will be complete during sessions held between each buddy group. Activity sheets are collected and passed on to the social worker to assess.

Evaluation of idea

Pros	Explanation
Comfortability of sharing information between fellow learners	Learners are more inclined to share or open up to those they can relate to.
Perceived sense of responsibility	Learners gain sense of responsibility to hold each other accountable

Table 4: Pros of Idea 2

Cons	Explanation
Dishonesty among learners	Some learners may not be open or honest about their situation at home or how they are doing. To not appear weak among their 'buddies'

Table 5: Cons of idea 2

[1] Activity sheets are questions put together by the social worker to promote community between learners and to identify learners that may be experiencing difficulties

[2] A buddy group is a group of learners from each grade that report to the learner in the grade above them

Feasibility

- Operational Aspect:
    - This idea can pose some difficulties when trying to arrange dates or times during the week for when the buddy sessions are being held.
- Resource Aspect:
    - This idea is feasible because we have all the resources required to materialize the idea. No outsourcing or third-party is required.

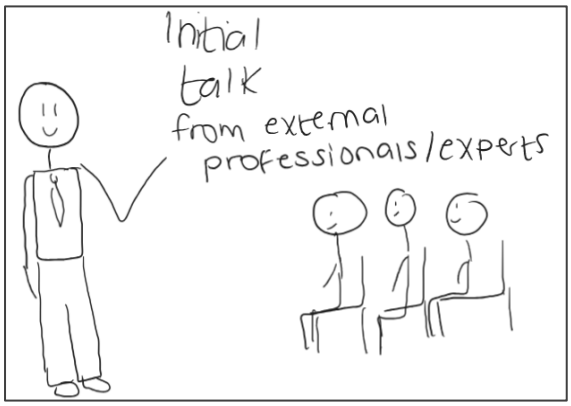
Viability

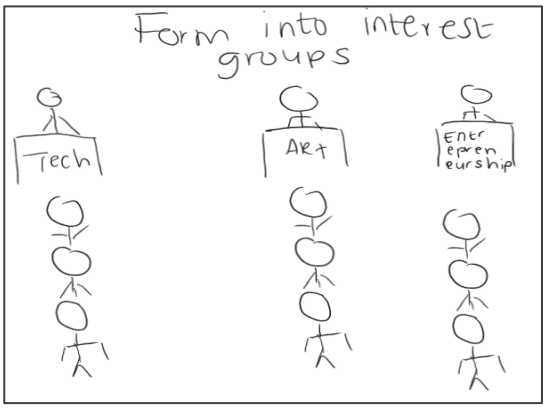
- Impact
    - Main reason that makes this idea viable is the potential for a lot of impact can be made on students when this community of buddies is created.
- Stakeholder support
    - Our sponsors favour this idea greatly, & that is a great indication to the viability of this idea
- Sustainability
    - Idea can hold for the long term; this idea can scale to incorporate academic focus or focus on a learner's career after-school.

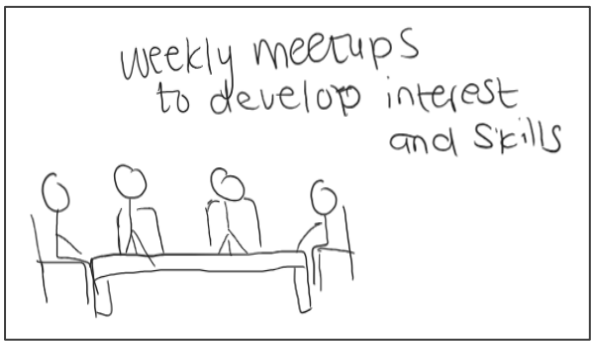
Idea 3; Mentorship program

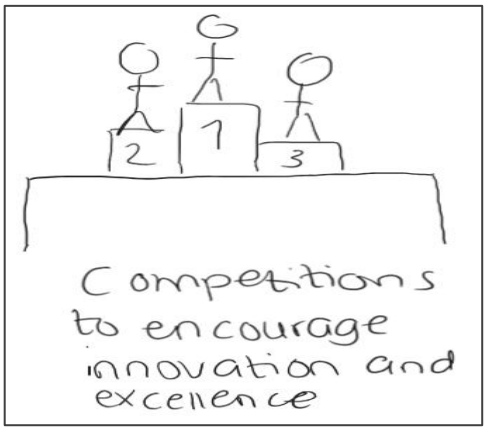
This idea is focused on motivating and allowing learners to see the bigger picture of what they can do after school. This will be done via motivational talks held by volunteers. Volunteers range from Just Grace alumni to career professionals such as doctors.

