6. Efficiency

6.1 Internal Efficiency

Introduction

Tribhuvan University (T.U.) has become the largest institution of higher education with its faculties, institutes and constituent as well as affiliated campuses that have more than 5000 teachers and 150,000 students. Lately, the university has been facing unprecedented challenges in matters concerning its internal efficiency -- enormous pressure on student enrolment, arrangement of shift system to combat student pressure, low student attendance and level completion rate, increasing number of non-class days, high attrition, dropout and failure rates.

The clearly evident social, economic and educational pressures on higher education, the questionable quality of higher education graduates, the overwhelmed management capacity of the university by the need to strike a balance between the quantitative expansion and qualitative growth of higher education, and the question of how the available limited resources of the university are utilised to effect an optimum level of productivity, all these and other issues have put the university at a critical juncture demanding immediate concern and increased efficient services to remedy the situation.

The issue of internal efficiency of T.U. as related to these factors has been strongly debated today urging the university to be more responsive to the challenges. A study was conducted by the Faculty of Education in response to the urgent call for suggesting tangible measures to raise the efficiency level of the university.

Objectives

The study had two major objectives:

a. to find out the internal efficiency of Tribhuvan University by evaluating the aspects like enrolment, attendance and attrition of the students, teachers' performance, instructional facilities (laboratory and library), student's entry behaviour, and implementation of the calendar of operations.

b. to suggest alternative ways and means for a more effective, economical and efficient system on the basis of the findings derived from the study.

Procedure of the Study

This study adopted survey design to evaluate the existing status of internal efficiency of Tribhvan University. A multi-stage stratified random sampling method

was used to study 50 percent of T.U. campuses located in different regions of the country. A campus survey form was developed and used to collect relevant data from the sample campuses. With a view to eliciting opinions regarding basic issues in internal efficiency and related components, opinionnaires were framed and administered. Opinions were collected from 32 Campus Chiefs, 13 Assistant Campus Chiefs, 64 Instructional Heads, 202 teachers and 571 students on admission policy, attendance, dropouts and failure rate of students, access to higher education, teacher performance evaluation, teachers' accountability, and library and laboratory conditions.

The research team visited selected campuses and organised discussions with Campus Chiefs/Assistant Campus Chiefs, Instructional Heads, teachers and students to elicit and record their views, opinions and suggestions on the basic issues of internal efficiency and its related components.

A high level seminar was also organised in Kathmandu with a view to bringing the issues of internal efficiency into focus and seeking suggestions from the participants to raise internal efficiency level at the T.U. campuses.

The data gathered from the field were tabulated and coded for computer data processing. The indices of internal efficiency were analysed in terms of cost input, materials and equipment, resources, student performance level, and attrition rate. Mean and percentage were computed on the data related to internal efficiency. In some cases, rank order was also used to present and analyze the data obtained on priorities of various suggested measures.

Major Findings

The following are major findings of this study:

Admission

1. Admission pressure was relatively higher in the day shift of PCL and Bachelor's levels. The campuses of the Kathmandu Valley and science-oriented campuses outside the Valley had more pressure of PCL students while the pressure of Bachelor's level students was higher mainly in the campuses of the Kathmandu Valley.

2. Introduction of admission test was emphasized as a measure to resolve present admission problems in T.U. campuses followed by fixation of dead line for admission, as at present, and maintenance of single admission dead line in all the faculties.

Attendance

3. Of 26 general campuses, eight campuses had approximately 25 percent of the students irregular from the beginning to the end of the academic session at both Proficiency Certificate and Bachelor's levels.

Duration of Shift

4. All the general campuses were found to have their daily teaching time below the required standard -- seven hours a day -- in each shift.

Drop-out

5. The highest dropout rate at PCL and Bachelor's level was found in the Faculty of Law whereas the lowest dropout rate at PCL was found in the Faculty of Education. Similarly, the lowest dropout rate at the Bachelor's level was found in the Faculty of Management in the three years' period (1991 -1993).

Level Completion Rate

6. The highest percentage of level completors in the three year period (1991-1993) was in the Institute of Science and Technology at both PCL and Bachelor's level and lowest in the Faculty of Education at both levels. In the case of technical institutes, the level completion rate was found to be about 80% except in the Institute of Agriculture. The Institute of Agriculture had an average of about 60% level completion rate for the same period.

