Application Engineering and Development – University Model Performance Metric Report

Team:

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Model Purpose:

To design and develop a performance measurement solution to enable universities to measure the quality of the education they deliver to their students. Academic quality is a way of describing how well the learning opportunities available to students help them to achieve their award. It is about making sure that appropriate and effective teaching, support, assessment and learning opportunities are provided for them. Therefore, maintaining the education quality is dependent upon several parameters like courses, faculty, employment opportunities which define a student's professional attributes.

Business Problems:

Performance measurement metrics were used for a student during their undergraduate and graduate studies at the university, as well as after they graduated. This university model primarily focuses on faculty, student, course work metrics and alumni information. By monitoring the interconnection of student metric with course data, we could identify the possibility of acceptance of a particular subject by any student. We can accomplish this by implementing the below mentioned metric systems:

1. Student Performance Metric System
2. Faculty Performance Metric System
3. Course Performance Metric System
4. Professional Growth Performance Metric System
5. Career Success Performance Metric System

Skills required by the company keeps on changing as per the ever-changing technologies and consequently the university would need to tweak the existing course offerings to

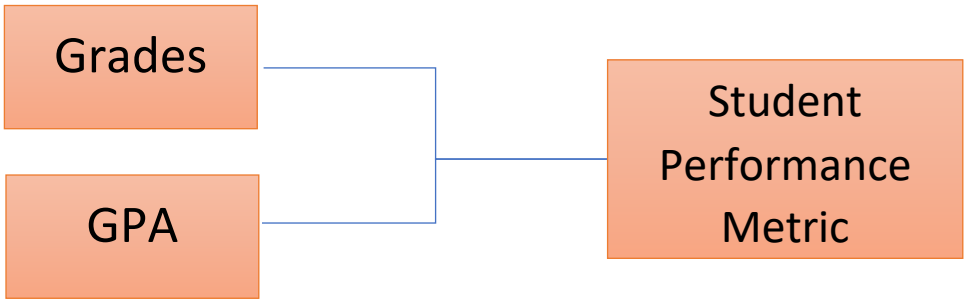
match the market needs. This proposed solution would help to monitor the employment performance metrics and student performance hand-on-hand.

Performance Metrics:

1. Student Performance Metric System (SPMS):

Performance assessments could include designing and carrying out experiments; writing essays which require students to rethink, to integrate, or to apply information. An assessment is another such metric which helps in defining the student performance which can be computed based on below elements.

a. Grades
b. GPA



Letter Grade	4.0 Scale (GPA)
A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C-	2.0
D+	1.3
D-	1.0
E/F	0.0

We can calculate the Student Performance Metric via the following method.

$$SPM = (GPA * 2 + 2)$$

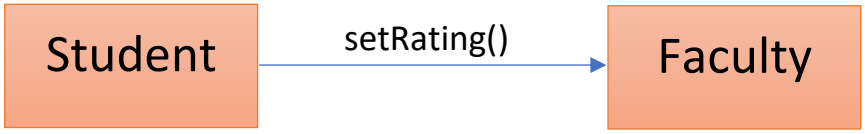
Let's say a student having a Grade of A corresponds to a GPA of 3.9 out of 4.0 scale will have the following SPM value as per the formula devised earlier.

Grade	GPA	SPM
A	3.9	3.9 * 2 + 2 = 9.8

2. Faculty Performance Metric System (FPMS):

The performance of a faculty/professor in the university based on the ratings awarded by the students can be tracked with the help of this metric system.

Based on the ratings provided by the students, a professor can be ranked by a method setRating().



3. Course Performance Metric System (FPMS):

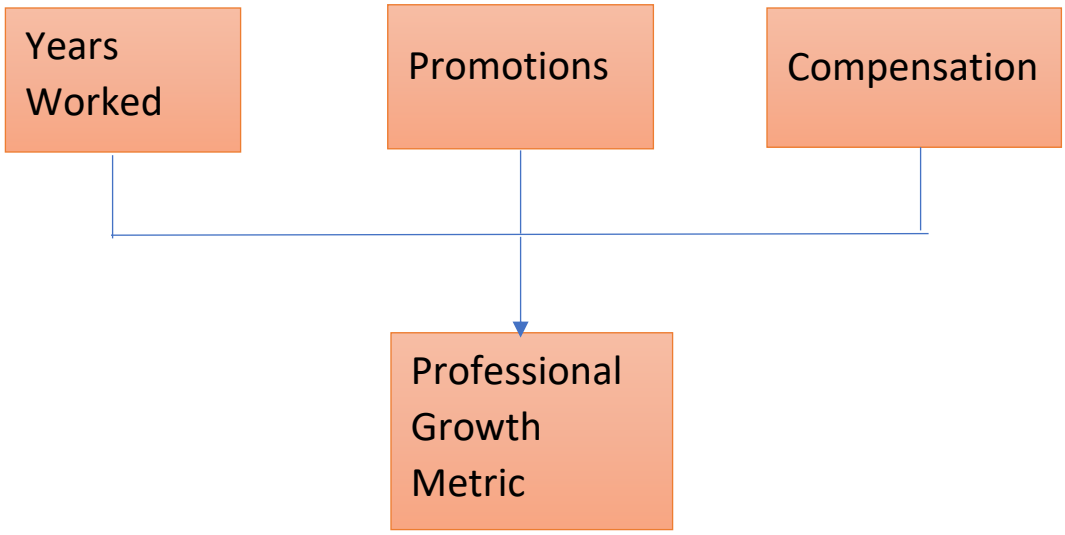
The employers would need to track the courses and rate them which their employees have opted during their academic session. This metric system computes the rating of the relevant courses by employers, assigned to the employees as being a student in university.

