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# Developing Innovation Competence Profile For Teaching Staff In Higher Education In Uganda

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## Abstract

Higher education across the globe is under increasing pressure to prepare students with innovation capacities to address challenges facing humanity in the 21st century and beyond. A call for innovative graduates without first understanding the factors that impede higher education institutions from acting as catalysts of innovation is not judicious. One of the notable factors that has been advanced is the lack of adequate competent teachers to let students develop innovation skills. This paper explores competence domains with their underlying competencies teaching staff require to act competently in the innovation field as well as being able to prepare students with the capability to foster innovation at the place of work. The study employed a mixed research design involving systematic literature search, exploratory survey, and three focus group discussions. The study was conducted in four stages. After stage one, four teacher innovation competence domains and 17 underlying competencies were identified. After the consultation questionnaire and focus group discussions, one competence domain was added to the profile and two competencies considered irrelevant were omitted. The study presents five innovation competence domains (teaching staff as: an innovator, knowledge society developer, networker and collaborator, higher education designer and developer, and entrepreneur) and15 underlying competencies.

**Key words:** Innovation, competence profile, teaching staff, higher education, Uganda

## 1. Introduction

Higher Education Institutions (HEIs) especially in Africa are failing to meaningfully address the pressing national socio-economic development challenges. On top of ensuring that the masses adequately meet their basics of life, countries such as Uganda have an uphill task of gaining competitive advantage in the global economy (Kibwika, 2006; Mamdani, 2007; Jowi, 2012). In an attempt to address this challenge, Uganda government, for example, has launched efforts to transform her society from peasant to modern and prosperous country within the coming 26 years (Uganda Vision 2040). The vision singles out education and innovation as one of the key avenues to reach to the desired development goals.

A demand for innovative graduates to foster socio-economic development, without first understanding the factors that impede HEIs to equip students with innovation competence is imprudent. One of the notable factors that has been advanced is the poor quality education system, mainly attributed by the lack of adequate competent teachers to let students develop innovation skills (Kibwika, 2006; O'Sullivan, 2010). Yet, a large body of research literature shows that student achievement is more heavily influenced by teacher quality (Darling-Hammond, 1997a).

Thus, providing relevant education that prepares a work force relevant to Uganda's socio-economic development needs should be a top priority. To this end, teaching staff in HEIs nowadays and the decades to come face uphill tasks ranging from: structuring relevant courses that enhance students' employment opportunities in the ever changing global labour market as well as teaching students how to create their own employment opportunities; and preparing students who can contribute to innovation at their work place and society (Cachia et al, 2010; Ferrari et al, 2009; Trilling & Fadel, 2009).

Apparently, there is overwhelming evidence that HEIs especially in Africa are incapable of preparing creative and innovative graduates with the capability to address numerous problems and challenges in the various labour sectors (Kasozi, 2003; Kibwika, 2006). This among other things is mainly attributed to lack of adequate competent teaching staff. It is against this background that this study set out to contribute to the development of a competence profile which could be used to underpin the recruitment, training and development of teaching staff in HEIs in African countries like Uganda.

## 2. Theoretical Framework

This study is rooted in the social efficiency notion of teacher education reform as advanced by Zeichner & Linston (1990), and builds on the work of Tigelaar et al (2004) on teaching competencies in higher education. The social efficiency perspective of teacher education reform is useful in examining the nature of teacher work so as to provide a basis for studying teaching (Zeichner & Liston, 1990). In this approach to teacher education, training and development, competencies are spelt out in advance together with the criteria to measure mastery of these competencies. Once the competencies have been demonstrated, the teacher is then viewed as 'effective' (Zeichner & Liston, 1990).

Some of the key assumptions in the social efficiency perspective in teacher education reform discourse as presented by Cochran-Smith (2002) include: teachers must have the ability to demonstrate required competencies; strategies and processes of effective teachers can best be determined through the scientific study of the nature of teacher work; teachers should be prepared for the realities of the teaching world; and teachers must have a desire for continuous learning. Building on these assumptions several authors (e.g. Badley, 2000; Bhargava & Patty, 2011; Karacaoglu, 2008; Li-Hua & Wilson, 2010; Martin et al, 2000; Nicoll & Harrison, 2003; Pantic & Wubbels, 2010; Tigelaar et al, 2004), all have commented extensively regarding the generic competencies required of teachers in HEIs.

This study attempts to make empirical contribution by exploring a wide range of competencies teaching staff in HEIs need to prepare students with the capability to contribute to innovation at their place of work and

society. This in turn is expected to reduce on the persistent problems of poverty, disease, food shortage, and other poor living conditions faced by a big number of people in most African countries. As such, the study adds to the existing literature regarding how HEIs in Africa can significantly act as a catalyst for national development as well as improving people's quality of life.

## 3. Methodology

The study employed a mixed research approach, involving cross-section survey and exploratory research design. This is because it set out to explore and confirm teaching staff innovation competence domains and their underlying competencies in HEIs . The study focus was on collecting rich qualitative information, through thorough literature search and small scale qualitative focus group discussions deemed to be more informative than large-scale surveys (Mulder et al, 2005; Wesselink & Wals, 2011).

