

# RESEARCH IN GHANAIAN UNIVERSITIES: AN EXAMINATION OF POLICIES, PRACTICES AND FUNDING AT THE UNIVERSITY OF SCIENCE AND TECHNOLOGY (UST) KUMASI, GHANA.

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## ABSTRACT

Generally, Ghanaian Universities face problems of funding in their research efforts. At the University of Science and Technology (U.S.T.), Kumasi, the Research and Conference Committee (RCC) is responsible for the administration of funds that are allocated to the University for research, and it faces problems when it comes to the disbursement of the funds, because they are meagre.

To enable it judiciously administer the funds, the RCC formulates rules, some of which appear rigorous, to guide it. The funds administered by the RCC are mainly for attendance at Conferences/Seminars, African Travel Grant for research purposes, individual research and for participation in academic activities at the International Centre for Theoretical Physics (I.C.T.P.); Trieste, Italy.

Postgraduate students at UST also conduct research of a kind at one time or the other; a condition for obtaining a postgraduate qualification. Funding of their research projects is so low that it makes the programmes unattractive.

The recommendations stated in this paper will help strengthen the research efforts at UST and other Ghanaian Universities.

**KEYWORDS** Research, policies, practices, funding, Research and Conference Committee, University of Science and Technology (UST), Kumasi.

## INTRODUCTION

Research is the backbone for the development of a nation and it is important that governments give it a priority in their national budgets. Researchers in Ghanaian Universities face problems in their efforts to carry out

research for lack of adequate funding. Professor George Benneh Vice-Chancellor of the University of Ghana, Legon, once intimated that "there is the urgent need for increased funding activities which he described as "one of the major problems of the country" [1]

It is required of lecturers at the Universities that in addition to teaching, they must undertake research. Professor Benneh lamented that unfortunately the University does not have the adequate resources in terms of money, equipment, vehicles and other inputs and observed that "it is a situation which we think needs to be improved" [1]. He stressed the need for government and the private sector to contribute more funds for research in the Universities and advised that the Universities themselves must get their results to people and policy makers who would need them.

Two months after Prof. Benneh's appeal, the British High Commission responded by donating a landrover and laboratory equipment to the Department of Social Science of the University of Ghana to assist the Department in its research work on the management of vertisols (black clay soils) for sustained small holder production in Ghana [2].

The research problems of the Universities are similar to those in other research institutions like the Council for Scientific and Industrial Research (C.S.I.R.). It was for this reason that its Director-General, "urged industries to co-operate with researchers in order to translate the country's dream of sustainable industrial development into reality" [3].

In this paper, the problems leading to low research output in the past few years as identified by the URC are reviewed. The policies, practices and funding of research at UST are also examined and suggestions offered with a view to improving upon research activities in the Universities.

## THE NEED FOR RESEARCH

The need for research in the Universities has long been realized. The University Rationalization Committee (URC) appointed in December, 1986 by the Ministry of Education (MOE) was to provide the basic information to enable a medium term University Sector development plan to be formulated for Ghana.

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One of their tasks was to examine research policy, output, organization, dissemination and funding and to make recommendations aimed at strengthening research work and increasing the articulation between areas of research and effective demand for the results and the accountability of faculty [4].

The URC made the following observations on research and postgraduate studies in all 3 Universities in Ghana: That "generally the proportion of postgraduate students in relation to the total student population was small. According to the report, reasons for the paucity in postgraduate number in those 10 years (up to 1988) include:

- i. amount of research conducted by staff in the Universities dwindled considerably and since most postgraduate training is essentially training in the conduct of research, the numbers of students have declined. It was observed that facilities were inadequate and postgraduate studies unattractive.
- ii. better opportunities for research in countries outside due to inadequacy of books, Journals and also for lack of equipment and consumables.
- iii. the URC also found out that the teachers could not teach effectively the techniques of conducting research to students.

Certain factors were also observed to have put limitations on the research effort in the Universities, for example economic constraints, academic programmes were not regularly reviewed and in addition, the limited research that went on in the Universities were unco-ordinated. As a result these appeared like pieces of individual research which were not linked in any way to meet the needs of the economy for research. The disadvantage was that whenever funding was provided by an external agency, it tended to reflect the interests of the donor agency and not the country executing the research.

It was realized that weak linkages also existed between research and teaching on one hand and between research and production on the other. There was also the problem of dissemination of research results. Works done were unpublished because learned Journals had to close down in view of economic depressions during those few years.

