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From Pedagogy to Societal Impact: Teaching Practices and Community Engagement Outcomes in Universities in Central Uganda

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Abstract: *This study examines the effect of teaching practices on community engagement outcomes in selected universities in Central Uganda. A mixed-methods cross-sectional design was adopted, integrating quantitative data from 330 academic staff with qualitative insights from key stakeholders. Correlation and Regression analyses reveal that experiential learning, curriculum alignment, faculty development, and technology-enhanced teaching significantly and positively influence community engagement outcomes. However, challenges such as limited infrastructure, large class sizes, and the persistence of traditional pedagogical approaches constrain the effectiveness of these practices. The study concludes that adopting competency-based, student-centered, and community-oriented teaching approaches is essential for strengthening university–community linkages and enhancing socio-economic impact. The findings highlight the need for institutional reforms that better integrate teaching with community engagement to improve the relevance, application, and societal impact of university knowledge.*

Keywords: *Teaching practices, community engagement, experiential learning, curriculum alignment, faculty development, technology integration, competency-based education, university impact.*

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1. Introduction

According to Jenner (2005), "Teaching" within universities, comprises three general activities: inculcation of skills; theory; and a critique of that theory. Teaching at university is occurs in diverse settings and contexts that eventually influence how knowledge is produced. University teaching include the full process of delivering higher education, typically at the undergraduate, graduate, and postgraduate levels, in various disciplines and involves the transmission of knowledge, development of critical thinking skills, and preparation of students for professional careers (Altbach *et al,* 2011). According to Sepešiová (2021), teaching in universities can range from being informal, formal, rote, and episodic. Teaching as a knowledge production practice is also quite varied and occurs as a continuum ranging from lectures, seminars, tutoring, laboratory experiences, mentoring, excursions, practical training, and consultations. The traditional delivery of teaching in many universities is ordinarily from lecture to students. Brown and Atkins (2002) developed a continuum of "teaching modes" that range from self-study to lectures (See Figure 1).

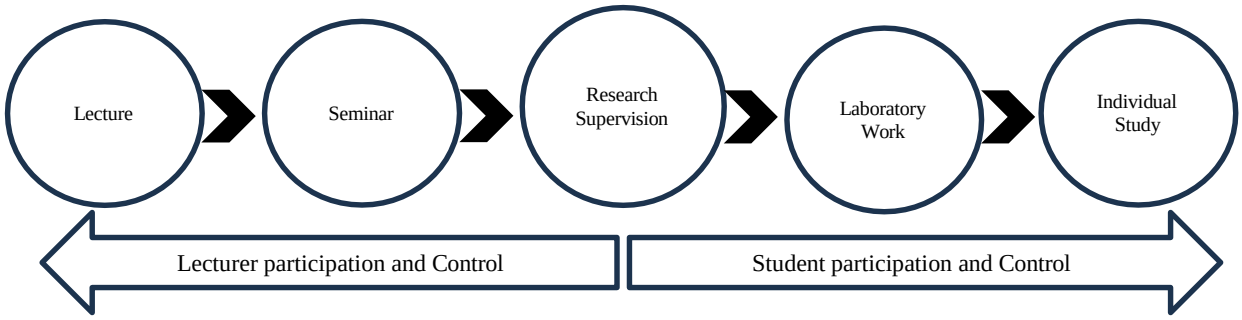

Figure 1: The various modes of teaching (Source: Brown and Atkins, 2002)

Whereas universities have traditionally been the primary producers and disseminators of knowledge, and generators of innovations, the rapid technological development coupled with the recent economic and social changes is significantly affecting this primary role (Snelman, 2015; Brennan & Naidoo, 2007). More recently, online, and blended learning, which integrates digital resources has become a major medium for delivering university teaching. This evolution has been attributed to both internal and systemic conditions within the knowledge ecosystem. According to Kanyengo (2020), the introduction of information technologies, for instance, has re-calibrated how knowledge is produced or appraised. Alavi and Lesner (2001) reiterate this and note that the diffusion of digital platforms has increasingly transformed knowledge production by enhancing collaboration, data sharing, and access to information. This trend has given rise to a "declinist" thesis by those who believe that the future of the university is under threat from governments and other non-state actors.

The more progressive view sees universities as the vanguard of the "knowledge economy" and as a steady path towards the 'knowledge-based economy' (Stehr, 1994). The convergence between knowledge production practices, the use of technology in learning, and community engagement of universities is a contested phenomenon. In some countries, universities are offering cut-price online degrees along with companies that offer electronic certification. This is corroborated by Martin & Etzkowitz (2000) who note that these technologies are slowly transforming traditional knowledge production, especially with the global south. These structural changes in the way knowledge are produced is enabling universities to inadvertently transform from within to produce a new "species" of universities. In addition, many universities have adopted experiential learning which includes internships, fieldworks, and service-learning projects to complement the more nuanced classroom or lecture environment. Several studies have tried to discuss ways on how to make lectures in university as effective as possible (Race, 2007; Brown, 1987) while others have focused on the pedagogical imperatives that relate to university teaching.

In Uganda, many universities are "teaching" universities and undertake more teaching than research or community engagement. Moreover, the manner of teaching across the different universities is varied. For many universities, the teaching mode depends on the course being undertaken and the discipline. As a result, the knowledge delivered across these modes is different and can influence the kind of impact it is likely to have. Whereas some universities in Uganda have opted to transform into research universities, resource constraints can handicap this transformation (Knight, 2008). For many universities in Uganda, the delivery of teaching remains through "lectures" which has been the mainstay since medieval times. The emerging debates in this area have been around how to integrate the different modes of teaching and the notions of blended learning. Moreover, the digital divide has also created a widening gap between universities in the global north and those in the global south where resources that facilitate access to knowledge are few. In the global north, the teaching in universities and the pedagogical approaches are significantly technology-active while other modes of student-centered learning are underlining their emphasis on critical thinking.

In Uganda, limited use or access to technology, large class sizes and rote learning remain the order of the day (Tefarra & Altbach, 2004). In many cases, many students never get to purchase reference material and often, they must depend on hand-outs or other notes (Sepešiová, 2021). Some teachers use the same notes for several years and as such there is limited dialogue or interaction between the lecturers and the students thereby losing the dialogic interaction that is critical (Sepešiová, 2021). Beyond the teaching issues, teaching in the university is also affected by the available infrastructure. Many universities lack libraries, laboratories, and studios, among others (Sepešiová, 2021). Often these realities are down to fiscal or budgetary decisions made at the policy level. However, the absence of key teaching infrastructure greatly impacts the effective and sustainable knowledge production within these universities. Moreover, universities are also engaged in the debates of whether to focus on locally relevant knowledge or to actively incorporate global perspectives. In doing so, universities in trying to be more accountable to the communities they serve, may look towards decolonizing their curriculum and indigenizing their knowledge content to address some of their local needs.

According to Vereijken, *et al* (2021), university teaching aims to transform students' conceptual understanding of disciplinary knowledge. As such, those who deliver the knowledge must constantly make decisions on the kind of approaches they use to deliver the knowledge.

Vereijken, *et al* (2021) note that there is limited attention to pedagogical approaches in university teaching. Moreover, the pedagogical approach in one discipline is also different from the approaches in another discipline. For instance, how medical students are taught at the bedside is quite different from how lawyers are trained using mock trials or case-based teaching. Knowledge production practices concerning teaching are quite diverse. Some studies have shown that lecturers make teaching decisions based on their knowledge of the subject matter (Oleson & Hora, 2014). These findings suggest that closer investigations on the subject level are needed to gain a deeper understanding of university teaching approaches.

Universities are established with the primary mandates of teaching, research, and community engagement (Nuia & Oringo, 2016; Tette *et al*, 2015). According to Al-Zoubi (2020), universities are the main instruments of society for the constant pursuit of knowledge. However, curriculum design has an imperative on how **c**ourses are designed to incorporate the latest research findings and methodologies, fostering a culture of inquiry and innovation among students. Whereas the three major missions of universities are teaching, research, and community engagement, balancing these three missions is often very challenging. Despite universities producing a considerable amount of research, there often exists a gap between the knowledge generated and its application in addressing real-world problems and contributing to economic development. In Uganda, whereas the number of universities has been on the increase and where they are increasingly expected to actively engage in the utilization of research, their level of community engagement remains low (Slaughter & Leslie 1997). Research activity across universities has increased ten-fold over the last fifteen years although the level of community engagement has been generally low (UNCST, 2023).

