

Data Collection and Analytics Workshop



SOL PLAATJE
UNIVERSITY

Lerato Sekonyela
Eli Nimy



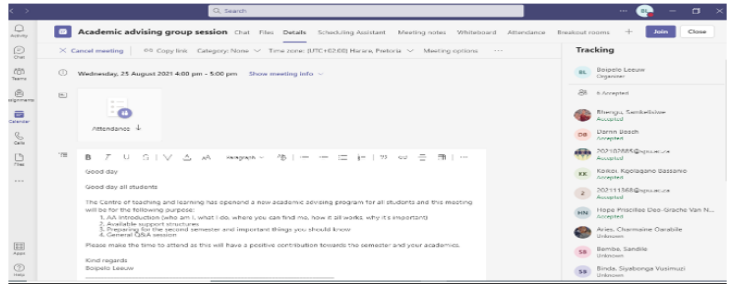


Content

- Learning Analytics Objectives
- Clarify the problem/Formulate the Research Question
- Understand data and its value
- Explore how data can drive better decisions
- Explore common data challenges and mitigation strategies



Session Notes



1.2 Attendance registers



1.3 Agenda

1. AA Introduction (who am I, what I do, where you can find me, how it all works, why it's important)
2. Available support structures
3. Preparing for the second semester and important things you should know
4. General Q&A session

Students on risk
Becoming year 1

1. Kgatwe - 202003911613
2. Koko Kgatwe - 2020039151 (no attendance, no assignment submission)
3. Mchanda - 2020040552 (Home not a great environment from studying)
4. Mkhize - 202107651 (Unreachable & not attending class)
5. Mofinane - 202101394 (Dropped out)
6. Molele - 2020039157 (only 2 modules)
7. Motingoe - 2020039160 (2 modules)

Kgatwe Tshireletso
⇒ Needs someone to talk to (meeting scheduled)

SAS Background

Student Feedback

ACADEMIC ADVISING EXPERIENCE

Student number: _____ Year of study: _____ Gender: _____

Subject: _____

Reason for the visit?

Which programs are you registered for?

High certificate
Degree
Diploma
Bachelors
Masters

How did you get to learn about academic advising?

Academic Orientation
Lecturer
iPads
Self Awareness Week

The academic advising session outcomes achieved?

Yes
No
Not yet

Residence:

On Campus (Campus/Student)
Off Campus (Suburban/Urban/Rural)
Private Accommodation (Commune)
Home

Do you prefer online or face-to-face sessions?

Online
Face-to-face

Which session did you attend?

One-on-one
Group session

I would recommend the session to a friend.

Yes
No
Maybe

Would you return for a follow up session?

Yes
No
Maybe

Statements

My academic adviser was welcoming.
The academic advising session was beneficial for my academic development.
The academic advising session met my expectations.
The academic advising session was informative.

Strongly disagree
Disagree
Neutral
Strongly agree
Agree

Provide suggestions on how the support can be improved? -

Diagnostic- Why?

Student number *

Short answer text

Please indicate your current year of study *

1st year
2nd year
3rd year
4th year
Honours

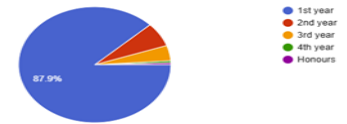
Please indicate your gender *

Male
Female
Prefer not to say

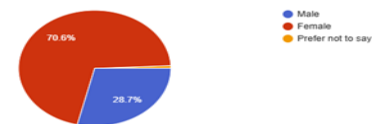
In which school are you currently registered? *

NRUM

Please indicate your current year of study.
1,594 responses



Please indicate your gender
1,594 responses



Session notes & Student Feedback

SAS Data Reporting

Hi! Would you mind taking a minute to complete this form? It would be great if you can submit your response by 6/12/2023. Thank you!
Hi, Lesedi. When you submit this form, the server will see your name and email address.

