

TUNING AFRICA II

“THE STUDENT VOICE IN **AFRICA HARMONISATION** **PROCESS IN HIGHER** **EDUCATION.”**

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EXECUTIVE SUMMARY

This essay represents the voice of students in the Department of Civil Engineering of the Kwame Nkrumah University of Science and Technology in Kumasi, Ghana on their course workload. The student voice is necessary for the African harmonization process in higher education in order to improve learning as well as the institutions in which these students learn.

After interviews with fellow students in the department, it can be confidently said that, most of the activities required for school work before examination week revolve around attending lectures, group meetings, laboratory and field sessions, tutorials, doing assignments as well as any other sets of activities related to the students' personal studies. In examination weeks, most of these activities reduce or even come to a halt. Students spend more time at places like the library doing personal studies to cover unread notes in preparation for their papers.

Aside academic work, students also like to engage in extracurricular activities. These activities depend on the interests of the students and may include student politics, religious activities and social clubs related to sports or any other subject.

Even though most of we students are still indecisive about our career decisions, we are very sure that, we would want to pursue career fields in civil engineering. In building a career in civil engineering, skills in team work, observation and analytical skills, engineering problem solving attitude and the use of softwares in Computer Aided design need to be developed. One way of developing these skills is by interning in civil engineering industries.

In conclusion, students need to spend more time on activities that expose them to the practical aspect of the course of study since practical sessions motivate and encourage students to learn as well as enjoy and gain a better understanding of the course of study.

1.0 INTRODUCTION.

The fourth sustainable development goal is to ensure inclusive and equitable, quality education and to promote lifelong learning opportunities for all.

In the realization of this goal, it is prudent that educational systems in institutions across Africa are structured such that, those receiving training in these institutions will benefit from a lifelong learning process.

Upon interviewing some Civil Engineering Students of the Kwame Nkrumah University of Science and Technology, it was realized that there is an aura of indecision around the lives of most of these students. Those who have formed adequate life goals do not even have enough information on how to achieve them.

Several reformations and revisions have taken place in the tertiary educational curriculum in order to solve this problem. One of these solutions included making lectures end at twelve midday in the afternoon so that students can attend compulsory seminars on the various disciplines of engineering. Unfortunately, all the solutions have failed. This is because, ironically, the solutions have neglected the voice of students, in various harmonization processes involving student centered education. Tuning Africa Academy has therefore beaten all odds in their decision to consider the voice of students in their harmonization process.

This report focuses on the view of students regarding the Civil Engineering curriculum for the first semester of the third year in the Kwame Nkrumah University of Science and Technology, Kumasi. In a typical semester of a year, eight (8) compulsory courses are offered with a total of nineteen (19) credit hours.

2.0 STUDENT ACTIVITIES REQUIRED FOR UNIVERSITY WORK

There are about twelve weeks for teaching and learning and three weeks for end of semester examinations. During the middle of the semester, a week is set aside for mid-semester examinations. However, lecturers also conduct both impromptu and announced quizzes during lectures. For all the courses taken for a particular semester, the activities outlined for university work are presented in the subsequent paragraphs.

2.1 LECTURES

This refers to oral presentations done by lecturers to introduce and explain the various topics under the course of study to the understanding of students. Students congregate in a lecture rooms. In KNUST, these rooms range from auditoriums to classrooms, depending on certain factors such as the number of students and availability of rooms. It is usually here that students are made aware of their workload for the semester. Lecturers make clear to us, our expected learning objectives and provide mostly, theoretical insight into the topics we are supposed to cover.

Although lectures are on the surface helpful towards achieving our academic goals, lecturers of most courses often make it clear that simply attending lectures is hardly enough and thus entreat students to seek additional knowledge by reading textbooks and other literature. Lectures typically happen during the day between the hours of 8:00 am and 6:00pm in designated lecture halls and classrooms. For the average student, total of thirty-six (36) hours are spent attending lectures in a typical week (Monday to Friday). In the revision week (a week before examinations begin), the frequency of lectures decreases, so as to provide more time to students for revision. During examination weeks, there are no lectures. Students spend most of the time on personal studies to cover their unread lecture notes and solve more questions in preparation towards their exams.