What this looks like in practice?









Process brief:

- An initial talk is held to inform learners about this initiative & how it will work
- Students are split into interest groups. Note that these are fluid to promote students to explore and educate themselves on the different avenues available.
- Weekly meetups between interest groups to monitor progress. Progress refers to any action taken by a student towards the goals they have set.
- Competitions as a lane to commend students who put a lot of effort into achieving their personal goals & in motivating other to do the same

Evaluation of idea

Pros	Explanation
Mind-opening	Learners don't have to have prior interest before the talks. Learners gain knowledge about tasks they might not have known about.
Inexpensive	Reliant on mostly volunteers no extra resources required.
Informative	The talks expose students to real-world experiences and career paths that go beyond the classroom.

Table 6: Pros of idea 3

Cons	Explanation
Uninterested learners	Learners may not be interested in the programme or what the volunteers have to offer

Table 7: Cons of idea 3

Feasibility

- Resource feasibility:
    - May find it challenging to find volunteers that cover a wide range of career opportunities
    - Scheduling time for these career talks could be challenging, may have to be after school hours
- Financial feasibility:
    - Funding may be required to ensure that students are fed during these sessions

Viability

- Scalability:
    - This idea can form learners into leaders, innovators and creators of tomorrow.
    - Great deal of potential to allow third parties to sponsor these events
- Impact
    - Educating students about their future is crucial, this aids our problem regarding learners who drop out of school.

Final Solution

After evaluating the feasibility, impact, and sustainability of our three initial ideas – the spreadsheet tool, the buddy system, and the mentorship programme – our team decided to merge selected components from the first two into a single, more cohesive solution. This integration was not simply based on stakeholder feedback but was guided by our own analysis of what would be most effective, context-appropriate, and scalable in supporting early intervention in learner disengagement.

Combining Ideas 1 and 2

- **From Idea 1 (Spreadsheet Tool)**:
  We retained the digital monitoring system, implemented as a structured spreadsheet. This allows for consistent data entry, real-time analysis, and centralised visibility for teachers and social workers. The tool uses built-in logic to identify at-risk learners based on key indicators, ensuring accountability and enabling data-informed intervention decisions.
- **From Idea 2 (Buddy System)**:
  We incorporated a peer-to-peer monitoring element, where older learners are assigned mentees and complete a weekly buddy form. This form allows them to flag any social or behavioural concerns from the learner's perspective. These learner-led insights complement the teacher-entered data and give students a meaningful role in the support system.

The mentorship programme (Idea 3) was excluded from the core prototype as it functions more as a long-term, enrichment-based intervention rather than an immediate detection mechanism. However, it remains a valuable recommendation for future rollout once the early warning system is embedded.

Rationale for Merging

This combined approach enables the system to track three key metrics per learner:

1. **Absenteeism Issue** – triggered if a student is absent two or more days without a valid sick note.
2. **Behavioural Issue** – flagged when two or more negative teacher comments are recorded in a week.
3. **Buddy Comment** – triggered when a concern is raised by a mentor in the weekly form.

Each risk factor contributes to a weekly **status score**, which determines the learner's colour-coded risk level:

- **White** – No concern
- **Yellow** – Monitor
- **Amber** – Contact parent
- **Red** – Refer to social worker

This tri-metric model increases reliability by incorporating multiple perspectives—teachers, learners, and attendance records—without overburdening any single stakeholder.

How the System Works

Each week, teachers complete a digital register logging attendance and behavioural incidents. At the same time, buddy mentors complete a Google Form reporting peer concerns that may arise during the weekly buddy sessions. The buddy would only fill out the form for students that they deem to be displaying negative behaviours or traits. These two data streams feed into a central spreadsheet, where formulas automatically calculate a risk score per learner based on the three indicators above.

A **monthly summary dashboard** aggregates these weekly scores, highlighting learners with sustained risk levels and enabling timely, informed responses. Teachers can adjust the number of working days per month to ensure attendance percentages remain accurate.

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System Components and Features

1. Buddy System Google Form

Senior learners complete a short, structured Google Form each week to flag peer concerns. The form collects:

- Group number and mentor name
- Names of learners in the group
- A comment only if a concern exists

The simplicity of the form ensures it does not burden learner leaders, while still offering valuable, learner-led insight. All submissions feed directly into the central spreadsheet.

