



Kolej Matrikulasi  
Sarak

# Peranan & Impak Seorang Guru Fizik

Oleh Shafiq Rasulan



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## Peranan saya?

# MOTIVASI



- Teori Penentuan Kendiri oleh Deci & Ryan (SDT)
- Kerangka Pemikiran Berkembang oleh Carol Dweck



# Differentiated Learning

## Perihal 1: PPPM

**Anjakan 1:**  
Menyediakan kesamarataan akses kepada pendidikan berkualiti bertaraf antarabangsa

## Perihal 2: Meningkatkan prestasi murid.



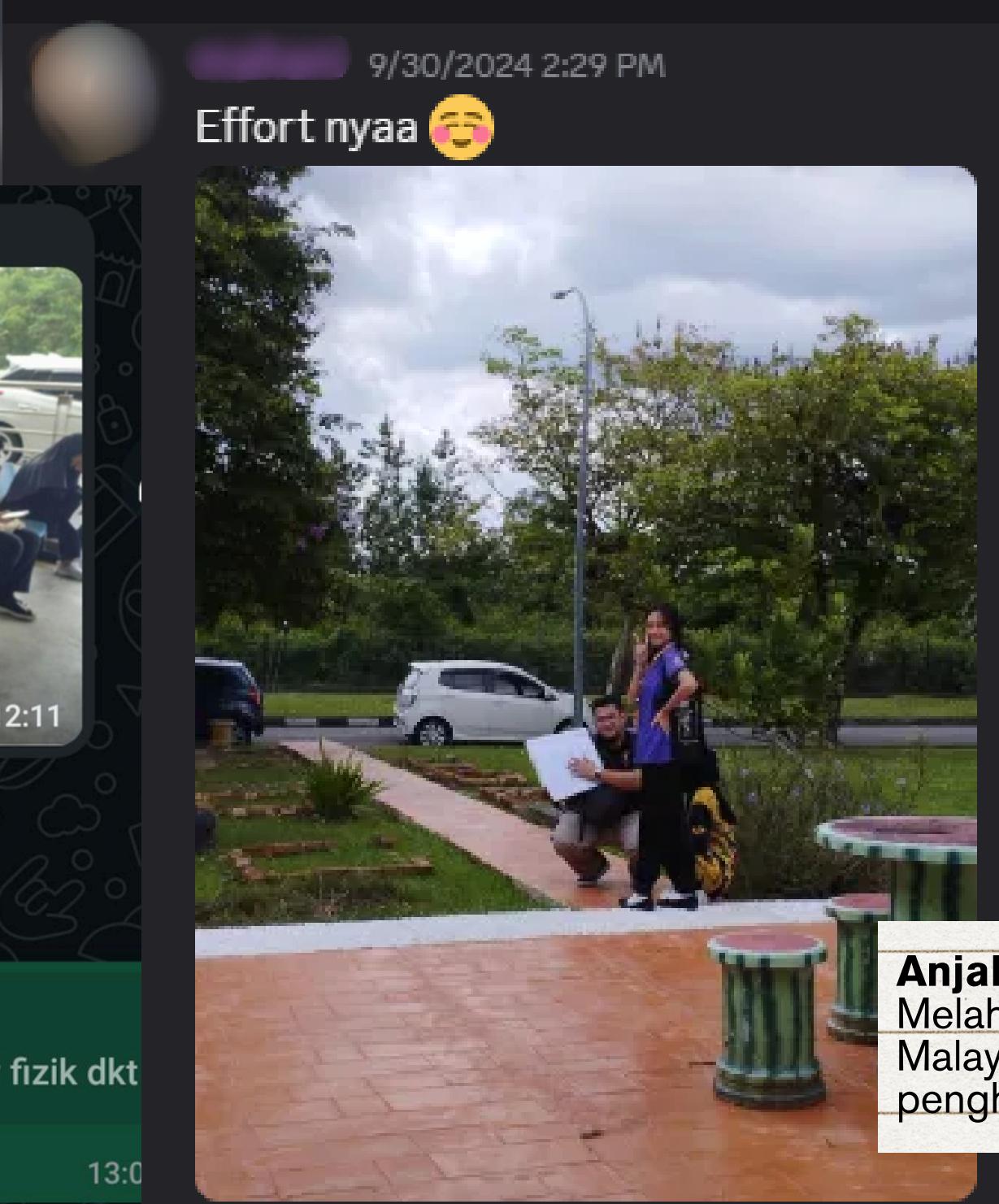
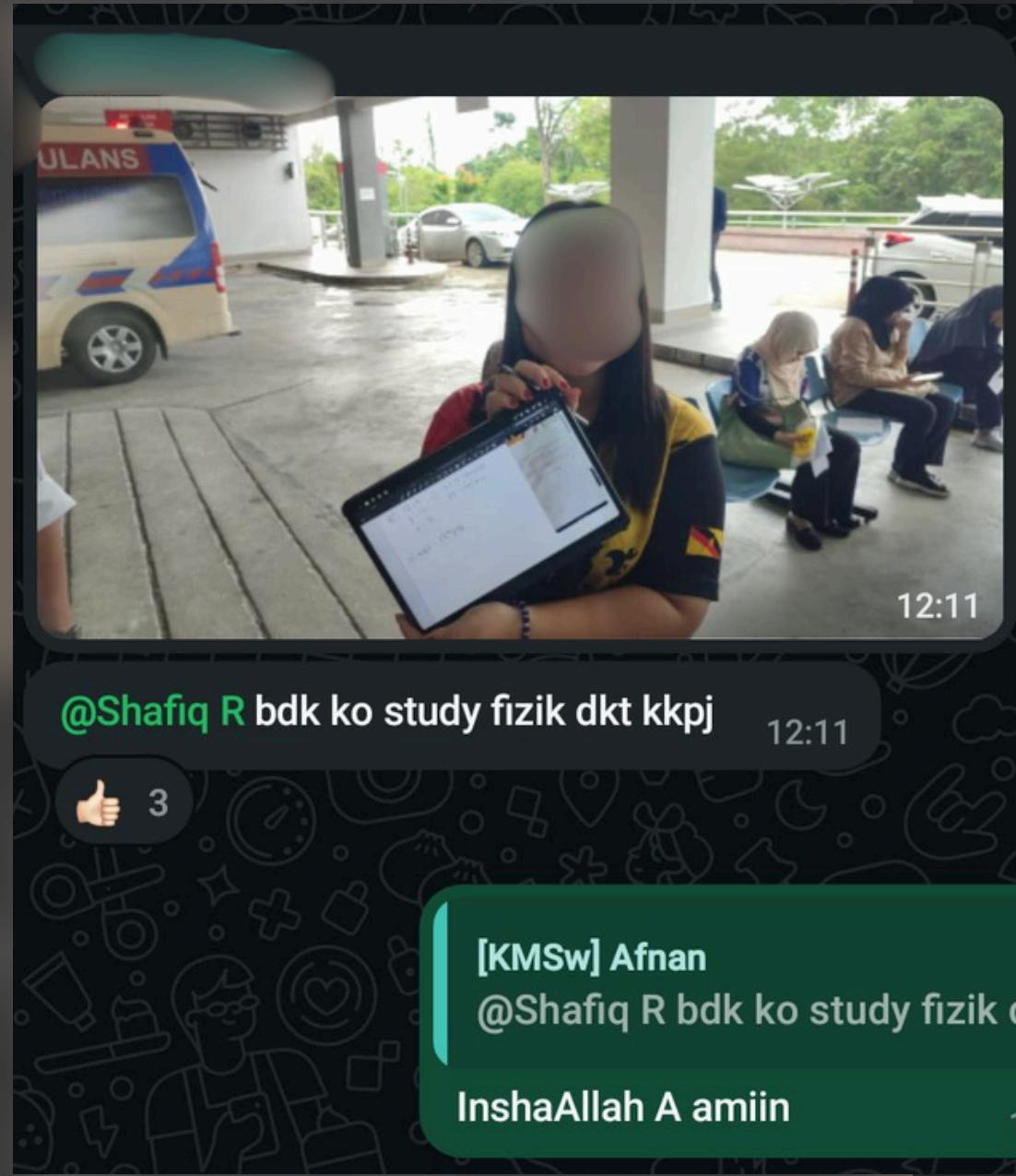
**Anjakan 7:**  
Manfaatkan ICT bagi meningkatkan kualiti pembelajaran di Malaysia