Although we as students would like to say that lectures are very effective for achieving learning goals, we often have to seek additional understanding from other sources, and this affects its effectiveness.

2.2 LABORATORY (LAB) WORK

In courses which require a practical understanding of topics, students need more than just the oral presentations from lecturers. To achieve this practical understanding, we have what we call “lab work”. This stands for sessions where theories from lectures are applied in the actual making of something or tested through experiments at the laboratory. Lab sessions, popularly known by students as “practicals”, take place during the day, just like lectures. Laboratory blocks are normally found around the same areas as lecture halls and theatres. In a week, about two lab sessions take place. A maximum of two hours is designated to each lab session per the lecture timetable, although most sessions may require more than two hours to set up and implement.

Usually, for experiments that require three or more hours to produce results, (and thus may eat into designated time for other activities like lectures) students go about their usual daily activities or go ahead to attend the next lecture session and set timers that will alert them to occasionally go to the lab and record results. An estimated four hours is spent on lab work in a typical week. Practicals are an essential part of a lifelong learning process. Practical lab sessions motivate students to develop interest as well as enjoy their course of study. For civil engineering, the engineering problem solving attitude is developed over time in order to gain expertise. There is also that sense of fulfillment when results from lab work tally with expected results we obtain from our theoretical understanding. It must be noted, however, that the current system has some flaws; the four hours allocated to lab work every week is not enough as compared to thirty six hours of sitting down to listen to long theoretical lectures. Sometimes, it takes more than two hours to complete a setup, and work has to be done shoddily because of the time. For an engineering programme, a minimum of 10 hours for lab work every week will enhance the learning and development of scientific knowledge and attitudes like thinking outside the box and objectivity. For most courses, practical sessions last throughout the semester until just before examinations begin, but there are the occasional ones which end well before that. All practical sessions come to an end when it is time for examinations. In terms of effectiveness towards achieving learning outcomes, this is one of the top activities.

2.2 FIELD WORK

This activity is often associated with Engineering Surveying, although it is present in other courses. Field work is another form of practical except that it is not done in the laboratory. It may involve taking measurements, setting out and levelling using the appropriate equipment for engineering surveying for example. It may also involve observing certain characteristics of water bodies and drains (such as width and depth), and taking the necessary measurements with which to calculate other characteristics which may not be determined by simply observing. This is usually the case for courses such as Hydrology and Hydraulic Engineering. Usually, field work takes about three hours per week, which is adequate to complete all the tasks assigned during those periods. Like lab work, all field work also comes to a halt during examinations, although much earlier than lab work for most courses.

2.3 ASSIGNMENTS

These are tasks given to students by lecturers to be completed outside classroom hours. This is a very common way for lecturers to test the understanding of students and how effective their guidance is. It is a very useful way to obtain feedback, either directly or indirectly, on their lecturing methods, so that they may adjust accordingly. The deadline of submission of an assignment depends on the workload; although they hardly go beyond a week. Assignments may range from research inputs, to drawings and calculations. In some rare cases, students are selected to present their research input to the rest of the class. On average, about five hours are spent on assignments during a week. During examination weeks, students are not given assignments.

2.4 REPORTS

These are written accounts of observations, measurements and other necessary points noted down from field and laboratory practicals. Similar to assignments, reports are ways for lecturers to assess students' understanding of work done over the course of the semester. Students are required to combine both their theoretical understanding and that obtained from these practical sessions in order to convince the lecturer that they actually understand what they have been taught. Lab and field reports are usually submitted a week after practicals. Reports are either written individually or in groups depending on the lecturer and the type of activities performed during practicals. For the average student, about eight hours are spent on reports in a week. This increases the workload on students and eats into their time for personal studies and research, considering the fact that, assignments have to be submitted as well during the same week. More time is needed to produce detailed and accurate reports. If students are given the opportunity to submit reports fortnightly, it would be more favourable. By examination time, the deadline for submission of all reports expire.