Failure

7. Compulsory English, followed by Economics and Mathematics, was the most difficult subject in which most (50 - 80 percent) of the students of both general and technical campuses failed.

Teachers' Performance

8. The campuses (24) were found to have an average teaching load (teacher's) of 14 periods in a week.

Teachers' Performance Evaluation

9. Lack of transparent criteria and objectivity in the evaluation procedure was the most critical shortcoming of T.U. teacher's performance evaluation system.

Teachers' Accountability

10. To complete the courses within the stipulated time, top priority was accorded to the provision of proper teaching environment (undisturbed, disciplined and quiet classroom with minimum facilities) and regularity of classes.

11. Priority to the need of training the teachers and providing instructional materials was given to motivate teachers to apply appropriate teaching techniques in the classroom by three groups of respondents (Campus Chiefs, Instructional Heads and teachers).

12. Strong emphasis was laid on the need of arranging remedial classes and requiring teachers to give assignments and homework to the students in order to motivate the teachers to provide feedback to weak students.

Teaching Time

13. The mean teaching days of the sample campuses were found to be 151 which were less by about three months than the possible 228 teaching days in one academic year.

14. On an average, 25 sample campuses were disrupted in their total teaching days by a lapse of 66 days in one academic year. Of those 66 days, an average of one month's teaching days were found to have been disturbed by the conduction of final examination in the 32 sample campuses.

Educational Facilities

15. Of the campus libraries, only 26 percent had 90 to 100 percent textbooks whereas the rest of the campuses did not have adequate number of textbooks.

16. Technical campuses had their libraries equipped with professional journals while the libraries of general campuses were poorly equipped with such journals.

17. About 40 percent of laboratories had adequate work space for practical work at par with the international norm (3 sq.m. per student) in all science subjects.

18. Though basic laboratory materials were available in almost all the campus laboratories, about 70 percent laboratories did not have these materials in required number. Further, replenishment of materials was not done in more than 50 percent of the laboratories.

19. Sixty-six percent of the practical course work, on an average, was completed in the campuses. This accomplishment was greater in Botany and Physics than in Chemistry and Zoology.

Financing

20. The contribution of fees to total income of technical campuses (5) was two percent, but in general campuses (27) , it was about 18 percent in 1992.

21. In 1993, the operating cost per student (gross) in Medicine, Agriculture and Forestry was NRs.74,467.00, NRs.38,782.00, NRs.28,199.00 respectively whereas in Management, Law and Humanities and Social Sciences, it was NRs.1,278.00, NRs.2,124.00, and NRs.2,869.00 respectively.

22. In 1993, salary expenditure in general campuses amounted to 84 percent (mean) whereas in technical campuses it amounted to 77 percent (mean).

Access to Higher Education

23. The most favoured programme for working students including the working women was correspondence course or distance education or open university system followed by mini-courses.

24. For socially disadvantaged groups, on-the-spot programme followed by correspondence course and mini-courses was strongly recommended by all the four types of respondents.

6.1.5 Recommendations

The following recommendations are made on the basis of the findings of this study.

Admission

1. Reintroduce entrance test at all levels of higher education in all the faculties. Open alternative venues for the screened out applicants by the entrance test in order to reduce the enrolment pressure in the campuses.

   Implementation Strategy. Initiation of entrance test with planning and preparation of tests should start in 1995 with their implementation due in 1996 in the professional faculties (Law, Management and Education) at the Bachelor's level. This system should be introduced at the Master's level in these faculties in the subsequent years. In the Faculty of Humanities and Social Sciences, this should be introduced at the Bachelor's level in 1997 and at the Master's level in 1998.

2. Provide the campuses outside the Kathmandu Valley with adequate facilities in order to lessen the enrolment pressure in Kathmandu.

   Implementation Strategy. Upgrade all the campuses of four development regions (excluding the ones of the central development region) with competent and well-qualified teachers, increased physical facilities, library and laboratory facilities and instructional materials. Out of the existing campuses located in these development regions, select and develop a centrally located potential campus to the status of centre of excellence in each region within a period of five years.

3. Increase the enrolment target in the technical campuses from the coming session (1995) considering the existing low teacher-student ratio and high unit cost.