## 4. Procedure

The development of innovation competence profile for teaching staff in HEIs in Uganda, was done in four stages. In the first stage, a systematic literature search led to generation of the first draft of the tentative profile. In the second stage, a consultation questionnaire for the selected key stakeholders in higher education in Uganda, led to the development of the second draft of the tentative profile. In the third stage, focus group discussions with key informants representing the various selected key stakeholder in higher education in Uganda led to exploration of competences and their underlying competencies teaching staff need to prepare innovative students in depth. In the fourth stage, a validation questionnaire was done. These stages are elaborated in details below.

### 4.1 First Stage: Literature Study

The study employed a systematic literature review in order to develop the first draft of the tentative innovation competence profile for teaching staff in HEIs . This method is considered highly appropriate in social science research as it: ensures a replicable and transparent procedure for determining what is currently known or stated about a certain phenomenon and for identification of sources to include in the review (Kumar, 2011). In addition, it also underpins the study research methodology; broaden one's knowledge base in the research area; and makes it possible to contextualise the study findings (Kumar, 2011). Creswell's (2002: 86) five-step process ("…identifying terms to typically use in your literature search; locating literature; reading and checking the relevance of the literature; organising the literature you have selected; and writing a literature review") in general acted as a useful guide to accomplish a systematic approach in the literature study. To this end, the literature search process consisted of three stages described below.

### 4.1.1 Formulation of inclusion and exclusion criteria

To come to a useful list, inclusion and exclusion criteria were formulated. The inclusion criteria were as follows: a) relevance of each publication i.e. each publication should be about teacher competencies and innovation in higher education institutions; b) peer reviewed articles; c) publications only written in English were considered, as the first author could only read and understand one international language i.e. English; d) the literature search time span was limited to 2000 - 2012. It is in within this period, that debates about the role of higher education in building a knowledge society, knowledge-based economy, and innovation-oriented population have become a top priority for academics, researchers, governments, policy makers and other stake holders (Brennan et al 2004; James et al 2011; Meek et al 2009; OECD, 2008; Pargaru et al 2009; World Bank, 2002). This made it possible to get a thorough overview of the recent research on teacher competencies and innovation in higher education institutions. Publications reporting on educational innovations in higher education (e.g. integration of ICT in the teaching and learning in higher education, Online Distance Education Learning etc.) and their implementation were beyond the scope of this review, and as such were excluded from the review.

### 4.1.2 Development of a search strategy

In order to develop a search strategy that would lead to development of a comprehensive tentative innovation competence framework for teaching staff in higher education, various search terms were identified as being the most informative. The search descriptors included: *innovation knowledge and skills*, *creativity skill development*, *innovation skill development*, and *teacher competenc*OR Skill? OR Capabili* OR Knowledge* each in combination with *higher education*, and *university*. Quotation marks were employed to search for phrases. The search strategy focused on title, abstract, and key words so as to get publications with a clear focus on teacher competencies and innovation skill teaching in HEIs .

### 4.1.3 Identification of relevant publications

Four data bases were searched: the Web of Science® (WoS), Scopus, Educational Resources Information Centre (ERIC) and Google Scholar. The abstracts of the publications resulting from the foregoing search strategy were screened for relevancy. If the abstract provide insufficient information, then the full text was perused to determine whether or not the publication is in line with the inclusion criteria. To this end, 45 publications were found to have information on teacher competencies, innovation and creativity, innovations in education, innovation knowledge and skills in higher education institutions. After perusing these articles, the first and second authors of this manuscript agreed that 28 (62%) have useful information for the study (see the inclusion and exclusion criteria mentioned above). The literature search done by the aforementioned

manuscript authors led to the development of a profile comprising of four tentative competence domains with their 17 underlying competencies. This is presented in the results section (5.1).

### 4.2 Second Stage: Consultation Questionnaire

The results from the literature search acted as a basis to construct a consultation questionnaire for the key stakeholders of higher education. This was geared at enriching the tentative profile as well as building consensus among the study participants. Participants in this stage were key stakeholders in higher education falling under five categories: teaching staff and students, employers of higher education graduates in government, private sector, and experts in higher education in Uganda). These different groups of people were chosen because they are all key actors in the education, training, and development of the country's human resource, and as such act as main drivers of the country's economy and labour force. Their selection made it possible to capture useful information from different perspectives regarding what should be included or excluded on second draft of the tentative profile.

Administration of the consultation questionnaire was done through employing a cross-section survey method. This method enables gathering of data from a sample of a population at a particular time so as to establish the prevalence of a phenomenon, situation, problem, attitude or issue by taking a cross-section of the population (Kumar, 2011). In this light, the sample population of 200 key higher education stakeholders (50% of teaching staff at Kyambogo University (n = 160); 10% of student leaders at Kyambogo University (n = 10); Employers of higher education graduates- members of the Uganda private sector foundation (n= 10), human resource management directors of government institutions (n= 10); and higher education experts in Uganda (n= 10) were involved in this phase. The total number of participants in this phase were determined by their availability and role played in higher education and training of the country's workforce.