2.5 INTERNET RESEARCH

This involves browsing the internet to acquire information on a particular subject of study. This may include reading online research papers and watching you-tube videos. In fact, aside from lab and field work, the internet is the best way to obtain practical understanding of topics. Most of us can attest to the fact that a thirty-minute video on YouTube can be more informative than an entire two-hour lab session. Despite the internet's vast potential for further learning, most

internet researches done by students are for answers to assignment problems or references for reports. Internet researches are also done for clarification or to gain better understanding of what was taught at lectures for themselves during personal studies. Internet researches take about ten hours within a work. A main reason that a lot of time is spent here is that most students do not know how to search for information on the internet. Another reason is that we get distracted by ads during our searches. During examination, the hours spent on internet research reduces because by that time, most of the information needed will be acquired. More time is spent on trying to cover lecture notes for the semester in order to pass exams.

2.6 LIBRARY VISITATIONS

This is a cheaper and more accessible alternative to internet research. Students visit the library for research or to gain information for personal studies. Although they are open as early as 8:00 am, they are mostly in use by students during the evenings between the hours of 6 pm and 10 pm. This is mostly due to the quiet atmosphere that the evenings provide. Some students also visit the library in between lectures during free periods to make good use of their time. An estimated four hours are spent by most students in the library during a week. During examination weeks, the number of hours spent at the library increases to about twelve hours a week because, the library has a serene and calm atmosphere for personal studies in preparation towards exams. Library sessions are very effective towards achieving our learning goals.

2.7 GROUP MEETINGS

This is when two or more students come together to discuss and solve a particular problem or complete a task on a particular subject. Students of KNUST like to follow the adage, “Two heads are better than one”. Group meetings are usually to discuss and compare results from lab works for use in lab reports. Sometimes, students also meet to solve past questions together, and explain notes to each other during the learning periods before exams. For non-examination weeks, students spend about four hours for group meetings but this can increase to six hours during exam weeks. Group meetings usually take place on free periods during the day; or in the evenings. Group studies help students to appreciate the course of study better because understanding is gotten easily when an individual is being taught by their colleague, as opposed to a lecturer. This is very effective because fellow students can sympathize with one’s lack of understanding better than seasoned experts in the topic of interest.

Because of the demand from other activities, by the time students come together, they are very tired and have very little concentration during discussions. It would be better if more hours are spent on group meetings. This would in effect reduce the time spent on internet research and report writing.

2.8 MINI-PROJECTS/COURSE WORKS

Another means to test students' understanding of a course, although less common, these are problems concerning a particular course of study that students are tasked with solving and submitting at the end of the semester. Usually, knowledge from the various lessons of the course that have been taught throughout the semester will be required to tackle a coursework, much like field work and reports. The importance of course works is that they keep students on their toes, in that we are required to apply new things we learn as the semester progresses. Course works are usually submitted before the week before examination, so during examination weeks, no time is spent here. Most of the time, students deviate from the given question in the presentation of their coursework solutions. This is due to the inadequate time spent on practical and group sessions. There is also the case where course works are ignored until the last few weeks of the semester, also caused by inadequate time available. Course works may take up to about three hours in a week because, it is done in bits.

2.9 TUTORIALS

There isn't enough time to work examples during lecture periods and the tutorial sessions are specially designed for this. Tutorials are organized by the lecturer using the teaching assistant as an aid. Some lecturers also engage in face to face tutorial sessions with students. Teaching assistants usually take students through solved problems in order to make them appreciate what their lecturers taught them. Tutorials may take place during week days and even weekends depending the free times of both the students and the teaching assistants. Tutorials take about four hours in a week. All tutorials end before examinations begin. However, a few weeks before exams, especially in the revision week, the number of hours students spend attending tutorials may increase to six because most students are having problems with catching up and covering unread notes towards examination preparations. Tutorials tend to be very effective towards preparing for examinations.

3.0 ACTIVITIES STUDENTS ENGAGE IN BESIDES ACADEMIC WORK

For the average KNUST student, a lot of time is spent on academic work, as can be seen above. There are however other activities that we engage in that also take our time. At times we have to prioritize these over academic work and other times academics wins.