University teaching practices and the way knowledge is transferred has a bearing on community engagement outcomes. New teaching methodologies are increasingly trying to close the "epistemic gap" between academic experts and residents by fostering the co-construction of knowledge (Taliep, 2024; Holland *et al*., 2011). Increasingly, the university teaching mission is progressively being aligned to better structure change and validate learning outcomes (Moraes Abrahão, 2024; Taliep, 2024). This study presents the analysis of the effect of teaching practices on community engagement outcomes in selected universities in Central Uganda. It specifically examines whether university teaching practices significantly influence community engagement performance and tests the hypothesis that university teaching practices do not have a significant effect on community engagement outcomes. The analysis is based on regression results derived from primary data collected from 330 respondents using both descriptive and inferential statistical methods.

Teaching in university is increasingly characterised by different aspects ranging from technology, infrastructure, and human personnel. Increasingly, the delivery modes of teaching material involve students in collaborative problem-solving (Bhattacharya, 2021; Salam *et al.,* 2019). This is reinforced by competency-based learning (CBL), a model that prioritizes the mastery of measurable skills over rote memorization, ensuring graduates possess the practical agency needed to address real-world challenges in sectors such as health and local industry (Muthanna & Khine, 2024; RUFORUM, 2025). Curriculum development acts as the strategic roadmap for this engagement, moving toward "backward design" where learning outcomes are intentionally aligned with external stakeholder needs and national development goals (ACE, 2025; McKernan, 2013). However, the success of these pathways depends heavily on faculty development, as educators must transition to facilitators who can navigate complex community-academic partnerships (Grant & Thornton, 2007; Sorcinelli, 2000). Finally, the strategic use of technology expands these outcomes by facilitating virtual collaboration and knowledge construction, allowing universities to scale their impact and maintain connectivity with diverse community actors regardless of geographical barriers (Bates, 2019; Hong & Kim, 2018). This study presents the descriptive statistics on respondents' perceptions of teaching practices in selected universities in Central Uganda.

1.1 Problem Statement

Universities in Uganda are expected to contribute to national development through teaching, research, and community engagement by producing knowledge that addresses societal challenges and promotes socioeconomic transformation (National Planning Authority [NPA], 2025; Ondari-Okemwa, 2021). However, while teaching and research functions have expanded significantly, the contribution of teaching to community engagement outcomes remains limited and insufficiently integrated into university practice. Evidence indicates that much of the knowledge generated through teaching remains theoretical, with limited translation into practical solutions for community needs (Obuku et al., 2017). Community engagement continues to be the least institutionalized function of universities, with weak alignment between teaching approaches and societal demands (Brackmann, 2015; Tumusiime, 2022). As a result, communities often perceive university outputs as lacking relevance, highlighting a gap between academic instruction and real-world application (Muwagga, 2021).

Although approaches such as service learning and competency-based education have been introduced to bridge this gap, their effectiveness in fostering

meaningful community engagement outcomes remains inconsistent across institutions (Strand et al., 2003). This persistent disconnect suggests that teaching practices may not be adequately structured to promote community-oriented knowledge application and impact. Therefore, this study examines the effect of teaching on community engagement outcomes in selected universities in Central Uganda, with the aim of identifying how teaching approaches can be strengthened to enhance community development.

1.2 Objectives of the study

To examine the effect of teaching on community engagement outcomes in selected universities in central Uganda.

2. Literature Review

2.1 Teaching and Community Engagement Outcomes

Whereas teaching remains one of the major knowledge production practices undertaken by universities, community engagement has become a critical feature of how universities account to the public and society. Community involvement in teaching, for instance through service learning models, has a long history, and has demonstrated positive outcomes for university students (Eyler *et al* 1997). Increasingly, universities are being put to task to demonstrate their level of community engagement and how what they teach aligns with societal aspirations and contributes to community wellbeing. Knowledge production practices are an upstream event that directly impacts ordinarily, universities are structured to equip students with the appropriate knowledge and skills to better contribute to community development. Students with knowledge and skills that can be directly applied to community development (Boyer, 1996). In some fields, the teaching of students integrates aspects of community. Jacquesz (2023) notes that the social sciences have a massive potential for pedagogy that directly benefits communities.

Experiential learning is also becoming a mainstay of delivering knowledge within higher education. Because most community partners are often not experts in undertaking research related to their programs, students from the university can support such organization by conducting research either with them or for them. This arrangement can have mutual benefits as it especially helps the students to understand the impact of their research (Jacquesz, 2023). However, the real evidence of how what is taught in the universities is impacting the community is in how teaching incorporates critical research skills to enable students undertake meaningful research that can directly contribute to the evidence required to resolve long-standing community challenges (Hart & Northmore, 2011). How teaching is undertaken in universities has a bearing on the propensity of that knowledge to be adequately translated to effectively provide contextualized solutions to challenges being faced by communities.

2.2 Teaching, Pedagogy and Community Engagement Outcomes

One of the major knowledge production practices in universities is teaching and the mode of delivery. Teaching and pedagogy in universities are a major imperative on community engagement outcomes within higher education. Pedagogy that is grounded in community engagement has the potential to influence policy by aligning academic research and teaching with the needs of local communities. There is a comprehensive body of literature on the pedagogical approaches of community engagement courses (Howard, 2003; Honnet & Poulsen, 1989; Shumer, 1997). All these underlines the critical role of pedagogy as a precursor to impactful community engagement, in what Petersen & Henning (2018) expressed as "social justice pedagogy" From the foundational conception of education by Freire (1970), the notion of "praxis" provides a nuanced lense through which education is viewed as reflective, active, creative, contextual, with a social purpose. This is congruent to Dewey (1938) whose philosophy seeks to integrate learning with community-based activities. This experiential learning within specific settings within the community facilitates both reflection, integration, and application of knowledge to the community context. Such pedagogy that is rooted within the community enables the application of theoretical knowledge to real-world challenges within the community.

Kolb (1984) has shown that experiential learning provides the necessary environment for which community engagement outcomes can better emerge from what Lave and Wenger (1991) refer to as "situated learning". Emerging debates circle around the contrast between student-centered learning versus faculty-led instruction. In most universities in Uganda, the traditional models focus of knowledge delivery persist the faculty remain the primary knowledge holders. In such an environment, learning is not "situated" within the community but is largely confined to regulated classroom environments. Such confined pedagogy could limit the possible impact on community wellbeing by scarcely addressing local needs in areas such as public health, education, and environmental sustainability. However, Mitchel *et al* (2012) posits the contrary. He notes that even though community-leaning pedagogical models are well intentioned, they may perpetuate structural oppression of communities by "academic outsiders" presuming to have superior knowledge or skills. For Jiang & Tham (2023), community-engaged pedagogy goes beyond just taking students to community spaces, but rather an opportunity for students to learn through working with community partners on actual projects.

In addition, debates about the trade-offs between having impact on communities and academic rigor. This contestation is reflected on how community-centered research is supported within the university system. In addition, new modes of co-creation of knowledge between universities and communities are pushing back on traditional models that are siloed. That is, increasingly knowledge is being constructed through interdisciplinary approaches that reflect changing contexts and that integrates diverse knowledge systems. Even so, new trends on university are emerging as universities increasingly pivot towards "democratizing" or "decolonizing" curricula by focusing on local knowledge and "situated" contexts. These new modes of knowledge production are also pushing against traditional approaches by for instance, integrating digital pedagogies and engagement. The post-COVID 19 university has been opened with digital platforms becoming learning spaces. Effective community engagement requires a commitment to ethical collaboration, interdisciplinarity, and the co-creation of knowledge that is beneficial to all stakeholders.

2.3 Curriculum Development and Community Engagement Outcomes

The curriculum is one of the most important factors in the academic field of higher education, as curricula put into effect the ideas of the university (Bender, 2007). How curricula are developed and how they are delivered has an implicit bearing on the mode of impact and contribution by the students who use or adopt them. For instance, the integration of community engagement into regular curricula has an implicit effect on how knowledge is translated to ultimately result into the desired community engagement outcomes.

Such stakeholders directly or indirectly frame the curriculum and ultimately define the type of impact such knowledge is meant to obtain (Phaeton & Stears, 2017). The seminal work of Boyer (1996) on how scholars "engage" provides a window into how teaching, research and service mandates of universities can ultimately deliver the desired community impact. How curricula are delivered and the pedagogical imperatives around university teaching is what Freire (1970) underlined by advocating for academic freedom, including the freedom to engage with communities. Key debates on the role of curriculum and how it affects community engagement outcomes are emerging. For instance, the extent to which community engagement should be integrated into the curriculum is a continuous contestation on whether it should be optional or extra-curricular.

Other debates go to the heart of knowledge production in universities. Gibbons *et al* (1994) with their Mode 1 and Mode 2 knowledge production derivatives have also shifted new conversations on how curricula around these two Modes are designed. That is, on whether university curricula should prioritize academic knowledge (Mode 1) or focus more on applied, community-based knowledge (Mode 2). Moreover, the post-pandemic university is also recalibrating (or has recalibrated) their curricula or the delivery of their programs using digital technologies which also has an inherent bearing on community engagement outcomes. Curriculum-based community engagement has the potential to contribute to improved community wellbeing if such curricula is nimble enough to keep up with changing narratives within the communities where university knowledge products are deployed.