**PiET**  
INTERACTIVE SIMULATIONS  
**Gamification**



## Perihal 2: Meningkatkan prestasi murid.

Peranan  
saya?



## Perihal 2: Meningkatkan prestasi murid.



THANK YOU SIRR! SIR, FINALLY I GOT A  
 IN PHYSIC. I'm grateful to be one of your  
 student. Thank you for pushing us to  
 become the best version of ourselves.  
 Thank you for making physic fun for the  
 past 10 months.

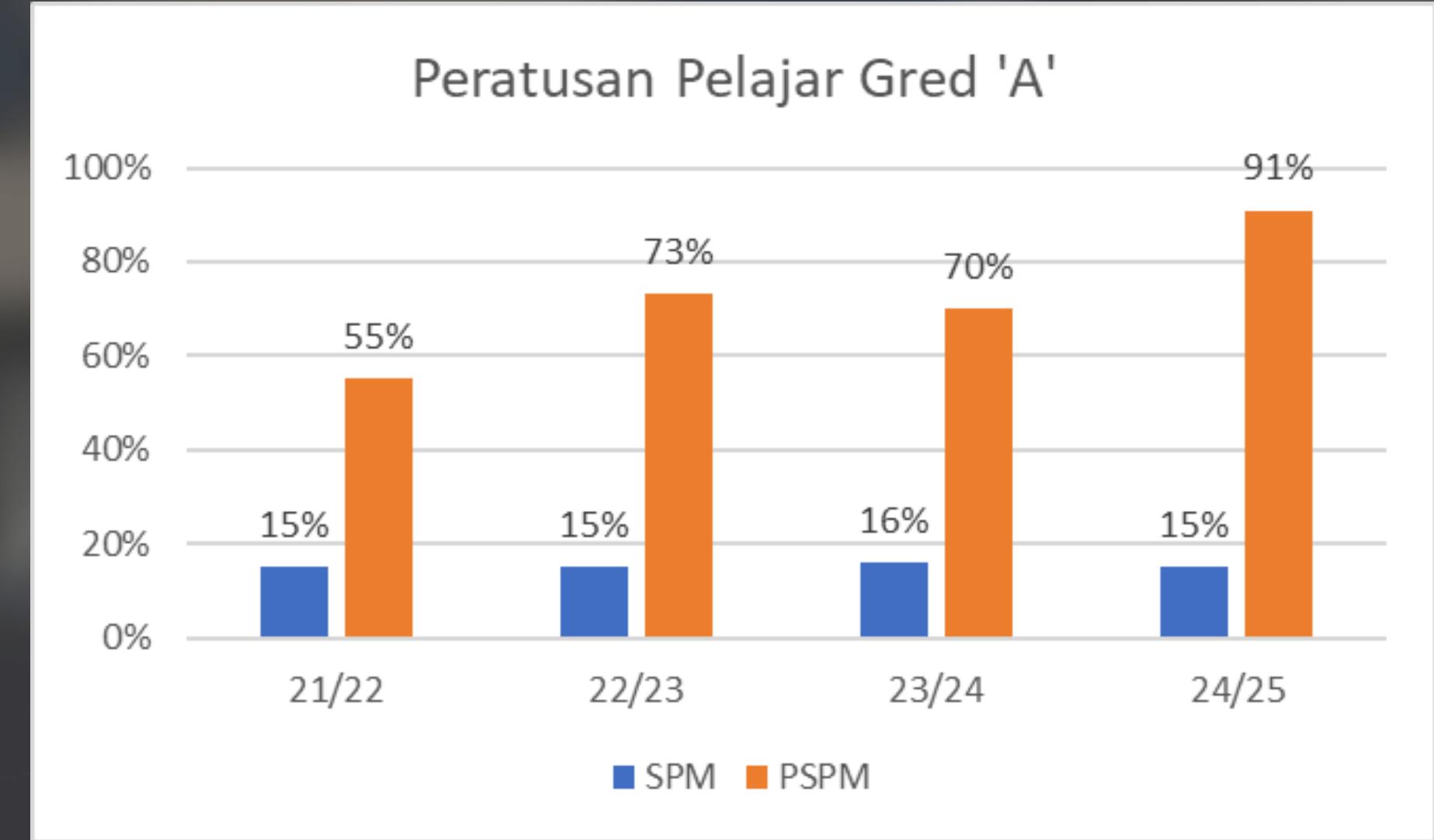
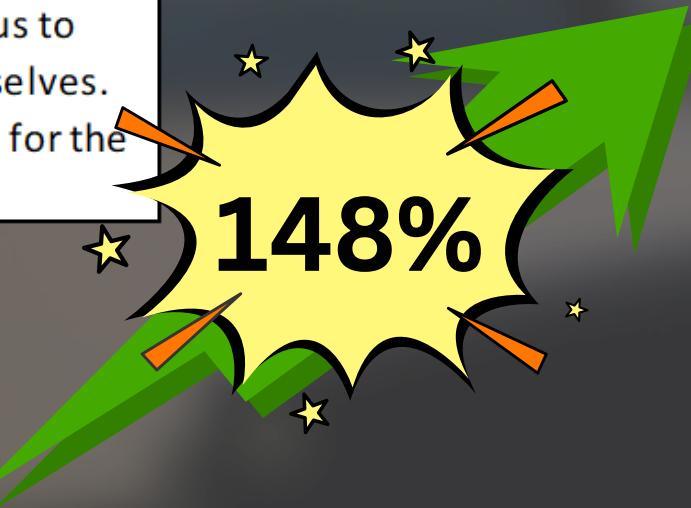
  