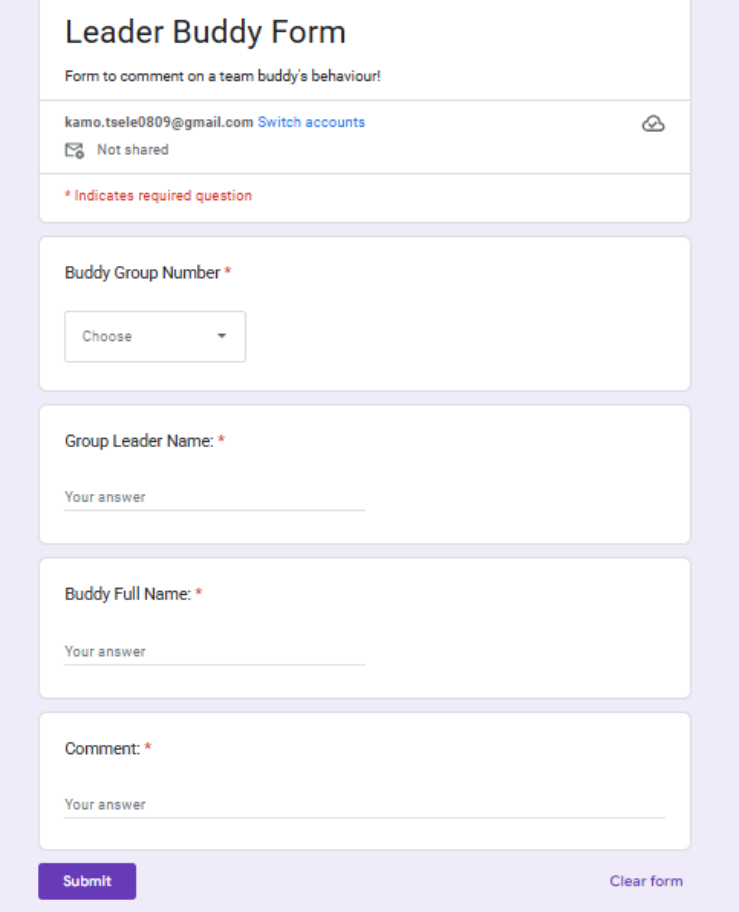


Figure 2: Buddy Google Form

2. Integrated Monitoring Spreadsheet

This is the core of the solution. It combines:

- **Teacher inputs** (attendance and behaviour)
- **Buddy form data**
- **Administrative data** (sick notes, absence reasons)

Key features:

- Tracks absences and validates against sick notes
- Flags behaviour concerns through structured comment counts
- Generates weekly **status scores** based on all three risk areas
- Uses **conditional formatting** to apply risk colours:
    - White = No concerns
    - Yellow = 1 issue
    - Amber = 2 issues
    - Red = All 3 issues
- Includes logic refinements tested and improved by the team to avoid false positives (e.g., excused absences do not trigger status flags)

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Grade/Class	Name	Monday	Comments	Tuesday	Comments	Wednesday	Comments	Thursday	Comments	Friday	Comments	Register Done	Buddy Comments		Sick notes	Days Absent	Absent Issue	Behaviour Issue	Status
9A	Zuhayr Khot	☑		☑		☑		☑		☑		☑	Seems to be very disengaged and		☐	0	0	0	1
9A	Lawton Springbok	☑	Disrupting class	☐		☑	Fighting between	☐		☑	Sent out of class	☑	Completely disengaged and not w		☐	2	1	1	3
9A	Kamogelo Tsele	☑		☑	Started shouting	☑		☑		☑		☑			☐	0	0	0	0
9A	Mahesh Rughubar	☑		☑		☐		☐		☑		☑	Being very distant		☐	2	1	0	2
9A	Vimbai Mutsawehuni	☐		☐		☑		☑		☑		☑			☑	2	0	0	0

Figure 3: Weekly Status Logic

3. Monthly Status Dashboard

The spreadsheet includes a separate summary sheet that compiles:

- Total absences per learner
- Total risk triggers by type (absenteeism, behaviour, buddy)
- Weekly status progression over the month
- An average risk score across weeks

This dashboard helps identify patterns and supports early identification of learners with sustained risk, enabling timely and targeted intervention by teachers and social workers.