1. Specify the programme *

Select your answer

2. Select session type *

Select your answer

3. Session method *

Face-to-face
Online

4. Session date *

Please input date (MM/yyyy)

5. Insert Student Number (ensure accurate student number is used) *

Enter your answer

6. Student Full name *

Enter your answer

7. Submit

Academic Advisor Session Form

* Required

Data Entry Mode

Capture

Advisor *

Session Date *

2023-04-11

Session Method *

Online

Session Duration *

1-15 mins

Session Type *

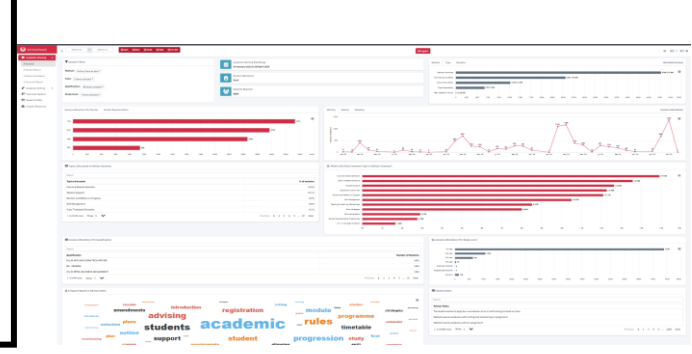
Individual Consultation

Student Number *

Main Topic(s) Covered/Discussed *

Advisor Notes

Submit form Manage data Log out



Predictive/Prescriptive – who and what works

Learning Analytics Objective

Learning Analytics

Learning analytics (LA) is a multidisciplinary field with the overall aim of analysing data to better understand and so improve the learning experience for each student.

The measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimizing learning and the environments in which it occurs.

Our Aim

Create Learning Support Pathways- these are ideal sequences of learning activities that support students to complete their studies in the shortest possible time.

How

- Build- purposeful design that leads to data that provides deeper educational insights
- Develop education/student data using a sound theoretical framework for what we are trying to measure.
- Developing first the professional support & academic staff (end-users) to ensure that the right data is being created in the first place.
- Create tools in the system that make use of common data format and vocabulary:
 - Maintain costs
 - Improve research outputs
- Ensure strong documentation and implementation guidance.

Early identification of students at risk

Data-driven student and staff advising

Measure intervention impact

Clarify the problem/Formulate the Research Question

Use existing data:

- **Quantitative** (25% of students fail Stats 1 and 60% never retake it)
- **Qualitative** (advisors report that students often seek help late)

Descriptive – Identify patterns & trends

Diagnostic- understand reasons for the outcome

Predictive- forecast future trends/outcomes using past & current data

Prescriptive- historical, current & predicated data to recommend action

Exploratory- helps understand data's characteristics, patterns and potential relationships

Identify the problem

Use Data to refine the Problem

Translate the problem into a research question

Align with learning analytics methods

Ethical considerations

Start Broad and narrow it down

- Low retention in 1st-year courses.
- Late identification of mental health challenges

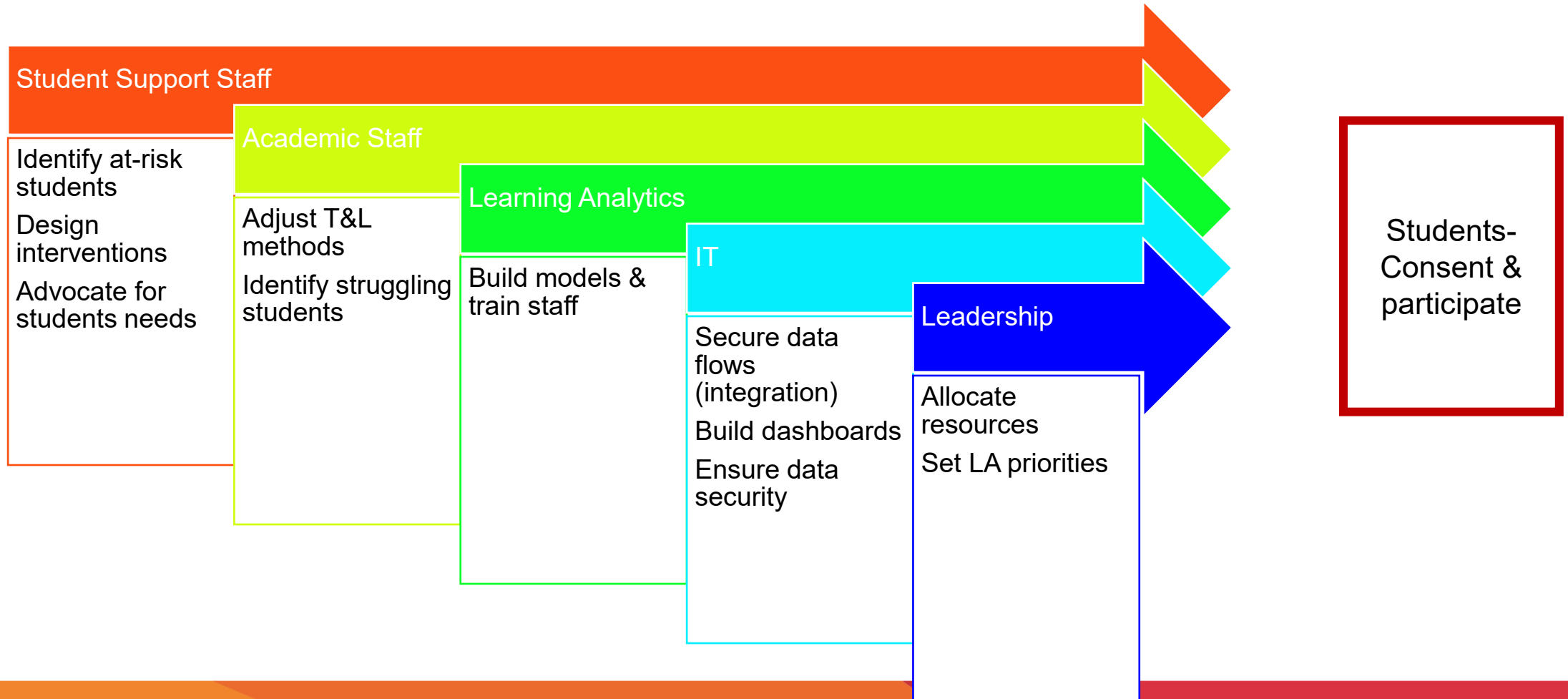
The research question should be **actionable**, **measurable** and **context-specific**.

