Evaluation of the effects of vocational choice and practical training on students’ employability

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Abstract
Purpose – The purpose of this article is to demonstrate the need for Kyambogo to pay special attention to students’ vocational choices, university based training and employability.

Design/methodology/approach – The sample of 46 final year students, 90 graduates and 50 supervisors using cross sectional survey design was used to collect data.

Findings – The paper reveals that factors such as government policies and regulations, people we interact and relate with for instance, parents, teachers, peers and other factors like our aspirations, interests, subjects studied at school have a significant bearing on our vocational choices. Practical training, curriculum followed in teaching and industrial training are relevant for electrical graduates in their preparation for employment challenges.

Practical implications – This paper calls for involvement of stakeholders in design, implementation and evaluation of the university curriculum. That there should be vigorous and rigorous regular evaluation of training of electrical engineers to meet the ever-changing needs of employers.

Originality/value – This paper presents a new approach to critical thinking young adulthood vocational choices, university based-training and employability of electrical engineering graduates.

Keywords Training, Vocational training, Career development, Students, Uganda

Paper type Research paper

Introduction
Most industries are now automated with use of microprocessors for machine controls. Computers, communication systems have highly modernised industrial processes, requiring highly trained and multi-skilled manpower (Walakira, 2000). Since the early 1990s the common wisdom has been that mergers, re-engineering, and downsizing in industries/organisations have led to retention of core staff and sub-contracting most of the jobs causing job insecurity for employees (Benson, 2006). This study was undertaken to seek information and explain the need for career guidance and career choice, curriculum development, practical and industrial training, retraining of staff for the employability of Kyambogo University electrical engineering graduates. Kyambogo University engineering programmes offer Certificates, Diplomas and Degrees.

However, Kyambogo University, particularly the faculty of engineering, faces the following challenges: the curriculum being followed does not meet the needs of industry due to lack of proper linkage with the employers; selection to academic programmes is based on the right grades in the subjects studied, guided by the
Government policy applicable at the time of admission. For direct entry from high school, the students’ choice and interest of an engineering profession particularly electrical engineering is not clear. More often than not in the first few months of the course some students opt out for other courses within the University or elsewhere. Desperately, other students request for reconsideration for taking on electrical engineering in preference to the earlier choices.

Furthermore, after completion of the engineering course, students who will not have identified which organisation to work for especially during industrial training period have to search for employment by themselves. The following hypotheses were formulated to guide the study:

\( H1 \). There is a positive relationship between factors that influence vocational choice of electrical engineering by students and their preparation for employment challenges.

\( H2 \). There is a positive relationship between the curriculum followed in the teaching of electrical engineering students and their preparation for employment challenges.

\( H3 \). There is a positive relationship between the practical training of electrical engineering students received and their preparation for employment challenges.

**Career guidance and career choice for employability**

According to Psacharopolous and Sanyal (1987), most students get their career guidance from their relatives, friends and parents and leaving career masters the most dissatisfied customers. Woodd (2000) contributes that the ecological environment (Bronfenbrenner, 1979) affects one’s perceptions of career choice. Bronfenbrenner (1979) further explains the ecological environmental as a nested arrangement of concentric structures named: the micro-; meso-; exo- and macro-systems. The first represents the home or a given setting with particular characteristics, which lead to a pattern of activities and interpersonal relationships which are experienced. The meso system comprises the interrelations between two or more settings, such as family, work and social life, which involve active participation by the developing person.

The exosystem refers to one or more settings that do not involve the developing person as an active participant, but in which events occur that affect, or are affected by, what happens in the setting containing the developing person. The fourth as the macro system, which refers to the consistencies of the culture, the beliefs and ideologies of the person’s family, religion or other set of beliefs encountered by the systems. However, Super (1957) earlier argued basing on personality that motivations lead to the development of interests, which in turn lead to occupational choice. Basing on departmental nominal rolls, it is evidenced that it is a common practice for students at Kyambogo University to switch courses within the first three months of admission. That by the time these students come to the University they are not certain of which profession to belong.

According to Moss and Frieze (1993), switching of career paths and fields of study is natural among young adults as they discover their strengths, weaknesses, and realistic demands of various careers. Feldman (2003) contributed that switching of career paths is becoming common among teenagers and young adults. However, Dunegan (1993)
observed that young adults are slow starters in their identification of early-career goals in the process they build many criteria to maximize in a career, in so doing no career seems particularly attractive. These young adults rather than “satisfice” with an option that at least minimally meets all relevant criteria (Simon, 1997) instead keep their options open for longer and longer periods (Feldman and Whitcomb, 2005).

Consequently, employers observe and question the motivation and commitment of applicants with noticeable delays in college graduation, numerous gaps in their employment history, and frequent changes in jobs (Feldman, 2002).

Recognising these gaps, The UNESCO Educational Policy report (1998) recommended that career guidance and counseling be significantly strengthened because of its utmost importance for all clients of the education and training systems. That career guidance should take into account the needs of industry, the individual and the family and be sensitive to each learner’s requirements and circumstances. Furthermore that its role should be extended to prepare students and adults for the real possibility of the frequent career change, which could include periods of unemployment and employment both in the formal and informal sector (The UNESCO Educational Policy report, 1998). In today’s economy, lifetime employment is not guaranteed and individuals need to be resigned to “involuntary career change” at least once in a career particularly due to lack of security of employment that puts the onus on the individual to take control of his/her future employability (O’Donoghue and Maguire, 2005).