In view of the above, the URC made a number of suggestions among which were the following:-

That "

- i. the proportion of postgraduate students be increased.
- ii. postgraduate work in the tertiary institutions be co-ordinated.
- iii. postgraduate work should be made more relevant to the needs of the country and the universities
- iv. individuals/organizations should assist in sponsoring and executing local postgraduate programmes.
- v. Universities to continue to establish links with overseas Universities and

organizations for exchange of postgraduate students.

vi. Universities to institute periodic review of their academic programmes.

vii. research in the tertiary institution should be funded as part of the recurrent budget of each tertiary institutions at 20% of direct teaching costs.

viii. adequate printing facilities should be provided (in the long term) to enable books and manuals to be published".

Pandit and Akangbou [5] based the funding of research in the Universities on the following

3 needs:-

- a. need to encourage all teachers to engage in general research as a means of raising the quality of teaching.
- b. need to take adequate recognition of research as the basis of training graduate students, and
- c. need to adequately fund approved programmes or organised research.

They proposed various useful rates of funding research activities in the Universities.

## OBJECTIVES OF THE UST

The Act which established the UST placed a very important premium on 'research'. The aim of the University, according to the Act "shall be to provide higher education, to undertake research, to disseminate knowledge and to foster relationship with outside persons and bodies". In doing this, certain principles were to be followed. Among these are:-

- i. "that research should be undertaken in all subjects which are taught in the University, but with special attention to subjects which relate to the social, cultural, economic, scientific, technical and other problems which exist in Ghana or elsewhere in Africa.
- ii. that opportunities for higher education and research should be provided for students from other countries in Africa.
- iii. that the fruits of research and knowledge generally should be spread abroad by the publication of books and papers and by other suitable means, and
- iv. that the University should develop close relationship with the people, of Ghana and with other cultural institutions whether within Ghana or outside" [6]

## PRACTICES AND FUNDING OF RESEARCH AT UST

Government funds which are allocated to the UST and which are meant for research are administered by the Research and Conference Committee (R.C.C.) of the University, which has representation from each faculty. (Grants which are given specifically to Departments/Faculties/Departments etc. by any donors

are not included in this). The funds that come to the RCC are mainly for the following purposes:

- i. Attendance at Conferences/Seminars/Workshops
- ii. Africa Travel Grant (ATG) for research purposes
- iii. Individual Research Grants (IRG).
- iv. Participation in the academic activities at the International Centre for Theoretical Physics (ICTP), Trieste, Italy, (Federation arrangement).

## QUALIFICATION FOR SPONSORSHIP BY THE RCC

The RCC formulated rules to guide it in the administration of the funds. To qualify for sponsorship for any of the above, certain conditions must be fulfilled, viz:

### Attendance at Conferences/Seminars/Workshops

Among other things, the applicant must be invited by the organizers of the Conference/Seminar/Workshop. He/She must read a paper or play a similar vital role at the Conference/Seminar/Workshop. The paper to be read must be accepted by the organizers of the Conference/Seminar/Workshop. In addition to these, the application must have the approval of the Head of the Department and the Dean of the Faculty as to the relevance of the Conference/Seminar/Workshop to the work of the University

### Africa Travel Grant (ATG) for research purposes

This is a grant for Senior Members to travel to a chosen African country to execute part of an on-going research project in that country. The ATG for research purposes is administered solely by the RCC which approves the location of the project. The research project must have the approval of the applicant's Head of Department or Dean of Faculty as to the viability, desirability, importance or impact on the University's work before it is submitted to the RCC for consideration. Also, the research should be undertaken during the long vacation within a 14-day period as part of an approved research project of a longer duration.

More importantly, approval is dependent on the availability of funds, especially in foreign exchange. It is required of any such applicant on his/her return from the trip, to immediately file a report with the Chairman of the RCC, who is also the Vice-Chancellor, for study. The Chairman may invite an assessor to study the report as and when necessary.

### Individual Research Grants (IRG)

Before 1987, there were some ceilings on individual research grants. A research grant which was initially £1,500.00 was increased to between £55,000.00 and £88,000.00. Projects involving the construction of experimental models/prototypes were to attract a grant of

£88,000.00, and projects without the construction of experimental models/prototypes were to attract £55,000.00. Research proposals exceeding the stipulated ceiling were to be re-directed under the auspices of the University to outside funding bodies [7].

