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Article

Mentoring support Sustaining Technical Education

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A B S T R A C T

In recent past India has witnessed a number of reforms in education sector. However, these changes have affected the supply and demand and education quality. Higher quality, lower cost of production and good service are the emerging needs of customers today.[18] This is a matter of great concern that students are not meeting the standards of industries. Hence it is very much necessary that the students which are coming out from technical institutions must be directly useful for industries. In order to meet this requirement of imparting high quality technical education one must maximize the effectiveness of the institution and in order to improve the effectiveness of any institution the various factors affecting it are identified and analyzed.[16] NAAC annual reports of previous four years indicate decline in the enrollment in technical education like Engineering and in many institutions number of seats just remain vacant. The quality of students enrolling in technical education are not very technical and academically sound today. Individual attention is required and learning at an individuals' pace is needed. Students require specific and special attention hence students mentoring plays an important role in learning of the students. A Student has to be understood at an individual level and the learning has to be very specific. Student has to be made comfortable at whatever basic concepts knowledge that he/ she possesses. Institutions have to invest more time and resources to cater to students entering Technical Education today. For Institutions to sustain it is advisable to improve the process of individual student mentoring by faculty members. The purpose of the study is to determine if graduate students are impacted by mentoring. The researcher seeks to determine if mentoring increases students' test scores .With this purpose in mind past data of 421 students was studied which comprise of students in technical education over four years. The aim of this study is to determine factors like student support as far as mentoring is concerned which impacts student's retention affecting the sustainability of educational institution. This is an exploratory study that collected data and analyses done to study impact of mentoring program in student retention Research results also indicated that impact of mentoring on improving the test scores is not that significant but it does impact student retention.

Keywords: Sustainability, Technical Education, Student Mentoring, Student Support

Introduction

Sustainability in terms of education is defined as the ability to continuously enhance without reducing the capacity to successfully remain in existence. An institution should be able to improve its processes without impacting adversely its ability to endure. The term Sustainability has been mainly adopted in Development and aims to describe the capacity of meeting the needs of the present without adversely impacting the future. To determine factors affecting the sustainability of educational institutions is imperative. In recent past India has witnessed a number of reforms in education sector. However, these changes have affected the supply and demand and education quality. Higher quality, lower cost of production and good service are the emerging needs of customers today.[18] This is a matter of great concern that students are not meeting the standards of industries. Hence it is very much needed that the students which are coming out from technical institutions must be immediately useful for industries. In order to meet this requirement of imparting high quality technical education one must maximize the effectiveness of the institution. And in order to improve the effectiveness of any institution the various factors affecting it are identified and analyzed. [16]NAAC annual reports of previous four years indicate decline in the enrollment in technical education like Engineering and in many institutions number of seats just remain vacant. The qualities of students enrolling in technical education are not very technical and academically sound today. Today we are dealing with a number of students who are not very good with their basic prerequisite required for the courses that they have taken up. To teach students and to improve the quality of student learning, the teaching faculty members have to take up extra effort to make concepts clear to the students. Traditional ways of teaching will not help the current students. Special emphasis has to be made for teaching basic concepts two students enrolling in technical education today. Individual attention is required and learning at an individuals' pace is needed. Students require specific and special attention hence students mentoring plays an important role in learning of the students. A Student has to be understood at an individual level and the learning has to be very specific. Student has to be made comfortable at whatever basic concepts knowledge that he/she possesses. Institutions have to invest more time and resources to cater to students entering Technical Education today. For Institutions to sustain it is advisable to improve the process of individual student mentoring by faculty members.

Literature Review

Technical Education

Workforces utilized in conventional positions in India are just around 14 percent [10]. Activity like Smart City improvement, Digital India, Skill India, Start-up India, National Investment, FDI upgrade Manufacturing zone, making of Industrial Corridor will produce countless business openings because of developing Industrial interest.[11] As per NASSCOM (National Association of Software Companies), each year, more than 3 million alumni and post-graduates are added to the Indian work power yet just 25% of specialized alumni and 1015 % of graduates from different streams are viewed as employable by the business. Education is a skill formation process, and should not be considered any less than the process of capital formation. A key purpose is to prepare youth for work which takes the form of learning and developing work related skills and mastery of underlying knowledge. Education helps to strengthen ones mind so that one can more easily learn to deal with specific challenges one faces throughout life and interact with people .Education also has several intangible benefits[12] There has been a sharp increase in the number of private institutes and universities in India in the last decade. Higher education is continuing to expand, mostly in an unplanned manner.[13] In India, as per the report of All India Survey on Higher Education (AISHE) 2014-2015, enrollment in Technical Education is the second largest among all higher education programs.[14] The Government of India encouraged the spread of Technical Education in last decade. By looking at The wide heterogeneity in quality of universities one can explain why only 25% of Indian engineering graduates are considered employable.[15] Indian National Assessment boards of Higher and Technical Education have given weightage to the supporting and extension activities which relate to employability skills for assessment of institutes. As per National Assessment and Accreditation Council, learning activities should demonstrate values in students like sensitivities towards community issues, gender disparities, social equality etc. and inculcating values and commitment to society. Extension services are part of education, which emphasizes community services. These should be and are integrated with curricula as extended opportunities, intended to help, serve, reflect and learn.[16]