Furthermore, the UNESCO Educational Policy report (1998) emphasizes that career guidance and counseling should not only be a recognised as a function of educational institutions but should also be provided at other venues accessible to the population at large. Spencer (1981) cited in Curzon (1983), asserted that preparing people for complete living is the function which education has to discharge and that the only rational mode of judging an educational course is to judge in what degree it discharges its functions. However, people change careers to be successful in life by searching for a rewarding job to make a meaningful living. According to Holland (1985), if the individual does not realize a fit between significant needs/goals and the opportunity from the chosen career for the need/goal fulfillment then that individual will be dissatisfied.

Super (1957) defined a career as a sequence of positions occupied by a person during the course of life-time. According to Arthur et al. (1989), a career is the evolving sequence of a person’s work experiences over time. That a career could imply any work, paid or unpaid, which is pursued over an extended period of time. Super (1957) further argued that a career enables an individual to implement his/her self-concept, in which case, a graduate’s choice must be matched with his/her manifest interest. So “career choice” implies that an individual, consciously and out of that person’s free will chooses a career among other types available.

However, Roe (1959), Plomin (1994) argued that individual’s genetic backgrounds relate what the individual will do in future and that certain personality behaviours enable them belong to certain careers such as engineering profession, which has to be well polished at the University through learning. In addition, Scheffer’s (1956) sustained hypothesis cited in Super (1957) stated that if a person cannot in his/her life time find opportunities to be the kind of person he/she wants to be, for self-fulfillment, he/she will be dissatisfied with his work. The emergence is then there is need to consider how work experiences change over time, and how organisations will need to
consider individuals’ needs within their career management (Woodd, 2000). However, the new psychological perspective suggests that this can be achieved through regular renegotiation of the psychological contract between the individual and the organisation (Schein, 1970).

Curriculum followed at the University for graduates’ employability

The UNESCO Educational Policy report (1998) acknowledged that learning requires five inputs; the student’s capacity and motivation to learn, the subject to be learned, the teacher who knows the subject and can teach it, time for learning, and tools for teaching and learning. That the curriculum should define the subjects to be taught, provide guidance on the frequency and duration of instruction and that the curriculum and syllabi be closely tied to performance standards and measures of outcome. According to Slaughter (1997), the curriculum content is created by a process of resolving tensions, academic disciplines, technological and economic change and the different agendas of governments, employers and labour organizations. This follows Young’s (1971, 1978) postulation that a curriculum is that in which knowledge acquired by the learner is determined by the way power is constructed in society. This means that the content of the curriculum has a great bearing on career choice and graduate’s abilities in meeting future employment challenges.

According to Clarke (1997), employers are not satisfied with the quality of young people and graduates coming into the labour market and that this challenge can only be met through a partnership involving individuals, parents/guardians, educators, employers and government in order to come up with an appropriate University curriculum. Boreham (2002) contributed that knowledge constituted in a curriculum is more than printed words in a syllabus, that it is embodied within teachers and students, and socially constructed in interactions between these and other actors in the curriculum process. In addition, Super (1957) emphasized the need for vocational maturing and development.

Manyindo (1998) adds that development of new technologies and their adoption by business and industry are having a major impact on labour force demand world wide with major technological changes occurring primarily in three fields: telecommunications, computer applications and advanced manufacturing technology, areas in which electrical graduates have to be prepared in competently.

Furthermore, electrical engineering graduates are facing the challenges of having to produce workers who can manage, operate, manufacture, test, design, program, install, maintain and repair high-technology products and processes (Manyindo, 1998). With a vision for the twenty-first century, The UNESCO Educational Report (1998) advocated a new paradigm that will address flexibility, innovation and productivity, imparting the skills required, addressing the implications of changing labour markets, training and retraining the employed, unemployed and the marginalised with the objective of achieving equality of opportunity for all in both formal and informal sectors of the economy, which should be achieved through partnership between education and the world of work (Clarke, 1997).

Practical training for employability

Jehopio (1990) noted that with the rapidly changing technologies applied in industry in this era of computing and information technology giving an important role to
mathematics will facilitate electrical graduates in analysis, testing, selecting and interpreting, and also in design and planning. Mpandey (1998) contributed to the need for improved practical training of graduates and continuous improvement by noting that in engineering laboratories and workshops:

- some equipment become obsolete, some suffer from wear and tear;
- there is often absence of a maintenance culture;
- workshops and laboratories not adequately stocked with up-dated equipment and consumables.

According to Walakira (2000), knowledge acquired and skills developed through education and training foster productivity of a given population, with the need for universities to regularly conduct evaluation of training to achieve greater returns on investment.

Warr et al. (1999), predicted three levels of training outcome through their study that examined an association between three levels in Kirkpatrick’s framework, (reactions, learning and job behaviour) and they investigated both individual and organisational characteristics. This suggests the kind of evaluation of training that should be used at universities in order to establish the graduates’ abilities in meeting future employment challenges.

**Industrial training for employability**

According to Lauwerys and Scantor (1968) cited in Mulumba (1998) in Denmark, electrical engineering students spend five weeks in school workshops and later seven months of industrial training of which two to three months may be spent abroad, which offers the engineering graduates a hands-on experience in the real work place. During the period of industrial training, trainees attempt to exert self-concept as Super (1957) clearly explained that there is the need for social, authority, co-workers and community adjustment and also adjusting to work in terms of technical competence, routine and tempo, work attitudes and values, security and time on the job demands.