To qualify for IRG, the applicant must submit a research proposal to the RCC according to an approved format. The following regulations on research grants are now in operation as decided upon at the 88th meeting of the RCC held on 5th February, 1987: [8]

### Individual Research Proposals:

- i. "That all research proposals shall be subjected to serious scrutiny by the Committee after which they shall be sent for external assessment.
- ii. That the applicant's Head of Department shall nominate a suitable external assessor for the Committee.
- iii. That the Secretary to the Committee shall communicate with the external assessor so nominated.
- iv. That the external assessor's report shall be addressed to the chairman of the Research and Conference Committee.
- v. That books and equipment purchased for the project shall become the property of the Department."

## GENERAL REGULATIONS

- i. That all applications shall be submitted to the Committee by the end of the academic year.
- ii. That two reports shall be submitted annually i.e. one every Semester on on-going projects.
- iii. That Heads of Department shall submit written progress reports on research projects in their Departments. Failure to submit a progress report on a research project funded by the Research and Conference Committee shall result in the blacklisting of the Department concerned and in the case of individual research projects, recovery of their grant from the project leader.
- iv. That in the case of departmental research projects, a reminder on submission of progress reports shall be sent to the Head of Department and copied to the project leader and in the case of individual research projects, the reminder shall be sent to the project leader and copied to the Head of Department.
- v. That for departmental research projects, Heads of Department shall control the disbursement of funds.
- vi. That the committee shall appraise the progress of on-going research projects annually just before new research proposals are considered.
- vii. That student research projects shall be treated as departmental research projects.
- viii. That individual research grants shall continue to supersede attendance at Conferences.
- ix. That an annual review of research projects shall be compiled by the Secretary to the Committee for the information of the Academic Board and copies deposited at the main Library.
- x. That if a project is a University research project, the

results shall belong to the University [8].

- d. Participation in the academic activities at the International Centre for Theoretical Physics (ICTP), Trieste, Italy (Federation arrangement)

The RCC arrived at the following decisions at its 93rd meeting held on 22nd March, 1988 on the sponsorship of the UST Scientists to ICTP Triests, Italy under the Federation Arrangement [8].

1. "That the number of Scientists to be sponsored by the UST to visit ICTP, Triests, Italy, each year will be three and that they will stay for a maximum of 40 days.
2. That UST will provide the three participants with return air tickets i.e. Accra/Rome/Accra.
3. That each Participant will be entitled to spend U \$ 300.00 out of the U \$ 700.00 subsidy which will be paid to him/her in Trieste by the ICTP to cover the underlisted items and return the remaining amount of U \$ 400.00 to the Finance Officer, UST, for his further action.

i. Train fare - Rome/Trieste/Rome-	U \$ 100.00
ii. Excursions organised by the Centre-	U \$ 50.0
iii. Shipping cost of course materials	-U \$ 75.00
iv. Airport service charge -	U \$ 50.00
Total	= U \$ 275.00

4. That the RCC will be responsible for the selection of the three participants at the proper time.
5. That interested participants will have to apply to the Vice-Chancellor as and when appropriate through their Head of Department.
6. That the applicants should preferably be not more than 40 years.
7. That applications should be limited to Senior Lecturers and below.
8. That the intended visit should coincide with an on-going activity at the I.C.T.P., Trieste.

9. That preference will be given to applicants who have not visited the centre before." [8]

Apart from the above, (a - d), the RCC also approves, whenever possible, applications from Faculties/Departments for financial assistance to organise seminars, workshops etc or from individuals to publish books etc.

## RESEARCH AT THE POSTGRADUATE LEVEL

The URC emphasised research at the postgraduate level at the Universities in Ghana [4]. At the UST, postgraduate students face accommodation, financial and other problems. The inadequacy of financial and other poor conditions prevent some students from completing their courses [9].

On the whole the proportion of postgraduate students to the total student population has been very small since the URC final report came out in 1988. For the period 1989 to 1992 the proportion was between 4.02% and 6.98% as shown in Table 1.

Between 1974 and March, 1991, the Board of Postgraduate Studies recommended the award of a total of 1001 postgraduate degrees made up of the following:

Ph D - 8; Mphil - 20; MSc - 315; Mpharm - 33; MA - 50; Postgraduate Diploma - 575 [9 pp 98].

Between the said period about 12,594 graduated from the University [10], meaning that only about 7.95% of the total number were recommended for postgraduate awards. The above figures support the URC findings that proportion of postgraduate students in relation to the total enrolment has been small. (The figures, 1001 and 12594 however do not include those that graduated in June, 1991.

