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Conceptualizing the Student-Centered Outreach Model for experiential learning and community transformation

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ABSTRACT
A dominant discourse in higher education has widely called for reviewing, redesigning and alignment of the curricula to suit the current and future skills demands in the labour market. In response, universities have over time been repositioning themselves to develop practical approaches to produce graduates with skills relevant to the job market. One such approach is the Student-Centered Outreach (S-C-O) model conceived and run at Gulu University in Uganda. However, little is known about the S-C-O model and thus this paper sought to develop and present a conceptual framework that underpins the functioning of the model. The structural set-up of the framework shows that students are centrally positioned between the faculty and the community. A key resource connecting the actors in the S-C-O model is knowledge which is gained through learning that takes place from either the top or bottom side of the S-C-O model and integrating feedback to close the learning loop. Examination of the implementation of the S-C-O model reveals that the model realizes three important outcomes: (i) enhancing experiential learning, (ii) promoting university linkage with the community, and (iii) enhancing transformation of the farming practices. The need for further studies as part of a process to develop an empirical methodology for examining the impacts of this outreach model remains apparent.

Key words: Graduates, Gulu University, higher education, labor market

RÉSUMÉ
Un éminent discours sur l'enseignement supérieur a largement appelé à l'examen, la restructuration et l'ajustement des curricula pour répondre aux besoins actuels et futurs en compétences sur le marché de l'emploi. En réponse, les universités se sont repositionnées au fil du temps pour développer des approches pratiques afin de produire des diplômés avec des compétences recherchées du marché de l'emploi. Une telle approche est le modèle de Sensibilisation Centré sur les Etudiants (S-C-E) conçu et exécuté à l'Université de Gulu en Ouganda. Cependant, il existe peu d'informations sur ce modèle S-C-E et donc ce document vise à développer et présenter un cadre conceptuel qui sous-tend le fonctionnement du modèle. L'organisation structurelle du cadre conceptuel montre que les étudiants sont au centre, entre la faculté et la communauté. Une ressource clé reliant les acteurs dans le modèle S-C-E est la connaissance acquise par l'apprentissage qui se fait soit à partir de la première ou de la dernière composante du modèle S-C-E et l'intégration d'une rétroaction pour fermer la boucle d'apprentissage. L'examen de la mise en œuvre du modèle S-C-E révèle que le modèle produit trois résultats importants: (i) l'amélioration de l'apprentissage par expérience, (ii) la promotion de la liaison université-communauté, et (iii) l'amélioration de la transformation des pratiques agricoles. La nécessité de poursuivre les études dans le cadre d'un processus d'élaboration d'une méthodologie empirique pour examiner les impacts de ce modèle de sensibilisation demeure une priorité.

Mots clés: Diplômés, Université de Gulu, Enseignement supérieur, Marché de l'emploi

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INTRODUCTION

Africa has the world's youngest population, a situation unlikely to change in the near future. About 60% of this population is aged between 15 and 24, unemployed or under-employed, and a significant number of whom are university graduates (Mohamedbhai, 2013). The unemployment pressures are likely to worsen even more with more graduates joining the labour market. World Bank (2014) estimated that as many as 11 million young people in Sub-Saharan Africa (SSA) would be joining the job market every year for the next decade. The implication of this scenario is the high risks associated with growing numbers of urban youths without meaningful occupation. Accordingly, the high incidence of unemployment/under-employment of African graduates has renewed the debate on the quality and relevance of curricula of training and learning offered at Higher Education Institutions (HEIs). Particularly, HEIs have been criticized for producing graduates whose skills do not match the expectations of the labour market and/or job seekers and not creators (Ssebuwufu *et al.*, 2012; World Economic Forum, 2014).