The participants were asked to rate on a scale of one to five (1 = Not relevant; 2 = Slightly relevant; 3 = Moderately relevant; 4 = Very relevant; 5 = Essential) the extent they agreed with items on the tentative profile. Besides, they were also asked to add competencies they felt are missing on the first profile draft. On the foregoing scale, items on the tentative profile that have an average score of three and above are regarded as relevant. Meanwhile, items that have an average score of 2.9 and below are regarded as irrelevant. One-Sample t Test was used to check whether the score of 2.9 is significantly different from 3. This underpinned the inclusion or exclusion of items on the tentative profile. Items that have an average score of 4.5 – 5 are considered essential, those with 4.0 - 4.4 are considered very relevant, and those with 3.0 - 3.9 are considered relevant.

Of the 200 consultation questionnaires disseminated to the selected participants, 120 were completed and returned within the required time. The distribution among the different groups was as follows: teaching staff- n = 95; student leaders- n = 09; Employers of higher education graduates in the private sector- n = 05, human resource management directors of government institutions -n = 05; and higher education experts- n = 06. This represents 60% response rate (see Table 1). However, as Kumar (2011) urges, one is considered lucky to obtain a 50% response rate.

Teaching staff and students at Kyambogo University were purposively selected because the institution does not have a competence profile to guide the education, training and development of teaching staff just like many other universities and higher education institutions in Uganda. Moreover, Kyambogo is the second largest public university in Uganda, mandated with the preparation of primary, secondary, and college tutors. This without question casts doubt on the quality of teacher education and training provided by Kyambogo University, and the overall impact teachers may have on fostering socio-economic development in Uganda. Needless to say, competence profiles are used as tools to describe the structure and the content of a job, thus spelling out what is required of a professional to fulfil the task of that job (Wesselink & Wals, 2011).

### 4.3 Third Stage: Focus Group Discussions

After consultation questionnaire administration and analysis (see Table 2), half-day focus group discussions with eleven key informants (three university teaching staff, two student leader, two human resource directors from the private sector, two human resource directors from government institutions and two experts in higher education in Uganda) were held. Mulder et al (2005) and Wesselink & Wals (2011) advance that at this stage of the job competence profile development process, small-scale qualitative approaches (interviews, discussions) are considered more informative than large scale surveys as earlier mentioned. The focus group discussions were geared at coming up with thoroughly discussed and unanimously agreed on competences and their underlying competencies, that teaching staff in HEIs need to prepare students with the capability to contribute to socio-economic development through undertaking innovations in the various labour fields.

The participants were randomly divided into two groups of six and five members. For each group, the following key question was posed to steer the discussion for a duration of two to three hours: *which jobs/tasks (competence domains), and competencies (behavioural task/job related characteristics/qualities) in reflection to both quantitative and qualitative results from the consultation questionnaire, do* teaching staff *in HEIs require to prepare students with the capability to contribute to innovation at their work place and society?* The participants in each group were also asked *with reasons to rank the competence domains and underlying competencies starting with the most relevant to the least relevant and also to make additions or subtractions*

*on the tentative profile.* At the end of the three hour group discussions, the two groups reported their findings in a plenary session, during which synchronisation of the findings was made so as to come up with a refined version of the profile (see Table 3 in section 5.3).

### 4.4 Fourth Stage: Validation Questionnaire

The refined version of the profile developed after the focus group discussions acted as input for the validation questionnaire, which was administered to participants that took part in the focus group discussions. This aimed at evaluating the trustworthiness of the qualitative approach of the group discussions (Mulder et al 2005). It also made it possible to establish the extent the focus group participants agreed on the degree of relevance of each item on the refined innovation competence framework for teaching staff in HEIs as per the group discussions. The results obtained from the validation questionnaire (see Table 3), led to the development of the final version of the profile, presented in the next section herein.

## 5. Results

In this section, qualitative and quantitative results are presented and discussed. First, is the presentation of what is expected from the teaching staff in HEIs from the literature search.

### 5.1 Tentative Teaching Staff Innovation Competence Profile From The Literature Search

*Table 1: Tentative competence domains and underlying competencies generated from the literature search*

| **Competence domain (n = 4) title and definition** | **Underlying competencies (n = 17)** | **Sources (n = 28 )** |
|---|---|---|
| **Knowledge society developer:** Teaching staff's ability to effectively create and disseminate knowledge and skills needed by students to be relevant and productive in the knowledge explosion era | Ability to teach a diverse range of students, from different age groups, intellectual abilities, socio-economic backgrounds, races, cultures and religions<br>Ability to authentically facilitate students' understanding of advancements in all spheres of life and its impact on the society<br>Ability to facilitate global and cultural awareness among students and other stakeholders | 1. Harley et al (2000). "The real and ideal": teacher roles and competences in South Africa- policy and practice.<br>2. Tigelaar et al (2004). Development & validation of a framework for teaching competencies in higher education.<br>3. Pantic et al (2011). Teacher competence as a basis for teacher education-comparing views of teachers and teacher educators in five Western Balkan countries |