- How does lecture attendance (predictor) in weeks 1-4 predict final grades (outcome) in stats 1 to target early support (action)?

Clarify the problem/Formulate the Research Question

Question Type	Example	Method
Descriptive	What % of students consult AA in weekly?	Frequency distributions/counts/ Dashboards analytics
Predictive	Who/which student is at risk of failing?	Regressions/machine learning
Prescriptive	Which interventions work best for commuter students?	Simulation modelling/scenario planning
Exploratory	Are there hidden patterns of engagement?	Data mining/cluster analysis

Role Players

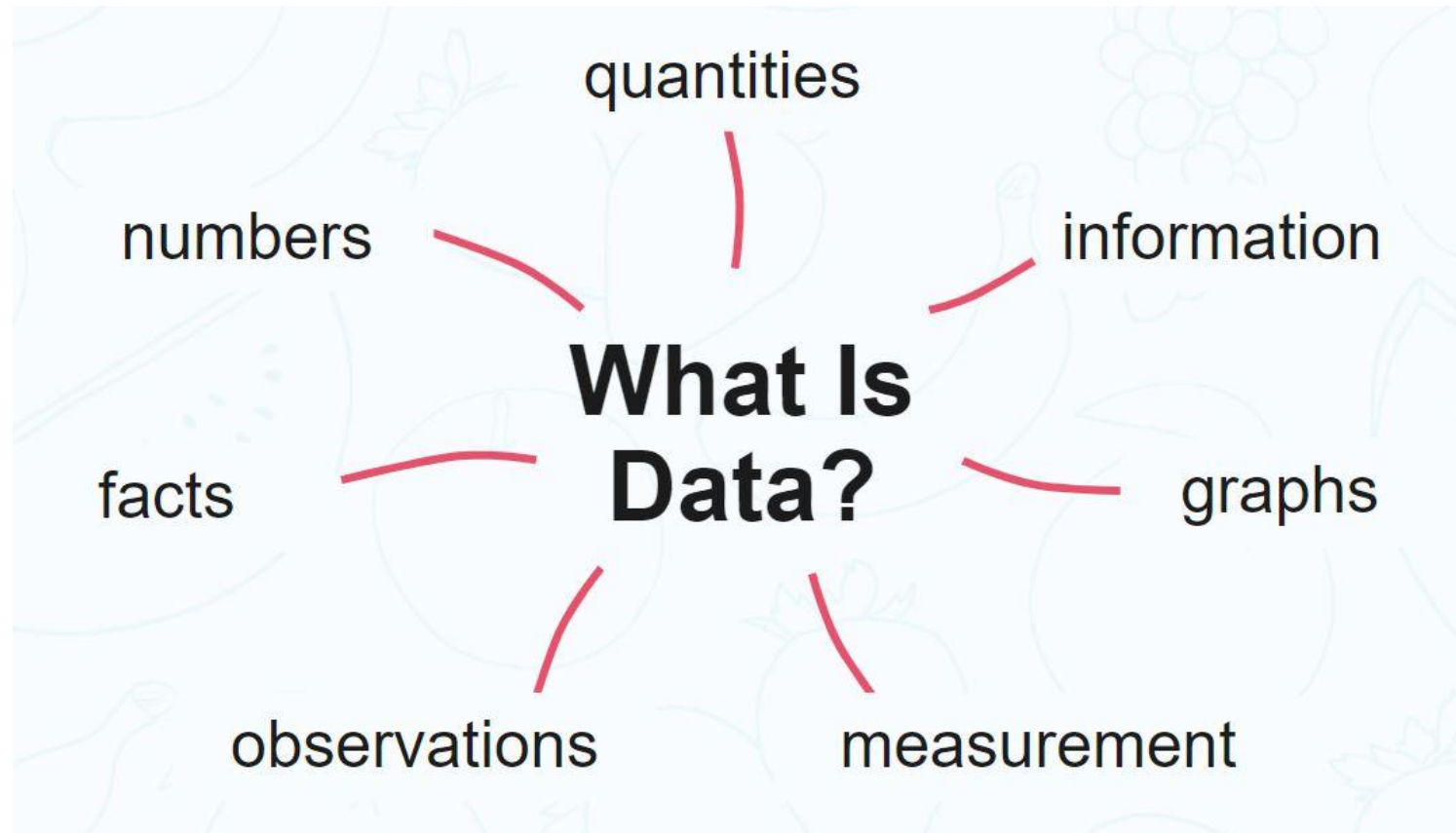




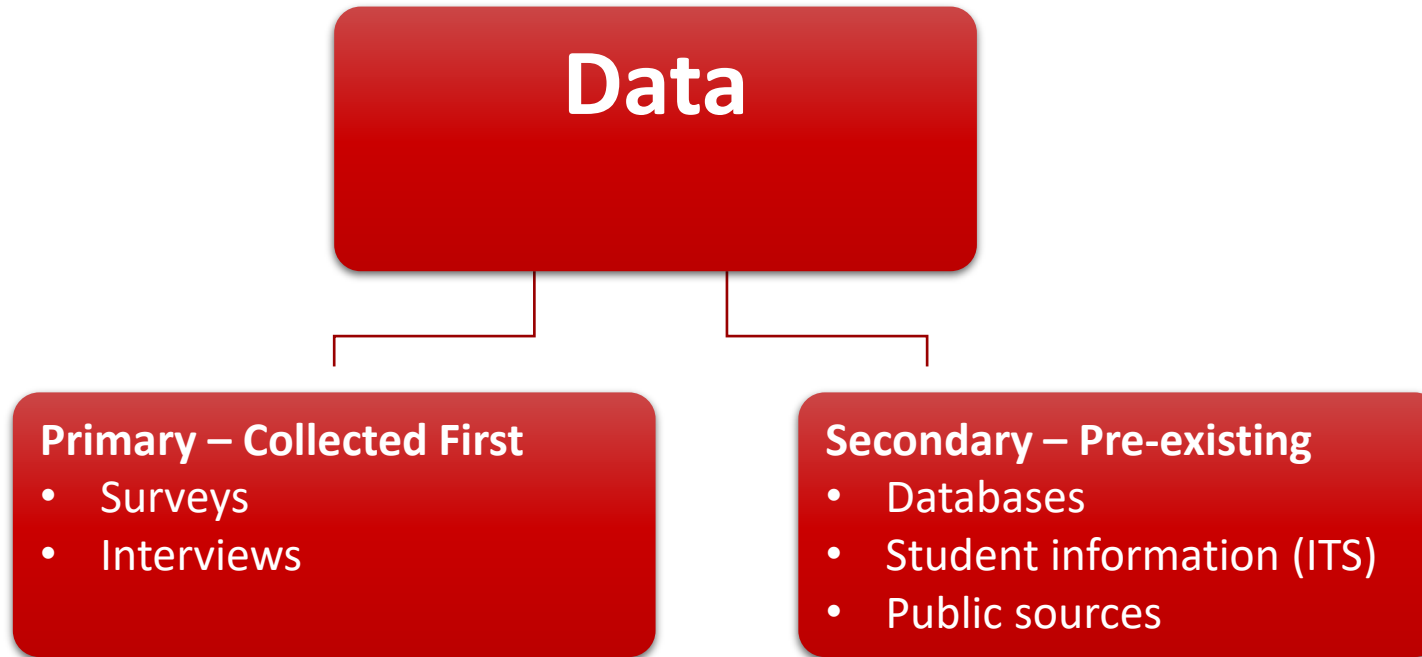
Unit Breakout – Mapping Data Landscape

- Discuss and document:
 - What data do we currently collect?
 - How is it collected, stored and accessed?
 - Who uses it?
 - What challenges do we face?