 aslm sir  
 phy saya A sir 😭

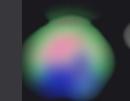
**21**  
**pelajar**  
**(SP015)**  
**36.8%**

Thank you sir, your motivation has positively affected how I feel about exam

I would like to say thank you sir for helping us to study physic and you give us motivation when we feel want to give up.

**52**  
**pelajar**  
**(SP025)**  
**91.2%**



  
 Assalamualaikum sir, good morning. Saya nak bagitau physics saya naik jadi A solid, hehe. Saya nak ucapkan terima kasih dkt sir sbb dh ajar physics selama 10 bulan ni. Tak sangka physics boleh jadi fun waktu dkt matriks. Tq juga sebab selalu bagi nasihat kehidupan lepas tulak pandang rendah dekat kita orang even narkah quiz kadang kelaut dalam. 🙏  
  
  
 Hii Sir Shafiq 😊  
 Just wanted to say thank you. I'm really grateful to be one of your students. You didn't just teach me Physics but you shared life lessons too. I'm glad to have someone I can look up to when I don't know what to do. Here's my last little gift to you.

**Anjakan 10:**  
**Memaksimumkan**  
**Keberhasilan Murid**  
**Bagi Setiap Ringgit**



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## Perihal 3: Meningkatkan tahap profesionalisme bidang kepakaran