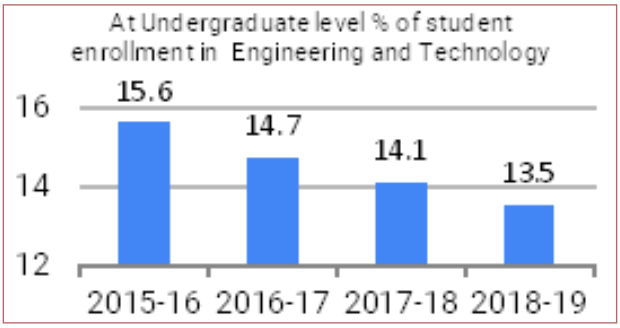

Figure 1.Percentage Enrollment in Engineering and Technology

As per AISHE 2015-16, 2016-17 and 2017-28 annual report students enrollment in Engineering and Technology was

15.6%, 14.7% and 14.1%.According to AISHE annual report 2018-19 at undergraduate level the number of students that have enrolled in Engineering and Technology has reduced to 13.5%, there is a gradual decline in enrolments if we look at last four years annual AISHE reports.

Sustainability

Sustainability in terms of education is defined as the ability to continuously improve without reducing the capacity to successfully remain in existence. A institution should be able to improve its processes without impacting adversely its ability to endure. Sustainability term has been used in areas such as development, biology, ecology, energy, to name a few. According to[1], sustainability is the noun form of the verb sustain, and it means to endure, keep up, etc. The term Sustainability is sometimes may also mean Maintainability which involves continuous improvement and learning from the past experiences in order to improve or maintain the standard as is. To sustain means requiring more energy and actively supporting to keep up and improve. Without sustainability efforts collapse is expected. In[2], the World Commission on Environment and Development (WECD) defined sustainable development as "development which meets the needs of the present without compromising the ability of future generations to meet their own needs." As per interpretation of the definition of the WECD by[3], sustainable development is inseparable from the total development of society. There are other definitions of sustainable development which includes: "Sustainable means using methods, systems and materials that won't deplete resources or harm natural cycles.[4] The practice of teaching for sustainable development is usually referred to as Sustainability Education, Education for Sustainability, or Education for Sustainable Development (ESD). Education for Sustainable Development is the term coined by the United Nations.[6,7] By the by the standards of manageability motivate numerous territories, almost no work has been accounted for to address the supportability of instruction.[8] advanced investigating how feasible in instructive organization as far as coherence of working with looking after quality. Moreover, the creators introduced in itemized outline work for estimating the Sustainability of Education. The examination tended to related issues for the Sustainability of Technical instruction, here specialized schooling is alluding to Engineering, Engineering Technology, Computing, and Applied Science. Following recommendations were made by[9] for senior education managers, policy-makers and decision-makers who are majorly involved in the process of educational changes. In order to ensure the sustainability of decisions regarding educational changes, the cultural features such as current conditions and procedures of the institution and educators should be given due consideration. The change should be initiated from the bottom upwards and the demands, expectations and thoughts of teachers should be taken into consideration in the change process. The changes should complement and be supportive and consistent. The process of change should be well planned and the element of time, budget and human resources should be given due consideration and should be well coordinated.

Factors Impacting Sustainability in Education

The concept of higher quality, lower cost of production and service are the emerging needs of today's customers.[18] This is a matter of great concern that in today's education institutions the students that are the products of the learning institutions are not meeting the initial prerequisite standards of industries. To sustain the educational institutions it is very much necessary that the students which are coming out from technical institutions must be directly useful for industries. The primary aim of the institution is to impart high quality technical education and for that it is necessary to maximize the effectiveness of the institution also, to improve the adequacy of any establishment the different variables influencing it ought to be distinguished and their significance in expanding the viability ought to be examined. Organizations are focusing on working administrations more than the supporting administrations and augmentation administrations. Be that as it may, understudies 'fulfillment is more connected with the supporting exercises and expansion exercises than working exercises. To illuminate improvement of the adequacy of instructive establishment some main considerations are talked about beneath.

