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Learning analytics for students' study habits and assessment in faculty of education, university of Port Harcourt

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Abstract

The study is a descriptive study research design to investigate learning analytics for students' academic performance in Faculty of Education, University of Port Harcourt. The Population comprised all Year 1 students from Faculty of Education with 8 departments, University of Port Harcourt offering Instructional Technology (EDU 102.2). A sample size of 300 students was used from six departments from Faculty of Education, University of Port Harcourt. Stratified and purposive sampling techniques were used for the study. The instrument used to collect data from respondents was a structured questionnaire entitled Learning Analytics for students' academic performance in Faculty of Education, University of Port Harcourt (LASAPFEUPH) with 22 items. To ensure validity, the instrument designed by the researcher was given to experts in the field of Educational Technology and measurement and evaluation. This was done to help the researchers assess the quality of each item in the context of clarity, ambiguity and generality of the items. Their various comments and assessment gave the researcher the conviction that the instrument is appropriate and valid for the research. To determine the reliability of the instrument, test-re-test was applied; 20 copies of the instrument were administered on some students at two different occasions within three weeks. Their responses to the questionnaire item in the two separate responses were correlated to attain the reliability coefficient of 0.86. The responses from the questionnaire in Section B were weighted on the four-point Likert type scale: Strongly Agreed, Agreed, Disagreed, and Strongly Disagreed. Data obtained were analysed using Mean, Standard Deviation and Chi-Square.

Keywords: learning analytics, study habit

Introduction

Scholarly examination is the change for authoritative procedures, work processes, asset assignment, and institutional estimation using student, scholastic, and institutional information. The scholarly investigation, similar to business examination, are worried about enhancing hierarchical viability. Disregarding the capability of learning examination, it is essential to stress that investigation is not the ultimate objective. Learning examination is seen as a way to give partners (students, teachers, directors, and funders) with better data and profound knowledge into elements inside the learning procedure that add to student achievement. Investigation serves to manage basic leadership about instructive change and student level intercession for in danger understudies. The expansive objectives of learning investigation are to enhance fruition rates, furnish chiefs with required data, and help students in creating expanded duty regarding their learning activities. As learning and collaboration are progressively appropriated crosswise over various instruments and situations, investigation can dissect the effect of those different communications and characters. Furthermore, the utilization of learning examination will enable analysts to ground their exploration in learning on genuine information, empowering what is at present a gathering of convictions and assessments to end up more logical and exactly grounded.

Learning examination hold the guarantee of enhancing learning productivity and adequacy in essential, optional, and post-auxiliary training. Learning investigation are coordinated towards giving teachers, students, and directors with significant knowledge to classroom and course level exercises. The advantages of learning examination in Training include:

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1. Through a watchful examination of huge information, specialists can decide valuable data that can profit instructive establishments, understudies, educators, and analysts in different ways.
2. Identifying target courses (Althubaiti and Alkhazim, 2014) ^[1].
3. Curriculum change: Utilizing huge information enables educators to roll out improvements and adjustments to enhance educational modules advancement in the instructive framework, for example, in the utilization of curricular mapping of information (Armayer and Leonard, 2010) ^[3].
4. Student learning result, conduct, and process: Another key advantage of huge information and text mining centres on the capacity of schools and teachers to decide understudy learning results in the instructive procedure and in addition decide how to enhance understudy execution. Analysts noticed that the utilization of instructive information mining added to positive outcomes in the learning procedure (AlShammari, Aldhafiri, and Al-Shammari, 2013) ^[2]. Examination of the information can enable instructors to comprehend the understudy learning background through student collaborations with innovation devices, for example, eLearning and portable learning. Utilization of enormous information additionally uncovers learning conduct, the effect on versatile learning, and level of industriousness (DiCerbo, 2014) ^[5] in the learning procedure. By understanding the impacts on student results, utilization of enormous information additionally uncovers how to make upgrades in understudy learning and execution in scholastic coursework. Along these lines, Learning Examination enables teachers to assess types of information and alter instructive substance as needs are.
5. Personalized learning: Using learning examination, the idea of customized learning uncovers understudy achievement. Dietz-Uhler and Hurn (2013) ^[6] affirmed that course planners don't represent understudies who don't start particular coursework at a similar learning stage and who don't continue, learn, and ace course skills at a similar pace. Learning examination enables staff to utilize information gathered by the learning administration framework to watch the recurrence of understudy login. Educators can likewise observe understudy association inside the course, add up to commitment, pace, and grades. These segments fill in as indicators of understudies' potential achievement or disappointment. Learning investigation takes into account the ongoing gathering of the relevant information, survey and additionally the consolidation of information, and constant input for each understudy.
6. Post-instructive employment: Using enormous information enables instructive establishments to recognize post-training work open doors for alumni and help target training that all the more nearly lines up with business advertising needs. It can likewise anticipate graduate business, joblessness, or undetermined circumstances about openings for work (Jantawan and Tsai, 2013) ^[7]. Utilizing huge information can help partners in the instructive framework better comprehend professional prospects for understudies and better evaluate understudy learning programs for word related similarity. In a worldwide learning condition, this sort of data not exclusively can encourage better instructive and