A	B	C	D	E	F	G	H
Grade/Class	Name	Total Days Absent	Total Behaviour Issues	Total Absent Issues	Weekly Attendance %	Number of Sick Notes	Average Status Score
From weekly sheets	Learner name	Sum of "Days Absent" from all weeks	Sum of "Behaviour Issue" flags from all weeks	Sum of "Absent Issue" flags from all weeks	Total present days ÷ total school days × 100	Total of "Sick notes" marked Checked across all weeks	Mean of "Status" column across all weeks (if numeric status is useful)
9A	Zuhayr Khot	2	1	0	88.9	1	0.75
9A	Lawton Springbok	5	4	2	72.2	0	2.25
9A	Kamogelo Tsele	0	0	0	100	0	0.25
9A	Mahesh Rughubar	6	0	2	66.7	0	1
9A	Vimbai Mutsawehuni	4	0	0	77.8	2	0.25

Figure 4: Monthly Summary Dashboard

4. Additional Functional Features

- **Adjustable School Days Field**: Teachers input the number of school days per month to ensure accurate attendance percentages
- **Dropdown Menus for Behaviour Input**: Improves consistency in teacher reporting with selectable categories like "Disruption", "Aggression", and "Substance Use", alongside a free-text note field for specifics

This merged solution balances structure and flexibility, leverages both teacher and learner insights, and provides a scalable, school-friendly early intervention system designed specifically for the needs of under-resourced environments.

Prototype Testing and Feedback

Following the completion of the prototype, the system was presented to Lindi Kers, representing the UCT Financial Innovation Hub and acting as the liaison to the project sponsor, Just Grace. This session functioned as a live demonstration and feedback opportunity, where the team walked through the full functionality of the prototype and received real-time responses.

Prototype Testing Context

During the session, the following features were showcased:

- The weekly buddy form and how comments are fed into the spreadsheet
- The spreadsheet's ability to track attendance, behavioural incidents, and sick notes
- The automatic generation of colour-coded learner status based on risk logic
- The monthly summary dashboard and its use in trend monitoring
- The teacher-controlled adjustment of school days per month for accurate attendance tracking

Feedback Highlights

Lindi provided detailed, structured feedback on each functional area, validating key elements while suggesting improvements.

What Worked Well:

- **Status Logic:** Lindi affirmed the logic behind the risk-based colour coding system as both practical and relevant.
- **Sick Note Handling:** She appreciated the system's ability to recognise valid absences without penalising the learner.
- **Buddy Form Design:** Its simplicity was noted as an advantage, allowing learners to contribute only when necessary.
- **Monthly Summary:** This was highlighted as a valuable tool for spotting patterns and assessing overall learner risk.

Suggested Improvements:

1. **Dropdown Behaviour Comments:**
   Introduce standardised behaviour categories (e.g., Disruption, Aggression, Substance Use) to improve consistency across teacher reports.
2. **Action Mapping for Status Colours:**
   Define intervention actions per status level:
   - Yellow = Monitor
   - Amber = Contact Parent
   - Red = Refer to Social Worker
3. **Snapshot Descriptors:**
   Add short summaries in the monthly summary explaining what triggered each learner's status (e.g., "Disruption + 2 unexcused absences").

Final Refinement: Application of Feedback

The version of the system described in the previous sections represents the core prototype as initially presented to the UCT Financial Innovation Hub. However, the **true final solution** is the result of incorporating structured feedback from our testing session with our sponsor liaisons at UCT Financial Hub.

Although time constraints prevented a second round of testing, this updated system reflects a more aligned, practical, and stakeholder-informed iteration.

Improvements Made After Feedback:

- **Dashboard Sheet** where teacher fill in the first day of the month as well as the class information to be auto-filled into sheets generated for that month.
- **Class List** sheet for teacher to populate, which will be parsed to the auto-generation of sheets.
- "**Generate Sheets**" button which creates all the weekly sheets and monthly summary sheet and inserts relevant information and functionality.
    - When generating the sheets, the code calculates the first day of the month and builds the sheets from there. i.e. If the first school day of the month is a Thursday, the Week1 sheet will be generated with only 2 days, with the following sheets following for the rest of the month.
    - This transforms this sheet into a monthly usage sheet wherein every time the "Generate Sheets" button is clicked, it will prompt the user to confirm the deletion of any current Weekly and Monthly Summary Sheets, and create a new set of sheets based on the entered date.
    - Weekly sheets are now generated dynamically based on the actual start day of the school month (i.e – if the first school day of the month starts of a Thursday, the sheet for "Week 1" would only contain fields for Thursday and Friday)
- **Dropdown comment categories** were added for behaviour input to reduce ambiguity and improve reporting consistency.
- **Status colour definitions** now include specific action-linked descriptors:
    - Yellow = Monitor
    - Amber = Contact Parent
    - Red = Refer to Social Worker
- A **date picker** was introduced to auto-fill the correct academic term and school days.
- A **"Class List" sheet** allows teachers to pre-populate names, improving setup and accuracy.