### KIK & Inovasi

*Lesson Crafter*

*Test Scheduler*

*Matrix Metric Match*

### Sarjana Holistik

*Kurikulum &*

*Pentaksiran*

*Pemeriksa Skrip*

*Jawapan Peperiksaan*

*Penggubal Modul*

*Amali*

**Anjakan 4:**  
Transformasi  
keguruan sebagai  
profesional pilihan

### PLC

*Foundations & Frictions*

### Sumbangan Luar

*Bengkel Discord IPGKBL*

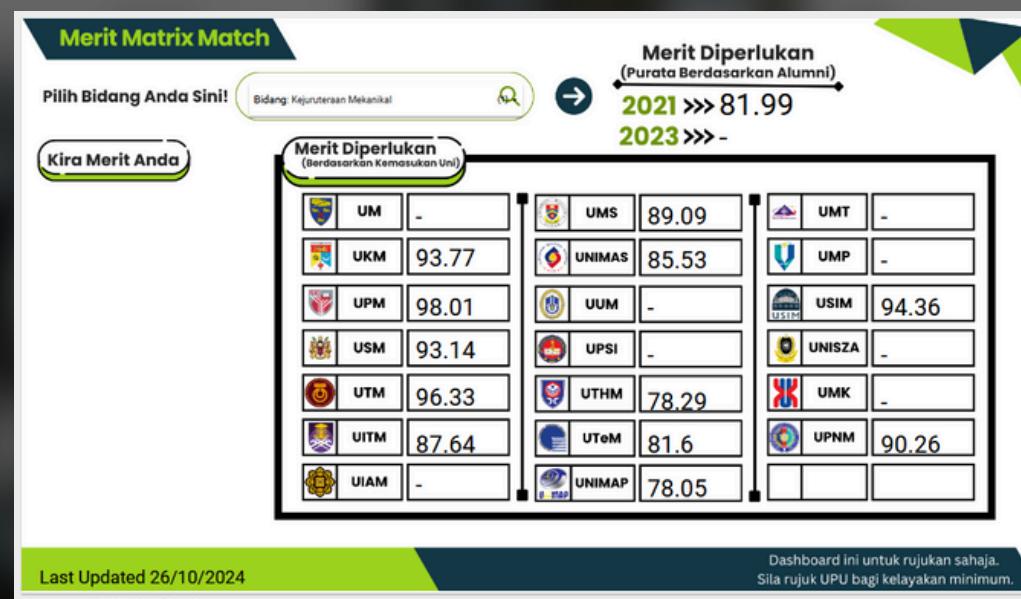
*Sinergi Inkubator STEM*

*SMTS*

*Easy Math & Science*

### Kajian Tindakan

*AI-Powered Tutoring for  
Conceptual Clarity*



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Oleh Shafiq R

**PARTICIPANT**

**ORGANISATION**  
SARAWAK MATRICULATION COLLEGE

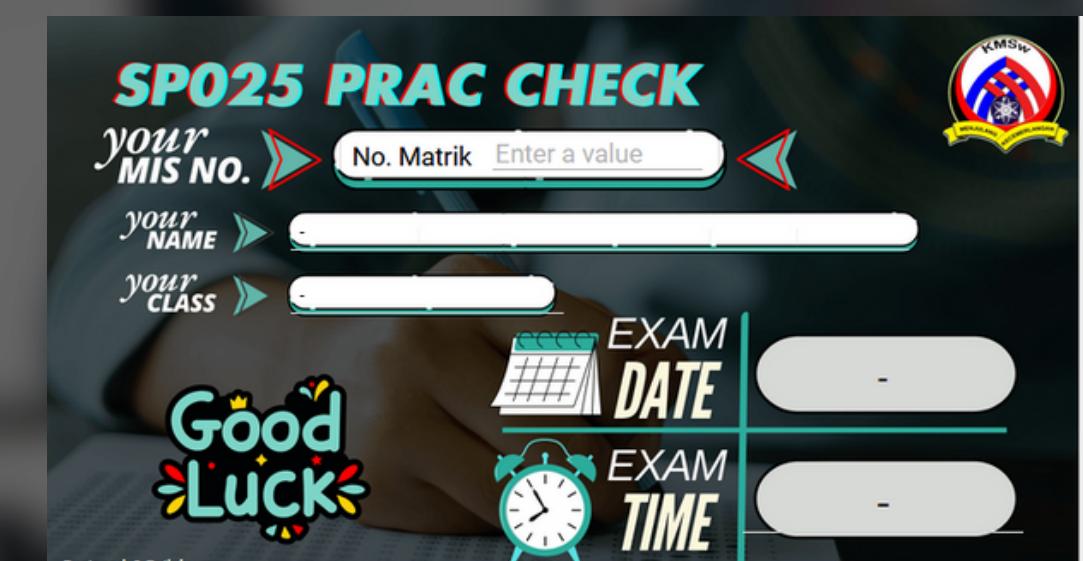
**TEAM LEADER**  
SANDRAN BIN ABDULLAH