3.1 RELIGIOUS ACTIVITIES

Ghana has an overwhelming proportion of people who belong to a particular religion. As such, almost every student you will meet is a member of either religion X or religion Y. We believe that religion is a way of life and thus cannot be left at home when we come to school. Students still engage in normal activities such as going to church on Sundays or to the Mosque on Fridays. This is part of our conscious effort to keep religion as a part of our lives no matter where we go. There are even cases where students partake in these more than they would at home, as evidenced by Christian students attending midweek services (some which last as long as four hours, longer than a typical Sunday church service), Church programs outside campus even on weekdays and , the most common of all, hold prayer meetings to pray together. These can be as long as two hours. Some even take on leadership positions and these take up even more time. We as Ghanaians believe that God is a necessary part of our lives and as such do as much as we can to include him our lives. The average student spends about five hours on religious activities in a week.

3.2 CLUB MEETINGS

It is a very common notion that book smarts aren't everything in life. In an effort to avoid being wholly book-oriented, students endeavor to join clubs which cater to their needs. A lot of these clubs provide leadership training, either directly or indirectly through leadership positions, and provide opportunities to learn specific skills one needs in order to increase their value beyond book smarts or "polish their CV", as it is commonly called. Examples of such skills are proficiency in use of Microsoft Office software, Engineering design software, Programming, and even language proficiency. The average student spends a maximum of two hours attending club meetings every week.

3.3 STUDENT POLITICS

Much like in life outside school, students need leaders to speak for them and guide them through their tenure as students. The selection process for these leaders is what gives rise to what we call “Student politics”. We try to mimic the democratic process, in that leaders must be voted for and as such, candidates are given the right to campaign to us in order to secure our votes. Although this may sound simple, it is actually extremely time-consuming, both for the candidates and the voters. The candidates form campaign teams which are tasked with convincing the voters to elect their candidate. Often times these activities interfere with schoolwork and have a negative effect on one’s grades, although they believe that it is worth it. It is therefore not surprising that, the average student can spend fifteen hours per week on activities related to student politics.

4.0 CAREER CHOICES IN CIVIL ENGINEERING AFTER UNIVERSITY EDUCATION.

Most students in the Department of Civil Engineering would like to pursue and build careers in structural engineering, transportation engineering, water resources engineering, waste and sewage engineering, geotechnical engineering and environmental safety and quality engineering. However, because most of us students are indecisive about the specific field in civil engineering they would want to venture into, we plan on working and doing internships in most of these areas right after universities so that we would gain experience and settle on which area is most suitable for us.

We believe that, internships expose students to the world of work after tertiary education. Internships also help students build and develop skills like team work, good analytical and observation skills. Aside the development of skills, internships help students establish strong links students with professionals in the civil engineering industry. These professionals can guide us in our career path.

Aside academic excellence for all these afore mentioned areas of civil engineering, skills and competencies in teamwork, proficiency, presentation and communication in English Language, Computer Aided Design, essential software (such as MATLAB, Microsoft Office Suite) community service and leadership will need to be developed in order to build a career that will go beyond ten years.

Actively participating in group activities is helpful in building good team playing skills. Constantly practicing and learning notes from video tutorials on softwares like AutoCAD and MATLAB is also very essential.

In demonstrating these skills to a potential employer, one would have to brand themselves, improve upon their presentation and communication skills and work on their dressing and physical appearance to earn a good first impression image.

5.0 CONCLUSION

From our point of view as students, it can be seen that, the time spent on personal studies, lab work, group discussions and other activities that will motivate and help us have a holistic and lifelong education is very small. Activities like lectures, reports and assignments take too much of our time. By the time we are done with all these, we are so worn out that, even personal studies is not very effective. The only period students get enough time to do personal studies is during examination weeks; when all lectures have ceased and the deadlines for submission of reports and assignments have come to an end. It is rather unfortunate that, by examination time, it is too late and almost impossible to cover all unread notes before an examination paper. Students suggest that field trips should be more frequent. In civil engineering, frequent visitation to sites of ongoing construction projects and other civil engineering related companies will make students appreciate the programme and awaken innovation and creativity in them. Lectures, reports and assignment are very important, but more attention should be given to lab and field works as well as group discussions because, these are what motivate the students to produce good results in assignment and reports.