Testing Limitation

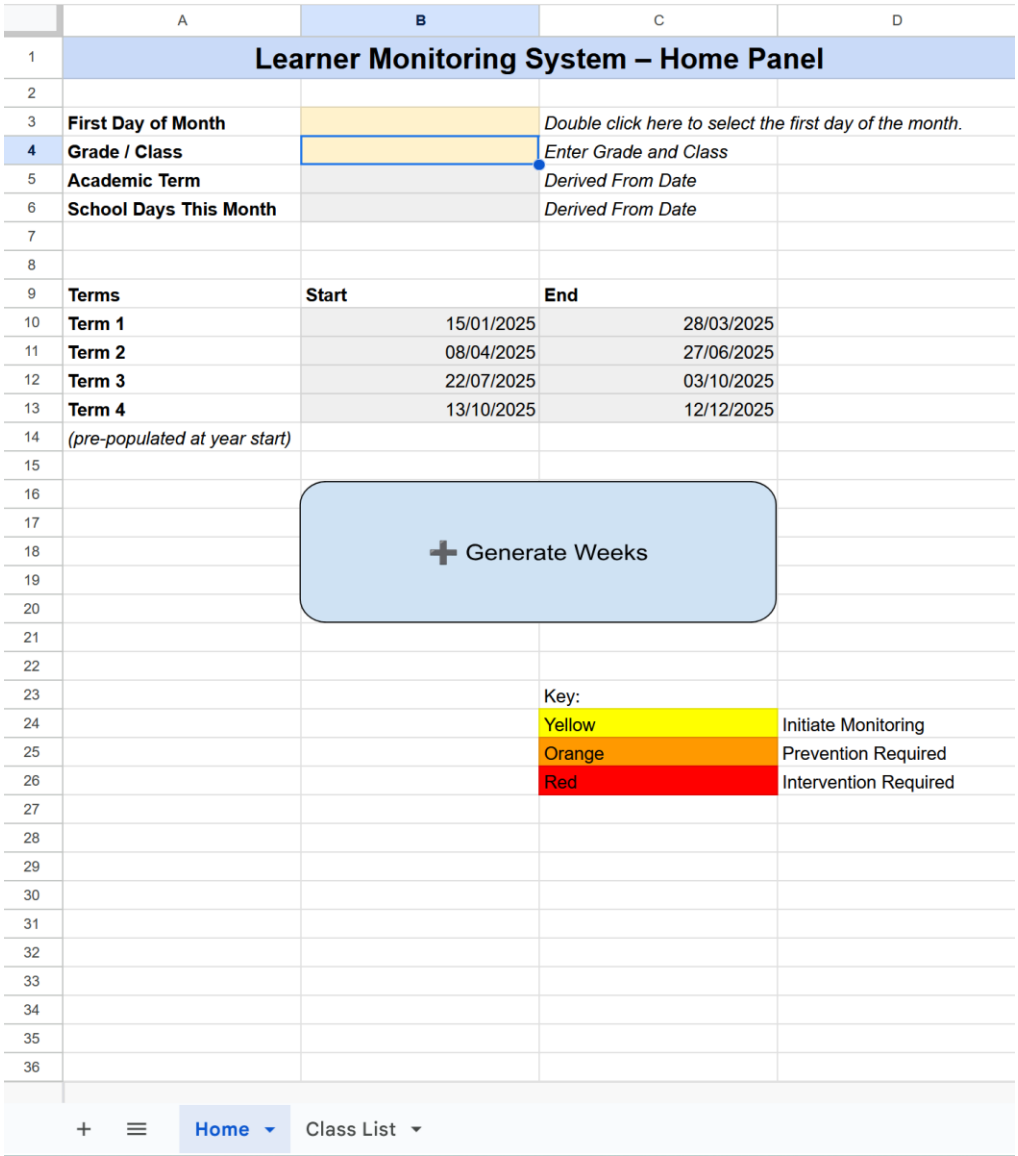
Due to the project timeline, we were unable to conduct a follow-up testing session with the sponsor to validate these changes. However, each update was directly guided by the feedback received during the initial review session and reflects our team's commitment to producing a context-aware, scalable, and user-aligned solution.

We believe the current version represents a more mature prototype and forms a solid foundation for future testing and real-world implementation.

Screenshots of Improvements Made

Dashboard Sheet

Implement **status colour definitions** per feedback.