Many employers question graduates from African universities on creativity, communication, analytical and problem-solving skills as well as adaptability to working conditions outside university gates (Dabalen *et al.*, 2001; Pitan and Adedeji, 2012). In some instances, owing to the skills gap (the difference between what the graduates have and those that are needed in the job market), many of these young people are deemed not employable (World Economic Forum, 2014). In this regard, employability refers to the possession of relevant knowledge, skills and other attributes that facilitate the gaining and maintaining of worthwhile employment (British Council, 2014). As such, there have been attempts to identify what exactly is missing amongst the current graduates. For instance, Mohamedbhai (2013) observed that a key aspect lacking in the work ethics of these graduates are the attributes and competencies often referred to as 'soft' skills. Yet, many employers place greater importance on these soft skills than on the actual qualifications. In achieving the desired soft skills amongst graduates, scholars urge that HEIs engage the learners in sports, debating, student union activities and participation in community service (Cape Higher Education Consortium, 2013; Mohamedbhai, 2013).

The situation of African graduates is not any different when viewed from the agricultural sector perspective. While agricultural employment still continues to dominate in the African region, for instance in Uganda where over 70% of the population are employed in agriculture (Ministry of Education and Sports, 2011) very few graduates are indeed employed in the sector. This is being blamed on unavailability of job opportunities in the sector, more pronounced in the era of reduction in public service employment following the civil service reforms of the 1990s. However, where opportunities for employment are limited, the expectation of the HEIs would be training students to become entrepreneurs for self-employment. This would be very useful to the economy, more so that such graduates would not only move away from job seeking to job providers but also contribute to the emergence of small, medium and micro-enterprises (SMEs) in agribusiness.

In the recent past, a dominant discourse in higher education has widely called for reviewing, redesigning and alignment of the curricula in the formal education systems and the vocational training institutions to suit the current and future skills demands in the labour market. A focal purpose for these cutting-edge curricula is making them more creative and innovation-oriented, targeting the convergence between the skills acquired in formal lectures and those required in the market. A case in point, the strategic plan of the Uganda's line Ministry responsible for education urges to start rethinking the current model of pedagogy based on the lecture method with a view of adopting the apprentice-based model of learner-centered, Problem-Based Learning, PBL (Republic of Uganda, 2015). Some suggestions for achieving these reforms include: 1) institutionalizing internships and apprenticeship for hands-on training in both private and public HEIs; and 2) establishing functional linkages between training institutions' curricula, potential employers and job opportunities (Republic of Uganda, 2015). However, the concern is on how best the HEIs can enhance the efficiency and effectiveness of skills delivery during training with limited funding. While African governments make suggestions for improved training approaches for skills enhancement, they also expect public HEIs to take on an increasing number of students that do not match the training facilities and budgets. Ultimately, without matching budgets to support innovative practical approaches, something has to give way, and typically it is experiential learning and the quality of field experience which are sacrificed. Thus, understanding the design and organization of internships becomes even a higher priority not only in the awakening of growing innovations in the practical orientation of agricultural training curricula (Weaver *et al.*, 2008) but also in the search for cost-effective practical approaches.

Student field attachments/community outreach

In HEIs, the terminology internship is widely used interchangeably with field attachment or community attachment. It refers to the engagement of students in service activities primarily for providing them with

hands-on experience that enhances their learning or understanding of issues relevant to a particular area of study (Furco, 1996). When viewed from the community-service perspective, student field-attachment meets the criteria of community outreach if university-based actors deliver knowledge to community and it is community engagement, if it is a two-way learning, i.e., knowledge flows from the university to community and vice versa (Arko-Cobbah, 2004). There are various approaches of practicing community engagement amongst different faculties and disciplines. Erickson (2010) notes that community engagement contains four main components namely: student engagement within a community setting, goals of meeting /engagement, identified community needs, and student achievement for a deeper understanding of field-based constraints and academic course content. Ibáñez-Carrasco and Riaño-Alcalá (2011) added that these community engagement activities may range from large-scale, top-down, long-range and highly orchestrated programmes to localized, intimate, short-term and intentionally functional research or attachments.