On duty to jobs after graduation, employers view industrial training as evidence of the world of work, of responsibility and dependability. Super (1957) further clarified that young workers attempt to implement a self-concept by underscoring the importance of job selection and placement, self-understanding, lack of occupational information, lack of opportunities or resources, social expectations, social adjustment, adjustment to authority, adjustment to co-workers, family and home demands, community adjustment, finding one’s place until he/she settles for an occupation. The young worker faces the challenges of adjusting to work requirements, technical competence, the routine and tempo of the work, the work attitudes and values, security and time on the job before advancement (Super, 1957). According to Schein (1996), a person’s self-concept or career anchor has an influence on one’s career choice, affects decisions to move, shapes career aspirations, determines an individual’s view of the future, and sways employee reactions to work experiences (Bigliardi et al., 2005).

Kagaari (1994) owed gratitude to those industries that willingly provide industrial training and employment to electrical graduates. Students at the end of industrial training period are expected to submit reports, which are assessed as part of their coursework (The Kyambogo University Industrial Training Committee Report, 1996). According to the The Kyambogo University Industrial Training Committee Report
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(1996), members acknowledged the request from the employers that training should put more emphasis on:

- practical use of electrical measuring instruments;
- principles on electrical machinery, transmission and reception of signals in telecommunications; and
- generation, turbine construction, renewable energy sources.

Qualifications, experiences and retraining of staff for employability
According to Dean and Hauer (1969), teachers should possess a strong background in a technological field of specialisation and in related fields of the technical sciences, have a minimum of five years of work experience in industry in a variety of positions related to the field of specialisation and a comprehensive understanding of several areas of human relations. The Ministry of Education Policy Review Commission Report (1989) recommended that no education system can be better than the quality of its teachers, nor can a country be better than the quality of its education and that it is the quality of its teachers which ultimately determines the lot of the nation. According to Robbins (1989) a happy worker is a productive worker, recognition for highly committed and motivated employees that should be sustained through retraining and exposure to new technologies.

Employability
Walakira (2000) argued that for industry to be efficient, modern industry requires highly trained graduates for effective and efficient performance and production especially those who are committed and identify themselves with their jobs. During industrial training period, some students are identified and recommended for permanent employment on completion of their training programme by their supervisors. Some employers recruit directly from colleges, through consultancies, employment bureaus, the media, or students walk door to door in search of employment.

Employability is not the same as employment, just as education is not the same as training (Cox and King, 2006): to be employed is to be at risk; to be employable is to be securing (Hawkins, 1999). In this context, employability means that a person possesses the capability to acquire the skills to do the required work, not necessarily that they can do the work immediately and without further training (Cox and King, 2006). Employers are looking for a more flexible, adaptable workforce (Bennett, 2002; Clarke, 1997) as they themselves seek to transform their companies into being more flexible and adaptable in response to changing market needs.

For instance, the World Bank Vocational Training Education (VTE) Policy Report (1991) indicated that where wage jobs are hard to find, graduates of modern sector training institutions will flow to the informal sector, although often after a long period of waiting for high-paying wage employment. In addition, Lynch (1991) found that prospective employers view college-based training as being “general” in providing skills ton increase the productivity of labour across companies (Becker, 1965) and prefer on-job-training that provides “specific” skills. Specific skills are those that increase the increased productivity in a single company (Becker, 1965). According to Benson (2006), general training is more marketable and provides more opportunities
for career growth for employees, need for electrical engineering graduates to take up entrepreneurship skills’ training for self-employment.

Walakira (2000) noted that small enterprises in a competitive economic environment in Africa under score the importance of small enterprises such that if graduates were given entrepreneurship skills would fit well in the informal sector.

However, Mhone (1991) noted that there are strong perceptions among policy makers that employment means a job with a wage or salary and working for somebody else. That this has strongly influenced those institutions that provide skills training to design training programmes and curricula that are said to be prominently biased towards preparing young people for formal sector wage jobs (Lukwago, 2003), which increases unemployment. The Poverty Status Report (2003) indicated that the population growth rate in Uganda is worrying at 3 per cent per annum; at this rate the population will double every 25 years. This high population growth rate has resulted in the rapid growth of labour, which is outstripping the supply of jobs (Lukwago, 2003).

Methodology
A disproportionate stratified random sampling was employed. Three standard questionnaires developed by the School of Education, Makerere University were adopted. The responses were from the electrical graduates in employment, their supervisors and final year students in electrical Engineering at Kyambogo University (see Appendix).

The questionnaires sought to collect data on the attitudes and opinions of the respondents using a seven point likert scale. The responses were “I strongly agree”, “I agree quite alot”, “I agree just a little”, “I am not sure”, “I disagree just a little”, “I disagree quite a little”, “I strongly disagree”. Some of the items were open ended. The department of industrial training has a registration of well above 150 industries/organisation that employ graduates from Kyambogo University. The researcher had targeted about 150 supervisors, graduates and 100 final year students.

In the end, 46 final year students responded, 90 supervisors and graduates responded out of 100 questionnaires given out. The researcher collected data from the graduates and their respective supervisors since they were based in the same industries/organisations.

After collecting and counting the questionnaires, they were then manipulated. Using the Statistical Package for Social Scientists (SPSS 10.0 Windows) computer program, files were opened for each set of questionnaires and data entered into the computer. Descriptive statistics were obtained. Cross tabulations of some items were made to obtain relationships and tested using Pearson correlation coefficients significant at 0.01 or 0.05 levels. Also, frequency counts, percentages were obtained for checks, interpretations and conclusions drawn about the study.