post-training professional arranging, yet in addition, may demonstrate valuable to associations as they settle on employing and planning

7. Learning investigation professionals and research community: The look into network additionally profits by the utilization of huge information in training. Scientists can all the more effortlessly share data and work together. They can distinguish holes among industry and the scholarly world with the goal that examination can decide how to defeat issues. Additionally, valuable information investigation speaks to an imperative segment of the capacity of researchers to produce learning and keep on advancing in research disciplines (Sharda, Adomako, Asamoah, and Ponna, 2013) ^[12]. Notwithstanding, these advantages are additionally counterbalanced by the requirement for prepared staff who can utilize and apply examination suitably.

Learning examination help to enhance e-Learning:

1. Helps to anticipate students' execution
2. Provides students with a customized e-Learning background
3. Increased students' standards for dependability
4. Helps to enhance future e-Learning courses
5. Boost in cost-effectiveness (Pappas, 2014) ^[10].

Learning investigation in numerous regards can change the universe of e-Realizing whether in instructive foundations or incorporate preparing. With the information gathered through investigation, instructional originators and e-Learning experts can offer students the one key thing that all e-Learning courses and preparing modules endeavour to offer (Pappas, 2014) ^[10].

Learning investigation can upgrade instructors with insights on the standard of instructive substance and procedures they are continuing and on their guidelines and assessment techniques. Some investigation is utilized by educators to watch the accomplishment of their understudies while the subjects or program of studies are occurring; they would then be able to alter their guidance on the off chance that it is seen that understudies are doing combating with a particular point. Then again, examination on understudy information happens from there on, allowing the future age of understudies to profit by a change to instructive substance and procedures. This has the likelihood to change their learning and their appreciation of how they learn by giving regular developmental input as they enhance through their investigations (Arnold, 2010) ^[4]. Learning investigation likewise fortifies understudies to liken themselves with companions, connecting a contention section (a critical spark for some understudies) and a test that they are keeping up with the gathering or with the advancement of prosperous understudies in past age. All the while, a few Colleges stretch out investigation based frameworks to enable understudies to pick future subjects, setting up on information about their profession decisions, abilities and grades for past subjects to make best pathways through their examinations.

Statement of problem

Learners themselves, especially when beginning higher education, often have little concept of how they are performing in comparison with others, have gaps in

essential knowledge, and lack key study skills. Giving students preferable information on how they are progressing and what they need to do to meet their educational goals is a major application of learning analytics.

Key concerns and challenges are corresponding with the plea of learning analytics (Pardo and Siemens, 2014) [11]. For example, not all educational information is suitable and similar. Consequently, the effectiveness of data and its analysis are critical for causing functional summative, real-time, and predictive understanding.

Some other serious regard is associated with the use of educational information for learning analytics and entails how personal students' data are collected and stored as well as how they are analysed and presented. Therefore, how students study and how they assess themselves.

Aim and objectives of the study

The aim of the study investigates Learning Analytics for Students' academic performance in Faculty of Education, University of Port Harcourt. Specifically, the study intends to:

1. Examine understudies' investigation propensities and their scholarly accomplishment
2. Assess understudies' propensity?