Service-learning activities are generally understood to involve and benefit various audiences, key among them: the educational institutions, the faculty, students, communities, businesses and agencies (Ward and Wolf-Wendel, 2000; Wolf *et al*., 2001; Ferman and Hill, 2004). Scholars have argued that internships are important in terms of improvements in career-related direction, gaining practical experience, improved marketability of graduates, responding to job expectations, developing interpersonal and leadership skills, and understanding of the business applications of classroom work (Beard and Morton, 1999; Knouse *et al*., 1999; Swift and Kent, 1999; Cook *et al*., 2004; Muhamad *et al*., 2009). Many field attachment programmes target to achieve a variant of these expected benefits. In effect, the structure, length, management and evaluation of field attachment programmes differ from one HEI to another, and amongst the academic programmes as well as the standard/level of academic undertaking (Bukaliya and Marondera, 2012). This implies that more work is still needed to gain a deeper understanding of the various models of field attachment.

Taking a divergent view of other internship actors, field attachment programmes are perceived and valued differently by various participants. For host organizations and individual industry players, internships are viewed as opportunities of supplementary and cheap labour to the existing workforce, and source of advice as well as new ideas and technical support in areas of newly introduced technologies (Rothman, 2007; Shuda and Kearns-Sixsmith, 2009). On the negative side, hosts may look at interns as learners who are demanding a considerable part of their time to attend to them (Muhamad *et al*., 2009). At University-level, the instructors take field attachment programmes as an opportunity of enhancing their community engagement. In part, the internships-based outreach can be considered as responding to the ever re-occurring question in higher education debate that African universities are disconnected from the communities they are meant to serve as way of giving back to tax payers. As such, the drive for instructors to be community-engaging through working with students is growing stronger especially for those universities that prescribe community outreach as one of the criteria for academic promotion within service.

The Student-Centered Outreach Model at Gulu University

In line with the community-connectedness paradigm in higher education, Gulu University, right from its inception in 2003 sought to be community-oriented in the execution of its threefold mandate of training, research and outreach. This is well-enshrined in its motto "for community transformation". In the same spirit, the Faculty of Agriculture and Environment (FAE) at Gulu University has since designed undergraduate and graduate academic programmes targeting transformation of smallholder farming systems using student field attachment. The Faculty has branded its field attachment approach as the Student-Centered Outreach (S-C-O) model. The unique features of this approach are that the students: i) interact with the farmers on knowledge, skills and experiences exchange; ii) identify farmer problems and respond appropriately with technical backstopping from academic staff; and iii) collect agricultural enterprise-specific problems requiring advanced research attention and transmit them to the faculty. Products of researched problems are then packaged as technologies or improved practices, and disseminated for uptake and adoption by farmers through different cohorts of students.

It should be recognized that agricultural training approaches in many universities around the world follow the "University Farm" model. Under this model, it is expected that students acquire relevant practical skills from the University farm which they would then apply in the real world upon graduation. This approach seems to work well in areas where agriculture is well-commercialized because set-ups of the university farms try to replicate what is found on commercial farms. On the other hand, it is important to appreciate that in sub-Saharan Africa, agriculture is dominated by smallholder farmers, who practice farming under conditions that do not mirror University farm set-ups.

This disconnect makes it difficult for graduates trained on the basis of the University farm model to fit into the smallholder farming conditions. In most situations, such graduates would again have to learn how to work in smallholder farming conditions before they can appreciate agriculture and accept it as a descent source of employment. Therefore, in building the S-C-O model, it was envisioned that agricultural students need to learn how to work with farmers right from the beginning to enable them understand and appreciate practical realities they would deal with when employed to provide advisory services to farmers or setting up and managing own agricultural-based enterprises.