4. Develop an explicit policy on student enrolment and plans for high level manpower development to cater to the needs for national development. Initiatives in this direction should be taken as soon as possible.

Attendance

5. Formulate and strictly implement explicit rules and regulations by fixing total teaching days in a year/session, number of teaching hours in a day and duration of teaching period in order to regulate student' attendance in the class.

   Implementation Strategy. Fix 150 hours of instruction for each course of 100 full marks in one academic year and one hour for each period. Strictly implement the regulations in all the faculties in each of the morning, day and evening shifts from the 1995 academic session.

6. To motivate students to attend classes regularly, design some of the courses demanding students' involvement in practical activities such as writing reports, term papers and other forms of assignments.

   Implementation Strategy. Redesign the courses of Bachelor's and Master's levels to mandate the students to write reports, reviews, term papers and prepare assignments by allocating 20 percent of full marks to such works of each course. This should be implemented in all the faculties along with the introduction of three-year Bachelor's programme.

Teachers' Performance

7. To raise the efficiency level of T.U. campuses, develop a well-planned scheme of staff development programme with a focus on: upgrading teachers' qualifications, organising refresher training for familiarising the teachers with latest developments in their subject areas, organising workshops for developing instructional materials and teaching strategies, and organising seminars for acquainting the teachers with T.U.'s plans, programmes, policies and new directions.

   Implementation Strategy. Complete the manpower needs assessment in all the faculties and institutes (Science and Technology) within a period of six months and develop a ten-year staff development programme within the next six months to upgrade the teachers. Initiation of in-country training programme should be taken when the three-year Bachelor's programme is implemented.

8. Provide training to the newly appointed teachers regarding classroom management and instructional strategy. Also, assign the beginning teachers to work under senior and experienced teachers for at least one full academic year.

9. Make a strong provision to apply successively measures like asking the irregular teachers to submit to the authority an explanation call, issuing stern warning to such teachers in the continuance of their irregularity and eventually terminating their job if they persist to be irregular in their classes.

   Implementation Strategy. This measure should be translated into policy and implemented from the 1995 session.

10. Fix the teaching load reasonably, requiring the teacher to teach 15 periods a week at both Proficiency Certificate and Bachelor's levels, and 12 periods or 12 contact hours a week at the Master's level. Extra classes should not exceed more than six periods a week at all levels.

Implementation Strategy. Implement this measure from this year of 1995.

Calendar of Operations

11. Develop and implement strictly a comprehensive calendar of operations for the whole year. Conduct final examinations during the vacation by slotting two months' vacation in one block in order to prevent possible disturbances to classes due to the conduct of final examinations in the campuses.

Implementation Strategy. Implement the comprehensive calendar of operations prepared by the T.U: central office immediately. Instruct campuses to develop their specific calendar of operations basing them on the framework of the comprehensive calendar from the academic session of 1996.

Raising the Level Completion Rate

12. Require teachers to teach 150 hours a session/year in each course worth 100 full marks, use standard instructional strategy to ensure wider students' participation in teaching-learning activities, and provide feedback to students regarding their achievement through periodical assessments.

Shift System

13. Make teaching in morning or evening shift a full time job by fixing five hours as the instructional hours for each shift and a period of one hour each. If the time available in these shifts is less than five hours a day and a period is less than one hour, the two years' course should be spread over three or more years so that adequate and qualitative instruction can be ensured.

14. Design and implement continuous scheduling for class instruction as a financially viable and academically efficient alternative to the shift system in T.U. campuses.

Educational Facilities

15. Prescribe a single, standard and comprehensive textbook for each course to facilitate students' acquisition of knowledge from a single textbook unlike the existing practice of having to read various textbooks and reference books for a single course.

Implementation Strategy. Encourage senior, experienced and competent teachers to write a standard comprehensive textbook for each course for each level. For this purpose, establish Textbook and Materials Development Centre

before the initiation of three-year Bachelor's programme throughout the country.

Financing

16. Fee structure of both the general and technical campuses should be reviewed.

Implementation Strategy. The technical campuses should increase their fees to meet at least 15 to 20 percent of their unit cost whereas the general campuses are recommended to revise their fees from 25 to 30 percent of their gross unit cost. The reviewed fee structure should be put into effect from the academic session of 1996.