Research Question

1. What are contrasts between understudies' investigation propensity and their scholastic accomplishment?
2. What is the appraisal of understudies' propensity?

Research Hypotheses

1. There are no noteworthy contrasts among male and female students' study propensities and their scholarly accomplishment

Methodology

The study is a descriptive study research design to

investigate learning analytics for students' academic performance in Faculty of Education, University of Port Harcourt. The Population comprised all Year 1 students from Faculty of Education with 8 departments, University of Port Harcourt offering Instructional Technology (EDU 102.2). A sample size of 300 students was used from six departments from Faculty of Education, University of Port Harcourt. Stratified and purposive sampling techniques were used for the study. The instrument used to collect data from respondents was a structured questionnaire entitled Learning Analytics for students' academic performance in Faculty of Education, University of Port Harcourt (LASAPFEUPH) with 22 items. To ensure validity, the instrument designed by the researcher was given to experts in the field of Educational Technology and measurement and evaluation. This was done to help the researchers assess the quality of each item in the context of clarity, ambiguity and generality of the items. Their various comments and assessment gave the researcher the conviction that the instrument is appropriate and valid for the research. To determine the reliability of the instrument, test-re-test was applied; 20 copies of the instrument were administered on some students at two different occasions within three weeks. Their responses to the questionnaire item in the two separate responses were correlated to attain the reliability coefficient of 0.86. The responses from the questionnaire in Section B were weighted on the four-point Likert type scale: Strongly Agreed, Agreed, Disagreed, and Strongly Disagreed. Data obtained were analysed using Mean, Standard Deviation and Chi-Square.

Presentation of Results

Research Question 1: What are the contrasts between understudies' investigation propensity and their scholastic accomplishment?

Table 1.1: Differences between understudies' investigation propensity and their scholastic accomplishment?

S/N	Understudies' investigation propensity and their scholastic accomplishment	Mean	Standard Deviation
1	Attending classes regularly will improve my learning	3.57	0.49
2	Taking down notes during teaching will make me remember what was taught	3.55	0.49
3	Concentrating on my study will improve my performance	3.55	0.49
4	I study with the aim of getting meaningful concepts	3.55	0.49
5	Preparing a timetable will improve students achievement	3.58	0.50
6	Following a timetable aids easy learning	3.56	0.50
7	Having proper rest periods will improve mental achievement	3.58	0.51
8	Facing the problems regarding home environment and planning improves performance	3.59	0.51
9	Facing the challenges posed by school environment will improve character and learning	3.60	0.49
10	Keeping daily survey of work has higher educational pursuit	3.59	0.50
	Average Mean	3.57	0.49

The table revealed that students accepted all the items as their study habits and their academic achievements for learning purposes. This is because all the item mean was above the criterion mean of 2.50. Therefore, the study found that facing the challenges posed by the school environment improves character and learning. Also, attending classes improves students learning. The result also revealed that

following a timetable aids easy learning and the aim is getting meaningful concepts that improve students' performance.

Research Question 2: What is the appraisal of understudies' propensity?

Table 1.2: Appraisal Understudies' Propensity

S/N	Appraisal Understudies' Propensity	Mean	Standard Deviation
1	To assess my habit, I study every day	3.66	0.47
2	I study in a way that suits me	3.66	0.47

3	I study the hardest things first and then move on to easier ones	3.60	0.50
4	Spend the most times on things that I find most difficult	3.49	0.49
5	I ask for help if I am struggling with a concept	3.56	0.49
6	I take regular breaks, like 5minutes every half hour	3.66	0.49
7	I take notes as I study using my own words to simplify complex concepts	3.66	0.47
8	I make connections between the topics I am studying and the topic I have already mastered	3.58	0.49
9	I take practice tests so I don't panic when it is time for the real test	3.57	0.49
10	I keep track of my study progress using notebooks	3.62	0.50
11	I give myself a pat on the back after a good session	3.65	0.49
12	I quiz myself about what I just studied	3.68	0.48
Average Mean		3.61	0.58

The table revealed that students accepted all the items as the ways they assess themselves for learning purposes. This is because all the item mean was above the criterion mean of 2.50. Therefore, the study found that students study every day the way it suits them and they take regular breaks like 5minutes every half hour.