Findings
With changes in demands of employers, most of the respondents were engaged in: electrical designing, subcontracting, testing, inspection, repair, supervision and maintenance of electrical installations and equipment for domestic, commercial, industrial and telecommunication organisations. Findings indicated that 86.2 per cent of the respondents in employment were below 36 years of age in Table I and 20.5 per
percent of the respondents were females in Table II. There was a significant relationship ($r = 0.386$) Pearson correlation at 0.05 level of significance between “preparedness of graduates for future challenges” and “ratings of supervisors ability to develop the employee.” in Table III. In respect of factors that influence vocational choice: 23.5 per cent of respondents did not choose the programmes according to their interests and aspirations; 65.2 per cent of the respondents indicated having put under consideration changing employment situations requiring changing attitudes before admission to the programme in Table IV.

There was a significant positive relationship ($r = 0.343$) at 0.05 level of significance (two-tailed) between items “Was the academic subject matter of training program pertinent to your needs and interests?” Versus “What is your overall rating of the trainer or instructor?” in Table III.

Regarding the relevance of the curriculum: 80.9 per cent of the respondents were satisfied with range of subjects being covered in Table V; 71.1 per cent of the respondents indicated inadequacy of lecturers at the University in Table VI; 28 per cent of the respondents lacked creativity; 24 per cent of the respondents lacked taking their own initiative; 41.7 per cent of the respondents were ill-prepared for job security; 32 per cent of the respondents lacked ability to adapt their expertise to local involvement in Table VII; 22 per cent of the respondents were dissatisfied with availability of study materials in Table V; 18.4 per cent of the respondents were dissatisfied with how the training at the University prepared graduates for future challenges on the job in Table VII; 88.6 per cent of the respondents indicated that the training facilities at the University were inadequate; and yet 95.3 per cent of the respondents indicated that the programme being offered was relevant to industry in Table VI.

In respect of practical training: 51.9 per cent of the respondents were dissatisfied with the practical training being conducted at the University; 30.6 per cent of the respondents were dissatisfied with the quality of training techniques being used; 68 per cent of the respondents were dissatisfied with usage of laboratory facilities; 74 per cent

<table>
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<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Valid percent</th>
<th>Cumulative percent</th>
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<tbody>
<tr>
<td>Valid Below 25 years</td>
<td>14</td>
<td>15.6</td>
<td>16.1</td>
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<tr>
<td>25-35 years</td>
<td>61</td>
<td>67.8</td>
<td>70.1</td>
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<tr>
<td>36-45 years</td>
<td>12</td>
<td>13.3</td>
<td>13.8</td>
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<tr>
<td>Total</td>
<td>87</td>
<td>96.7</td>
<td>100.0</td>
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Table I. Age of graduates

<table>
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<th>Frequency</th>
<th>Percent</th>
<th>Valid percent</th>
<th>Cumulative percent</th>
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<tbody>
<tr>
<td>Valid Male</td>
<td>70</td>
<td>77.8</td>
<td>79.5</td>
</tr>
<tr>
<td>Female</td>
<td>18</td>
<td>20.0</td>
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<tr>
<td>Total</td>
<td>88</td>
<td>97.8</td>
<td>100.0</td>
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Table II. Sex of graduates

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<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Valid percent</th>
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<tbody>
<tr>
<td>Valid</td>
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<td>79.5</td>
</tr>
<tr>
<td>Female</td>
<td>18</td>
<td>20.0</td>
<td>20.5</td>
</tr>
<tr>
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</tr>
<tr>
<td>Total</td>
<td>87</td>
<td>96.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Was the subject matter of training program pertinent to your needs and interest?</td>
<td>What is your overall rating of the trainer/instructor?</td>
<td>Sex of respondent</td>
<td>Age of respondent</td>
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</tr>
<tr>
<td>1.000</td>
<td>0.343*</td>
<td>0.011</td>
<td>-0.208</td>
</tr>
<tr>
<td>1.000</td>
<td>-0.306</td>
<td>-0.169</td>
<td>-0.093</td>
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<td>1.000</td>
<td>1.000</td>
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Notes: * Correlation is significant at the 0.05 level (two-tailed); ** correlation is significant at the 0.01 level (two-tailed)
of the respondents were satisfied and 24.5 per cent of the respondents were dissatisfied with lecturers’ performance in Table V.

**Discussions**

According to this study, lack of information on employment trends, lack of career guidance at university, the selection method used by Joint Admission Board to admit students into public universities in Uganda that lays emphasis on passes in relevant school subjects passed in the examinations does not consider the students’ interests, aspirations and expectations. This greatly impacts on the graduates’ ability to meet employment challenges. Furthermore, findings indicated that Kyambogo University curriculum does not adequately address the employers’ needs, ill-prepares graduates for employment due to poorly equipped laboratories and workshops and lacks competent lecturers. This could have contributed to the poor graduates’ attitudes towards the training, particularly with realisation of lack of specific skills for direct employment (Cox and King, 2006).

With increasing worldwide competition and ever more pressing environmental turbulence (Shipton *et al.*, 2006), organisations have to adopt new technology to be able to diversify, adapt and reinvent them (Shooven *et al.*, 1990). In order to meet these employment challenges, Boreham (2002) and Fischer (2000) emphasized the need for curriculum development and debate on work process knowledge to underpin job performance. Work process knowledge being an employee’s knowledge work of the work processes in the enterprise as a whole, including the labour process, the

<table>
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<tr>
<th>Table IV. Graduates views of employment</th>
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<tbody>
<tr>
<td><strong>Had you just completed school?</strong></td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td><strong>Were you advised to select your course according to your aspirations?</strong></td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
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<tr>
<td>Imposed</td>
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<td><strong>Was the course imposed relevant enough for employment?</strong></td>
</tr>
<tr>
<td>Yes</td>
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<tr>
<td>No</td>
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<tr>
<td><strong>On completion were you employed?</strong></td>
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<tr>
<td>Yes</td>
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<tr>
<td>No</td>
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<tr>
<td><strong>When considering to study course above did you take account of changing employment situations which may require changing attitudes?</strong></td>
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<tr>
<td>Yes</td>
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<tr>
<td>No</td>
</tr>
<tr>
<td><strong>Were you employed when you joined the course?</strong></td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
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</table>
production process and the way in which the various departments and functions are interrelated.