	A	B	C	D
1	**Learner Monitoring System – Home Panel**			
2				
3	**First Day of Month**		*Double click here to select the first day of the month.*	
4	**Grade / Class**		*Enter Grade and Class*	
5	**Academic Term**		*Derived From Date*	
6	**School Days This Month**		*Derived From Date*	
7				
8				
9	**Terms**	**Start**	**End**	
10	**Term 1**	15/01/2025	28/03/2025	
11	**Term 2**	08/04/2025	27/06/2025	
12	**Term 3**	22/07/2025	03/10/2025	
13	**Term 4**	13/10/2025	12/12/2025	
14	*(pre-populated at year start)*			
15				
16		➕ Generate Weeks		
17				
18				
19				
20				
21				
22				
23			Key:	
24			Yellow	Initiate Monitoring
25			Orange	Prevention Required
26			Red	Intervention Required
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				

Figure 4: Blank Dashboard

Teacher can select date from a **date picker**, which will automatically fill the correct Academic Term (per the Term Table), and School Days This Month.

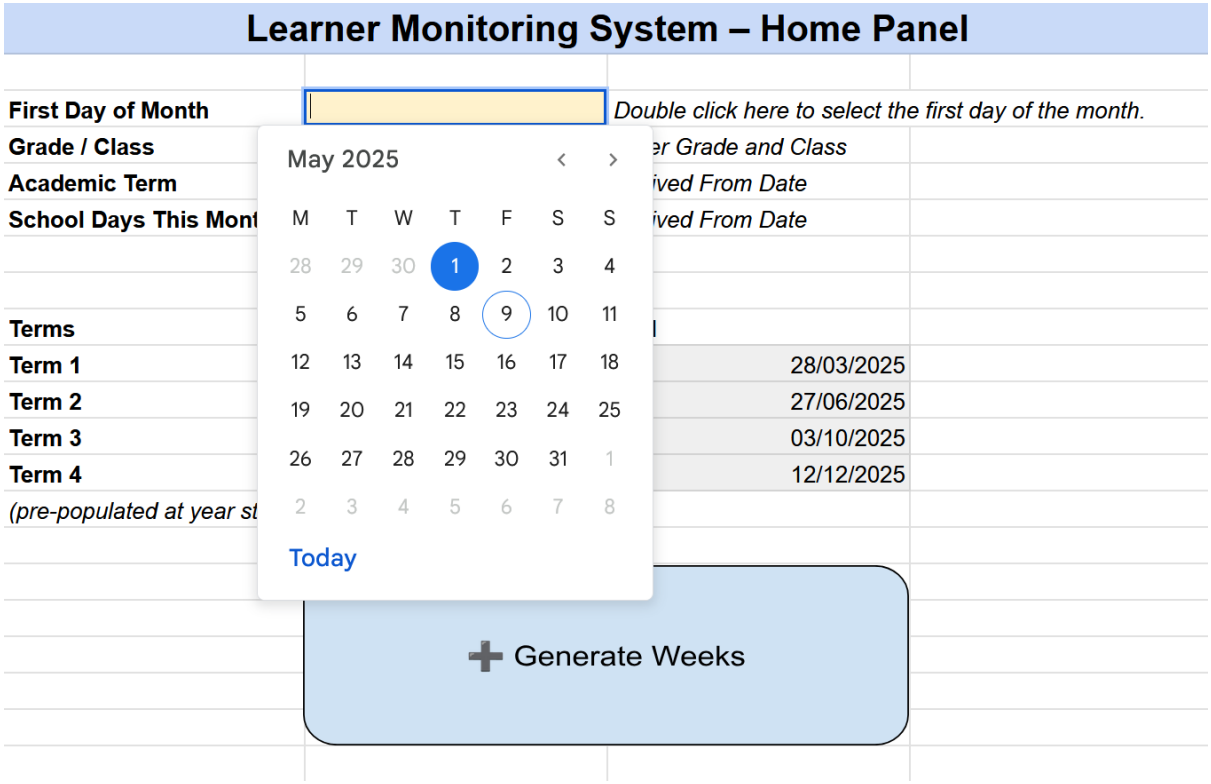