What is Data?



Data Sources – University-based



Data-Driven Decision Making

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Data - In its raw form, data often has very little meaning or value



Info - Once data is processed, organized and stored, it can be analyzed to produce useful information which adds context and clarity



Insight - Data-driven insights are meaningful findings which can help inform or influence decisions and recommendations



Action - Data is meaningless until it inspires stakeholders to act; no matter how insightful the analysis, it only adds value if it impacts real-world decisions

[Maven Analytics Data Literacy Course Example](#)

Data-Driven Decision-Making Example

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Data - 1,082 students used academic advising in March.



Info – Advising usage increased by 80% over February, with most interactions occurring through webinars and online platforms.



Insight – March consistently sees a peak in student interactions, largely driven by new student intakes and high participation in webinar-based advising.



Action – We recommend offering foundational support resources during this period—such as onboarding webinars, FAQ guides, and early planning tools—to help new students navigate academic requirements and feel confident in their course selections.

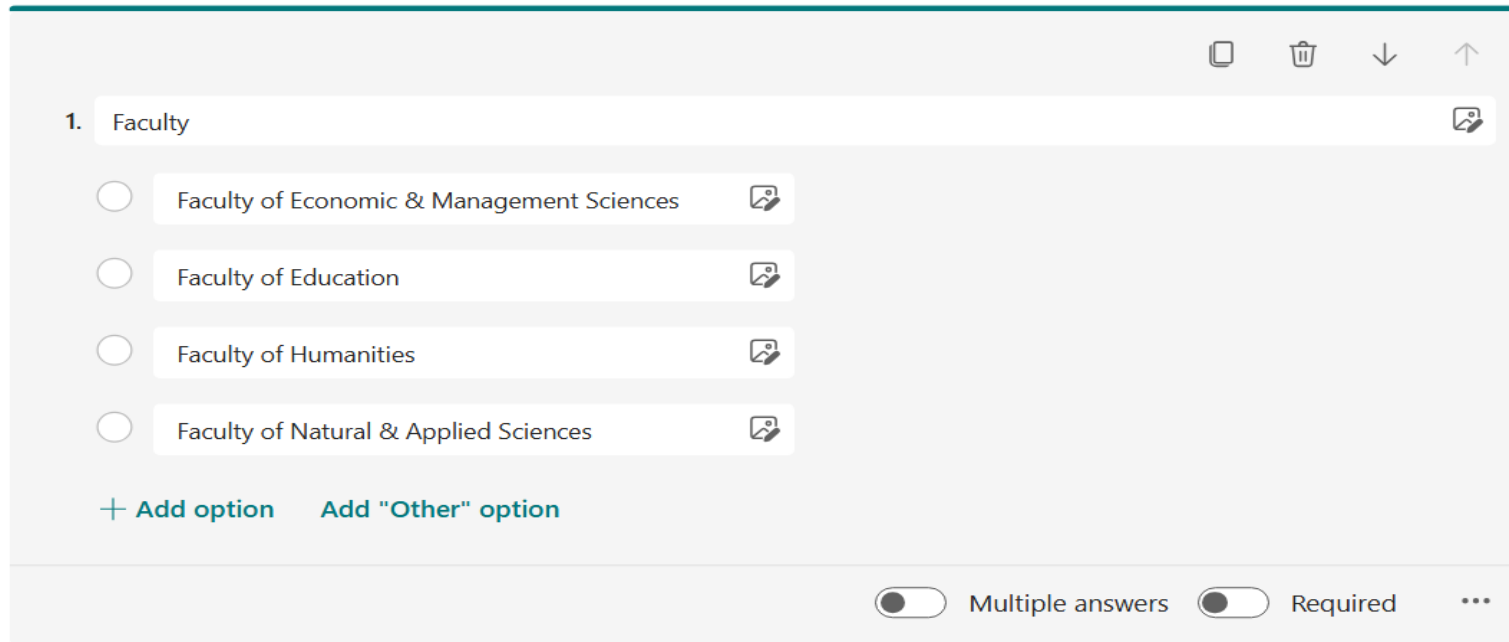
Key Challenges in University Data Collection