With regard to funding of postgraduate studies, students now enjoy the Social Security and National Insurance Trust (S.S.N.I.T.) loan, a Ghana government scholarship of ₵150,000.00 per annum and Thesis/

**Table 1: Proportion of postgraduate students to total students population for three years**

Year	Total Student population (N)	Total Number of postgraduates (n)	n expressed as percentage of N
1989/90	3657	147	4.02
1990/91	3980	185	4.65
1991/92	4754	332	6.98

Source: UST Basic Statistics, issued by the UST Planning Unit, July 1992 (p.9)

dissertation allowance according to the following categories:

MA/MPhil/Postgraduate Diploma	₵10,000.00
Ph D	₵30,000.00

These amounts are still small in view of escalating costs of materials and other costs that might be incurred in the process of writing a thesis or a dissertation.

## DEPARTMENTAL RESEARCHES

Research goes on in the various Departments of the University and apart from the support the Departments can receive from the RCC, the Departments or even individuals may receive assistance from a number of benefactors and donors to undertake specific researches. The assistance are in diverse forms e.g. equipment inputs, and grants. Some of the projects are executed in collaboration with donor agencies or organizations [9].

In addition to the above support, some of the Departments and Centres, through their own income-generating activities generate funds which are utilised for the benefit of the Departments.

## FOUNDATIONS

### i. The Collingwood - Williams Foundations

Apart from government grants and assistance from donors and benefactors, the UST enjoys the Collingwood-Williams Foundations. An amount of ₵470,000.00 has been bequeathed to the UST by the late Joseph Collingwood-Williams for "Collingwood-Williams Foundation" to support research into food processing, preservation and storage.

The fund invested in government stock is code-named 'UST/Collingwood-Williams' stock. The RCC is empowered to administer only the accruing interest for research purposes. This is because the administration of the late Collingwood-Williams will have specifically stated that the actual amount, ₵470,000.00, should be invested in government stock and the interest used [8].

This bequeathal is specific in character, i.e. it is for a specific purpose. It implies that, only a certain category of researchers can benefit from it. Secondly, the number of applicants that can benefit from it would be limited in view of the paucity of the accrued interest. As at 1st January, 1989 for example, the interest was ₵134,112.50 (This was the latest figure at the time of writing).

### ii. Shell (Gh) Foundation

Shell (Gh) services established a foundation in May, 1992 under which the company will provide an initial amount of ₵5m annually to the UST to support research projects and provide scholarships to outstanding students. The foundation is specifically to support research projects, academic work and scholarships to students from the School of Engineering and the Institute of

Renewable Natural Resources (IRNR). It is administered by a Steering Committee, not the RCC of the UST.

## DISCUSSION

The UST was founded with very good intentions as contained in the Acts that established it. One wonders however if the objectives stipulated could be successfully achieved when presently Ghanaian Universities are facing inadequate funding of research. Relevant equipment, consumables and other inputs are grossly inadequate and it may not be possible to achieve all the objectives stated for the UST.

It could be difficult to fulfil the objectives of providing opportunities for higher education and research for students from other countries to an appreciable level as a result of inadequate facilities. This will make the programmes unattractive.

In many cases, admission to postgraduate programmes, especially, those involving the use of equipment, consumables etc depends on the availability of staff, equipment and the necessary inputs. It is apparent therefore that not all the qualified applicants can be accepted for such research programmes.

The number of foreign students on postgraduate programmes are, most of the time, very small. The greater proportion of the foreign students are found in the Department of planning of the Faculty of Environmental and Development Studies. For example, during the 1991/92 academic year, out of a total of 306 postgraduate students, only 13 were foreign students. Majority of these (about 7) were in the Department of Planning. The reason for the higher numbers in the Department of Planning is that the programme, Development Planning and Management, is conducted in co-operation with the Department of Spatial Planning at the University of Dortmund, Germany. The programme therefore attracts foreign students who spend one year at the University of Dortmund and one year at U.S.T. Between 1985 and 1991, about 48 students benefited from the programme. This number was made up of 19 Ghanaians and 29 foreign students [9].

