

Encouraging social innovation for combating poverty: master's students' gendered experiences with a service-learning intervention in Kenya and Uganda

Social
innovation for
combating
poverty

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Abstract

Purpose – This study aims to understand master's students' experiences of service-learning, following their participation in a workshop with local social innovators whose activities had contributed to combating poverty in East Africa and to determine how this participation affected work on the students' theses. The authors also explored possible gender differences in this context.

Design/methodology/approach – The study was based on pretest–posttest mixed methods research design. Data were collected from master's students within the social sciences and science, technology, engineering and mathematics (STEM) disciplines, respectively, in Kenya and Uganda, via surveys and interviews before the workshop, immediately afterwards and six months later.

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Findings – Students' immediate experience was that the workshop contributed to increased critical awareness, adoption of transdisciplinary community-serving approaches and strengthened self-confidence. Six months later, most had related their projects to social problems (e.g. poverty) in their communities. Moreover, the results motivated integration of gender-sensitive curricula based on service-learning in East Africa.

Practical implications – Based on the results, the authors suggest a framework for gender-sensitive curriculum development that can stimulate service-learning in master's students. Implementation of such a curriculum could eventually contribute to community development, including, e.g. poverty reduction.

Originality/value – Studies on service-learning are rare in Africa, especially in postgraduate education. Gender-sensitive studies on service-learning are generally scarce and the same holds for studies on encouraging STEM students to integrate social innovation into their thesis work. By combining these aspects, this study presents an original contribution to existing research.

Keywords Developing countries, Sustainable development, Mixed methods, Curriculum development, Community-based learning, Master's education

Paper type Research paper

Introduction

Sub-Saharan Africa, particularly East Africa, faces serious developmental challenges in areas of basic human needs, health and opportunities for individuals to reach their full potentials (Porter *et al.*, 2017). Uganda and Kenya rank among the top ten poorest countries in Sub-Saharan Africa with over ten million people living in extreme poverty, and unless radical measures are taken, they are unlikely to meet the 2030 sustainable development goal (SDG) of no poverty (Turner *et al.*, 2014).

Universities are expected to play a pivotal role in national socioeconomic development by producing skilled manpower required to promote research, innovation and community service with the goal of reducing poverty (Mulinge *et al.*, 2017). However, in most higher education institutions (HEIs) in East Africa, teaching is based on lectures where learning is characterised by memorisation rather than problem-solving (McCowan, 2018; National Council for Higher Education, 2013). Little evidence exists showing the integration of academic skills with work, innovation and entrepreneurship in Uganda (Wamala *et al.*, 2013) or Kenya (Kaburu and Embeywa, 2014; Munene, 2016; Mwebi and Simatwa, 2013; Okioga *et al.*, 2012). Aligning university education output with community development is thus critical.

Without contesting the importance of technical innovations in developing countries, social innovations are key to combating poverty as they “are social in both their ends and their means” and “are not only good for society but also enhance society's capacity to act” (Hubert, 2010, p. 24). According to Lindberg *et al.* (2015), social innovation implies development of new goods, services, methods, etc., where the social value and originality of the innovation depend on the context:

The “social” in social innovation thus refers to the three normative components of identified needs and challenges, inclusive development and individual, organisational or societal improvement. The “newness” in social innovation refers partly to the identification of *hitherto unaddressed* social needs and challenges, partly to the *newness of the solutions* developed to address them in terms of new to the world, new to the specific context or a new combination of existing components (Lindberg *et al.*, 2015, p. 6).

The majority of university teachers in Kenya and Uganda lack sufficient entrepreneurial competence to promote social innovation (Kasule *et al.*, 2015; Muriithi *et al.*, 2018). However, this is not unique to Kenya and Uganda alone. In their review of research on developing countries, Unterhalter and Howell (2021) found a general misalignment between the role of HEIs and the implementation of SDGs whereby HEIs either fail to produce appropriate skills and knowledge

in students (which is related to curricula and teachers' competence) or are not undertaking research needed for their effective implementation. Moreover, initiatives to strengthen sustainable development via HEI are still "fragile and need deepening through practice and further research" (Unterhalter and Howell, 2021, p. 23). Against this background, we explored the possibility of integrating service-learning into master's education in East Africa by conducting an intervention study on encouraging social innovation in this educational context.

Service-learning

In its pragmatic aspects, the concept of *service-learning* creates linkages between learners and the broader community (Wade, 2000), for example, by integrating meaningful community service experience into students' courses (Ide and Theda, 2011). According to Eyler and Giles (1999), initiation of a service-learning programme requires cognizance of four areas:

- (1) Students offered an opportunity to make significant contributions to communities through active participation.
- (2) Students having time to think through, share and communicate about their experiences.
- (3) Students being accorded an opportunity to apply academic content learned to real-life situations.
- (4) Community partnerships being associated with some responsibility bestowed on students and their institutions by the community.