**TEAM MEMBER**  
SHAFIQ BIN RASULAN

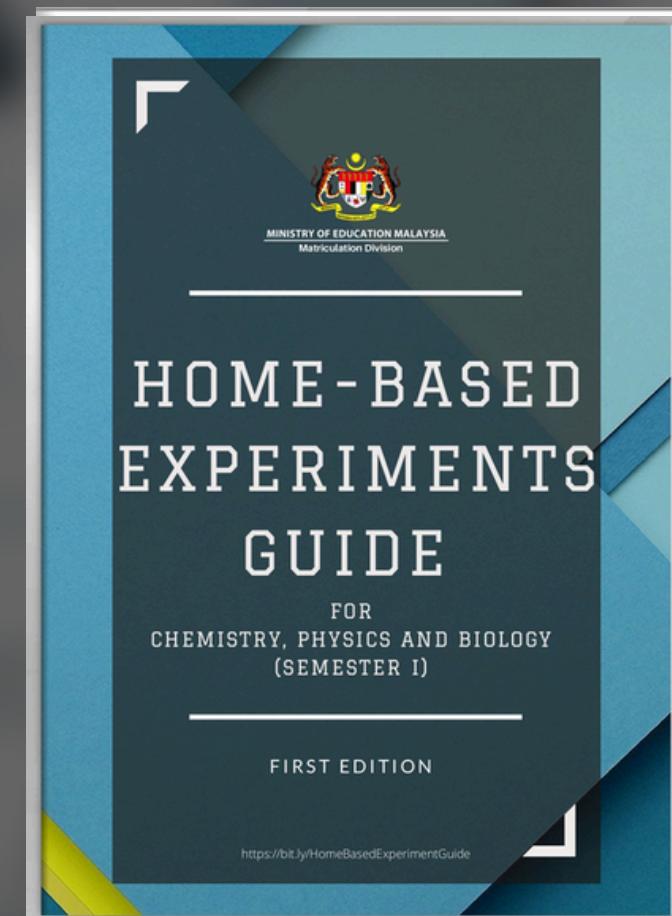
**TEAM MEMBER**  
TEVYA LETCHUMANAN

**PIITRAM 2024**  
Pre-University Matriculation Innovation Competition  
"From Ideas To Impact: Igniting Innovation"

**Lesson Crafter**



**Anjakan 7:**  
Memanfaatkan ICT  
bagi meningkatkan  
kualiti pembelajaran  
di Malaysia





## Perihal 3: Meningkatkan tahap profesionalisme bidang kepakaran

**Guru  
Inovatif**



### Alat Sokongan Pembelajaran Kendiri

#### SP025 Random Practice Question

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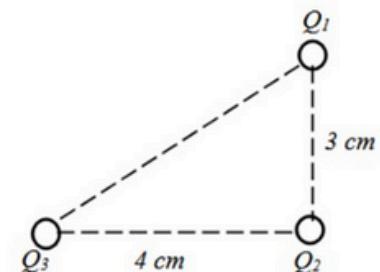


FIGURE 1

Three point charges,  $Q_1 = +15 \mu\text{C}$ ,  $Q_2 = -25 \mu\text{C}$  and  $Q_3 = -35 \mu\text{C}$  are arranged as in FIGURE 1.