The S-C-O has been querred in terms of its operation and what it seeks to achieve. A key point of contestation is on whether this outreach model targets student experiential learning only, or there are other elements of community learning, innovation and transformation that arise from the implementation process. Some studies seem to suggest that on the account of the main mandate of educational institutions of training students, the objective of internships (the student-farmer attachment inclusive) is squarely experiential learning for the students (Muhamad *et al*., 2009; Bukaliya and Marondera, 2012). However, anecdotes show that more pragmatic academicians, aligned to the thinking of community transformation-oriented universities, contend that even though students are still learning, field attachment takes place when such students have gained some knowledge from the community. This means that the interactions and exchanges between the students and smallholder farmers can result into learning on both sides. Moreover, the presence of academic supervisors in the attachment programme creates a fallback position for students in knowledge aspects for which they require additional information and as such, enabling them to execute the tasks at hand more diligently. Whereas these competing arguments continue to escalate, little attention has been paid to explaining what constitutes the S-C-O model and how it functions.

The central focus of this paper, therefore, is to present the conceptual framework and the functional set up of the S-C-O model conceived and run in the Faculty of Agriculture and Environment, Gulu University. Gaining insights on the design, inherent processes and management of S-C-O model is useful not only for sharing and learning internship structures as well as outreach approaches across universities but also promoting redesigning of curricula of agricultural programmes for practical orientation linked to realities of smallholder farmers' conditions.

METHODOLOGY

The proposed conceptual framework and functional set-up is as a result of observations and analysis of operations, target objectives, processes and outputs of the student-farmer attachment approach of practical training at Gulu University. The study used constructivist approach rooted in the epistemological foundations of philosophy of science. As opposed to positivist approach whose emphasis is hypothesis testing using existing theory, the constructivist approach assumes that no valid knowledge exists and the research process starts with exploration before theorization and developing hypotheses (Andrews, 2012). Accordingly, the constructivist approach relies a lot on observation and interpretation of social phenomena, interactions, and realities for making scientific conclusions and is unconcerned with ontological questions or questions of causation (Andrews, 2012).

In this study, accumulated experiences gained from the field attachment programme were collected from the programme managers, faculty staff, students and smallholder farmers. The focus of information collection was based on the processes and activities undertaken in field attachment. It also utilized information and experiences from implementation of a Community engagement Project titled "Strengthening University Outreach and Agri-Entrepreneurship Training for Community Transformation in Northern Uganda" concepturalised under the auspices of the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM). A key criticism of a researcher being part of the subjects under study is reflexivity, in which, the researchers' influences are difficult to separate from the overall study process. However, in this study, internal validity was enhanced by triangulation of facts and information obtained from multiple data sources. Besides, observation of actions of the field attachment actors, review and analysis of information in documents and records maintained in the faculty was undertaken. Documents reviewed include the faculty strategic plan, faculty outreach policy, student-farmer attachment manual, and student reports on field attachment.

CONCEPTUAL FRAMEWORK AND FUNCTIONAL ANALYSIS OF STUDENT-CENTERED OUTREACH MODEL

Structurally, the S-C-O model (Figure 1) comprises of three components, each of them executing a separate mandate but linked and complimenting each other's roles. An important resource connecting the three components of the S-C-O model is knowledge and the