- Data Quality Issues
 - Missing data
 - **Inconsistent data**

Student Number	Faculty	Residence
201000000	NAS	Moroka
201100000		maroka
201200000	EMS	Rathago
201300000	EDU	RATHAGA
201400000	HUM	Rathago
201500000		MOROKA
201600000	Natural and Applied Sciences	I stay at home
201700000	NAS	Off campus
201800000	Education	I stay at Moroka
201900000	HUM	
202000000	EMS	South campus

Generated example

Missing Data Example



1. Faculty

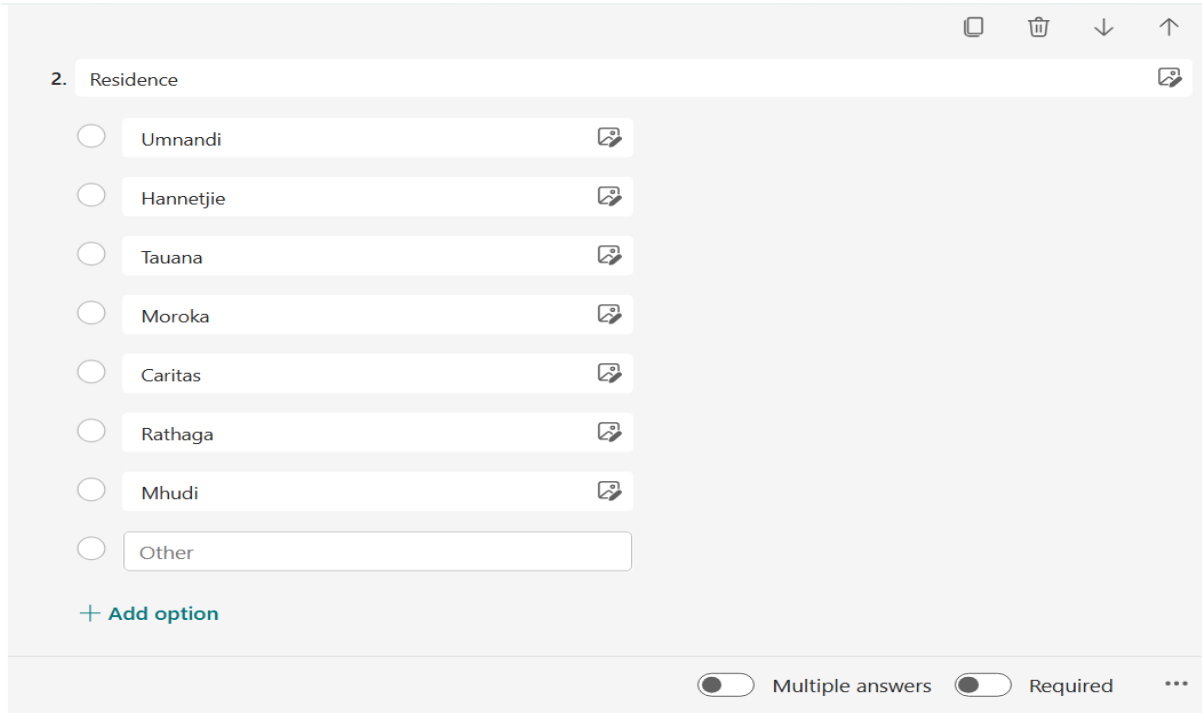
- ☐ Faculty of Economic & Management Sciences
- ☐ Faculty of Education
- ☐ Faculty of Humanities
- ☐ Faculty of Natural & Applied Sciences

+ Add option Add "Other" option

☐ Multiple answers ☒ Required ...

Ensure all fields/questions that need a response are **required**

Inconsistent Data



2. Residence

☐ Umnandi

☐ Hannetjie

☐ Tauana

☐ Moroka

☐ Caritas

☐ Rathaga

☐ Mhudi

☐ Other

+ Add option

☐ Multiple answers ☐ Required ...

If options are available ensure all the available options are listed or exhausted before providing an “Other” option.