- Copy FIGURE 1 and draw the direction of the electrostatic forces on  $Q_2$ .
- Calculate the magnitude and direction of the resultant force on  $Q_2$ .

$$[F = 6.19 \times 10^3 \text{ N}, \theta = 37.31^\circ \text{ above } x-\text{axis}]$$

#### Pendulum Experiment Simulator: $T^2$ vs L

By Shafiq Rasulan

Generate Data

■ Data Points (L vs  $T^2$ ) ■ Trendline



### Experiment Simulator

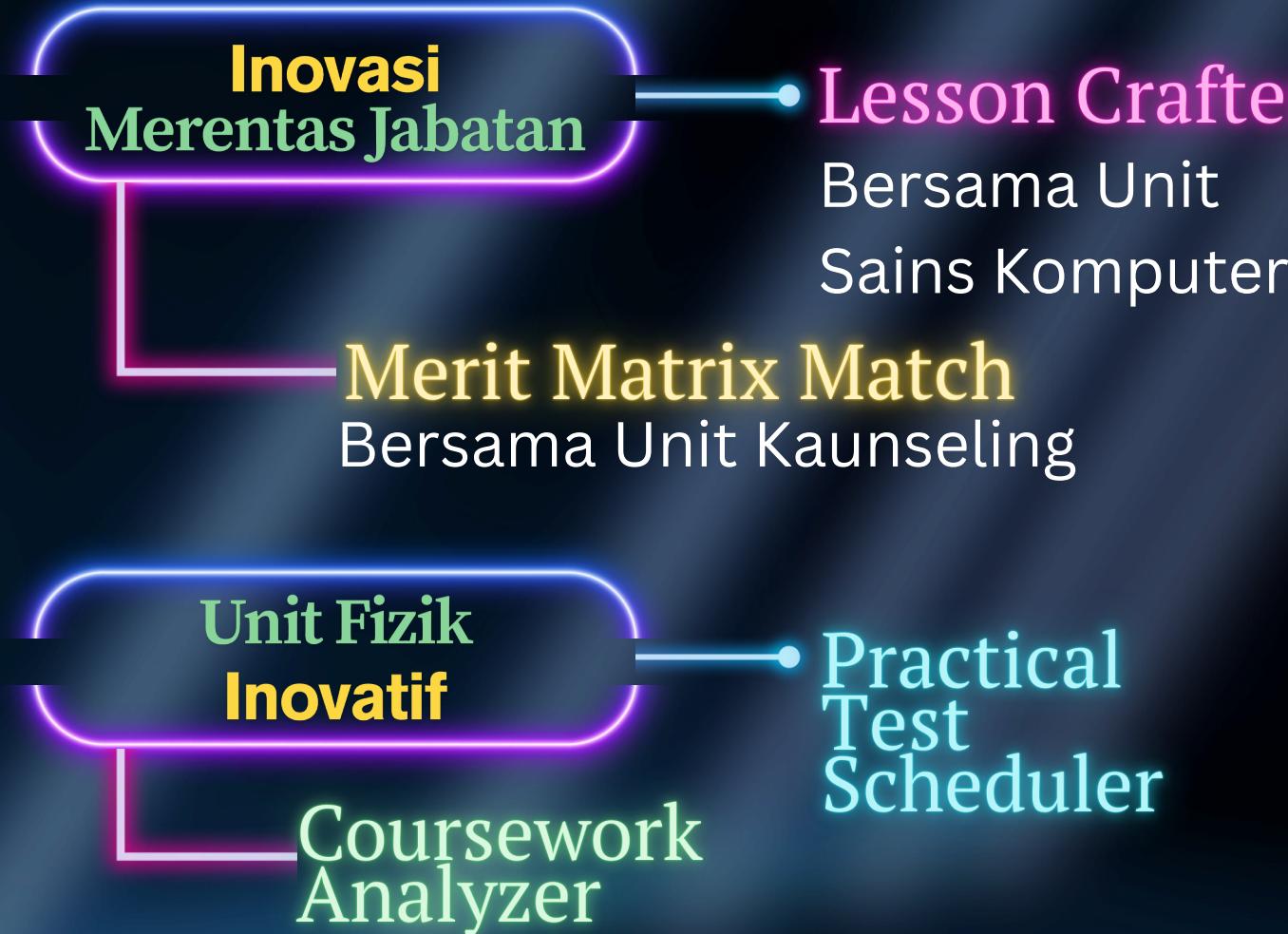
Konvensyen Penyelidikan, Komuniti Pembelajaran Profesional dan Inovasi Pendidikan  
Program Matrikulasi KPM (KonPPI-5) 2025