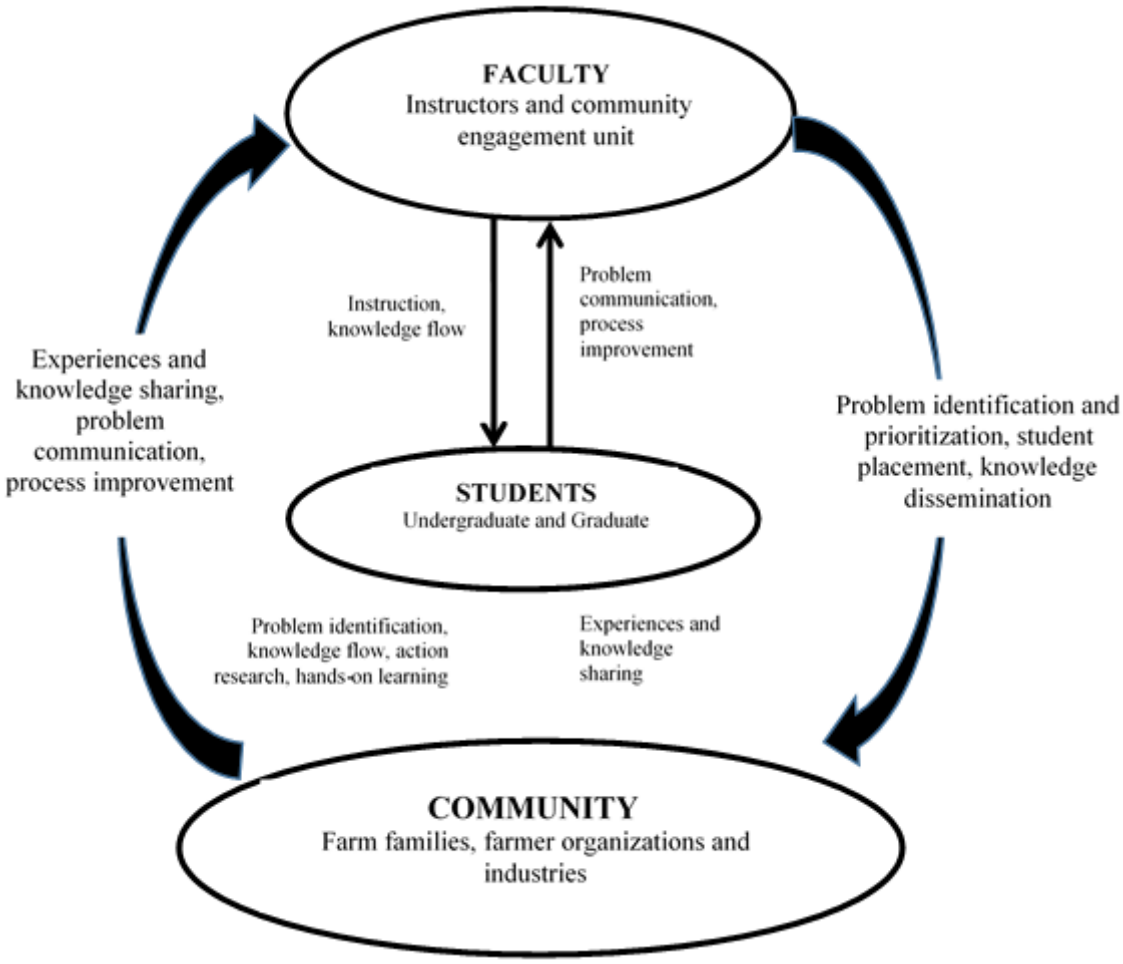

Figure 1: Conceptual framework for the Student-Centered Outreach Model designed and implemented by Gulu University

ultimate goal for knowledge exchange is learning, innovation and community transformation. At the heart of this model are the students who include both the undergraduates and graduate students. The students are structurally positioned at the center showing that they are the link between the Faculty and the community. Both student categories, either individually or in teams, interact with farmers for purposes of knowledge and information sharing, facilitate the organization of farmer for learning, conduct problem identification and develop researchable /workable solutions.

In the S-C-O model, two distinct approaches are particularly used for students to engage with the community. The difference in the two approaches lies in the intensity of academic rigor, length of field attachment and process output expectations. The undergraduate students, whose study programmes are longer (up to four years) but less mature and with lower academic expectations, work more with farm families and in some few cases with established agribusinesses and industries. The length of stay of these students with farm families of attachment is always one year and above. While on the farmsteads, the students generally participate in problem identification, routine farm activities such as animal husbandry practices, crop management, soil and water conservation, postharvest management and taking farm records. They also share and advise on opportunities that farmers can exploit in their environment so as to commercialize agricultural activities.