Based on the rating provided by the employers we can use Custom Sorting function to rank the courses tagged to corresponding employers.

4. Professional Growth Performance Metric System (FPMS):

The contribution of university to student performance (indirect through education and skills development) during work can be determined using this metric. A student's professional measure can be determined using the below attributes:

a) Number of years employed
b) Promotions and Progressions
c) Compensation/Salary/ Increments



i. **Years Worked** :

Below is the categorization of ratings based on the years of experience of an employee.

0-3 years	2.5 points
3-6 years	5 points
6-8 years	7.5 points
8+ years	10 points

ii. **Promotions & Progressions** :

Below is the categorization of ratings based on the promotions and progressions of an employee during his professional tenure.

0 Promotions	2.5 points

1 Promotions	5 points
2 Promotions	7.5 points
3+ Promotions	10 points

iii. **Compensation** :

Below is the categorization of ratings based on the salary or compensation of an employee at an organization.

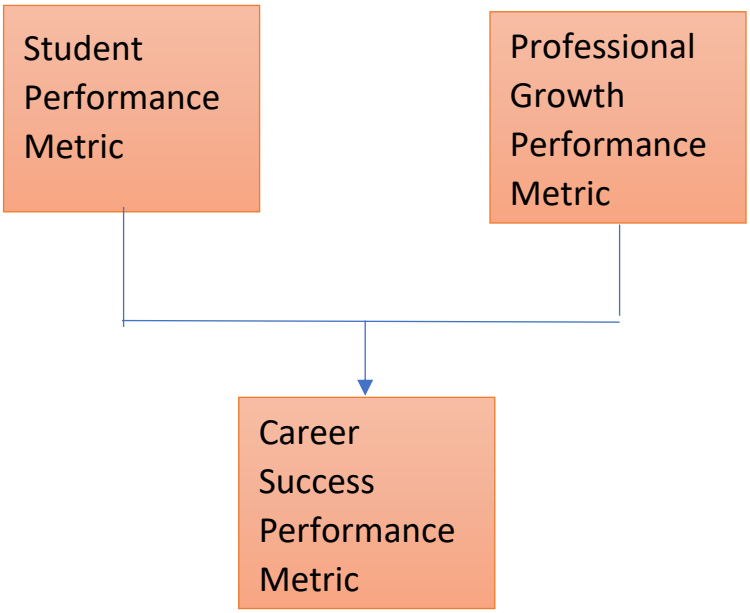
60k – 80k	2.5 points
80k – 100k	5 points
100k – 120k	7.5 points
120k+	10 points

Professional Performance metric can be calculated on a gross basis on a scale of 10.0 by considering all the factors like Years Worked, Promotions and Compensation.

Years Worked	4 years	5
Promotion	0	2.5
Compensation	110k	7.5
Gross Professional Growth Metric (GPGM)	Aggregate	(5+2.5+7.5/3) = 5.00

5. Career Success Performance Metric System (FPMS):

This metric is evaluated based on the aggregate of student Academic and Professional growth metrics. It provides the overall student's performance in the university and over the tenure of employment.