Some members of staff found the conditions to be fulfilled by staff to qualify for support from the RCC very disturbing as exemplified by the following extract:

"..... the Secretary explained to the meeting the conditions which an applicant must satisfy to qualify him/her for attendance at Conferences/Seminars viz: the applicant must be invited, he must read a paper and the paper must be accepted by the organizers of the Conference/Seminar. The meeting found these too rigorous and unfair. A memorandum was to be sent to the Administration on the subject for consideration." [11]

The issue of small proportion of postgraduate students as a result of unattractive and poor conditions, 'rigorous' conditions to be satisfied by staff to qualify for financial support etc hinge on 'Funding.' It is for this reason that Pandit and Akangbou recommended that

teachers should be encouraged to engage in research by funding their research so that by so doing postgraduate students could also be encouraged to undergo training in research. [5]

The RCC faces problems as to the financial support it can give to applicants. In 1990, the RCC was allocated €5m to support staff applications for research, attendance at Conferences/Seminars/Workshops etc. In 1991 and 1992, the figures were €3.75m and €8m respectively. These were inadequate. As at May, 1992, for example, the applications received totalled £295 + \$22,115.70 + €2,723,220.00. If the foreign components are converted to cedis, it would be realized that it would be impossible for the RCC to support all the applications received even before the end of the year.

In view of the above observation, it is common to find comments from the RCC as responses to applications saying for example "presently there are no funds," "the vote is depleted", "the Research and Conference cannot support this project for lack of funds", there are no funds for this project" etc. Some applications had been "approved subject to the availability of funds."

The above comments and the conditions to be satisfied to qualify for sponsorship by the RCC would seem to be disheartening, unfair and rigorous as pointed out by some staff [11] but the crux of the matter is that the funds cannot support all the applications received and therefore some restrictions must be instituted to pave the way for judicious administration of the funds for research. This argument is strengthened by the contents of a general notice which read:

"It is announced for general information that the Research and Conference vote for 1990 is fully exhausted. New applications cannot therefore be financially supported by the University this year. Applicants are advised to seek financial support from their conference organizers or other agencies." [12]

One observes also that the Foundations enjoyed by UST are for specific purposes and must be used as such. Very few people can benefit from them.

The process of dissemination of research findings is limited. Research results can be disseminated at Conferences/Seminars/Workshops when staff present papers, posters etc. Since not many staff can be supported to attend such conferences, it implies that not all the research findings can be disseminated through the attendance at Conference/Seminars/Workshops. It is gratifying, however, that many of the staff send articles for consideration and for publication in the Journal of the U.S.T.

## SUGGESTIONS/CONCLUSIONS

The URC made very good observation and recommendations and these should be implemented. With the current curriculum development programmes taking place in our educational institutions, including the Universities, relevant training in the conduct of research should be seriously addressed. This may imply review of

programmes to suit the needs of the day. In this way, the objectives of the University will be achieved with greater success.

Postgraduate training should be made more attractive by the provision of adequate facilities (e.g. computers for data storage and retrieval) so that students do not abandon their programmes or seek admission at Universities outside. A considerable amount of improvement should be made to arrest the deteriorating situation.

The author strongly supports the recommendation by Pandit and Akagbou that teachers should be encouraged to engage in general research as a means of raising their quality of teaching.

The UST, and indeed, all Ghanaian Universities should solicit more support, financial or otherwise, from external agencies including the industries. After all the UST and other Universities produce useful manpower for the industries and other sectors of the economy in Ghana and elsewhere.

It is noted that the UST has linkages with a number of Institutions. Greater efforts should be made to establish other international relations for the benefit of the UST and Ghana.

Students could be involved in nationally important projects. By so doing, the UST can win the support of donor agencies which would provide assistance in diverse forms.

The UST can enter into a number of agreements with many companies who could assist financially to the benefit of UST.

The UST has been doing much in the area of income generation. Greater efforts should be made in this direction to earn more for the Departments to support some of their research projects. In this way, individuals who could, probably, not be supported by the RCC, could turn to their Departments for assistance.

It is an undeniable fact that the government alone cannot foot all educational bills, taking into account other commitments, but in order to encourage both teachers and students to undertake research for national development, efforts must be made to provide more funds for research.

Bamfi-Adomako discussed problems of resource allocation in the Universities [13]. Every sector of the University is important and since research is indispensable in national development, the RCC should be allocated a fairer proportion of government funds to meet research needs.

Research findings should not remain on shelves but should be disseminated. The problem of the dissemination of research results had already been identified by the URC. It should be made possible for as many staff as possible to attend Conferences/Seminars/Workshops especially those that would read papers or present posters based on original research. Staff of the UST, apart from publishing a good number of articles in the Journal of the UST, patronize other learned Journals outside. They need to be encouraged to do more. This will help

improve their teaching. All these, to be successful, call for more funds.

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