In this study, college-based practical training and industrial training, which act also as a socialisation process of students into the world of work though limited, were proved to be crucial and significant in shaping the graduates’ performance behaviour.

<table>
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<tr>
<th>Practical training</th>
<th>Totals (N = 52)</th>
<th>Valid %</th>
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</thead>
<tbody>
<tr>
<td>Highly satisfied</td>
<td>5</td>
<td>10.2</td>
</tr>
<tr>
<td>Satisfied</td>
<td>17</td>
<td>34.7</td>
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<tr>
<td>Dissatisfied</td>
<td>29</td>
<td>51.9</td>
</tr>
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<tr>
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<td>9</td>
<td>18.4</td>
</tr>
<tr>
<td>Satisfied</td>
<td>25</td>
<td>51</td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>15</td>
<td>30.6</td>
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<th>Valid %</th>
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<td>30</td>
</tr>
<tr>
<td>Satisfied</td>
<td>24</td>
<td>48</td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>11</td>
<td>22</td>
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<tr>
<th>Laboratory facilities</th>
<th>Totals (N = 52)</th>
<th>Valid %</th>
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<tr>
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<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Satisfied</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>34</td>
<td>68</td>
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<tr>
<th>Conducting practicals</th>
<th>Totals (N = 52)</th>
<th>Valid %</th>
</tr>
</thead>
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<tr>
<td>Highly satisfied</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Satisfied</td>
<td>16</td>
<td>32</td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>32</td>
<td>64</td>
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<th>Availability of lecturers</th>
<th>Totals (N = 52)</th>
<th>Valid %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly satisfied</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Satisfied</td>
<td>35</td>
<td>70</td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>12</td>
<td>24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Theoretical aspects</th>
<th>Totals (N = 52)</th>
<th>Valid %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly satisfied</td>
<td>16</td>
<td>32.7</td>
</tr>
<tr>
<td>Satisfied</td>
<td>30</td>
<td>61.2</td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>3</td>
<td>6.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Range of average subjects</th>
<th>Totals (N = 52)</th>
<th>Valid %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly satisfied</td>
<td>7</td>
<td>14.9</td>
</tr>
<tr>
<td>Satisfied</td>
<td>38</td>
<td>80.9</td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>2</td>
<td>4.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lecturers performance</th>
<th>Totals (N = 52)</th>
<th>Valid %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly satisfied</td>
<td>5</td>
<td>10.2</td>
</tr>
<tr>
<td>Satisfied</td>
<td>32</td>
<td>65.3</td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>12</td>
<td>24.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Industrial training</th>
<th>Totals (N = 52)</th>
<th>Valid %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very relevant</td>
<td>37</td>
<td>74</td>
</tr>
<tr>
<td>Irrelevant</td>
<td>13</td>
<td>26</td>
</tr>
</tbody>
</table>

Table V.
Graduates’ assessment of the quality of practical training
Socialisation could be defined as the process through which individuals learn and identify organisational and unit values, expectations about job-related behaviours, and social knowledge necessary to assume roles as productive members (Bigliardi et al., 2005). Digman (1997) cited in Bartram (2004) explains that through socialisation, an individual develops impulse restraint and conscience, reduction on hostility, aggression and neurotic defence. Through this process, graduates were able to overcome the entry shock into the world of work (Shipton et al., 2006). According to Bigliardi et al. (2005), socialisation that is related to job satisfaction covers aspects of training received, the understanding of one’s role and of the organisation, co-worker support, and future prospects within the employer. In addition, O’Donoghue and Maguire (2005) emphasises that University-Industry linkages is key to good relationships between the individual, lifelong learning, the workplace and employability.

Other findings indicated that graduates performed best in the first ten years in employment when they have just left college, which is between ages 25 and 35. Performance declines with ageing and increased kinship responsibility according to the findings in this study (Tables VIII and IX). In support of these findings, Tharenou (1997) indicated that the labour market studies based on human capital assessed the impact of demographic variables (age, education, tenure, gender) on occupation and industry on participation in training and development, explaining that skills decline with age and kinship responsibilities. However, Holland (1985) argues that personality-vocational fit if good leads to the individuals’ satisfaction and longevity in the organisation.

According to Clarke (1997) and Bennett (2002), employers are looking for a more flexible, adaptable workforce as they themselves seek to transform their companies into being more flexible and adaptable in response to changing market needs. So, as part of this flexibility, companies also seek to hire and fire their employees more readily in response to the continuing changes faced by employers (Cox and King, 2006), a reason for organizations to recruit young college graduates that are dynamic, flexible and can easily be disciplined. Cox and King (2006) add that the graduate should have transferable skills to manage the changes and sufficient subject skills to adapt to the new technical demands. Failure to have these skills leads to the individual’s quitting, receiving low performance ratings, being required to take additional training, or being counseled to leave the firm altogether (Werbel and Gilliland, 1999; Wilk et al., 1995).