17. Since existing budgetary allocation for instructional purposes (instructional materials, laboratory and library facilities) in both technical and general campuses is low, it is recommended that this allocation should be increased upto 12% in technical campuses and 8% in general campuses of their total budgetary expenditure.

Implementation Strategy. Provision of this recommended increase should find its place in the coming fiscal year of the university.

Supervision and Evaluation

18. Develop an efficient mechanism for monitoring and supervising classroom instruction and teachers' performance. Classroom supervision should be undertaken by the Campus Chiefs and Heads of Departments while monitoring and evaluation should be carried out through Campus Chiefs and central authorities. Existing Monitoring Unit of the T.U. should be strengthened.

Access to Higher Education

19. Implement correspondence courses/distance education/open university education system/continuous scheduling of classes to provide access to higher education for working students, socially disadvantaged groups and working women. Design specifically and implement on-the-spot or correspondence or distance education to socially disadvantaged groups and students of remote areas.

Implementation Strategy. A comprehensive feasibility study on introducing correspondence courses, distance education, open university system and on-the-spot programme should be carried out in 1996 in order to ensure the access of higher education to such students.

Teachers' Performance Evaluation

20. Develop transparent and objective criteria for teachers' performance evaluation by basing these criteria on the demonstrated acquisition of skills and

knowledge in teaching one's own subject and performance on course completion.

Decentralization of Power and Responsibility

21. Clearly define, the areas of responsibility for the staff and teachers within which they could make independent academic decisions. Also, delegate more authority in writing to campuses for the efficient management.

22. Ensure free and regular interaction on campus issues between the faculty and management with periodic involvement of students and local communities.

Improved Database

23. Establish an Educational Management Information System (EMIS) at the national level manned by trained manpower and equipped with necessary hardware and software to facilitate efficient and successful planning and implementation of T.U.'s programmers.

Implementation Strategy. Establish EMIS under the Planning Division of the T.U. and start its operation as soon as possible.

Student Evaluation

24. To improve instruction, modify and improve existing students' evaluation system thereby providing autonomy to the faculties to adopt their own student evaluation system on the basis of their proven capabilities.

Implementation Strategy. Devise student evaluation system to include internal assessment with the weightage of 20% of the full marks in theory course. Introduce this system at the Master's level of Faculty of Education with a gradual extension to the Faculties of Law, Management, Humanities and the Institute of Science and Technology on a phase-wise basis. The faculties will be made fully responsible in conducting their own student evaluation system in the final phase.

6.2 External Efficiency: Higher Education and the Labour Market

The overall unemployment is increasing and it has reached 6,50,000 in 1991/92. A study conducted in 1989 has indicated that 46 percent of persons with educational level of S.L.C. or higher are not gainfully employed. In recent years the competition for employment even for technical manpower is increasing due to low production and productivity, lack of capital and technology, increase in labour force due to higher population growth rate and internal migration and immigration. The recent retrenchment policy of the government strictly limits the employment opportunities in the government sector and the privatization of the Public Enterprises checks employment opportunities in the Public Enterprises.

During the last four periodic plans, the demand for and supply of technical manpower shows a shortage of varying degrees in all fields and levels with only a few exceptions. If private sector demand could be included, the shortage of skilled manpower appears more acute. But, in reality, there is some sort of mis-match since the manpower included in the shortage category is unemployed particularly in the urban areas.

Tribhuvan University and different universities abroad are the major sources of the skilled manpower supply in the country. But the types and kinds of manpower supply trend show inefficiency in the manpower plan of the country. The pattern of the TU enrolment shows nearly 80 percent of the SLC completers join different Campuses. The enrolment pressure in the three Faculties/Institute namely Institute of Science and Technology, Faculty of Management, and the Faculty of Humanities and Social Sciences account for more than 80 percent of the total enrolment. This kind of enrolment skewed manpower supply mostly for white-collar jobs.

The total number of T.U. supplied technical manpower during 1984 to 1992 are 6,258 persons with certificate or Intermediate level education and 1,744 persons with Bachelor level of education. As there is no reporting system for the students returning back with degree from abroad, their exact number is not available. In recent years, the number of students going abroad for study, especially in the countries like Russia, India and Bangladesh indicate increasing trend under self-finance.