This corroborates what Bouwer (2024) who noted that community engagement outcomes inextricably originate from the curriculum itself. This is corroborated by Doubeni, *et al,* (2022) who affirms that the goal is for learners within universities to acquire knowledge and skills that enable them identify exemplars and metrics of success in addressing specific community engagement outcomes like health disparities or policy enablers of health equity (Davidson, *et al,* 2022). However, the integration of community engagement into the curriculum has to be an intentional and deliberate process. According to Bender (2007), curriculum-based (credit-bearing) community-engaged modules and programs can be achieved when Community engagement is integrated in the pedagogy and not simply be added on to the existing responsibilities of academic staff and that it requires significant investment in planning, time, and finances to reshape and restructure existing and new modules.

For the curriculum to have maximum impact on community engagement outcomes, the content must be delivered using both didactic and experiential methods. For instance, Ahmed &Palermo (2010) recommend that these are critical considerations to be made in public health and clinical practice within the community. According to Piasecki *et al* (2020), such a curriculum that speaks to community engagement outcomes should include at least seven competencies: 1) elements and value of community-engaged research; 2) dissemination and advocacy in community 3) Community engagement principles; 4) social determinants of health and historical injustices;5) resource sharing and communication; 6) program evaluation for Community engagement; and engagement; and, 7) personal traits, like cultural humility. These competencies, however, need to be perceived or framed within the overarching objective of ensuring that curricula are developed or conceived with "an eye" on the community. That could be why Ziegahn (2021) emphasizes the criticality of co-designing curricula with community members to ensure that community values and priorities are integrated or mainstreamed upstream of the curriculum development process. Ultimately, it's the community that defines the community engagement outcomes (Doubeni, 2022). Therefore, to maximize the extent, reach and impact of community engagement of universities, prioritization should be done by or with the community and that the meaningfulness of community engagement outcomes is determined primarily from the

community's perspective.

2.4. Faculty Development and Community Engagement Outcomes

Faculty, including teaching staff are critical in university knowledge production and can enhance community engagement outcomes. O'Meara (2008) contends that community engagement requirements ought to be embedded in the roles and responsibilities of university teaching staff. For Holland (2005), integration of community service within research and teaching, can directly impact on community engagement outcomes. New debates are emerging on how to balance the need to conduct research, teaching, and community engagement. Several studies have shown that faculty often seek to find overlap and integration among roles (Colbeck, 1995; Neumann, 1996). Other studies have called for the integration of community engagement into regular faculty responsibilities.

While community engagement is increasingly becoming central to university mandates, other concerns on faculty workload and career advancement come into play. In some universities, there is an intentional recognition of faculty's contribution towards community engagement. However, as discussed earlier, traditional systems generally still marginalize community engagement resulting into minimalist impact on broader community engagement outcomes. That is, the prevailing academic core of most universities pivots towards research publications over engagement activities. Bloomgarden & O'Meara (2007) note that of all the faculty roles, community engagement is the least celebrated in most universities. In other universities, faculty are expected to involve students in community engagement. However, capacity building for faculty to undertake community engagement is often lacking. In an increasingly digitalized knowledge ecosystem, the use of digital tools to dramatize and influence community engagement outcomes is critical. the impact of university knowledge production. For instance, training faculty on how to facilitate virtual community partnerships and use online platforms for collaboration is critical.

Welch and Plaxton-Moore (2017) note that there is an emerging pedagogical and ethical incentive to identify and implement continued professional education to faculty that requires them engage pedagogy in the courses. Whereas community engagement is a central mandate for many universities, it receives limited intentional support within university operations. Faculty development in community engagement has the potential to shape policy by producing the necessary evidence to inform policy. However, in most universities, faculty do not have opportunity to directly engage policy makers. Fitzgerald *et al.* (2016) focuses on the nexus between faculty development, policy, and community well-being. These imperatives are critical in demonstrating that faculty within universities are part and parcel of the observed (or unobserved) community engagement outcomes. Ultimately, effective faculty participation in community-driven research has a high propensity to facilitate impact on tangible improvements in community well-being, such as better health outcomes, enhanced education, and increased economic opportunities. However, issues around a sustained mindset change of such faculty is also critical in breaking down some long-held biases.

2.5 Use of Technology in Learning and Community Engagement Outcomes

Technology is increasingly being used as an enabler for conceiving and delivering knowledge within contemporary universities. According to Alter (2017), community engagement efforts by universities have a recursive relationship to new technologies; with technologies shaping people's patterns of socialization and forms of learning. The use of technology and the integration of information and communication technologies (ICTs) in learning is increasingly being integrated in Ugandan universities. This is consistent with Trotter *et al* (2014) who highlighted the increased use of technology and the perfusion of digital technologies. This has been turbo-charged by the ratification, by many countries, of the UNESCO recommendation on Open Science that seeks to "open up" and integrate knowledge production systems in the global south with global north.

According to Wright *et al* (2012), such transitions that facilitate the use of technologies have leveraged the university's "connectedness" with the community and the overall impact of university research products. Mittal & Bansal (2024) documents successful examples of how digital education has been used to promote community engagement and solve social problems while Trappett (2023) notes that universities can gainfully utilize online engagement platforms to engage their community in strategic planning. In 2019, the National Council for Higher Education developed the Open Distance E-learning (ODeL) minimum standards to help in the accreditation of ODeL programs in Higher Education Institutions in Uganda (NCHE, 2019). However, several challenges still abound. Mtebe & Raisamo (2014) highlight how educators within universities still struggle to "cross the chasm" for adoption and use of Open Educational Resources (OERs). This is exacerbated by the apparent "digital divide" within universities. For instance, the use and deployment of some of these technologies is shaped by the nature of funding, the human resources capacity and the overall "technology readiness" of the university. For instance, many universities still face significant infrastructural challenges, such as unreliable internet connectivity and a lack of adequate hardware. In Uganda, in the aftermath of the COVID-19 pandemic, some universities adopted Blended Learning Models that combine online and face-to-face instruction.

2.6 Summary

The literature demonstrates that teaching practices are central to shaping community engagement outcomes in universities, with pedagogy, curriculum design, faculty capacity, and technology acting as critical enabling factors. Evidence highlights that experiential and community-engaged pedagogies, grounded in frameworks such as praxis and situated learning, enhance the application of knowledge to real-world challenges, although tensions remain between academic rigor and societal impact. Curriculum integration, particularly through Mode 2 knowledge production and co-designed, community-responsive approaches, is essential for translating knowledge into meaningful outcomes, while faculty development and institutional incentives significantly influence the extent of engagement. Additionally, the growing role of digital technologies is expanding opportunities for collaboration and knowledge co-creation, despite persistent infrastructural and capacity constraints, especially in developing contexts like Uganda. Overall, there is a consistent gap between knowledge production and its application, underscoring the need for more intentional, integrated, and context-responsive teaching practices to strengthen university community engagement outcomes .

3. Methodology

This study adopted a mixed-methods approach to examine the effect of teaching practices on community engagement outcomes in selected universities in Central Uganda. A cross-sectional research design with concurrent triangulation was employed, allowing for the simultaneous collection and integration of quantitative and qualitative data to enhance the validity, depth, and complementarity of the findings. The study was conducted in three universities Makerere University, Uganda Martyrs University, and Bugema University which were purposively selected to reflect urban, peri-urban, and rural contexts, respectively.

The study population comprised academic staff, university leaders, community members, and policymakers involved in university–community engagement initiatives. A sample of 330 academic staff was selected using stratified random sampling to ensure representativeness across faculties, departments, and gender categories. The sample distribution ensured adequate representation from each institution. Purposive sampling was applied to select key informants, including university administrators, leaders of academic units, community representatives, and policymakers, based on their knowledge and experience in teaching practices and community engagement.

Data were collected using structured questionnaires, key informant interviews, focus group discussions, and document analysis to provide a comprehensive understanding of teaching practices and their influence on community engagement outcomes. Quantitative data were collected through structured questionnaires administered face-to-face by trained research assistants to academic staff. The questionnaires consisted of closed-ended and Likert-scale items capturing key teaching practices such as pedagogical approaches, curriculum design, experiential learning, and the use of technology in teaching and learning. Each questionnaire took approximately 30 minutes to complete and was administered in English.