<table>
<thead>
<tr>
<th>Goodness of education system</th>
<th>Adequacy of training facilities</th>
<th>Adequacy of lecturers</th>
<th>Relevancy of the course in the field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very good</td>
<td>Good</td>
<td>Poor</td>
<td>Very poor</td>
</tr>
<tr>
<td>Totals (N = 46)</td>
<td>3</td>
<td>23</td>
<td>17</td>
</tr>
<tr>
<td>%</td>
<td>6.5</td>
<td>50</td>
<td>37</td>
</tr>
<tr>
<td>Valid %</td>
<td>67</td>
<td>51.1</td>
<td>37.8</td>
</tr>
</tbody>
</table>

Table VI. Final year students’ assessment of their course
## Table VII.
Trainees’ assessment of their training preparation for future challenges in employment

<table>
<thead>
<tr>
<th></th>
<th>Totals (N = 52)</th>
<th>Valid %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Applying skills</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very well</td>
<td>21</td>
<td>42</td>
</tr>
<tr>
<td>Well</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>Not well</td>
<td>9</td>
<td>34.6</td>
</tr>
<tr>
<td><strong>Work responsibility</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very well</td>
<td>17</td>
<td>34.7</td>
</tr>
<tr>
<td>Well</td>
<td>24</td>
<td>49</td>
</tr>
<tr>
<td>Not well</td>
<td>8</td>
<td>16.3</td>
</tr>
<tr>
<td><strong>Advancement in employment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very well</td>
<td>12</td>
<td>24.5</td>
</tr>
<tr>
<td>Well</td>
<td>25</td>
<td>51</td>
</tr>
<tr>
<td>Not well</td>
<td>12</td>
<td>25</td>
</tr>
<tr>
<td><strong>Challenge on job</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very well</td>
<td>7</td>
<td>14.3</td>
</tr>
<tr>
<td>Well</td>
<td>33</td>
<td>67.3</td>
</tr>
<tr>
<td>Not well</td>
<td>9</td>
<td>18.4</td>
</tr>
<tr>
<td><strong>Creativity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very well</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td>Well</td>
<td>24</td>
<td>48</td>
</tr>
<tr>
<td>Not well</td>
<td>14</td>
<td>28</td>
</tr>
<tr>
<td><strong>Initiative</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very well</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Well</td>
<td>28</td>
<td>56</td>
</tr>
<tr>
<td>Not well</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td><strong>Job security</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very well</td>
<td>5</td>
<td>10.4</td>
</tr>
<tr>
<td>Well</td>
<td>23</td>
<td>47.9</td>
</tr>
<tr>
<td>Not well</td>
<td>20</td>
<td>41.7</td>
</tr>
<tr>
<td><strong>Career development</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very well</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td>Well</td>
<td>28</td>
<td>56</td>
</tr>
<tr>
<td>Not well</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td><strong>Adapt expertise to local environment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very well</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td>Well</td>
<td>22</td>
<td>44</td>
</tr>
<tr>
<td>Not well</td>
<td>16</td>
<td>32</td>
</tr>
<tr>
<td><strong>Technical knowledge</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very well</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>Well</td>
<td>22</td>
<td>44</td>
</tr>
<tr>
<td>Not well</td>
<td>3</td>
<td>6</td>
</tr>
</tbody>
</table>

### Conclusion
The need to have this study on vocational choice, practical training and graduates’ employment challenges is established from the empirical data obtained. The sample of supervisors and graduates that facilitated this study was a particularly important
group of employees that is very sensitive to technological changes and obsolescence of
skills (Benson, 2006). Implications of this study included college-based practical
training, good curricula that consider stakeholders’ needs and reinforced with
industrial training as a good foundation for the development of electrical engineering
graduates as they face employment challenges. Other research studies indicate that
students who have had industrial training are better perceived by employers (Vincens
and Chirache, 1992).

Boreham (2002) contributed by arguing for work-process co-production of curricula
with stakeholders for the learner’s attainment of broader understanding and technical
knowledge. However, the practice has been that employers are not involved in
curriculum development and evaluation that Kyambogo University should plan for
and implement. The university needs to build linkage with stakeholders, particularly
employers for sustainability and growth.

This study underscored the need for students to make their career choice based on
interest and aspirations. Students need to understand that the sole purpose of training
is to improve their knowledge, skills and abilities (Feldman and Whitcomb, 2005) in
relation to professional application and their total environment (O’Donoghue and
Maguire, 2005). The study revealed that students do not have adequate information on
the programmes being offered at the university. This is a barrier to early career
decision making among young adults that the university should through institution of
career guidance services.

Regarding policies, Government should put in place policies that address the age
limits within which people are employable without any barriers (Loretto and White,
2006). Employability policies (Benson, 2006) that facilitate employees updating their
skills, and acquiring new relevant knowledge are necessary and should be provided by