The field survey findings of the newly expanding sectors of the economy show that the people with tertiary education are proportionally more employed in the service sectors like consulting services, news-media, financial institutions and tourism. On the other hand, majority of the literate people with training are working in the production sectors, like garment, carpet and handicraft.

The opinion collection about the quality of the tertiary education at present as compared to five years back shows that 46 percent indicated `same' while 28 percent cited `decreased' and 17 percent cited `increased'. In response to the follow-up question, 28 percent opined that the curriculum is not relevant. Therefore, they have suggested to increase quality of education by making timely revision in the curriculum, higher participation of the employing agencies in the curriculum development process, diversifying people in the technical stream, increasing the physical facilities in the campuses and so on.

A review of job vacancy as advertised in *The Gorkhapatra* and *The Rising Nepal* for the years 1991,1992 and 1993 shows a total demand of 5,024 posts in officer or equivalent posts requiring a minimum educational degree of BA or equivalent and 2,586 posts for non-gazetted Class I level or equivalent posts requiring a minimum educational degree of IA or equivalent in the technical or non-technical field. The job openings were higher in the private sector, government, public enterprises and INGOs. By discipline, the job openings were higher in general administration, education, engineering, medicine and trade and commerce.

The limited job opportunities in the last three years indicate that the problems of educated unemployment, both in the urban areas and rural areas, have increased.

The 33 percent of the vacancies in the technical field indicate imbalances between the manpower demand (technical) and the supply (more than 80 percent of the TU output). As recommended by various education commission reports in the past, the diversification of the students enrolment from the general and liberal arts education to the vocational and technical education is very urgent.

The review of the literature on manpower studies in Nepal shows that different studies related to manpower needs assessments were made mostly in the micro level, concentrating on the needs of studied organization and certain specific objectives. Many studies have pointed out the shortages of trained manpower and the resultant impact made in their programme. Therefore, those studies have suggested the ways of manpower development in their field of study. Accordingly many studies on education have recommended the need to increase technical study enrolment by decreasing the non-technical enrolment, but in reality, this kind of recommendation is still not properly implemented.

There is no critical thinking about the need of manpower planning in the general education and in the private sector of the economy. Besides, there is lack of consistency between education streams and the manpowers demand and supply needed in the country. The supply of technical manpower is always less than the demand, yet the supplied manpower had to remain unemployed. The manpower supply of the TU is skewed towards white-collar jobs and their competitiveness with the foreign product is less due to various reasons.

Thus, it can be concluded that though the need for manpower planning in Nepal has been emphasized in the four Five-Year plans, the actual supply of skilled and semi-skilled manpower (trained from various educational and training institutions) has, in most cases, been discouraging compared to the estimated demand. It is very difficult to obtain exact and reliable manpower needs assessments in Nepal, and especially in the non-technical areas as well as technical manpower needs assessments of the private sector.

In fact, many efforts were made in the process of manpower planning by opening up various vocational and manpower development institutions, including TU, but there could not be coordination between the training institution and the employing agencies. So, the locally produced manpower could not be fitted into the job-market needs.

It can be concluded that despite a significant growth in the quantity in higher education there has always been concern for quality and relevance of education. In fact, quantitative growth is one of the major factors of quality erosion due to physical and financial constraints in the higher education. Such an unplanned manpower supply led to the problems of educated unemployment, not only of the general education graduates but also the technical skilled graduates. According to an informal source there are more than 500 engineers unemployed. This kind of problem has been further aggravated by their preference to work particularly in the Kathmandu Valley and generally not in the rural areas. Therefore, a serious thinking is needed to make use of the trained manpower, on the one hand, and motivate them to work in the much-needed rural areas, on the other.

In the Eighth Five-Year Plan there is no manpower projection at all. It shows that the National Planning Commission at present either does not have the technical capability to undertake macro level manpower planning or it does not feel the importance of the manpower planning in Nepal.

During the last two decades many good plans have come but due to softness of the State, almost all of them have met miserable fate. It seems that the Government is still not much serious about the importance of manpower planning and the recommendations of the Higher Education Commission reports. For example, in the last three years, in the name of privatization, many private campuses have been approved for the study of general and liberal arts education except one for nursing education at Butwal. Therefore, there is an urgent need for re-orientation of the manpower and the education planning in Nepal.