Qualitative data were obtained through key informant interviews and focus group discussions to gain deeper insights into the contextual and experiential aspects of teaching practices and their contribution to community engagement. Semi-structured interview guides were used to ensure consistency while allowing flexibility to explore emerging issues. Focus group discussions were conducted with community members and relevant stakeholders to explore perceptions of university teaching practices and their impact on community development. These sessions were facilitated by trained moderators, conducted in accessible locations, lasted between 60 and 90 minutes, and were audio-recorded with participants' consent. In addition, document analysis was undertaken to review institutional reports, curricula, policy documents, and strategic plans to provide contextual and historical understanding of teaching practices and engagement initiatives.

The data collection process followed a structured and systematic procedure to ensure accuracy and reliability. Research assistants were trained on the objectives of the study, data collection tools, ethical considerations, and quality assurance procedures. Participants were mobilized through university administrative channels and community leaders, and data collection schedules were arranged in advance to ensure participation and minimize disruptions. Questionnaires were administered directly to respondents, while interviews and focus group discussions were conducted at convenient locations. Field notes were taken to supplement recorded data, and all instruments were checked for completeness and consistency before analysis.

Data analysis involved both quantitative and qualitative techniques. Quantitative data were analyzed using STATA version 18.5. Descriptive statistics, including means, standard deviations, frequencies, and percentages, were used to summarize the key variables. Inferential analysis included Pearson's correlation and multiple regression analysis to examine the relationships between teaching practices and community engagement outcomes. The analysis was based on a five-point Likert scale to assess the level and variability of teaching practices and their perceived contribution to community engagement outcomes. Qualitative data were analyzed thematically using NVivo version 10, involving systematic coding, categorization, and interpretation of emerging themes. The results from both quantitative and qualitative strands were triangulated to provide a comprehensive and

contextualized understanding of the study phenomenon.

Measures were taken to ensure data quality, validity, and reliability. Content validity was assessed using the Content Validity Index (CVI), with all items meeting the acceptable threshold, ensuring that the instruments adequately captured the constructs under study. Reliability was assessed using Cronbach's alpha coefficients, which exceeded the recommended threshold of 0.70, confirming internal consistency. Qualitative rigor was enhanced through triangulation of data sources, detailed documentation, and adherence to principles of credibility, dependability, and confirmability.

Ethical considerations were strictly observed throughout the study. Informed consent was obtained from all participants prior to data collection, and participation was voluntary, with respondents free to withdraw at any stage without penalty. Confidentiality and anonymity were maintained by safeguarding personal information and ensuring secure storage of all data. The study adhered to established ethical standards and ensured that no harm psychological, social, or professional was caused to participants. All information collected was used strictly for academic purposes and handled with integrity and professionalism.

4. Result and Discussion

4.1 Respondent socio-demographic characteristics

In order to understand the performance of research activities in universities, academic staff members were identified as major respondents in this study. Accordingly, Table 1 presents the socio-demographic characteristics of the respondents involved in the study. The distribution includes gender, age group, academic qualification, marital status, employment status, professional experience, institutional tenure, mode of work, and access to institutional support services. The demographic profile helps provide context for interpreting the study findings.

Table 1: Respondent socio-demographic characteristics

-	Category	Frequency	Percent
Gender	Female	118	35.76
	Male	212	64.24
Age group	<29	2	0.61
	30–39	66	20
	40–49	161	48.79
	50–59	90	27.27
	60+	11	3.33
Highest academic qualification	Bachelor's	34	10.3
	M.Phil (taught)	1	0.3
	Master's (taught)	92	27.88
	PhD / Doctorate	203	61.52
Marital status	Divorced / Separated	17	5.15
	Married	255	77.27
	Single	49	14.85
	Widowed	9	2.73
Employment status	Contract	9	2.74
	Full-time	228	69.51
	Part-time	91	27.74
Experience in higher education	≤9	67	20.3
	10–14	83	25.15
	15–19	83	25.15
	20–24	63	19.09
	≥25	34	10.3
Years with institution	≤5	40	12.12
	6–10	131	39.7

-	Category	Frequency	Percent
	11–15	64	19.39
	16–20	72	21.82
	≥21	23	6.97
Mode of work	Fully Online	3	0.91
	Hybrid	76	23.03
	On-campus	251	76.06
Research support access	Adequate	168	50.91
	Inadequate	48	14.55
	Not available	6	1.82
	Somewhat adequate	108	32.73
Teaching/Learning support	Adequate	284	86.06
	Inadequate	7	2.12
	Not available	3	0.91
	Somewhat adequate	36	10.91
Knowledge services support	Adequate	277	83.94
	Inadequate	8	2.42
	Not available	1	0.3
	Somewhat adequate	44	13.33

Source: Primary data, 2026

The demographic characteristics of respondents indicate that the study largely captured experienced and well-established academic staff. Male respondents constituted the majority (64.24%), compared to 35.76% females, suggesting a gender imbalance that may reflect the composition of academic staff in the selected universities. In terms of age, most respondents were in the mid- to late-career stages, with 48.79% aged 40–49 years and 27.27% aged 50–59 years. This distribution implies that the study benefited from participants with substantial professional experience and institutional knowledge.

Additionally, the majority of respondents were highly qualified, with 61.52% holding PhD degrees and 27.88% holding master's degrees, reinforcing the credibility and depth of the information provided.

Regarding professional and employment characteristics, most respondents were married (77.27%) and predominantly employed on a full-time basis (69.51%), indicating a stable and committed academic workforce. Part-time staff accounted for 27.74%, while contract staff formed a small proportion (2.74%). The findings further reveal that respondents were generally experienced in higher education, particularly those with 10–14 years and 15–19 years of service (25.15% each), reflecting a concentration of mid-career academics. In terms of institutional tenure, most respondents had served their current institutions for 6–10 years (39.7%), indicating moderate institutional loyalty and familiarity with internal systems and practices. The dominance of on-campus work arrangements (76.06%) also highlights the continued reliance on traditional academic work structures within the universities.

Institutional support systems were perceived positively across teaching, research, and knowledge services. Over half of the respondents (50.91%) rated research support as adequate, while teaching and learning support received stronger approval, with 86.06% indicating adequacy. Similarly, 83.94% of respondents viewed knowledge support services as sufficient. These findings suggest that the selected universities provide a supportive environment for academic work, particularly in teaching and knowledge dissemination. Overall, the demographic and professional profile indicates that respondents were experienced, highly educated, and well-integrated into their institutions, thereby enhancing the reliability and credibility of the data in assessing teaching practices and community engagement outcomes.

4.2 Teaching Methods (Pedagogy)

Teaching in universities increasingly incorporates diverse approaches, including collaborative problem-solving, competency-based learning, curriculum alignment, faculty development, and the use of technology. These approaches emphasize practical skills, stakeholder-oriented learning outcomes, and the application of knowledge to real-world challenges. Effective implementation depends on well-prepared academic staff and supportive institutional frameworks that enable meaningful engagement with communities. This section presents descriptive statistics on respondents' perceptions of teaching practices in selected universities in Central Uganda. It focuses on key dimensions of teaching and learning, including teaching methods, competency-based

learning, curriculum development, faculty development, and the use of technology. The analysis is based on a 5-point Likert scale, with mean scores and standard deviations used to assess the level and variability of responses, providing insights into how teaching practices contribute to community engagement outcomes.

Table 2: Descriptive statistics on respondents' perception of teaching practices

TEACHING / LEARNING	n	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Mean (SD)	Standard Deviation	Interpretation
Teaching Methods (Pedagogy)									
My teaching methods emphasize problem-solving using real community challenges.	330	1.21%	1.52%	4.85%	76.36%	16.06%	4.045	0.615	High
I use participatory and experiential learning approaches in my courses.	330	1.52%	1.82%	6.06%	71.82%	18.79%	4.045	0.676	High
Teaching activities encourage students to apply theory to practical contexts.	330	0.61%	3.94%	3.94%	70.00%	21.52%	4.079	0.680	High
Many of the courses I teach include a community engagement component (e.g service-learning, field placements, community projects, internships..)	330	3.03%	5.76%	6.06%	72.73%	12.42%	3.858	0.818	High
Competency-Based Learning									
Learning outcomes in my courses are clearly defined in terms of specific competencies students must demonstrate.	330	1.52%	2.12%	10.30%	76.97%	9.09%	3.900	0.637	High
Teaching and assessment methods are aligned with the competencies required for professional or real-world practice.	330	0.30%	3.03%	10.91%	74.55%	11.21%	3.933	0.605	High
Students progress in my courses based on demonstrated mastery of competencies rather than time spent in class alone.	330	0.30%	2.12%	11.52%	73.64%	12.42%	3.958	0.592	High
Feedback provided to students is focused on helping them improve and achieve defined competencies.	330	0.30%	0.30%	9.39%	79.39%	10.61%	3.997	0.490	High
Assessment tasks require students to apply knowledge, skills, and attitudes to authentic or real-life situations.	330	—	2.42%	6.06%	80.61%	10.91%	4.000	0.517	High
Curriculum Development									
Community or industry perspectives inform curriculum design in my discipline.	330	0.91%	5.15%	14.24%	72.42%	7.27%	3.800	0.681	High