Some undergraduates work with farm families organized in a group(s) receiving services from a graduate student. This means that the graduate students' activities are linked to those of the undergraduate students. This further creates continuity in the farmer attachment programme since some of undergraduate students eventually end up replacing graduate students in community engagement activities. The linkage between graduate and undergraduate students in community engagement is provided for in the graduate training curricula in the Faculty of Agriculture and Environment. The rationale is that results of the graduate students' research should feed into the teaching of the undergraduate students thus providing opportunity for taking research results to

the community. To the university, these students help to provide feedback from the community and more especially on challenges that they cannot handle on their own. As a deliverable, the undergraduate student at the end of the attachment is expected to submit a report to the faculty for evaluation of field attachment process but more importantly for academic assessment/grading. On the other hand, graduate students are attached more to farmer groups, farmer organizations, co-operatives and other organizations serving smallholder farmers and rural communities at large. Essentially, this positioning of graduate students enables a participatory-research approach, in which the students work with the community to identify researchable community problems.

The faculty comprises of academic instructors, administrators, faculty outreach managers (Community Engagement Unit) and support staff. The faculty provides guidance to students, receives and screens farmers for student attachment and ensures that student placement in field attachment are effected. Furthermore, the faculty conducts support supervision to students, documentation of processes and lessons, and monitoring and evaluation. The faculty academic staff "who are subject matter specialists" upon receipt of feedback provide advice (technical backstopping) to students on how to package and respond to farming and community development needs. In addition, the subject matter specialists in the faculty may interact directly with the community during student supervision and share knowledge with the host community. The faculty also assesses student learning, performance and behavior while on field attachment and lastly they learn from the communities and also become more aware of community demands and the role of the university in meeting societal needs.

The community comprises of smallholder farmers largely farm families, farmer groups and organizations, firms/industries and service providers operating in the agricultural sector. These community entities have the infrastructure that can facilitate student experiential learning. The infrastructural types include the crop fields and livestock structures and stockings, group-based infrastructure like document storage, collective produce storage structures as well as real work/life environments for the students to learn and practice both soft and technical skills. The community hosts the students, share knowledge and information and offer facilities for experiential learning. This mutual engagement also offers the opportunity of gaining and learning indigenous knowledge and practices that are largely resident in the community by both the students and the faculty. The community gain intellectually-backed knowledge, researched technologies and practices, and information, for example, on produce prices and possible buyers.

A functional view of the S-C-O model depicts cyclic two-looped structures that are identically symmetrical i.e., loop "A" and "B". Loop "A" starts from the faculty through the students to the community with a feedback to the faculty. The linkages in this loop represent the flow of intellectual resources in form of knowledge, technologies, research products and other communications amongst the actors of the S-C-O model. Two types of knowledge are transmitted in these sequential processes of sharing and exchange, i.e., codified knowledge (written and explicit in form) from the faculty and the students, and tacit knowledge (mainly accumulated out of experience and may not be written), and largely from smallholder farmers. The faculty's role is instruction both within and outside the classroom environment to the students. The instruction focuses on relaying objectives of the farmer attachment, knowledge, information, and guidance to the students for proper positioning for field attachment. Forming part of the instruction processes are: the discussions on mode and detailed criteria of assessment, on-farm activity expectations, joint student-host work plans, expected reports and reporting formats, frequency of student-host interactions and length of field attachment. Others are: on-farm identification of farming problems and response including seeking technical support from academic staff in case of doubting appropriate solutions.