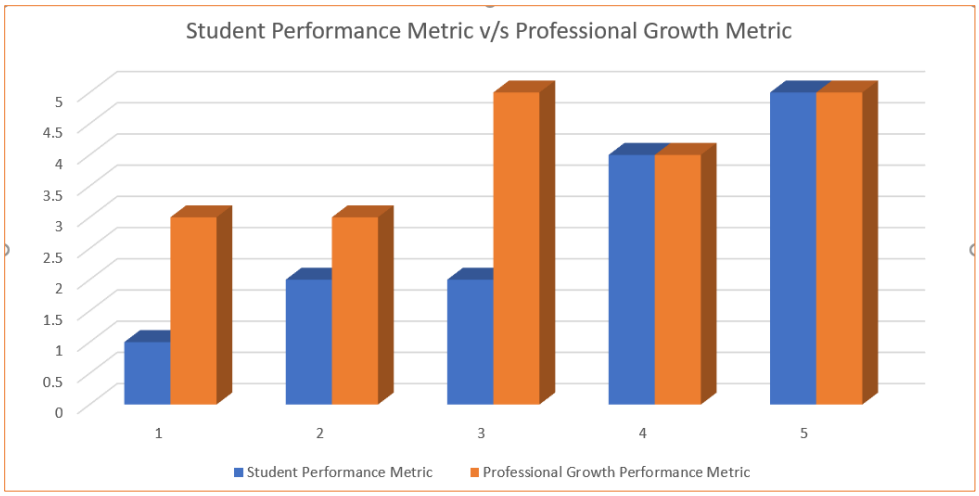


Performance Metric Graphical Representation:

Based on the above metric calculations and certain assumptions, below graphical representations have been derived.

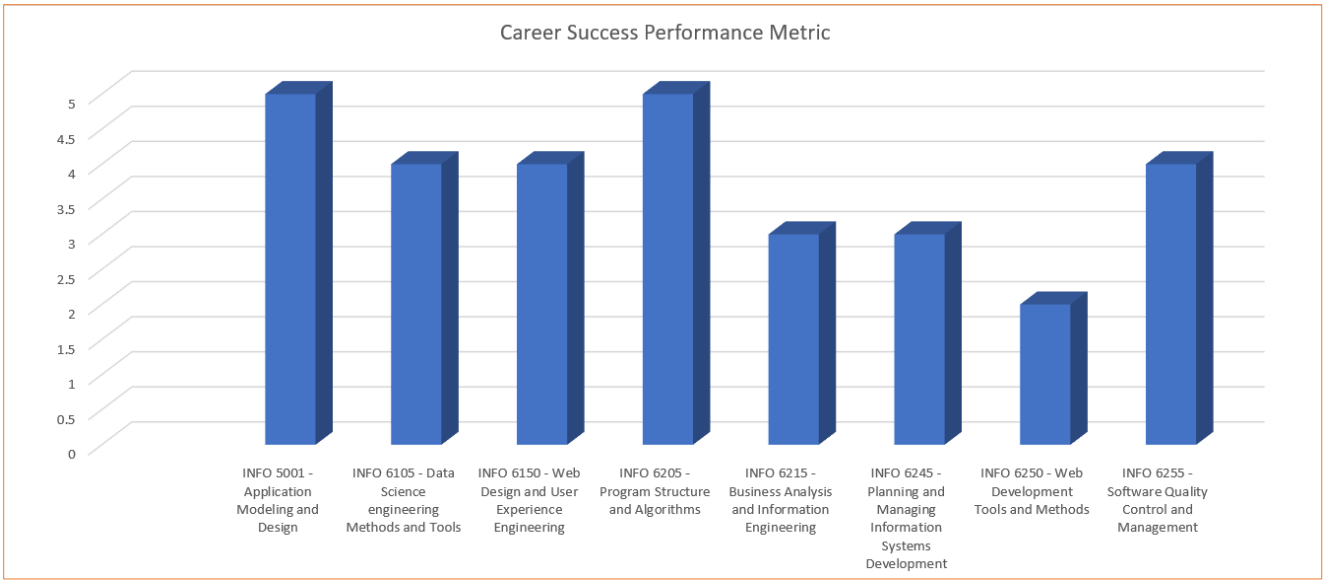
Student Performance Metric v/s Professional Growth Performance Metric

Student Performance Metric	Professional Growth Performance Metric
1	3
2	3
2	5
4	4
5	5



Student Performance Metric v/s Professional Growth Performance Metric

Course	Career Success Performance Metric
INFO 5001 - Application Modeling and Design	5
INFO 6105 - Data Science engineering Methods and Tools	4
INFO 6150 - Web Design and User Experience Engineering	4
INFO 6205 - Program Structure and Algorithms	5
INFO 6215 - Business Analysis and Information Engineering	3
INFO 6245 - Planning and Managing Information Systems Development	3
INFO 6250 - Web Development Tools and Methods	2
INFO 6255 - Software Quality Control and Management	4



Conclusion:

Career Success Growth is an aggregation of both Academic and Professional Performance metrics and is also calculated on a 10.0 scale. So, it is evident that both these parameters impact independently in deciding the final career success growth. If the GPA is lower still a person can be successful if the professional attributes are higher to compensate the lower grades.

So, a person development can not be only measured by academics, rather his/her professional skills does matter too. A good quality education that aligns with the industry trends is very important for a country to elevate the growth and development.