Curriculum content reflects current societal and community needs.	330	1.21%	4.85%	17.88%	67.58%	8.48%	3.773	0.719	High
Curriculum reviews incorporate feedback from external stakeholders.	330	0.61%	5.76%	21.21%	61.82%	10.61%	3.761	0.740	High
Curriculum policy within the university underscores integration of community-derived input	330	0.61%	6.36%	21.21%	66.97%	4.85%	3.691	0.690	High
Faculty Development									
I regularly participate in professional development related to community-engaged teaching or research.	330	—	10.30%	13.94%	69.39%	6.36%	3.718	0.733	High
Faculty development programs strengthen my ability to engage with communities.	330	—	3.94%	23.33%	66.97%	5.76%	3.745	0.620	High
Training opportunities support integration of community engagement into academic work.	330	—	5.45%	16.67%	71.21%	6.67%	3.791	0.640	High
Use of Technology in Learning									
I regularly use digital tools to enhance interaction between students and external stakeholders.	330	0.30%	4.85%	10.00%	70.00%	14.85%	3.942	0.684	High
Technology supports experiential or community-based learning in my courses.	330	—	3.64%	8.18%	74.24%	13.94%	3.985	0.606	High
Online platforms facilitate collaboration beyond the university environment.	330	—	3.64%	6.97%	72.42%	16.97%	4.027	0.621	High
Digital platforms and their use in teaching have brought the university closer to the community	330	0.30%	5.15%	10.30%	70.00%	14.24%	3.927	0.689	High
Overall	330						3.899	0.382	High

Key:

- Likert Scale :5= Strongly agree (SA) , 4= Agree (A) , 3= Neutral (N) , 2= Disagree (D) and 1= Strongly disagree (SD).
- Likert Mean: less 3- Disagreement and greater than 3- Agreement.
- Legend: Very high (4.24 – 5.00), High (3.43 – 4.23), Moderate (2.62 – 3.42), Low (1.81 – 2. 61), Very Low (1.00 – 1.80)

Source: Primary data, 2026

a) Teaching Methods (Pedagogy)

Teaching methods or the manner in which pedagogical frameworks are designed, may have an impact on how knowledge is received and in the practical use of that knowledge. The majority of respondents indicated that their teaching methods emphasize problem-solving based on real community challenges. Specifically, 76.36% agreed and 16.06% strongly agreed, while very few respondents disagreed (1.21% strongly disagree; 1.52% disagree). The mean score of 4.045 (SD = 0.615) indicates a high level of agreement, suggesting that instructors frequently integrate community-based problems into their teaching strategies. Qualitative findings reinforce this perspective by demonstrating how students apply their knowledge in community contexts. For example, one participant explained, ***"Students come out to teach the community new ideas in farming"* (FGD003, R6),** illustrating how teaching approaches incorporate real-life community challenges.

Most respondents also reported using participatory and experiential learning methods in their courses. Specifically, 71.82% agreed and 18.79% strongly agreed, while only a small proportion disagreed. The

mean score of 4.045 (SD = 0.676) reflects a high perception, indicating that participatory teaching approaches such as discussions, field activities, and collaborative learning are commonly practiced. Qualitative findings support this by highlighting field-based learning experiences. For instance, one respondent noted, ***"Students of carpentry and architecture come to our communities for internship and they give us some labour" (FGD001, R6),*** demonstrating how experiential learning allows students to interact directly with community environments.

Similarly, a large proportion of respondents indicated that teaching activities encourage students to apply theory to practical contexts, with 70.00% agreeing and 21.52% strongly agreeing. The mean score of 4.079 (SD = 0.680) suggests that instructors strongly promote bridging theoretical knowledge with real-world practice. This is reflected in community testimonies describing how practical learning activities benefit local populations. As one participant explained, ***"People go to the model farm to learn different techniques and skills needed for better production" (FGD003, R6),*** illustrating how academic knowledge is translated into practical applications. Most respondents also indicated that many courses include a community engagement component, such as service learning, field placements, internships, or community projects. Specifically, 72.73% agreed and 12.42% strongly agreed, with a mean score of 3.858 (SD = 0.818), which still falls within the high interpretation range. Qualitative findings confirm this engagement through practical demonstrations of skills. One participant stated, ***"Furniture students also come and support the community with their skills" (FGD002, R3),*** showing how course activities contribute to community development.

These findings are generally consistent with the changing shift towards community-engaged pedagogies. This is majorly borne out of a need, among many universities, to improve the relevance of knowledge for societal needs (Salam et al., 2019; Muthanna & Khine, 2024). These teaching pedagogies can enhance students abiilties for knowledge translation and community engagement (Bringle & Hatcher, 2002). However, the slightly lower mean score and higher variation observed in the incorporation of formal community engagement activities suggests that, while applied teaching practices are widely encouraged, the institutionalization of structured engagement mechanisms such as service learning and community-based projects may still vary across courses and departments. Scholars like Bates (2019) and Sorcinelli (2000) have reported that while in some cases experiential pedagogies are widely adopted, their systematic integration into curricula and institutional frameworks remains uneven. For this study, while there are pedagogical shifts towards community learning, its integration as a regular practice needs to be institutionalised and strengthened.

b) Competency-Based Learning

Learning in universities is often about the transfer of critical competencies that facilitate community-derived imperatives. In this study, the majority of respondents reported that learning outcomes in their courses are clearly defined based on specific competencies. The majority of respondents reported that learning outcomes in their courses are defined in terms of competencies, with 76.97% agreeing and 9.09% strongly agreeing. The mean score of 3.900 (SD = 0.637) indicates a high level of implementation of competency-based learning principles. Qualitative findings support this by demonstrating how student competencies translate into practical community benefits. One participant remarked, ***"Students have knowledge and skills that help communities improve the way they do things"*** **(FGD002, R5),** highlighting the practical value of competency-oriented education.

Similarly, most respondents confirmed that teaching and assessment are aligned with professional competencies, with 74.55% agreeing and 11.21% strongly agreeing. The mean score of 3.933 (SD = 0.605) supports a high level of agreement. Community members also observed how students demonstrate professional competencies in practice. For example, one participant noted, ***"Students demonstrate skills in carpentry and other technical work when they come to the community"*** **(FGD001, R6),** illustrating how competency-based education contributes to skill development and community service.

A majority of respondents also indicated that students progress based on mastery of competencies, with 73.64% agreeing and 12.42% strongly agreeing. The mean score of 3.958 (SD = 0.592) suggests that competency-based progression is widely practiced. Qualitative findings also highlight how learning activities address real community challenges. One participant explained, ***"The university activities help people learn practical ways of improving their livelihoods"*** **(FGD003, R5),** demonstrating the relevance of competency development in addressing societal needs.

Furthermore, respondents agreed that feedback helps students achieve competencies, with 79.39% agreeing and 10.61% strongly agreeing, resulting in a mean score of 3.997 (SD = 0.490). In addition, assessment tasks requiring application of knowledge in real-life situations received one of the highest agreement levels (80.61% agree; 10.91% strongly agree; Mean = 4.000, SD = 0.517), indicating that real-world application is strongly integrated into teaching and assessment practices. From these findings, there is a strong imperative on how competence based learning is vital in higher education in Uganda and is consistence with current work in this area (Muthanna & Khine, 2024). For Mulder (2024), such competency-based pedagogical frameworks are useful in bridging academic knowledge and labor market demands. Furthermore, global and regional higher education initiatives, particularly in Africa, emphasize competency-based training as a strategy for producing

graduates capable of addressing community and development challenges (RUFORUM, 2021). Today, competence based education is being rolled out in across Ugandan universities and can help reinforce the notion of universities as a medium of community transformation and change (Kitasse & Ssembatya 2024; Nakawuki *et al* (2025).

c) Curriculum Development

How university curricula are designed and how they engage communities in doing so has an implicit effect on community or industry engagement. A large proportion of respondents indicated that community or industry perspectives inform curriculum design, with 72.42% agreeing and 7.27% strongly agreeing. The mean score of 3.800 (SD = 0.681) suggests that external stakeholder input is generally incorporated into curriculum development. Qualitative findings show that such educational opportunities benefit local communities. For instance, one respondent noted, ***"There are students from the community who study for free when they perform well and receive bursaries"*** **(FGD003, R3),** highlighting how educational initiatives extend opportunities to surrounding communities.