Research Hypotheses

Hypothesis 1: There are no significant differences between male and female students' academic performance and study habit

Table 1.1: Chi-Square analysis of difference between male and female students' study habits Study Habit Vs Gender

Chi-Square Tests					
	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.087 ^a	1	.079		
Continuity Correction ^b	2.592	1	.107		
Likelihood Ratio	3.158	1	.076		
Fisher's Exact Test				.105	.053
Linear-by-Linear Association	3.077	1	.079		
N of Valid Cases	300				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 24.98.
 b. Computed only for a 2x2 table

If Cal <tab = accept Ho (Not Significant)

If Cal >tab = reject Ho (Significant)

X²Cal: 3.087

X²tab: 3.84

Table 1.1 shows the Chi-Square analysis of the difference between male and female students' academic achievement and students study habit. Since Cal X²value of 3.087 is less than Tab X²value of 3.84the null hypothesis which state that there are no significant differences between male and female in their study habits is thus accepted. The implication is that male, as well as female students, have similar study habits.

Discussion of Findings

Research Question 1: What are the differences between students' academic achievement and study habits?

The outcome shows that noteworthy contrasts exist in understudies' scholastic accomplishment and study propensities. A general mean of 3.57 recommends that critical contrasts exist among male and female understudies' accomplishment and study propensities. The outcome uncovers that confronting the difficulties presented by school condition enhances character and learning. Additionally, going to classes enhances understudies learning. The outcome additionally uncovered that following a period table guide's simple learning and the point is getting significant ideas that enhance understudies' execution.

The outcome is normal in light of the fact that most understudies focus on their examination with the point of getting significant ideas and in this manner keeping day by day overview of their work will have high instructive interest.

The discoveries of the present examination are in concurrence with those of Maiyo (2015) [8], the level of

learning relies upon the measure of time the tyke is effectively occupied with learning. The time spent on considering encourages understudies to hold the materials realized, which will, in the end, support the understudies' execution result amid test and examinations.

Sherafat (2016) [13] saw that understudies should be acquainted with the connection of good investigation propensities and scholarly accomplishment to achieve extraordinary accomplishment in any level of training. She fought that by adapting great investigation propensities, understudies have a tendency to perform superior to battling understudies.

Research Question 2: What is the assessment of students' habit?

A general mean of 3.61 demonstrates that understudies think consistently the manner in which it suits them. The outcome is normal on the grounds that most understudies invest more energy in things that they find most troublesome and they request help in the event that they are battling with a few ideas that enhance enormously their evaluation and accomplishment.

The discoveries of the present investigation are in concurrence with those of Olutola (2016) [9] which declare that understudies understand that school is altogether different from some other condition they have already experienced when they begin perusing each day to enhance their execution.

Tassini (2017) [14] state that compelling perusing is a vital road of viable learning and perusing is interrelated with the

aggregate instructive process and henceforth, instructive achievement requires effective perusing propensities. He thinks perusing is the distinguishing proof of the image and the relationship of fitting significance with them.

Conclusion

The accompanying ends were made by the analyst

1. The examination found that understudies confronting the difficulties presented by school condition enhances the character and picking up, going to classes enhances understudies learning and that following a period table guides simple learning and the point is getting significant ideas that enhance understudies' execution.
2. The examination found that understudies consider each day the manner in which it suits them and they take consistent breaks like 5minutes each half hour.

Recommendation

In view of the end, the scientist suggests that

1. All partners in training (Guardians, instructors and government) ought to empower understudies in their diverse regions of duties, for example, giving investigation materials, helpful place of study, perceiving greatness and acknowledging understudy fill in as quickly as time permits among others. These will propel the understudies decidedly towards their examination and scholarly achievement. Students ought to be trained investigation propensities with the goal that they can develop great and successful examination aptitudes.
2. Students who are battling with learning ought to dispense think about time effectively.

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