Educational output is seen as the application of acquired skills to solve practical problems in the community. Besides enhancing students' understanding of their professional development and career paths (Cashman and Seifer, 2008; Peterson *et al.*, 2006; Reeb, 2010), service-learning increases confidence in community service contributions, social awareness and social justice beliefs (Rooks and Rael, 2013).

While service-learning in HE can be traced back to the early twentieth century in the USA. Shukla and Shukla (2014), its implementation in other nations is recent (Vergés Bosch *et al.*, 2021), including in African countries. Thus, in spite of numerous experience-based studies on service-learning (Salam *et al.*, 2019) showing positive outcomes in terms of personal, academic or social development (Myers, 2020), knowledge about African students' experiences in this regard is just emerging. So far, studies from Ghana have revealed that cultural diversity experience, social responsibility and students as partners are keys to stimulate civic participation among university students (Owusu-Agyeman and Fourie-Malherbe, 2021). Furthermore, in the post-colonial era, educational research from Zambia emphasises the importance of incorporating indigenous knowledge systems into African universities to foster sustainable development in society (Mbah *et al.*, 2021). Similar findings exist in a project for undergraduate students on tackling forest-related community problems in Kenya (Munezero and Bekuta, 2016) and in the annual "International Training Course on Organic Agriculture" where undergraduates from different disciplines and countries meet farmers in Uganda and other key stakeholders to find possible ways to promote sustainable development. In the latter study, results showed that participation positively predicted students' feelings of having influence in sustainable development, professional and personal skills and environmental attitudes (Probst *et al.*, 2019). However, unlike these studies, our investigation also includes a gender perspective.

Towards gender-sensitive service-learning in master's education

Gender aspects are generally missing in research on service-learning (Vergés Bosch *et al.*, 2021), although exceptions exist with respect to undergraduate students. In the USA, Shukla

and Shukla (2014) found that female undergraduate students were more positive to engaging in service-learning than were their male counterparts. Whether similar gender differences hold for master's students in developing countries (i.e. under significantly different economic conditions) has not been explored. Furthermore, studies on encouraging *social innovation* in master's education are still lacking, something which motivated our study.

Hitherto, most innovation research has focused on innovative processes, organisations and systems, rather than on the individual actors and innovators behind these (Alsos *et al.*, 2013). Furthermore, while research on innovation has drawn increased attention since the 1990s, the relationship between gender and innovation has been less investigated (Foss and Henry, 2016). Evidence shows that women's innovative activities are not often accorded the attention and recognition they deserve (Alsos *et al.*, 2013; Lindberg *et al.*, 2015; Sardeshmukh and Smith, 2016). Studies from developing countries nevertheless show that perspectives on innovation are not only gender-biased, but are context-biased and ethnocentric as well (Baskaran and Mehta, 2016; Tillmar, 2016). Accordingly, besides gender, contextual factors are important for understanding possible differences in postgraduate students' approaches to social innovation.

Against this background, we designed a workshop where students interacted with both female and male social innovators from the community. The workshop served as an intervention because it was expected to trigger students to conceptualise research problems related to combating poverty.

Objectives of the study

Focusing on master's students within, respectively, the social sciences and the science, technology, engineering and mathematics (STEM) fields, this intervention study aimed to investigate:

- their experiences of participating in a workshop along with local social innovators whose activities had contributed to combating poverty;
- whether this workshop affected their thesis work; and
- possible gender differences in students' experiences in this context.

Guided by the findings, we aimed to outline initial policy recommendations and suggestions for possible curriculum development in East Africa's master's education.

Originality

The use of social innovation for poverty alleviation is not new in Africa (Millard *et al.*, 2016; Osei and Zhuang, 2020; Spitzer and Twikirize, 2021). However, we are not aware of gender-sensitive educational activities that stimulate master's students' service-learning in an attempt to alleviate poverty – especially within the STEM field which is usually associated with technical rather than social innovation. In fact, most research on service-learning has been in areas of the health sciences and business (Salam *et al.*, 2019). Moreover, unlike other social innovation studies, we focus on students as the primary agents of change, not on members of the general public.

Methods

Institutional Review Board (IRB) approvals for the study were granted by the African Medical and Research Foundation-Ethics and Scientific Review Committee (AMREF-ESRC P676/2019) and Mildmay Uganda Research Ethics Committee (# REC REF 1006-2019), in Kenya and Uganda, respectively.