Figure 5: Date Picker on Dashboard

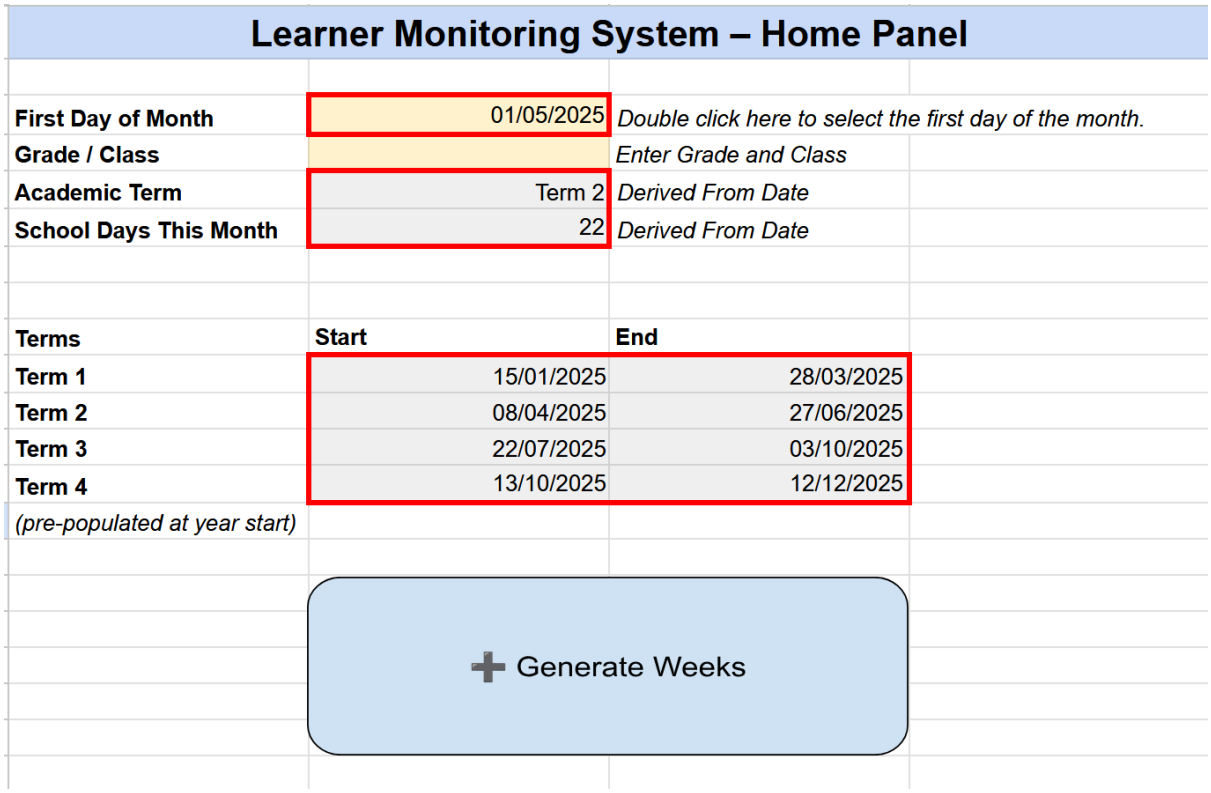


Figure 6: "Academic Term" and "School Days This Month" calculated from "First Day of Month" Date Picker and Term Table on Dashboard

Created **Class List** sheet for the teacher to populate.

This automatically fills weekly sheets when "**Generate Sheets**" button is pressed.

	A	B
1	**Surname**	**First Name**
2	Khot	Zuhayr
3	Mutsawehuni	Vimbai
4	Rughubar	Mahesh
5	Springbok	Lawton
6	Tsele	Kamogelo
7		
8		
9		
10		
11		
12		

Figure 7: Class List Sheet

"**Generate Sheets**" button creates all the **weekly sheets** and **monthly summary sheet** and inserts relevant information and functionality.

When generating the sheets, the code calculates the first day of the month and builds the sheets from there. i.e. If the first school day of the month is a Thursday, the Week1 sheet will be generated with only 2 days, with the following sheets following for the rest of the month.