The students as learners interact with the community to gain experience of the environment they are expected to work in upon graduation. First, students are engaged in the joint on-farm problem identification (which could be crop or livestock or pest or disease, soil deficiency, defective crop and animal husbandry practices, or inappropriate harvesting/post-harvest practice). For effective attention to farm-level problems, during the course of classroom training, students are encouraged to develop crop pests and disease albums, in which, they specify the crop, symptoms, causative agents, cultural and chemical control/ treatment. More recently, the albums are supported with modern technologies of smartphone enabled applications of the "Plant Doctor". For hands-on experience, students are required to actively participate in routine farm activities. Common activities are: designing and construction of feed structures for silage and heylage, involvement in farm records taking, livestock feeding, and cropping practices. Students (especially the masters) conceptualize community/ farming problems into research questions before designing studies for search of solutions and subsequent dissemination of research

outputs to the origin of problems in form of knowledge, researched products and technologies. In other words, this model provides opportunity for graduate students to conduct research on real problems of the community and generate results that effectively inform community practice.

For the agribusiness-inclined students and more specifically at graduate training level, the engagement has sometimes followed the Commodity Value Chain (VC) approach. Students under the supervision of academic advisors, undertake VC assessment to identify constraints and opportunities and utilize the learnt lessons for either business plan development or working out researchable problems and questions before actual execution of the studies. Using the same VC lessons, at times, students are positioned at various segments of the value chain i.e. attachment to VC actors (farmers, producer organizations, processors etc.); VC supporters, e.g. financial institutions, innovation brokers/ intermediaries, research organizations, civil society, and VC influencers like the public laboratories to complete the action-research cycle.

Using this approach, students are equipped to become facilitators of the innovation process enabling the creation of more interactive linkages. This is assumed to enhance trust in the relationships amongst market actors and with the environment in which they operate. A case in point, a student group from the 2014 cohort of Master Science in Agri-enterprises Development was attached to a farmer group involved in commercial poultry production. Upon completion of the VC cluster mapping, the students observed that at farm-level, a major constraint of poultry production was the management of day-old chicks. Smallholder farmers experienced high mortality rate of chicks which, in turn affected the profitability of the poultry enterprise in rural settings. Upon return to the university, the students translated the farmers' problem into a business opportunity. These students developed and implemented a business plan, using loaned funds from the faculty, on raising day-old chicks to one month for resale to farmers. As a result of students selling raised chicks to smallholder producers, farm-level mortality rates went down amongst the farmers purchasing chicks from the students' project. These farmers have since embraced the students' innovation as a reliable source of chicks for farm-level stocking, increasing production and enhancing profitability of the poultry enterprise.

Like the other actors in the system, the community interacts and exchanges with two stakeholders namely: the students and the faculty. To the faculty, the community shares experiences and knowledge, communicates community/farming problems and needs and provide feedback for process improvement. Similarly, with the students, the community shares experiences, problems and locally existing knowledge. The knowledge that the community share is mostly indigenous and highly linked to local realities. As explained earlier, the symmetrical mirror-image of loop "A" and "B" is still evidenced by similarity in the flow of knowledge and information and actor interactions in either loop. The only difference is that the action starts from the community intermediated by the students to the faculty or by more direct route, the communications are channeled straight from the community to the faculty. Then, the faculty provides feedback still by the direct route to the community or through the students.

Arising out of the actor interactions and the flows, the S-C-O model as a system performs three key functions: 1) transmission and retention of knowledge across actors, 2) knowledge creation/ generation, and 3) knowledge assimilation. The function of transmission and retention of knowledge i.e. prioritizing knowledge at risk of loss (Kirsch, 2008), and ensuring its flow is performed at all levels/ components of the system. For instance, faculty can initiate knowledge transmission by providing lecturing and training sessions on business plan preparation. Such knowledge becomes resident among students and therefore retained for the preparation of own business plans upon completion of the learning cycle. However, the students may choose to further the knowledge transmission by sharing it and using it to guide smallholder farmers in developing business plans on the farmsteads of field attachment.