Most respondents also agreed that curriculum content reflects societal and community needs, with 67.58% agreeing and 8.48% strongly agreeing. The mean score of 3.773 (SD = 0.719) indicates that curricula are generally responsive to societal issues. Qualitative evidence further supports this perception, as one participant explained, ***"The students learn things that can help communities improve farming and other businesses"*** **(FGD003, R6),** demonstrating the relevance of curriculum content to community development. Similarly, respondents indicated that curriculum reviews incorporate external stakeholder feedback, with 61.82% agreeing and 10.61% strongly agreeing, resulting in a mean score of 3.761 (SD = 0.740). Institutional policies emphasizing community input in curriculum development were also positively rated (Mean = 3.691, SD = 0.690), suggesting a generally supportive policy environment. The findings of this study are broadly consistent with existing literature showing that universities increasingly incorporate external stakeholder perspectives in curriculum design to enhance the societal relevance of higher education. According to the OECD (2019), curriculum development in universities must reflect global trends toward stakeholder-informed and demand-driven curricula. Other studies have shown that universities that integrate community actors during curriculum development, are able to generate graduates with skills relevant to local development (Arbo & Benneworth, 2007). However, the relatively higher proportion of neutral responses observed in this study suggests that stakeholder engagement in curriculum review may not yet be fully institutionalized across all departments or programs. This pattern has been noted in other studies where universities formally recognize the importance of stakeholder participation in curriculum design but face practical challenges in systematically integrating external actors into curriculum governance structures (Benneworth & Jongbloed, 2010). University curricula in central Uganda are increasingly responsive to community and industry needs.

d) Faculty Development

Most respondents reported participating in professional development activities related to community engagement, with 69.39% agreeing and 6.36% strongly agreeing. The mean score of 3.718 (SD = 0.733) indicates that such professional development opportunities are fairly common but not universal. Qualitative findings show that academic expertise plays a role in supporting community learning. One participant stated, ***"Students and staff from the university help the community with different knowledge and skills"*** **(FGD002, R5),** indicating the value of faculty knowledge in community engagement. Similarly, faculty development programs were perceived to strengthen community engagement abilities, with 66.97% agreeing and 5.76% strongly agreeing (Mean = 3.745, SD = 0.620). Qualitative findings also highlight knowledge-sharing initiatives where university staff interact directly with communities. For example, one respondent noted, ***"Sometimes students and staff come and help communities understand new ideas" (FGD003, R6),*** illustrating how academic training supports knowledge dissemination.

e) Use of Technology in Learning

Most respondents indicated that they use digital tools to interact with external stakeholders, with 70.00% agreeing and 14.85% strongly agreeing. The mean score of 3.942 (SD = 0.684) suggests that technology plays a significant role in facilitating engagement beyond the university. Qualitative findings show that technological knowledge has also influenced community practices. For instance, one participant explained, ***"I learnt that I can digitally advertise my business and do deliveries because of university customers" (FGD001, R5),*** demonstrating how digital literacy can support local entrepreneurship. Similarly, respondents reported that technology supports experiential or community-based learning, with 74.24% agreeing and 13.94% strongly agreeing (Mean = 3.985, SD = 0.606). Participants also observed how technological tools have improved communication and interaction. One respondent noted, ***"Many businesses around here now use phones and online platforms because of students"*** **(FGD001, R3),** indicating broader technological diffusion within communities. Online platforms were also perceived to facilitate collaboration beyond the university, with 72.42% agreeing and 16.97% strongly agreeing (Mean = 4.027, SD = 0.621). Additionally, respondents agreed that digital platforms bring the university closer to the

community (Mean = 3.927, SD = 0.689). This perception was echoed in qualitative findings, where one participant stated, ***"Technology helps the university connect with people outside the campus"*** **(FGD003, R8),** demonstrating the role of digital tools in strengthening university–community relationships.

The **overall mean score of 3.899 (SD = 0.382)** indicates a high level of positive perception regarding teaching practices among respondents. The quantitative findings show strong implementation of **community-engaged pedagogy, competency-based learning, and technology-supported instruction** across the selected universities. Qualitative evidence further demonstrates how these teaching practices manifest in real-life contexts through internships, skill demonstrations, community learning initiatives, and digital engagement. Community members particularly highlighted the practical benefits of student projects, agricultural training, and professional skills demonstrations, which contribute to improved livelihoods and knowledge sharing. However, some variability in responses suggests that the extent of implementation may differ across programs and institutions.

In conclusion, the findings demonstrate that **teaching practices in the selected universities strongly support community engagement and practical learning outcomes.** Instructors widely adopt participatory, experiential, and competency-based teaching approaches that encourage students to apply academic knowledge to real-world problems. Curriculum development and faculty development initiatives also appear to support the integration of community engagement within academic programs. Furthermore, the increasing use of digital technologies enhances collaboration and knowledge exchange between universities and external stakeholders. Overall, these teaching practices strengthen the link between **academic learning, professional skill development, and community development**, reinforcing the role of universities as key institutions for knowledge transfer and societal transformation.

4.3 Community Engagement Outcomes

Universities engage with communities through knowledge exchange mechanisms that link teaching, research, and service to societal needs. This section presents descriptive statistics on respondents' perceptions of community engagement outcomes in selected universities in Central Uganda. The analysis focuses on three dimensions: policy changes, community improvements, and stakeholder satisfaction. Results are summarized using frequencies, percentages, mean scores, and standard deviations based on a 5-point Likert scale, providing insight into the extent to which university teaching and academic activities contribute to measurable community outcomes.

Table 3: Descriptive statistics on respondents' perception of Community engagement outcomes

COMMUNITY ENGAGEMENT OUTCOMES	n	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Mean (SD)	Standard Deviation	Interpretation
Policy Changes									
University research has informed policy decisions at local or national level.	330	—	4.24%	14.85%	73.33%	7.58%	3.842	0.608	High
Research outputs from my institution are used in planning or implementation.	330	0.30%	3.64%	16.36%	74.55%	5.15%	3.806	0.593	High
University knowledge has influenced professional or institutional practices (guidelines, local by laws, program adoption, ministry policy..)	330	—	1.82%	9.39%	81.52%	7.27%	3.942	0.487	High
Research findings are cited or referenced in policy or technical documents.	330	—	1.82%	14.24%	79.70%	4.24%	3.864	0.490	High
Community Decision-makers actively seek evidence from the university.	330	1.82%	3.64%	11.82%	75.15%	7.58%	3.830	0.690	High
My research findings are accessible and actionable	330	0.61%	7.58%	13.33%	72.12%	6.36%	3.761	0.706	High

by community policy makers									
Community Improvements									
University knowledge has contributed to improved community livelihoods (e.g improved health outcomes, improved farming practices, adoption of new technology)	330	—	0.61%	10.91%	81.21%	7.27%	3.952	0.452	High
Your Research activities have led to positive health, social, or environmental outcomes.	330	—	1.52%	15.15%	76.97%	6.36%	3.882	0.512	High
Community practices have changed as a result of university engagement.	330	—	1.52%	18.79%	74.55%	5.15%	3.833	0.523	High
Communities have adopted innovations introduced through university research.	330	0.30%	2.42%	15.45%	73.94%	7.88%	3.867	0.584	High
University activities (teaching and research) have contributed to sustainable community development.	330	0.61%	0.30%	11.82%	79.70%	7.58%	3.933	0.507	High
Satisfaction and Perception									
Community stakeholders are satisfied with the university's engagement efforts.	330	—	5.45%	26.67%	60.91%	6.97%	3.694	0.680	High
Communities perceive the university as responsive to their needs.	330	0.61%	10.00%	21.82%	64.24%	3.33%	3.597	0.738	High
Stakeholders trust the university as a credible source of knowledge.	330	—	0.30%	6.06%	75.45%	18.18%	4.115	0.492	High
Community partners value the relevance of university-generated knowledge.	330	—	—	6.36%	81.82%	11.82%	4.055	0.424	High
Stakeholders are willing to collaborate with the university again.	330	0.30%	—	11.52%	76.97%	11.21%	3.988	0.505	High
Overall	330						3.873	0.341	High

Key:

- Likert Scale :5= Strongly agree (SA) , 4= Agree (A) , 3= Neutral (N) , 2= Disagree (D) and 1= Strongly disagree (SD).
- Likert Mean: less 3- Disagreement and greater than 3- Agreement.
- Legend: Very high (4.24 – 5.00), High (3.43 – 4.23), Moderate (2.62 – 3.42), Low (1.81 – 2. 61), Very Low (1.00 – 1.80)

Source: Primary data, 2026

a) Policy Changes

According to McKenzie *et al* (2020), academic research and community policy change is rarely a linear transfer of knowledge. It is characterised by two communities which have two different incentives for research. To Bohacova (2023), research often is limited in its impact on community policy because academic timelines are typically measured in years, while policy is based on budget cycles or election periods. This often is the case where research is not consistent with the political-economy of the community. The findings indicate that university research significantly contributes to policy-related outcomes. A large majority of respondents agreed

(73.33%) or strongly agreed (7.58%) that university research has informed policy decisions at local or national levels (Mean = 3.842, SD = 0.608), indicating a high perceived policy influence. Qualitative findings support this perception, as community participants acknowledged that university research has contributed to policy reforms and environmental governance. For instance, one participant explained, ***"The local council adopted new waste management rules based on the university's research and the district implemented strict environmental regulations"* (FGD002, R4),** illustrating how academic evidence can directly influence policy decisions and regulatory frameworks.