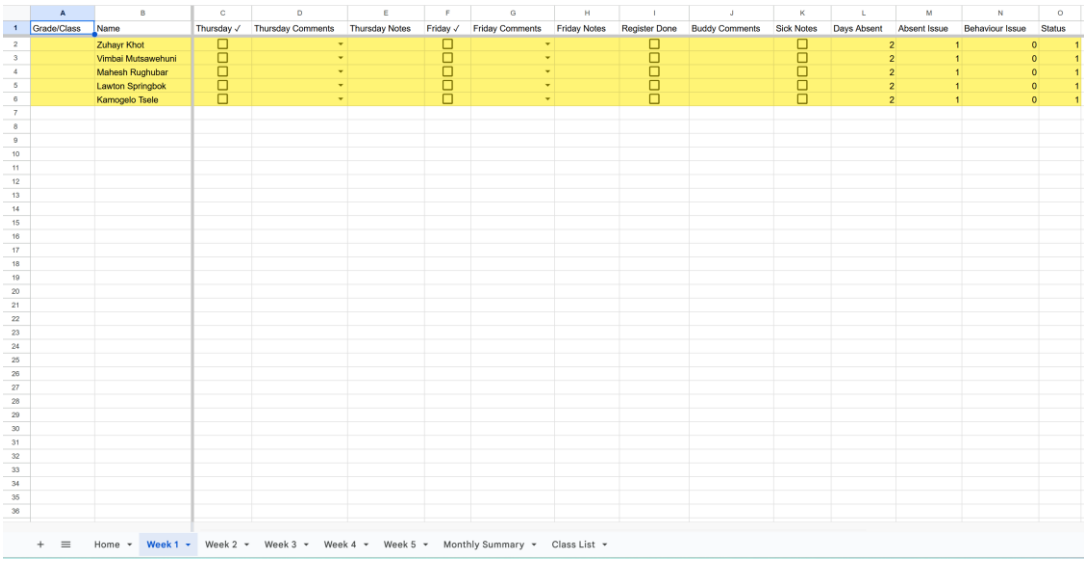


Figure 8: Weekly Sheet Generated via "Generate Weeks" button on Home sheet.

Implement **dropdown comment categories** and **notes** for each day per feedback.

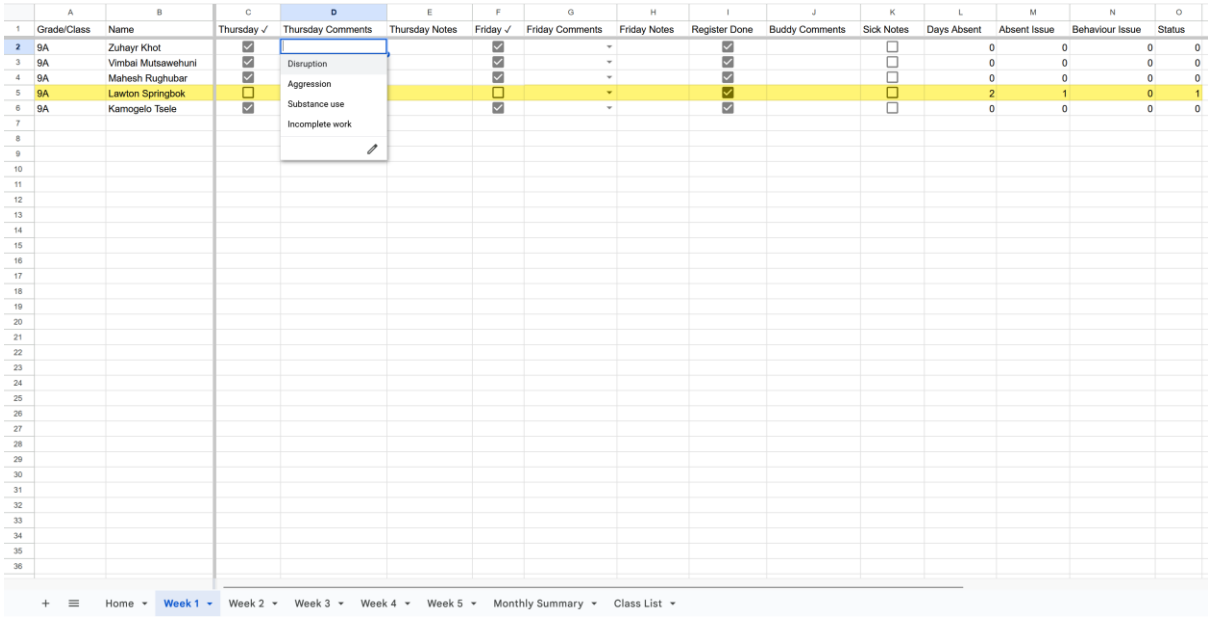


Figure 9: Dropdown Implementation

Conclusion and Next Steps

In conclusion, this project, taken on by Just Grace, aimed to develop a solution for monitoring learner disengagement across the various schools in the Langa township. By following a structured approach—including stakeholder meetings, project scheduling, problem analysis, and design thinking techniques—the team was able to deliver a viable and sustainable outcome. Despite some initial challenges in aligning user requirements & managing stakeholders, the final solution met all critical objectives and was well received by both sponsors and users. Overall, the project has proven both feasible and impactful, offering a strong foundation for future development.

References

- Department of Basic Education, 2022. *School dropout and learner retention in South Africa: Policy Brief*. Pretoria: Republic of South Africa.
- Just Grace, 2021. *Annual Report 2021*. [online] Cape Town: Just Grace. Available at: https://justgrace.co.za/wp-content/uploads/JG-Annual-Report-2021-C.pdf [Accessed 8 May 2025].
- Statistics South Africa, 2022. *Education Series Volume V: Higher Education and Skills in South Africa, 2017*. [online] Pretoria: Stats SA. Available at: https://www.statssa.gov.za/?p=15520 [Accessed 8 May 2025]