Knowledge creation or generation is a function performed both formally by the students and the faculty on one hand, and informally by the community. Informally, community members may invent a new idea (possibly a farming practice or technology), improve or adapt an existing one to own situation (Waters-Bayer *et al*., 2006). This process of inventing or adapting within the confines of community setting does not follow scientific procedures nor is documentation done, rendering it informal. Formally, the students and the faculty conceptualize community issues, needs and development gaps into research problems, giving rise to research questions and subsequent experimentation or search of knowledge to respond to such community interests. A clear example is when a Masters' student in the year 2015 pursued child under-nutrition issues among rural communities in Gulu and Amuru districts in Northern Uganda. The student positioned herself in the nutrition ward of the regional referral hospital (Gulu Regional Referral Hospital), discussed with the caregivers attending to children (aged 6 – 23 months) admitted with under-nutrition problems. As a follow up, the

student conceptualized the nutritional issues for action-research, developed together with the community, a complementary food composite (Millet-Sesame-Soy), based on locally available food resources, as a product for mitigating under-nutrition in the affected children. The product was then evaluated in the community atmosphere for acceptability. Ultimately, the approach of the student engaging the community to solve an existing problem resulted into knowledge creation.

The third function of the system is knowledge assimilation which, refers to analysis, processing, interpreting and understanding of the information obtained from external environment (Fletcher and Prashantham, 2011). In the S-C-O context, knowledge assimilation involves acquisition, interpretation and processing of the knowledge, research outputs and other products of interactions in the system. The students utilize the knowledge, skills and experiences gained from the attachment for personal development. As an example, many agricultural students of Gulu University take lessons of field attachment for preparation of business plans, a key requirement for completion of both undergraduate and graduate programmes at the University. Interestingly, some students actualize and up-scale these business plans initiated as academic exercises, by implementing and expanding them upon graduation from the University. For instance, one former student built poultry business utilizing lessons from the time while pursuing university studies. This particular business reportedly went ahead to employ 12 high school drop-outs and earning the owner an amount of revenue way above the salary of a fresh graduate.

Likewise, the faculty assimilates the field attachment lessons, outputs and experiences into secondary products. Such essential products include the training curricula freshly initiated or revised/ improved with practical orientations linked to lessons derived from community engagement. Many faculty members have also previously used field attachment outputs for preparation of project proposals that attract research grants and other development-oriented initiatives. Other important benefits to the faculty include improved visibility and publication (especially when field attachment outputs are disseminated to the wider community through the websites, journals and conferences), and staff development/promotion. In the community, knowledge assimilation is manifested in form of changes in farming practices (for instance, changes in agribusiness planning, soil and water conservation practices, planting practices and others), technologies adopted, as well as changes in self-organization amongst smallholder producers.

CONCLUSION AND RECOMMENDATION

The student-Centered Outreach model is an approach that universities can exploit to target two goals: (i) enhancing practical training of students by linking them to the realities of the community setting; and (ii) enhancing the engagement of the faculty with the community using the students as the vehicle. As demonstrated in this paper, students are placed at the heart of the outreach approach linking the faculty and the community. Clearly evident in this model is the fact that the main resource connecting all stakeholders is knowledge. Accordingly, knowledge flow can be initiated from the faculty through academic and management instruction to students who in turn transmit it to the community. The communities transmit the feedback through the same students to the faculty or using the direct route straight to the faculty. On the other hand, the knowledge flow (especially the indigenous type) along with farming experiences start from the community to the students and finally to the faculty or following the direct route i.e. from the community to the faculty. The S-C-O as a model of outreach performs three functions: (i) transmission and retention of knowledge across actors, (ii) knowledge creation, and (iii) knowledge assimilation. The S-C-O model outcomes are mainly three: (i) enhancing experiential learning, (ii) promoting university linkage to the community, and (iii) enhancing transformation of the farming practices. While the S-C-O model is a novel approach for university-community partnerships, there is need to develop a methodology for evaluating it or assessing how it impacts on the audiences it targets to serve (education institutions, faculty, students and the communities). It is therefore recommended that future studies on the S-C-O model concentrate on developing an empirical methodology for examining its impacts.

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STATEMENT OF NO CONFLICT OF INTEREST

We the authors hereby declare that there are no competing interests in this publication.

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