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| | Ability to authentically facilitate students' rationale and scientific temperament development | 4. Nicoll and Harrison (2003). Constructing the good teacher in higher education: The discursive work of standards.<br>5. Barnes et al (1994). Higher education staff development: directions for the 21st century.<br>6. Van der Klink et al (2007)- Competences and vocational higher education: now and in future.<br>7. Karacaoglu (2008). Determining the teacher competencies required in Turkey in the European Union harmonisation process. |
| **Higher education designer & developer:**<br>Teaching staff's ability to:<br>envisage the needed current and future knowledge and skills of the globalised economy<br>Structure study programmes that are responsive to the labour market needs | Ability to authentically structure content that prepares students to meet the knowledge economy labour market demands<br><br>Ability to structure learning experiences that enable students to cope and adapt to the global knowledge economy era<br>Ability and commitment to conduct research in area of speciality<br><br>Ability to design activating educational materials<br><br>Ability to adjust teaching practice on the basis of evaluations | 8. Laine et al (2008). Higher education institutions and innovation in the knowledge society.<br>9. Short (2010). Higher education and the world of work<br>10. Alves et al (2012). Reconstructing higher education? The case of master's and PhD programmes in education in a Portuguese institution.<br>11. Henard & Leprince-Ringuet (2008). The path to quality teaching in higher education.<br>12. Martin et al (2000). What university teachers teach and how they teach it'<br>13. Stigmar (2010). 'When bridging theory and practice in higher education'.<br>14. Pilot (2007). The teacher as a |

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| | | crucial factor in curriculum innovation: the case of Utrecht University.<br>15. Liakopoulou (2011). The professional competences of teachers: which qualities, attitudes, skills and knowledge contribute to a teacher's effectiveness? |
| **Innovation orientation:**<br>Awareness of desired teaching staff's innovative behaviours and ability to put these in practice | Self-development- Teaching staff's ability to proactively take actions to improve personal ability to remain relevant and productive in the education sector as well as in the highly competitive globalised knowledge economy<br><br>Inventive thinking- Teaching staff's ability to come up with new things in his area of speciality<br><br>Flexibility- Teaching staff's ability and willingness to adapt to and work effectively within a variety of diverse situations, and diverse individuals or groups<br><br>Initiative and entrepreneurialism- Teaching staff's ability to turn desired education ideas into action<br><br>Reflecting on difficulties- | 16. Meek et al (2008). Higher education, research and innovation: changing dynamics<br>17. Gibbs & Coffey (2004)- The impact of training of university teachers on their teaching skills, their approach to teaching and approach to learning of their students.<br>18. Van Dam et al (2009)- Developing a competency-based framework for teachers' entrepreneurial behaviour.<br>19. Li-Hua et al (2010). Strategic aspects of innovation and internalisation in higher education: the Salford PM12 experience.<br>20. Cachia et al (2010). Creative learning and innovative teaching.<br>Hodgson (2012). "The only answer is innovation…": Europe, policy, and the big society<br>21. Vila et al (2012). "Higher education and the development of competencies for innovation in the work place" |

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|---|---|---|
| | Teaching staff's willingness to "work through" the personal experience of having contributed to an unsuccessful outcome | 22. Putkonen et al (2010). Enhancing engineering students' innovation skills through innovation pedagogy: experiences in Turku University of Applied Sciences.<br>23. Bjornali & Storen (2012). Examining competence factors that encourage innovative behaviour by European higher education graduate professionals |
| **Collaboration and Networking:**<br>Teaching staff's ability to work well with and through partnerships and networks with professionals, government departments, industries, business organisations etc. to advance the frontiers of knowledge as well as improving people's quality of life | Relationship building- Teaching staff's ability to build and or maintain ethical relationships or networks or contacts with students, colleagues and with other people who are, or may be potentially helpful in achieving education/work related goals and establishing advantages<br><br>Teamwork and co-operation- Teaching staff's ability to work co-operatively within diverse teams, work groups, diverse students to achieve the desired educational goals<br><br>Partners with stakeholders- Teaching staff's ability and desire to work co-operatively with all education stakeholders to meet the desired mutual goals. | 24. Buckley (2012). Higher education and knowledge sharing: from ivory tower to twenty-first century<br>25. Sa (2011). Redefining university roles in regional economies: a case study of university-industry relations and academic organisation in nanotechnology.<br>26. Foulger et al (2008). 'We innovate: the role of collaboration in exploring new technologies'.<br>27. O'Connor (2012)- The professional development needs of academic teachers adding career technical education licenses.<br>28. Tafel-Viia et al (2012). Networks as agents of innovation: teacher networking in the context of vocational and professional higher education reforms |

The literature search in Table 1, show that teaching staff in HEIs among other things are expected to: teach a diverse range of students, from different age groups, intellectual abilities, socio-economic backgrounds, races, cultures and religions; authentically facilitate students' understanding of advancements in all spheres of life and its impact on the society; facilitate global and cultural awareness among students and other stakeholders; and authentically facilitate students' rationale and scientific temperament development (Barnes et al 1994; Harley et al 2000; Karacaoglu 2008; Laine et al 2008; Nicoll and Harrison 2003; Pantic et al 2011; Short 2010; Tigelaar et al 2004;Van der Klink et al 2007). These expectations are considered essential for developing a knowledge society. Thus, teaching staff's ability to effectively create and disseminate knowledge and skills needed by students to be relevant and productive in the knowledge economy is crucial. In this study, this teaching staff ability is conceptualised as the *knowledge society developer competence domain*.