Recommendations

General Recommendations

A more comprehensive manpower plan at the macro level has to cover the public and the private sector as well as skill categories in technical and non-technical education. Therefore, strengthening the capability at the National Planning Commission for macro level manpower planning is urgent.

In Nepal there are many vocational training and manpower development institutions but there is lack of coordination. So, the Council for Technical Education and Vocational Training and the Ministry of Education, Culture and Social Welfare must play a crucial role to integrate the manpower development activities.

In many jobs the minimum educational degree and discipline prescribed has been based on crude estimate. Therefore, a study is suggested in order to review the existing minimum education and skill required for a specific job so that the educational efficiency could be increased further.

The recent policy of economic liberalization and privatization may call for more quality education to increase the employability and competitiveness of the job-seekers, so the quality and relevance of education should be increased by modifying curriculum as per the job-market needs as well as by improving teaching/learning environment.

Communication skills should be increased in order to cater to the manpower needs of travel and tourism sector, news- media, and consulting services. For this purpose a number of training packages can be introduced, e.g. a) Computer literacy, b) Fluency in English and ability to draft in English/Nepali, c) Ability to organise/conduct meetings d) Typing/shorthand skills, e) Handling telephone, photocopy, fax, etc., f) Filing of the office documents, g) Ability to interact in groups and with grassroots level people, h) Interaction with expatriates, i) Time management. j) Travel planning, and k) Office management.

Many schools still lack subject-teachers in such subjects as English, Mathematics and Science which impedes the quality of the SLC-completers making those students less able to cope with the standard of tertiary education. Therefore, there is a need to increase the number of qualified and trained subject-teachers in the schools.

In order to make manpower production more employable, a pragmatic job-orientation programme (e.g. Income generating, Self-supporting and Labour-intensive) from the school level should be introduced so that the high school students can choose their future career in time. Such an approach might motivate a larger number of young people to join technical education and reduce the existing pressure on liberal arts enrolment of T.U.

Attrition rate of the trained manpower should be reduced by providing better facilities and introducing certain scheme to upgrade basic and middle level manpower through advanced training.

Self-employment capabilities of the technical manpower should be enhanced by certain schemes of soft loan and tax rebates, particularly in the semi-urban and rural areas.

Further research studies are suggested on "Educated Unemployment" and "Income Generating Activities".

University Specific Recommendations

University education should be visibly responsive to the national manpower needs, i.e. educational programmes of the University should emphasize more on the vocational and technical streams as well as on the needs of the emerging avenues of employment.

Tribhuvan University should enhance the capability of its technical and vocational institutes, and promote diversification in course offerings.

TU should decentralize the technical and vocational education programmes to improve access to such streams of education at different parts of the country.

TU should introduce new programmes e.g., a) Training courses/programmes (Non-academic) b) Technical Education leading to a University degree (Academic), and c) Vocational courses (Academic as well as non academic and formal as well as non-formal) to cater to the needs of the market forces as well as pressing demands of the rising modern sectors of the economy with clear goals of increasing income, jobs and promotion.

Enrolment pressure in TU is very high since nearly 80 percent of the SLC completers are enroled at different Campuses, which is rare in the world education system. Therefore, the enrolment should be selective by strict eligibility measurements or by introducing entrance test.

While framing the new proposed Three-Year Bachelor's level curriculum, vertical and terminal goals of education should be clearly spelt out and courses be adequately linked with them. This is also advisable while revising the Master's level curriculum as well.

Curriculum should be improved with adequate involvement or feedback from the employing agencies so that the TU education could be more job-oriented.

TU has to create effective teaching/learning environment in order to increase internal efficiency.

TU examination system should be thoroughly reviewed and improved.

TU should conduct tracer study of its graduates in selected areas of learning or selected faculties/institutes so that TU can introduce short-term pre-service, in-service and refresher training courses in order to increase employability, competitiveness and efficiency of its graduates.

TU should make an intensive plan to increase employability and competitiveness of its graduates in the days ahead. For this purpose, the TU Planning Council should be duly equipped and activised for more research and action-oriented programme.