This ensures student selections are consistent

Data Collection - Surveys



MICROSOFT FORMS

- Seamless integration with Microsoft365
- Only authorise people within SPU to fill the form
- No need to collect student numbers and names

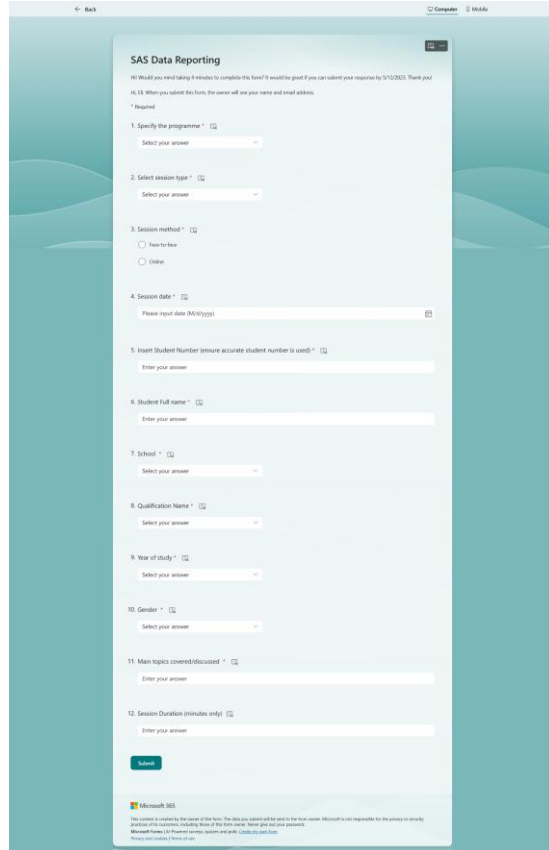
Send and collect responses

- ☐ Anyone can respond
- ☒ Only people in Sol Plaatje University can respond
 - Sign-in required to validate access within Sol Plaatje University
 - ☒ Record name
 - ☐ One response per person
- ☐ Specific people in Sol Plaatje University can respond

Microsoft Forms vs Custom Application

Feature/Consideration	Microsoft Forms	Your Own Data Collection Application
Ease of Use & Speed	Very easy, quick setup, user-friendly interface	Can be complex and time-consuming to develop
Microsoft Ecosystem	Seamless integration with Microsoft 365 apps	Requires specific development for integrations
External System Integration	Limited direct integrations	Can be built with specific integrations in mind
Data Validation	Basic validation options	Can implement highly specific validation rules
Analytics & Reporting	Real-time basic analytics, export to Excel	Can implement advanced analytics and custom reports
Costs	Often included in Microsoft 365 subscriptions	Can involve significant development and maintenance costs
Technical Expertise	Minimal technical skills required	Requires development and maintenance expertise
Option Search	Does not allow users to search the question options	Can implement a highly customisable search bar

SAS Data Collection Journey



SAS Data Reporting

Hi! Would you mind taking 4 minutes to complete this form? It would be great if you can submit your response for 5/12/2023. Thank you!
 (6/16/2023) When you submit this form, the owner will see your name and email address.

* Required

1. Specify the programme *
2. Select session type *
3. Session method *
4. Session date *
5. Insert Student Number (ensure accurate student number is used) *
6. Student Full name *
7. School *
8. Qualification Name *
9. Year of study *
10. Gender *
11. Main topics covered/discussed *
12. Session Duration (minutes only) *

Submit

Microsoft 365
This content is intended for the owner of this form. The data you submit will be sent to the form owner. Microsoft is not responsible for the privacy or security of the data you submit. Please do not submit sensitive information. Please do not submit sensitive information. Please do not submit sensitive information.

Old SAS Data Form

Change



**CENTRE FOR
TEACHING, LEARNING
AND PROGRAMME
DEVELOPMENT**



**SOL PLAATJE
UNIVERSITY**

Academic Advisor Session Form

* Required

Data Entry Mode

Advisor *

Session Date * Session Method * Session Duration *

Session Type *

Student Number *

Main Topic(s) Covered/Discussed *

Advisor Notes

Submit form **Manage data** **Log out**

New SAS Data Form

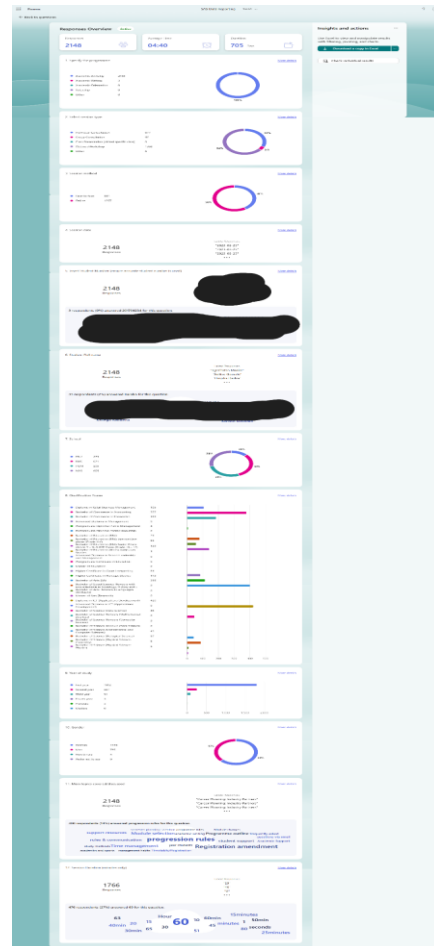
Data Analytics – To more Granular Insights