Secondly, the literature search reveals that teaching staff are expected to: authentically structure content that prepares students to meet the knowledge economy labour market demands; structure learning experiences that enable students to cope and adapt to the global knowledge economy era; have the ability and commitment to conduct research in area of speciality; design activating educational materials; and adjust teaching practice on the basis of evaluations (Alves et al 2012; Harley et al 2000; Henard & Leprince-Ringuet, 2008; Liakopoulou, 2011; Martin et al 2000; Meek et al 2008; Pilot, 2007; Putkonen et al 2010; Stigmar, 2010; Tigelaar et al 2004). These expectations are considered critical in designing and developing relevant higher education that can foster socio-economic development in society. Teaching staff's ability to envisage the needed current and future knowledge and skills of the globalised economy as well as structuring study programmes that are responsive to the labour market needs is of paramount importance. In this study, this ability is conceptualised as *the higher education designer and developer competence domain*.

Thirdly, the literature search reveal that teaching staff in HEIs ought to: proactively take actions to improve personal ability to remain relevant and productive in the education sector as well as in the knowledge and innovation era (self-development); come up with new things in their area of speciality (inventive thinking); have ability and willingness to adapt to and work effectively within a variety of diverse situations, and diverse individuals or groups (flexibility); turn desired education ideas into action (initiative and entrepreneurialism); have willingness to "work through" the personal experience of having contributed to an unsuccessful outcome (reflecting on difficulties) (Bjornali & Storen, 2012; Cachia et al 2010; Gibbs & Coffey, 2004; Harley et al 2000; Hodgson, 2012; Li-Hua et al 2010; Kallenberg, 2007; Kibwika, 2006; Laine et al 2008; Meek et al 2009; Tigelaar et al. 2004; Van Dam et al 2009; Vila et al 2012). These expectations require the teaching staff

to possess innovative behaviours and have the ability to put these in practice. In this study, this ability is conceptualised as *innovator competence domain*.

Fourthly, the literature search furthermore reveals that teaching staff are expected to have the ability to: build and/or maintain ethical relationships or networks or contacts with students, colleagues and with other people who are, or may be potentially helpful in achieving education/work related goals and establishing advantages (relationship building); work co-operatively within diverse teams, work groups, diverse students to achieve the desired educational goals (teamwork and co-operation); and work co-operatively with all education stakeholders to meet the desired mutual goals (Partners with stakeholders) (Buckley, 2012; Foulger et al 2008; Harley et al 2000; Kibwika, 2006; O'Connor, 2012; Sa, 2011; Tafel-Viia et al 2012; Tigelaar et al 2004; Van Dam et al 2009). These expectations require teaching staff to work well with and through partnerships and networks with professionals, government departments, industries, business organisations etc. to advance the frontiers of knowledge as well as improving people's quality of life. In this study, this ability is conceptualised as *Networker and collaborator competence domain*. The generated tentative profile from the literature search, underpinned the construction of a consultation questionnaire in stage two. Table 2 shows the results of step 2.

## 5.2 Teaching Staff Innovation Competence Needs As Perceived By Key Stakeholders In Higher Education

A total of 4 competence domains and 17 underlying competencies that formed the tentative profile were presented to selected key stakeholders in higher education to establish those that are relevant for teaching staff to prepare students with innovation capacities at the place of work and society as whole (see Table 2).

***Background information***

Regarding the category of respondent, nine were university student leaders (7.5%); university teaching staff were 95 (79.2%); human resource directors in the private sector were five (4.2%); human resource directors in the government sector were five (4.2%); and higher education experts in Uganda were six (5.0%). With respect to gender, 88 were males (73.3%); and 32 were females (26.7%). As to the age of respondents, nine were between 18 – 24 years (7.5%); 30 were between 25 – 35 years (25%); 47 were between 36 – 46 years (39.2%); and 34 were 47 years and above (28.3%). Regarding the work experience of respondents in their fields, only one respondent has working experience between one - two years (0.8%); 30 respondents have working experience between three - five years (25%); 45 respondents have working experience between six-ten years (37.5%); and 35 respondents have working experience of 11 years and above (29.2%).

*Table 2: Extent of agreement of selected key stakeholders on teaching staff needed innovation competence needs as per the consultation questionnaire*

| Competence domain and underlying competencies | N[1] =120 | M[2] | SD[3] |
|---|---|---|---|
| **Teaching staff as a networker and collaborator** | | | |
| Teamwork and co-operation- Teaching staff's ability to work co-operatively within diverse teams, work groups, diverse students to achieve the desired educational goals | | 3.9 | 1.21 |
| Relationship building- Teaching staff's ability to build and or maintain ethical relationships or networks or contacts with students, colleagues and with other people who are, or may be potentially helpful in achieving education/work related goals and establishing advantages | | 3.7 | 1.36 |
| Partners with stakeholders- Teaching staff's ability and desire to work co-operatively with all education stakeholders to meet the desired mutual goals | | 3.5 | 1.47 |
| **Teaching staff as an innovator** | | | |
| Self-development- Teaching staff's ability to proactively take actions to improve personal ability to remain relevant and productive in the education sector as well as in the highly competitive globalised knowledge economy | | 3.7 | 1.42 |
| Flexibility- Teaching staff's ability and willingness to adapt to and work effectively within a variety of diverse situations, and diverse individuals or groups | | 3.6 | 1.41 |
| Inventive thinking- Teaching staff's ability to come up with new things in his area of speciality | | 3.5 | 1.61 |
| Initiative and entrepreneurialism- Teaching staff's ability to turn desired education ideas into action | | 3.4 | 1.57 |
| Reflecting on difficulties- Teaching staff's willingness to "work | | 3.0 | 1.55 |