Effective Data Driven Quality Services

We are in the information age, where data is power. Decision-makers need accurate data to know where to go next or how to respond to changing times and situations. Decision makers having access to better data and information are equipped with a significant strategic advantage. Shifting from instinct based model to data driven decision-making model is quite achievable as there are no cost or technical limitations. Given that data is available to decision-makers easily now and there are significant advances in data visualization, data analysis, and predictive modeling tools, creating data-driven leadership ecosystems is not difficult. Organizational learning, and Continuous Improvement of an organization is enhanced by processing various types of data, such as input data, process data , outcome data and satisfaction data including employee and customer opinions.[26,27-29]

Academic Leadership

Leadership is key in the success or failure of any organization. In higher education, compared to other organizations has yet to evolve into a mature industry. In reality, most of the institutions are complex and unique in their own way

even if they do share some common characteristics with respect an organization.[19] Studies that focus exclusively on leadership in higher education are quite sparse. It is generally accepted that academic leaders need to be proficient in assessing student requirements and should be evaluating their programmes and services and providing aggressive leadership within a more democratic and legalistic framework.[20] Enrolment are fluctuating costs are rising and budgetary concerns and a host of other concerns have also accentuated the need for effective leadership in higher education.[21] As the new millennium progresses, educational leaders will be constantly challenged to be Leadership in higher education more effective in strategic planning, modifying organizational structures and bringing more control and flexibility to budgeting processes and staffing patterns. In fact,' effective leaders are often described as individuals who are able to control resources in a way that organizes the organization to effectively meet its goals'.[22] Data analysis, data visualization, and predictive modeling tools are now much more. Accessible and user-friendly than they were even a year ago, and don't require deep or complex technical knowledge to use. This is especially true of solutions designed specifically for executives and senior leadership roles. Good decisions about destinations and the paths we take to reach them ultimately drive outcomes. What happens when you reach that destination? We question ourselves was it a good decision to embark on the journey in the first place. Decisions result in outcomes, and outcomes must be measured. And the success or failure of the outcome should be quantified. And when it comes to sustain professional institutions, the answer should always be yes.)[30]

Student Support

Understudy maintenance is a difficult undertaking in advanced education[23] and it is accounted for that around one fourth of understudies dropped school after their first year.[23-25] Late investigation results show that mediation projects can effectsly affect maintenance, particularly for the primary year. To viably use the restricted help assets for the mediation programs, it is attractive to distinguish ahead of time understudies who will in general need the help most. The understudies entering specialized schooling are not scholastically stable when contrasted with earlier year where specialized instruction at graduate or post alumni level was under taken by just scholastically splendid understudies. Tutoring assumes a significant part in creating trust in understudies and sustaining abilities, making him/ her learn at his speed.[28] Objective of student support systems is to enable students to get accustomed to campus life and the programs to facilitate the mentoring for poor performers at any stage during the education process. Students may face challenges in the following aspects such as adaptation to new environment and academic schedule, to understand the needs of the curriculum, to develop healthy interpersonal relationship and also for personality development. This student support systems of mentoring can address the varying requirements of the students. These facilities enable students during their course. However, those with special needs such as poor academic performers, learning disabilities, etc may find this extremely useful. A faculty selected as the teacher guardian is allotted to a student as a teacher guardian.

The ultimate goal of the program is to improve student academic and behavioral outcomes through the guidance and encouragement of a volunteer mentor.

Today, professionals are looking for ways to better connect with students, particularly those at risk, and mentoring programs are one way to do so.

Every instructor watchman might be dispensed with 5-10 applicants. At the hour of direction, the instructor gatekeeper/ coach will meet the guardians of his/ her ward, expand to them about the plan and give them the vital contact data, for example, his/her versatile number or email id. Likewise, the contact subtleties of the guardians, for example, address, portable/office number, email id and so forth will likewise be gathered at that point to guarantee viable correspondence. Parents will be informed about the Student information Facility portal so as to monitor their child's attendance and performance in the internal examinations. The teacher guardian also can access to portal to keep a track of their mentees' performance. Students need to meet their teacher guardian regularly. They should also inform their TG regarding any leave, being out of station as well as change of hostel or residence. In case of minor ailments, the teacher guardian may direct their ward to the medical assistance.