<table>
<thead>
<tr>
<th>How long have you been in the service?</th>
<th>Low</th>
<th>Less developed</th>
<th>Moderate</th>
<th>High</th>
<th>Well developed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-4 years</td>
<td>1.1</td>
<td>3.4</td>
<td>17.2</td>
<td>18.4</td>
<td>2.3</td>
<td>42.5</td>
</tr>
<tr>
<td>5-7 years</td>
<td>1.1</td>
<td>1.1</td>
<td>4.6</td>
<td>8.0</td>
<td>5.7</td>
<td>20.7</td>
</tr>
<tr>
<td>8-10 years</td>
<td>per cent total</td>
<td>1.1</td>
<td>5.7</td>
<td>2.3</td>
<td>9.2</td>
<td></td>
</tr>
<tr>
<td>11-13 years</td>
<td>per cent total</td>
<td>2.3</td>
<td>1.1</td>
<td>1.1</td>
<td>4.6</td>
<td></td>
</tr>
<tr>
<td>14 years and above</td>
<td>per cent total</td>
<td>2.3</td>
<td>9.2</td>
<td>6.9</td>
<td>1.1</td>
<td>19.5</td>
</tr>
<tr>
<td>Others</td>
<td>per cent total</td>
<td>2.3</td>
<td>6.9</td>
<td>36.8</td>
<td>41.4</td>
<td>12.6</td>
</tr>
<tr>
<td>Total</td>
<td>per cent total</td>
<td>2.3</td>
<td>6.9</td>
<td>36.8</td>
<td>41.4</td>
<td>12.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Can handle any work problems that come your way</th>
<th>Low</th>
<th>Less developed</th>
<th>Moderate</th>
<th>High</th>
<th>Well developed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of respondent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 25 years</td>
<td>Total (%)</td>
<td>8.1</td>
<td>5.8</td>
<td>2.3</td>
<td>16.3</td>
<td></td>
</tr>
<tr>
<td>25-35 years</td>
<td>Total (%)</td>
<td>1.2</td>
<td>7.0</td>
<td>23.3</td>
<td>31.4</td>
<td>8.1</td>
</tr>
<tr>
<td>36-45 years</td>
<td>Total (%)</td>
<td>1.2</td>
<td>7.0</td>
<td>37.2</td>
<td>41.9</td>
<td>12.8</td>
</tr>
</tbody>
</table>
Government. This study established that by the age of 40 graduates are out of employment mainly because of the decline in their skills. The current practice in Uganda is that such policies are either not appropriately applied or require revision to meet the new employment demands.

Like any other study, there were limitations in this research. To investigate such graduate employees on the factors that influence their vocational choice and how they perceive, adapt to new technological job challenges could be better done with a longitudinal research design involving a larger heterogeneous sample for generalisability. The conceptual perspective also needs further broadening and refinement. Future research should be directed towards addressing demographic changes, young adulthood career choices (Feldman and Whitcomb, 2005) and up-to-date employee competences and knowledge, including use of information and communication technology (Arnold, 2004).

References


Further reading


Appendix. Evaluation of the effects of vocational choice and practical training on students’ employability questionnaire

Organisational trust (electrical engineering employees only)

1. Management at my organisation is sincere in its attempts to meet the worker’s point of view.
2. Our organisation has a poor future unless it can attract better management.
3. Management can be trusted to make sensible decision for the future of the organisation.
4. Management at work seems to do an efficient job.
5. I feel quite confident that the organisation will try to treat me fairly.
6. Our management would be quite prepared to gain advantage by deceiving workers.

Needs and expectations

1. This organisation gives me the opportunity to meet challenges in the work.
2. My job carries quite a lot of prestige in my organisation.
3. This organisation has given me the chance to use more of my skills and abilities.
4. This organisation has given me the chance to learn new things.
5. I get recognition for what I succeed in doing for this organisation.
6. Working for this organisation carries a lot of prestige in this society.
7. Working for this organisation allows me to meet social and economic obligations.
8. If I had a place to go I would leave this organisation in a year’s time.
9. I am planning to leave this organisation in the next five years.
10. I hate to admit it, but if I had a place to go I would not hesitate to leave this organisation.
11. Are able to adapt to changing circumstances.
12. Are willing to take risks (action with uncertain outcomes.
13. Welcome job and organisational (changes, e.g. new assignments).
14. Can handle any work problems that come your way.
15. Look forward to working with new and different people.
16. Have clear career goals.
17. Have realistic career goals.
18. Know your strengths (the things you are good at).
19. Know your weaknesses (the things you are not good at).
20. Recognise what you can do well and cannot do well.
21. Define yourself by your work.
22. Work as hard as you can, even if it means frequently working long days and weekends.
23. Are involved in your job.
24. Are proud to work for your organisation.
(25) Believe that your success depends on the success of your employer.
(26) Are loyal to your employer.
(27) See yourself as a professional and/or technical expert.
(28) Demonstrates trust and confidence in you.
(29) Treats you with dignity and respect.
(30) Gives you the authority you need to do the job.
(31) Provides you with a useful performance appraisal.
(32) Provides you with ongoing feedback.
(33) Jointly sets performance objectives with you.
(34) Helps you develop career plans.
(35) Provides adequate time for you to attend training.

Supervisors’ rating of their graduates/subordinates at work

(1) Seeks and accepts responsibilities at all times.
(2) Performs competently under pressure.
(3) Gets a great deal done within a given time frame.
(4) Readily accepts more work.
(5) Could be expected to be in a position to start work at an appointed time.
(6) Could be relied on to come on time every morning.
(7) Could be expected to maintain the hours he/she is required to work.
(8) Could be expected to attend work regularly and be punctual.
(9) Does not take days off without previously asking for them.
(10) Outstanding and effective in dealing with members of the public.
(11) Never deliberately works below his/her best even without supervision.
(12) Anticipates problems and develops suggestions in advance.
(13) Assists superior with his/her work.
(14) Makes innovative suggestions to improve the department or organisation.
(15) Helps others who have a heavy workload.
(16) Does only what is required of him/her and never volunteers for extra work.

Evaluation of graduates/employees at work

(1) Technical Institute/College/University last attended.
(2) Was the subject matter of the training at the university pertinent to your needs and interests?
(3) How was the ratio of lecture to lab/workshop practical?
(4) Are able to adapt to changing circumstances.
(5) Are willing to take risks (action with uncertain outcomes).
(6) Welcome job and organisational (changes, e.g. new assignments).
(7) Can handle any work problems that come your way.
(8) Look forward to working with new and different people.
(9) Have clear career goals.
(10) Have realistic career goals.
(11) Know your strengths (the things you are good at).
(12) Know your weaknesses (the things you are not good at).
(13) Recognise what you can do well and cannot do well.
(14) Define yourself by your work.
(15) Work as hard as you can, even if it means frequently working long days and weekends.
(16) Are involved in your job.
(17) Are proud to work for your organisation.
(18) Believe that your success depends on the success of your employer.
(19) Are loyal to your employer.
(20) See yourself as a professional and/or technical expert.