Similarly, 74.55% agreed and 5.15% strongly agreed that institutional research outputs are used in planning and implementation (Mean = 3.806, SD = 0.593), suggesting practical utilization of research findings in governance processes. Qualitative evidence indicates that the presence of the university can shape local development planning and infrastructure expansion. One participant noted, ***"Roads and electricity came because of the university and the community developed faster"* (FGD003, R3),** demonstrating how university activities can influence development priorities and policy implementation within local communities.

Influence on professional or institutional practices received strong support, with 81.52% agreeing and 7.27% strongly agreeing (Mean = 3.942, SD = 0.487), demonstrating that university knowledge contributes to guidelines, by-laws, and policy frameworks. Community members also acknowledged the institutional authority of universities in shaping local decisions. For example, a participant observed, ***"The university is a very big institution and sometimes their decisions influence what happens in the community"* (FGD001, R4),** highlighting the institutional influence of universities in local governance contexts.

Research citation in policy or technical documents was also highly rated (79.70% agree; 4.24% strongly agree; Mean = 3.864, SD = 0.490), confirming formal recognition of university research. Similarly, community decision-makers actively seeking university evidence was supported by 75.15% agreement and 7.58% strong agreement (Mean = 3.830, SD = 0.690), indicating strong demand for academic expertise. Accessibility and actionability of research findings were also highly rated (72.12% agree; 6.36% strongly agree; Mean = 3.761, SD = 0.706), suggesting effective knowledge translation mechanisms that enable research to inform governance processes. Overall, policy-related outcomes demonstrate a strong influence of university research on governance and decision-making processes.

b) Community Improvements

University research has the potential to result into both direct and indirect improvements in the community imperatives like jobs and health. However, this can happen once universities go beyond being purely extractive (e.g for data collection) and move towards engagement with communities to ensure that research outcomes are consistent with local research agenda or local challenges (APLU, 2025; IHEP, 2025). The results show strong evidence that university activities contribute to tangible community improvements. An overwhelming majority agreed (81.21%) or strongly agreed (7.27%) that university knowledge has improved community livelihoods (Mean = 3.952, SD = 0.452), indicating substantial developmental impact. Qualitative findings confirm these perceptions, particularly through economic opportunities generated by university presence. For example, one participant explained, ***"Students are the highest percentage of our customers in our communities and this has boosted businesses" (FGD001, R1),*** demonstrating how universities stimulate local economic activity.

Positive health, social, and environmental outcomes were also widely reported (76.97% agree; 6.36% strongly agree; Mean = 3.882, SD = 0.512). Participants described how the university's presence has stimulated local enterprise development. One respondent noted, ***"Stationary printing shops, restaurants, hostels and rentals have grown because of the university population"* (FGD002, R3),** highlighting how universities create demand for goods and services within surrounding communities. Changes in community practices due to university engagement were supported by 74.55% agreement (Mean = 3.833, SD = 0.523), reflecting behavioral and practical shifts among community members. For instance, the university's influence on employment and mobility was evident in the testimony of one participant who stated, ***"The university has led to an increased number of bodas from 3 to 20 and above because many people move around the area"* (FGD003, R7),** demonstrating how university presence can stimulate local employment opportunities.

Adoption of innovations introduced through university research was strongly affirmed (73.94% agree; 7.88% strongly agree; Mean = 3.867, SD = 0.584). Participants particularly highlighted agricultural innovations and knowledge-sharing initiatives. One respondent explained, ***"People go to the model farm to learn different techniques and skills needed for better production" (FGD003, R6),*** illustrating how universities support community capacity building through practical learning platforms. Furthermore, contributions to sustainable community development received strong support (79.70% agree; 7.58% strongly agree; Mean = 3.933, SD = 0.507). Universities also provide market opportunities for local producers. As one participant stated, ***"Farmers with food stuff sell to the university and it supports them as a marketplace at an affordable price" (FGD003, R5).*** In addition, the presence of the university has motivated community members to prioritize education. One respondent remarked, ***"The***

university has motivated parents to educate their children because they see students graduating" (FGD003, R2), indicating broader social and educational impacts.

c) Satisfaction and Perception

The relationship between university research and the community has shifted from a "broadcast" model of knowledge to a "co-creation" model centered on mutual wellbeing. This co-dependence is reflective in how universities craft research problems to characterise the lived realities of the surrounding population. However, gaps still persist. Omodan *et al.* (2019) has noted a "Two Communities" Gap in which communities perceive academic research as highly "theoretical". Moreover, the persistance of societal challenges like unemployment make communities have negative perceptions of university work. Even then, stakeholder satisfaction and trust in university engagement were also rated highly. A majority agreed (60.91%) or strongly agreed (6.97%) that community stakeholders are satisfied with university engagement efforts (Mean = 3.694, SD = 0.680). Qualitative findings indicate that community members generally perceive the university as a positive driver of economic and social development. One participant stated, ***"The university has helped the community to grow economically because many businesses depend on students"*** **(FGD001, R3),** demonstrating positive perceptions of the university's local contributions.

Perceptions of responsiveness to community needs were similarly positive (64.24% agree; Mean = 3.597, SD = 0.738), though comparatively lower than other items. Qualitative evidence reveals that some community members feel that stronger communication and engagement mechanisms are needed. For example, one respondent noted, ***"There is a very big gap between the institution and the community and this needs to change" (FGD001, R1),*** indicating areas where universities could strengthen responsiveness and dialogue with local stakeholders.

Trust in the university as a credible source of knowledge recorded one of the highest ratings (75.45% agree; 18.18% strongly agree; Mean = 4.115, SD = 0.492), indicating very strong institutional credibility. Qualitative findings support this perception, with participants acknowledging the value of university expertise. One respondent explained, ***"Students have knowledge and skills that help communities improve the way they do things" (FGD002, R5),*** demonstrating confidence in academic knowledge and its practical relevance. Stakeholders valuing the relevance of university-generated knowledge also received strong endorsement (81.82% agree; 11.82% strongly agree; Mean = 4.055, SD = 0.424). Similarly, willingness to collaborate again was high (76.97% agree; 11.21% strongly agree; Mean = 3.988, SD = 0.505). Qualitative findings reinforce this, with community members expressing interest in stronger partnerships. For instance, one participant emphasized, ***"The university and community should work together more because both sides benefit" (FGD003, R3),*** indicating strong potential for sustained collaboration.

Overall, community engagement outcomes were rated high (Mean = 3.873, SD = 0.341), indicating that universities in Central Uganda are perceived to significantly influence policy processes, community development, and stakeholder satisfaction. Quantitative findings demonstrate strong impacts in areas such as policy influence, livelihood improvements, and stakeholder trust, while qualitative evidence provides concrete examples of how these outcomes manifest in practice. Community members highlighted improvements in local businesses, employment opportunities, agricultural productivity, and policy reforms influenced by university research. At the same time, qualitative insights also reveal areas for improvement, particularly regarding communication, feedback mechanisms, and responsiveness to community concerns.

In conclusion, the findings demonstrate that research and academic activities in the selected universities generate meaningful and measurable community engagement outcomes, reinforcing the critical role of higher education institutions in societal development. Universities contribute to policy formulation, economic development, knowledge transfer, and social transformation within surrounding communities. The strong levels of stakeholder trust and willingness to collaborate further highlight the strategic importance of university–community partnerships. However, strengthening communication channels, enhancing responsiveness to community needs, and institutionalizing feedback mechanisms could further improve the effectiveness and sustainability of these engagements. By addressing these areas, universities can deepen their impact and strengthen their position as key drivers of inclusive and sustainable community development.