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|---|---|---|
| through" the personal experience of having contributed to an unsuccessful outcome | | |
| **Teaching staff as a higher education designer and developer** | | |
| Ability to structure learning experiences that enable students to cope and adapt to the global knowledge economy era | 3.7 | 1.08 |
| Ability to authentically structure content that prepares students to meet the knowledge economy labour market demands | 3.7 | 1.17 |
| Ability and commitment to conduct research in area of speciality | 3.6 | 1.55 |
| Ability to design activating educational materials | 3.1 | 1.41 |
| Ability to adjust teaching practice on the basis of evaluations | 3.1 | 1.46 |
| **Teaching staff as a knowledge society developer** | | |
| Ability to teach a diverse range of students, from different age groups, intellectual abilities, socio-economic backgrounds, races, cultures and religions | 3.4 | 1.47 |
| Ability to authentically facilitate students' understanding of advancements in all spheres of life and its impact on the society | 3.0 | 1.45 |
| Ability to facilitate global and cultural awareness among students and other stakeholders | 2.9 | 1.51 |
| Ability to authentically facilitate students' rationale and scientific temperament development | 2.9 | 1.57 |

[1]Number of respondents

[2]Mean 1= Not relevant ; 2= Moderately relevant; 3= Relevant; 4= Very relevant; 5= Essential)

[3]Standard deviation

As can be seen in Table 2, only two items have an average score of 2.9 which is below the required average score of three for the profile competencies to be considered relevant as per the defined scale. One-Sample t

Test was performed to check whether the score of 2.9 is significantly different from 3. The results show that the t-value is -.121 falling in the acceptance region of the null hypothesis, thus, 2.9 is significantly different from three. In light of this results, the two items with average score 2.9 regarding the teaching staff as a knowledge society developer were excluded from the second version of the competence profile. Furthermore, Table 2 results reveal that the participants considered teaching staff as a networker and collaborator, as the most important competence domain. This is followed by teaching staff as: an innovator, higher education designer and knowledge society developer respectively.

From the consultation questionnaire, participants suggested additional profile items such as entrepreneurialism, pedagogical leadership, and ICT usage in the instructional process etc. The focus group discussion participants deliberated on these suggested additional profile items and agreed on what should be included and excluded on the tentative profile in stage three of the study presented in the next section 5.3. This underpinned adjustment of the tentative profile developed from the literature search.

## 5.3 Teaching Staff Innovation Competence Needs As Perceived By Focus Group Discussion Participants

The Focus Group Discussion participants in regard to the additional suggested profile items, recommended that the entrepreneurship competence domain and its underlying competencies is relevant and should be included on the profile. This was underpinned by the argument that teaching staff should have the ability to equip students with entrepreneurial skills in order for the students in question to make things happen. Especially, in the event that entrepreneurship nowadays is seen as one of the most important aspects of any country's economy. Other suggested profile items were considered rubrics by the participants, as such were not included on the tentative profile. Thus, the modified version of the profile comprise of 5 competence domains and 15 underlying competencies (see Table 3). This version was discussed by eleven selected key higher education stakeholders, with the object of reaching consensus regarding the profile in stage three as earlier on mentioned. During the group discussions, views to support the degree of relevance of each competence domain and their underlying competencies were given. In order to establish the extent of agreement and disagreement regarding the order and degree of importance of each competence domain and the underlying competencies, a questionnaire involving the Focus Group Discussion participants was administered (see Table 3) in stage four of this study.

***Background information***

Regarding the category of respondent, two were university student leaders; three were university teaching staff; two were human resource directors in the private sector; two were human resource directors in the

government sector; and two were higher education experts in Uganda. In regard to gender, nine were males, and two were females. Regarding the age of respondents, two were between 18-24 years; only one respondent was between 25-35 years; three respondents were between 36 – 46 years; and five respondents were 47 years and above (28.3%). As per the work experience of respondents in their fields, three respondent has working experience between one-five years; four respondents have working experience between six-ten years; and four respondents have working experience of 11 years and above.