Methodology

This paper analyses the records of student over four year to understand the impact of the mentoring program in an technical institution. Data were obtained from 421 students who had engaged in mentoring program during the last consecutive years. The purpose of the study is to determine if students are impacted by mentoring. The researcher seeks to determine if mentoring has positively impacted student academic performance. A total of 421 students over four different batches were studied. Improvement in scores of subsequent semesters if showed improvement, were marked as positive and reduction in score or no improvement was recorded as negative. There were five semester university exam results which were analyzed for each student. Data for four batches were analyzed to study improvement in results. Students drop out of the semester were not included in the total student and percentage calculations. To study Student retention, drop out students were recorded.

Analysis and Result Evaluation

A definitive objective of the understudy uphold program is to improve understudy scholastic and social results through the direction and consolation of a coach. To meet this prerequisite of granting top notch specialized instruction one should expand the viability of the organization. Also, to improve the adequacy of any foundation the different elements influencing it ought to be recognized and investigated.[16] NAAC yearly reports of past four years show decrease in the enlistment in specialized instruction like Engineering and in numerous foundations number of seats simply stay empty. The nature of understudies selecting specialized instruction are not extremely specialized and scholastically solid today. The fundamental goal of advanced education is to give quality training to understudies. One approach to accomplish most significant level of value in advanced education framework is by finding information for foreseeing execution of understudies in a course they have selected. For Institutions to support it is fitting to improve the interaction of individual understudy coaching.

Numerous establishments will most likely be unable to support because of understudies exiting because of participation or lower levels of scholastic accomplishment. Coaching programs must be for quite a long time to show positive outcomes.

This paper investigations the records of understudy more than long term to comprehend the effect of the tutoring program in a specialized foundation. Information were gotten from 421 understudies who had occupied with coaching program during the last back to back years. The motivation behind the investigation is to decide whether understudies are affected by tutoring. The researcher seeks to determine if mentoring has positively impacted student academic performance. A total of 421 students over four different batches were studied. Percentage of students showing improvement in their academic scores was 57.96%. The figure below depicts the impact of mentoring over the academic records of students over the four batches.

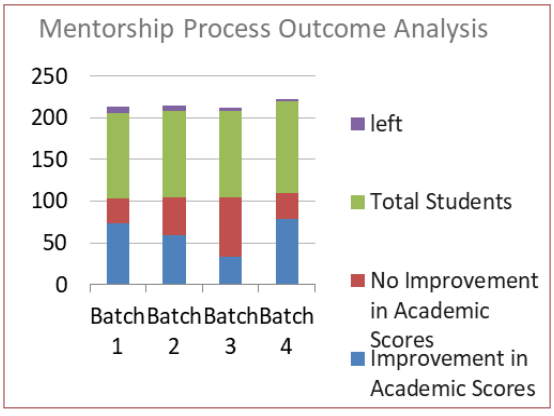

Figure 2.Mentroship process Outcome analysis

The batch wise chart indicates no gradual improvement of academic records of students over the previous three year. Though in the last year student academic scores have improved. The students leaving the institution have reduced over last four years. Mentoring programs has to be in effect for decades to show positive results but should be more data driven and immediate so that students' needs are catered. What decision-makers like mentors need are accurate information, timely intelligence, and actionable insights from data collected through the academic process. Mentoring programs can contribute positively to student retention thus help in sustaining the institution if information is timely and ac- curate. Academic process should process student data that helps improve processes and help analyze outcomes.

Conclusion

The students entering technical education are not very academically very sound as compared to previous year where technical education at graduate or post graduate level was under taken by only academically brilliant students. Mentoring plays an important role in developing confidence in students and nurturing skills, making him/her learn at his pace.[28] The ultimate goal of the mentoring program is to improve student academic and behavioral outcomes through the guidance and encouragement of a volunteer mentor. Today, professionals are looking for ways to bet- ter connect with students, particularly those at risk, and mentoring programs are one way to do so. To support the instructive establishments it is a lot of essential that the understudies which are coming out from specialized organizations should be straightforwardly helpful for enterprises. The essential point of the organization is to give top notch specialized schooling and for that it is important to augment the viability of the foundation. Numerous establishments will most likely be unable to support because of understudies exiting because of participation or lower levels of scholarly accomplishment. Tutoring programs must be essentially for quite a long time to show positive outcomes however ought to be more information driven and quick so that understudies' necessities are catered. What leaders like tutors need are exact data, convenient knowledge, and significant experiences from information gathered through the scholarly interaction? Coaching projects can contribute emphatically to understudy maintenance hence help in supporting the organization if data is ideal and precise. Scholarly cycle should deal with understudy information that improves cycles and help break down results.

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