4.4 Regression and Correlation Analysis

Table 4: Correlational analysis showing the relationship between teaching methods and community engagement outcomes

Variables	Community Engagement Outcomes	p-value
Teaching Methods	0.4115	0.000
Competency-Based Learning	0.3611	0.000
Curriculum Development	0.4252	0.000
Faculty Development	0.5580	0.000
Use Technology in Learning	0.4797	0.000
Teaching or Learning	0.6164	0.000

Source: Primary data, 2026

The correlation analysis shows that teaching and learning practices are significantly and positively related to community engagement outcomes. The overall teaching and learning composite variable exhibited a strong positive relationship with community engagement outcomes ($r = 0.6164$, $p = 0.000$), indicating that improvements in pedagogical strategies, competency-based learning, curriculum design, faculty development, and technology integration are associated with stronger community engagement performance. Among the individual variables, faculty development showed the strongest correlation ($r = 0.5580$), suggesting that professional development programs that enhance faculty capacity in community-engaged teaching and research play a crucial role in strengthening university-community linkages. Other teaching-related dimensions also demonstrated moderate positive relationships, including use of technology in learning ($r = 0.4797$), curriculum development ($r = 0.4252$), and teaching methods ($r = 0.4115$), indicating that community-oriented instructional approaches contribute meaningfully to engagement outcomes. The results further reveal that competency-based learning has a weak to moderate positive relationship with community engagement outcomes ($r = 0.3611$), suggesting that while competency-based approaches support engagement, their impact may be less direct compared to other teaching dimensions. The statistical significance of all relationships ($p = 0.000$) confirms that the associations are unlikely to have occurred by chance. Overall, the findings imply that strengthening integrated teaching and learning systems within the university can enhance community engagement effectiveness. Institutional emphasis on faculty capacity building, technology-supported learning, and curriculum alignment with community needs is therefore essential for promoting sustainable community engagement outcomes.

Table 5: Regression analysis showing the relationship between teaching methods and community engagement outcomes

Predictor	B	SE	t	p	95% CI for B
Teaching or Learning	0.551	0.039	14.18	< .001	[0.475, 0.627]
Constant	1.724	0.152	11.33	< .001	[1.425, 2.024]

$F(1, 328) = 201.04$, $p < .001$, $R^2 = .380$, Adjusted $R^2 = .378$, RMSE = 0.269.

Source: Primary data, 2026

The regression analysis shows that teaching and learning practices are significant predictors of community engagement outcomes. The overall model is statistically significant ($F(1, 328) = 201.04$, $p = 0.000$), indicating that the relationship between teaching and learning practices and community engagement outcomes is strong and reliable. The coefficient of determination ($R^2 = 0.380$) implies that 38% of the variation in community engagement outcomes can be explained by teaching and learning practices, while the remaining 62% may be attributed to other factors not included in the model. This suggests that pedagogical strategies such as experiential learning, competency-based instruction, curriculum integration, faculty development, and technology-supported teaching play an important role in shaping community engagement performance. The regression coefficient for teaching and learning practices ($\beta = 0.550977$, $p = 0.000$) indicates a positive and statistically significant effect on community engagement outcomes. This means that a one-unit improvement in teaching and learning practices is associated with an approximate increase of 0.551 units in community engagement outcomes, assuming other factors remain constant. The result confirms that strengthening teaching methodologies, enhancing faculty capacity, and integrating community-oriented learning approaches can significantly improve engagement outcomes. Overall, the findings highlight the critical role of academic instructional practices in promoting sustainable university-community engagement.

Table 6: Regression analysis showing the relationship between teaching methods (Teaching Methods, Competency-Based Learning, Curriculum Development, Faculty Development and Use Technology in Learning) and Community Engagement Outcomes

Predictor	B	SE	t	p	95% CI for B
Teaching Methods	0.102	0.036	2.85	.005	[0.032, 0.173]
Competency Based Learning	-0.008	0.048	-0.17	.865	[-0.103, 0.086]
Curriculum Development	0.117	0.028	4.13	< .001	[0.061, 0.173]
Faculty Development	0.189	0.030	6.25	< .001	[0.130, 0.250]
Use of Technology in Learning	0.132	0.033	4.06	< .001	[0.068, 0.196]
Constant	1.818	0.152	11.98	< .001	[1.519, 2.116]

$F(5, 324) = 49.09$, $p < .001$, $R^2 = .431$, Adjusted $R^2 = .422$, RMSE = 0.260.

Source: Primary data, 2026

The multiple regression analysis shows that the combined teaching method variables significantly predict community engagement outcomes. The model is statistically significant ($F(5, 324) = 49.09$, $p = 0.000$), indicating that at least one of the independent variables has a significant effect on community engagement outcomes. The coefficient of determination ($R^2 = 0.431$) suggests that 43.1% of the variation in community engagement outcomes is explained by the five teaching and learning variables included in the model, while the remaining 56.9% may be influenced by other factors not captured in the analysis. This indicates that teaching and learning practices collectively play a substantial role in shaping community engagement performance. Among the predictor variables, faculty development had the strongest positive and statistically significant effect on community engagement outcomes ($\beta = 0.1899394$, $p = 0.000$), followed by use of technology in learning ($\beta = 0.132062$, $p = 0.000$), curriculum development ($\beta = 0.1174132$, $p = 0.000$), and teaching methods ($\beta = 0.1020846$, $p = 0.005$). These results indicate that strengthening faculty capacity, integrating technology into teaching, and aligning curriculum design with community needs significantly enhance community engagement outcomes. However, competency-based learning showed no significant effect ($\beta = -0.0081681$, $p = 0.865$), suggesting that competency-based approaches alone may not directly influence community engagement unless integrated with other pedagogical and institutional strategies. Overall, the findings emphasize the importance of comprehensive teaching and learning reforms to improve community engagement performance.

4.5 Hypothesis Testing

The regression results provide sufficient statistical evidence to reject the null hypothesis that university teaching practices in selected universities in Central Uganda do not have a significant effect on community engagement outcomes. The overall model was statistically significant ($F(1, 328) = 201.04$, $p = 0.000$), indicating that teaching and learning practices significantly influence community engagement outcomes. The coefficient of determination ($R^2 = 0.380$) shows that teaching practices explain 38% of the variation in community engagement outcomes, while the regression coefficient ($\beta = 0.550977$, $p = 0.000$) confirms a positive and statistically significant relationship. This implies that improvements in teaching methodologies, faculty development, curriculum integration, and technology-supported learning are associated with enhanced community engagement performance. Therefore, the null hypothesis was rejected, and it was concluded that university teaching practices in selected universities in Central Uganda have a significant positive effect on community engagement outcomes.

4.6 Discussion: Regulation and Economic Security Outcomes

The findings of this study are consistent with prior research highlighting the critical role of teaching and learning approaches in strengthening university–community engagement. Studies on service-learning and experiential learning demonstrate that integrating community-based activities into university curricula enhances students' practical skills, civic responsibility, and collaboration with local communities (Bringle & Hatcher, 2016). Similarly, research on engaged scholarship shows that learner-centered pedagogies and community-oriented curricula foster stronger partnerships between universities and communities, thereby contributing more effectively to social and economic development (Benneworth, 2013). These insights suggest that strengthening innovative teaching strategies, supporting faculty development, and embedding community engagement within curricula can significantly improve the societal impact of universities. In addition, the findings align with literature emphasizing the importance of institutional support, particularly research funding and knowledge dissemination, in enhancing community engagement outcomes. Well-funded research environments enable universities to expand outreach initiatives, generate policy-relevant knowledge, and promote innovation that

benefits surrounding communities (Cunningham et al., 2018). Furthermore, effective dissemination of research through publications increases visibility and facilitates knowledge transfer to policymakers, practitioners, and community stakeholders (Benneworth et al., 2016). However, existing studies caution that collaboration alone does not automatically lead to meaningful community impact unless it is supported by adequate resources, institutional incentives, and effective engagement mechanisms that align academic activities with community needs.

5. Conclusion and recommendations

5.1 Conclusion

The findings from this study indicate that teaching practices in the selected universities play a significant role in promoting community engagement and practical learning outcomes. Academic staff widely employ participatory, experiential, and competency-based approaches that encourage students to apply theoretical knowledge to real-world challenges. In addition, curriculum development and faculty development initiatives support the integration of community-oriented learning within academic programs. The increasing use of digital technologies further enhances collaboration and knowledge exchange between universities and external stakeholders. Collectively, these practices strengthen the link between academic learning, professional skill development, and community development, reinforcing the role of universities as key drivers of knowledge transfer and societal transformation.

5.2 Recommendations

1. Universities should strengthen the integration of community-based learning approaches such as service learning, internships, and field attachments into academic programs to enhance the practical application of knowledge and improve community engagement outcomes.
2. Academic staff (faculty) should adopt participatory, experiential, and problem-based teaching methods that effectively link theoretical instruction to real-world community challenges, thereby fostering student engagement and promoting socially relevant learning.
3. Higher education institutions should invest in continuous faculty development programs and digital teaching innovations to equip academic staff with the skills and tools necessary to design community-oriented curricula and sustain meaningful collaboration with external stakeholders.

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