*Table 3: Focus Group Discussion participants' extent of agreement of the relevance of profile items as per the validation questionnaire*

| **Competence domain and underlying competencies** | N = 11 M[2] | SD[3] |
|---|---|---|
| **Teaching staff as an innovator** | | |
| Self-development- Teaching staff's ability to proactively take actions to improve personal ability to remain relevant and productive in the education sector as well as in the highly competitive globalised knowledge economy | 4.9 | .30 |
| Inventive thinking- Teaching staff's ability to come up with new things in his area of speciality | 4.6 | .50 |
| Flexibility- Teaching staff's ability and willingness to adapt to and work effectively within a variety of diverse situations, and diverse individuals or groups | 3.6 | 1.1 |
| **Teaching staff as knowledge society developer** | | |
| Ability to teach a diverse range of students, from different age groups, intellectual abilities, socio-economic backgrounds, races, cultures and religions | 4.3 | 1.2 |
| Ability to authentically facilitate students' understanding of advancements in all spheres of life and its impact on the society | 4.1 | .94 |
| **Teaching staff as a networker and collaborator** | | |
| Relationship building- Teaching staff's ability to build and or maintain ethical relationships or networks or contacts with students, colleagues and with other people who are, or may be potentially helpful in achieving education/work related goals and establishing advantages | 4.6 | 1.2 |
| Teamwork and co-operation- Teaching staff's ability to work co-operatively within diverse teams, work groups, diverse students | 4.1 | .87 |

| | | |
|---|---|---|
| to achieve the desired educational goals | | |
| Partners with stakeholders- Teaching staff's ability and desire to work co-operatively with all education stakeholders to meet the desired mutual goals | 3.6 | .67 |
| **Teaching staff as higher education designer and developer** | | |
| Ability to structure learning experiences that enable students to cope and adapt to the global knowledge economy era | 4.5 | .82 |
| Ability to authentically structure content that prepares students to meet the knowledge economy labour market demands | 4.3 | 1.2 |
| Ability and commitment to conduct research in area of speciality | 3.8 | 1.4 |
| Ability to design activating educational materials | 3.6 | 1.0 |
| Ability to adjust teaching practice on the basis of evaluations | 3.5 | 1.6 |
| **Teaching staff as an entrepreneur** | | |
| Reflecting on opportunities and difficulties- Teaching staff's willingness to take on opportunities as well as "working through" the personal experience of having contributed to an unsuccessful outcome | 3.1 | 1.0 |
| Creativity and initiative- Teaching staff's ability to turn desired education ideas into action | 3.0 | 1.4 |

[1]Number of respondents

[2]Mean 1= Not relevant ; 2= Moderately relevant; 3= Relevant; 4= Very relevant; 5= Essential)

[3]Standard deviation

From Table 3, it can be seen that four of the underlying profile competencies have an average score of 4.5 - 5 considered essential. Table 3 furthermore indicates that four of the underlying profile competencies were rated with an average score of 4.0 - 4.4 considered very relevant. Meanwhile, seven of the underlying profile competencies were rated with an average score of 3.0 - 3.9 considered relevant. Unlike results from the consultation questionnaire (see Table 2), Table 3 results reveal that participants in the Focus Group Discussions consider teaching staff as an innovator, as the most important competence domain (mean = 4.3). This is closely followed by teaching staff as: a knowledge society developer (mean = 4.2); networker and collaborator (mean = 4.1); higher education designer (mean = 3.9); and an entrepreneur (mean = 3.1) respectively.

Results from the validation questionnaire (see Table 3), indicate a slightly different order and degree of importance of the competence domains and the underlying competencies from the consultation questionnaire results (see Table 2). As such, the results from the validation questionnaire, since were derived from a thorough deliberation process were regarded as being more valid and reliable. This underpinned the development of the final version of the profile presented in the next section 5.4.

### 5.4 Ranking Of Required Teaching Staff Innovation Competence Needs

From the Focus Group Discussions and the quantitative analysis presented in Table 3 the following competence domains and their underlying competencies are considered necessary for teaching staff to prepare students with the capability to contribute to innovation at their work place and society as a whole (see Table 4).

*Table 4: Rank of required teaching staff innovation competence domains and their underlying competencies*

| Competence domain | underlying competencies |
|---|---|
| 1. **Teaching staff as an innovator** | Self-development- ability to proactively take actions to improve personal ability to remain relevant and productive in the education sector as well as in the highly competitive globalised knowledge economy<br><br>Inventive thinking- ability to come up with new things in ones' area of speciality<br><br>Flexibility- ability and willingness to adapt to and work effectively within a variety of diverse situations, and diverse individuals or groups |
| 2. **Teaching staff as knowledge society developer** | Ability to teach a diverse range of students, from different age groups, intellectual abilities, socio-economic backgrounds, races, cultures and religions<br><br>Ability to authentically facilitate students' understanding of advancements in all spheres of life and its impact on the society |
| 3. **Teaching staff as a networker and collaborator** | Relationship building- ability to build and or maintain ethical relationships or networks or contacts with |

| | |
|---|---|
| | students, colleagues and with other people who are, or may be potentially helpful in achieving education/work related goals and establishing advantages<br><br>Teamwork and co-operation- ability to work co-operatively within diverse teams, work groups, diverse students to achieve the desired educational goals<br><br>Partners with stakeholders- ability and desire to work co-operatively with all education stakeholders to meet the desired mutual goals |
| 4. **Teaching staff as higher education designer and developer** | Ability to structure learning experiences that enable students to cope and adapt to the global knowledge economy era<br><br>Ability to authentically structure content that prepares students to meet the knowledge economy labour market demands<br><br>Ability and commitment to conduct research in area of speciality<br><br>Ability to design activating educational materials<br><br>Ability to adjust teaching practice on the basis of evaluations |
| 5. **Teaching staff as an entrepreneur** | Reflecting on opportunities and difficulties- willingness to take on opportunities as well as "working through" the personal experience of having contributed to an unsuccessful outcome<br><br>Creativity and initiative- ability to turn desired education ideas into action |

Table 4, indicates that the results from the validation questionnaire administered to Focus Group Discussion participants reveal that teaching staff as an innovator is the number one competence domain needed in HEIs. This is followed by teaching staff as: knowledge society developer; networker and collaborator; higher education designer and developer; and entrepreneur with their underlying competencies respectively.