#### AI-Powered Tutoring for Conceptual Clarity in Energy and Momentum among Sarawak Matriculation College Physics Students

Shafiq Bin Rasulan<sup>1</sup>

<sup>1</sup>Sarawak Matriculation College

## Perihal 4: Menggalakkan inovasi dalam kalangan murid/ pelajar/ peserta dan rakan sekerja



| Tahun | Peratusan Penglibatan Pensyarah dalam Aktiviti Kesarjanaan (%) |
|-------|--|
| 2020  | 26.6   |
| 2021  | 43.9   |
| 2022  | 77.2   |
| 2023  | 100  |
| 2024  | 100  |



## Peranan saya?

**Anjakan 9:**  
 Bekerjasama dengan ibu bapa, komuniti dan sektor swasta secara meluas

**Anjakan 11:**  
 Meningkatkan Ketelusan dan Akauntabiliti Awam

**Menyokong pembangunan budaya kesarjanaan dalam kalangan warga kolej sebagai ahli pengurusan KIK dan Inovasi**



## Perihal 5:

Merealisasikan harapan dan wawasan Pendidikan negara selaras dengan aspirasi global dan **aspirasi kebangsaan**.

Prakarsa Pendidikan Madani 1:  
Akses Pendidikan Saksama



Pengaplikasian *Differentiated Learning*

Prakarsa Pendidikan Madani 4:  
Membina Ekosistem  
Pendidikan Digital



Penggunaan *Discord, PhET*  
dan juga pembinaan  
*Dashboard Digital*

Prakarsa Pendidikan Madani 5:  
Ekspresi Aspirasi Malaysia  
MADANI



Mengatur pelajar daripada  
pelbagai latar belakang secara  
strategik



## Perihal 5:

Merealisasikan harapan dan wawasan Pendidikan negara selaras dengan aspirasi global dan aspirasi kebangsaan.

TIMSS Science Framework:  
Practice 3: Working with data



Pembinaan *e-Phylab*,  
*Experiment Simulator*

PISA: Learning in the digital  
world (2025)



*Spreadsheet* untuk data  
analisis data Fizik

UNESCO's ICT Competency  
Framework for Teachers



Pembinaan Lesson Crafter  
Kursus *Discord for Teachers*



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Anugerah



# Peratusan A Tertinggi SP015 Peringkat Kebangsaan 2025

## e-Penilaian Pelajar Tertinggi Peringkat Kolej 2024

### Pensyarah Terbaik Peringkat Kolej 2023

Kain batik corak berseri,  
Dijahit rapi tangan sendiri.  
Hati tenang rasa dihargai,  
Sudi mendengar, terima kasih diberi.