Employees’ rating of the supervisor
(1) Demonstrates trust and confidence in you.
(2) Treats you with dignity and respect.
(3) Gives you the authority you need to do the job.
(4) Provides you with a useful performance appraisal.
(5) Provides you with ongoing feedback.
(6) Jointly sets performance objectives with you.
(7) Helps you develop career plans.
(8) Provides adequate time for you to attend training.

Student(s) rating of the lecturer(s)
(1) How well did they state objectives?
(2) How well did they keep the lectures alive and interesting?
(3) How well did they use the blackboard, charts, and other aids?
(4) How well did they summarize during the lectures?
(5) How well did they maintain a friendly and helpful manner?
(6) How well did they illustrate and clarify the points?
(7) How was the summary at the close of the session?
(8) What is your overall rating of the lecturer(s)?

Personal information
(1) Age of organisation/hospital/school/institute/college/polytechnic.
(2) Approximate number of employees in your organisation.
(3) Number of people in your department/section/ward.
(4) How long have you been in service?
(5) What is your qualification?
(6) Name of technical institution attended for highest qualification obtained.
(7) What is your present status/title in the organisation?
Vocational choice

(1) How important were the following reasons for undertaking electrical engineering? (Please circle)
   (a) Acquisition of skills and knowledge.
   (b) Professional advancement.
   (c) Monetary gains.
   (d) Need for break in work routine.
   (e) On advice of my employer.

(2) Were you advised to select your course of study according to your aspiration?

(3) If imposed on you by who?

(4) Was the course imposed relevant enough for employment?

(5) How many of you graduated in your year?

(6) How does the number relate to the demand of electrical engineers in the field?

(7) When considering studying the course above, did you take account of changing employment situations which may require changing attitudes?

(8) How well were you prepared for the following? (Please tick)
   (i) Applied knowledge.
   (ii) Creativity.
   (iii) Initiative.
   (iv) Technical knowledge.

(9) Were you employed, when you joined the course?

(10) If Yes, did this engineering profession increase your chances for . . .
   (i) Job security.
   (ii) Technical knowledge.
   (iii) Adaptive expertise to suit local condition.
   (iv) For local needs.

Evaluation of the college-based training programme

(1) How would you assess quality of the training with regard to the following?
   (a) Variety/range of average subjects.
   (b) Theoretical aspects.
   (c) Practical aspects.
   (d) Industrial training.

(2) How would you assess the quality of your education with regard to the following?
   (a) Training techniques.
(b) Lecturers performance (competence, ability, etc.).
(c) Study materials (books).
(d) Use of laboratory facility.
(e) In the conducting practicals.
(f) In the availability of lecturers.

(3) Were the following part of your education?
   (a) Industrial training.
   (b) Study visits.
   (c) Practical projects.

(4) If yes, how relevant to your training is
   (a) Industrial training.
   (b) Study visits.
   (c) Practical projects.

Effects of the training on work performance

(1) After engineering education:
   (a) Immediately employed
       (a) If No, how long did you remain unemployed? State how long.

(2) Were you employed before college?

(3) How did you get your job after engineering education?
   (a) through institutional allocation;
   (b) personal efforts/contacts;
   (c) employer recruitment.

(4) How well did engineering education prepare you for the following?
   (i) applying skills;
   (ii) work responsibility;
   (iii) advancement in employment opportunities;
   (iv) challenge of job;
   (v) creativity;
   (vi) initiative;
   (vii) job security;
   (viii) further career development;
   (ix) adapt expertise to suit the local situation;
   (x) technical knowledge.

Causes of unemployment for graduate engineers

(1) How good is your educational system?

(2) Do you have adequate facilities for your training?
(3) Are the following part of your training?
   (a) industrial training;
   (b) practical project.

(4) Do you have adequate lecturers for your course?

(5) Were you advised about the opportunities of employment in the course?

(6) Is the course relevant to requirement in the field?

(7) When considering coming for the course you are studying, did you consider changing employment situation which may require changes of attitude about certain courses?

(8) How do you think will the introduction of technology particularly advanced technology such as the computer to effect your chances of getting employment on completion?

(9) Now that Uganda’s economy is gaining momentum, are your chances of employment breaking?

(10) Comment on the state of Uganda’s Economy as far as employment is concerned.

(11) How well are you prepared for?
   (i) applying knowledge;
   (ii) technical knowledge;
   (iii) creativity;
   (iv) job responsibility;
   (v) self employment;
   (vi) industrial work;
   (vii) city conditions.

About the author
James Kagaari – Nationality: Ugandan. Previous universities attended: Bachelor’s Degree in Social Sciences (Makerere University, Uganda) Master of Organisational Psychology (Makerere University, Uganda). Current position – Lecturer Kyambogo University. Current area of research: to develop and test a theoretical model that should come up with an enriched explanation of performance management that will facilitate managers of organisations implement systems, which will avoid criticisms of: poor management practices, bureaucratic inefficiencies, and poor quality services. Manuscripts – “Evaluation of the effects of vocational choice and practical training on students’ employability”, “Engineering lecturers’ competencies and organizational citizenship behaviour (ocb) at Kyambogo University”. James can be contacted at: Kagaari@yahoo.com

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