## 6. Discussion

Firstly, the study findings reveal that teaching staff are key if HEIs are to be able to prepare graduates with innovation capacities to address the numerous problems facing society today. Innovation is crucial for both surviving and thriving in these acute and competitive economic times (Hodgson, 2012; Kallenberg, 2007; Kibwika, 2006; Laine et al 2008; Meek et al. 2009; Vila et al. 2012). To this effect HEIs are under enormous pressure to develop innovation capacities of students. However, this begs the question, to what extent do teaching staff possess innovation competence in their areas of speciality and to what extent do they pass them on to their students?

Secondly, the study findings show that teaching staff should possess knowledge society developing competence. In this turbulent knowledge-based economy, it is extremely important for teaching staff on a continuous basis ponder on society's present and future social, cultural, economic, ecological, and political challenges. (Barnes et al. 1994; Harley et al. 2000; Karacaoglu 2008; Laine et al. 2008; Nicoll and Harrison, 2003; Pantic et al. 2011; Short, 2010; Van der Klink et al. 2007).

Thirdly, the study findings indicate that teaching staff should possess networking and collaborating competence. In this knowledge and information age the role networking and collaboration play for individuals, organisations and nations to survive and/or gain competitive advantage cannot be overemphasised. It is through networking and collaboration with various actors in the education, community, industry, government, and business sectors that teaching staff can stay relevant. Thus, prepare relevant and productive students for the labour market (Buckley, 2012; Foulger et al. 2008; Harley et al. 2000; Kibwika, 2006; O'Connor, 2012; Sa, 2011; Tafel-Vila et al 2012; Van Dam et al 2009).

Fourthly, the study findings show that teaching staff should possess higher education curriculum designing and developing competence. As world economies go through unprecedented changes, education of previous decades cannot adequately prepare people to meet the current and future socio-economic conditions. To this end, teaching staff have a challenge of coming up with ideas to educate, train, coach and mentor students in the various aspects of life through appropriate educational programmes (Alves et al 2012; Harley et al 2000;

Henard & Leprince-Ringuet, 2008; Liakopoulou, 2011; Martin et al 2000; Meek et al 2009; Pilot, 2007; Putkonen et al 2010; Stigmar, 2010; Tigelaar et al 2004).

Fifthly, the study findings indicate that teaching staff should possess entrepreneurial competence. This paper has a conviction that any education system that train people to be job seekers rather than job creators in this competitive global knowledge and innovation economy commits both " academic and economic suicide". Due to changes in the nature and demand for work and products, universities are required to prepare individuals who create their own jobs or help their organisations come up with new products. To this effect, teaching staff should walk the talk by exhibiting the required entrepreneurial behaviour i.e. opportunity recognition, taking initiative, and risk management (Kibwika, 2006; Rogers, 2003; Short, 2010; Van Dam et al 2009; Vila et al 2012).

There is a large body of literature showing that HEIs across the globe are under increasing pressure from policy makers, governments, business organisations, industries, international bodies etc. to prepare individuals who can significantly contribute to innovation at the work place and in society (Buckley, 2012; Ferrari et al 2009; Laine et al 2008; Maassen & Stensaker, 2011; Meek et al 2009; Short, 2010;). All this is geared at addressing the pressing present and future world social, economic, ecological, political and health problems. If HEIs are to meet this demand, a lot of emphasis and attention should be paid to teaching staff's education, training, recruitment, appraisal and development in HEIs. The profile herein can act as a guide in enhancing teaching staff competence to prepare innovative individuals with capability to make a significant contribution towards solving the different challenges facing individuals, organisations and nations in the 21st century and beyond.

## 7. Conclusion

Uganda does not have national competence profile for teaching staff in HEIs, thus putting higher education into a quagmire. This study set out to make a contribution towards addressing this gap. The study establishes five competence domains and 15 underlying competencies considered critical if teaching staff are to prepare students (future employees and employers) with the capability to contribute to innovation at their work places and society. These in order of magnitude are: teaching staff as an innovator, knowledge society developer, networker and collaborator, higher education designer and developer, and entrepreneur. The profile presented herein is a big landmark in underpinning teaching in HEIs in developing countries such as Uganda. Similarly, the profile enlightens managers and administrators in HEIs regarding the competencies that should underpin teaching staff recruitment, appraisal and development. This study also form a basis for further studies into the

kind of education, training and professional development activities and institutional policies and practices that enhance the development of teaching staff innovation competence.

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