We wanted to see Academic Advising Trends based on:

- Usage Period
- Faculty
- Study Level
- Qualification
- Session Method
- Session Type

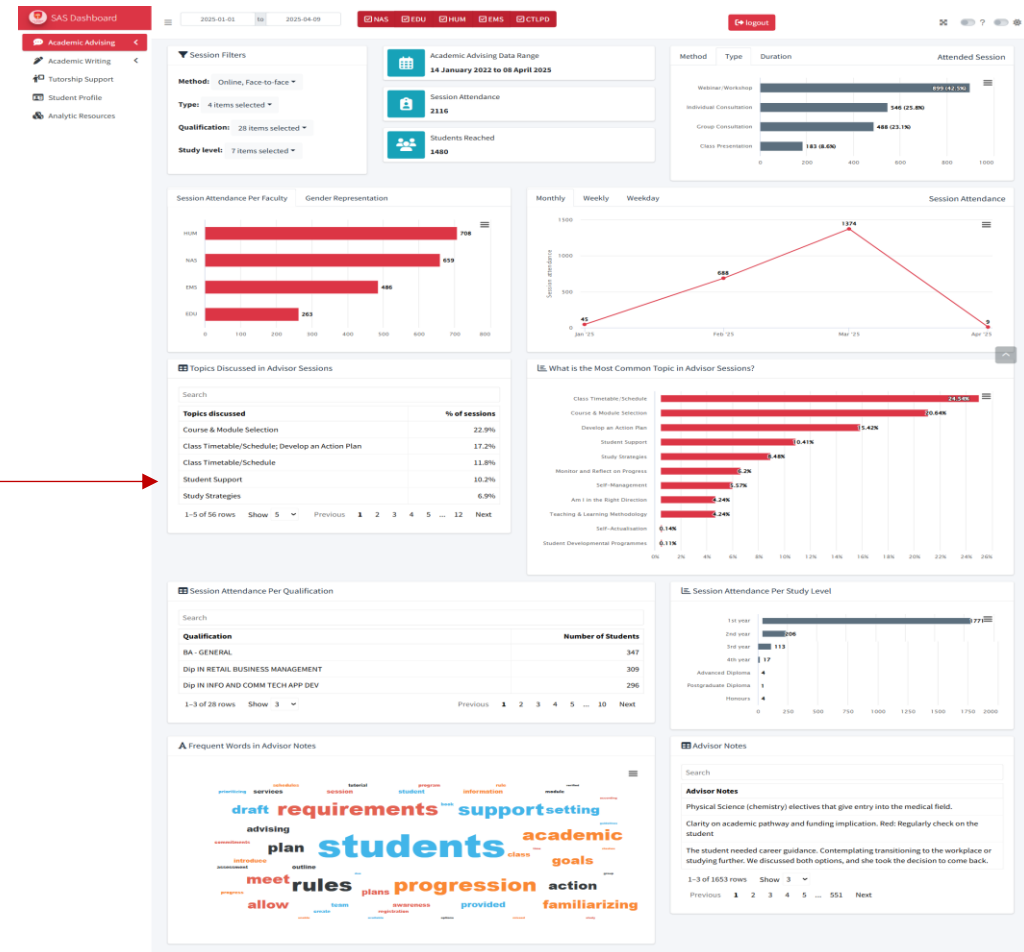
Generic Analytic Questions

- Who is using services?
- When?
- How often?
- What works?



Microsoft Forms Analytics

Shift



SAS Dashboard



Data to Insights

- Participants define:
 - One key question to answer or problem to solve with data
 - What data is needed to answer the question or solve the problem
 - One actionable step to take based on the answer or solution



Future Engagements

- Revised Data Collection Tools
- PowerBI (Analysis, interpretation and Reporting)



Thank You



www.spu.ac.za



Private Bag X5008
North Campus
Chapel Street
Kimberley
8300



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