Study design

This intervention study consisted of two steps:

- (1) designing and conducting a one-day workshop with eligible students pursuing master's courses (i.e. the intervention); and
- (2) collecting longitudinal data, once during pre-intervention and twice during post-intervention (immediately after the workshop and six months later, respectively).

The pre-intervention served as a baseline for interpreting the post-intervention results. Consistent with Kirkpatrick's four levels of training evaluation model (Kirkpatrick and Kayser Kirkpatrick, 2016), the first immediate post-intervention evaluation was aimed at assessing the students' *reactions* and potential *learning* related to the workshop, whereas the second evaluation assessed the extent to which students perceived these workshop experiences as contributing to a change in their (thesis work) *behaviour* and *results*.

Through the aforementioned study design, we combined two established approaches that often occur in outcome-oriented research on service-learning:

- (1) pretest–posttest design based on scales and questionnaires (Eidson *et al.*, 2018); and
- (2) research based on mixed methods (usually applied without a longitudinal design) (Marco-Gardoqui *et al.*, 2020).

Specifically, we used a *partially mixed concurrent equal status design* (Leech and Onwuegbuzie, 2009), whereby quantitative and qualitative data are collected concurrently over time; both components are accorded equal emphasis in addressing the research questions; and mixing occurs following data analysis. Using this mixed methods approach enabled us to corroborate (triangulate) and clarify (complement) findings (Greene *et al.*, 1989). Overall, this approach allowed us to generate quantitatively comparable data before and after the intervention and qualitatively explore students' experiences with the workshop to further understand the survey results.

Intervention

The researchers identified four potential social innovators whose community projects were consistent with the objectives of the intervention. We ensured gender balance existed among the selected innovators at each university. In Uganda, a male innovator's presentation considered improving economic profits from agriculture by growing new crops across provinces, whereas his female counterpart's presentation was about effective urban farming using small plots. In Kenya, the male innovator focused on countering fake news in society through innovative journalism, whereas the female presenter focused on transitioning low-income homes in Kenya into using cleaner cooking fuels to prevent lung disease in women. All these social innovators were successful in sharing ideas that helped poor people achieve better living conditions.

In the workshop, the innovators were asked to present and discuss what community problems their project ideas addressed, important lessons learned, practical *problems* they observed in their communities and possible solutions. These presentations were followed by discussions with students and supervisors/tutors. Thereafter, students divided into small groups to discuss how to integrate social problems into their thesis research ideas. Furthermore, they were able to continually engage with the innovators and workshop organisers whenever necessary.

Selection of participants

Details of the workshop, which was arranged and held separately on two occasions one week apart in Uganda (U1) and Kenya (U2), were communicated to all eligible participants: students pursuing master's degrees in the social sciences or the STEM field at two HEIs. These students were already in their second semester (the period when students are preparing to develop their thesis proposals). Through contact persons at each of the HEIs, a total of 64 eligible and willing students registered for the workshop (50 at U1 and 14 at U2).

Data collection tools

Because existing questionnaires and interview guides on service-learning have been created in contexts outside Africa but with no master's students or invited social innovators, we developed new tools appropriate to this study. By reviewing relevant literature, we identified useful concepts and jointly developed context-sensitive questionnaires and interview guides based on our methodological expertise. The questionnaire consisted of close-ended and open-ended items to ensure that students' possible answers were not restricted (Bowling, 1997). The instruments were pilot-tested using a sample of student volunteers and thereafter revised based on the debriefing of the pilot exercise.

Data collection procedures

Five researchers collected data via surveys and interviews at different times at the two sites.

Pre-intervention survey. An identical online and physical self-administered questionnaire was distributed to all 64 students who registered for the workshop. All responded to the survey, which covered demographic information, the students' current state of master's training and the development of their thesis proposals with respect to community development needs.

Immediate workshop survey and interviews. Upon conclusion of the workshop, participants consented to an immediate post-intervention workshop survey where they shared their learning experiences and perceptions of the innovators' presentations. Willing participants were invited for interviews and ten students volunteered (five from each university). They are labelled as male/female 1–10, U1/U2 in the results. Using semi-structured interview guides, they were asked about their experience of master's education, thesis development and possible effects of the workshop. Where students had not linked their thesis ideas to social innovation or yet developed a thesis idea, we explored the reasons for this. All interviews were recorded and transcribed verbatim for analysis.

Post-intervention survey and interviews. Six months after the workshop final data were collected to assess the extent to which the workshop may have affected participants' thesis development and any challenges or lack thereof. Thus, a new survey was distributed to all the 64 students involved. Only 37 students responded, representing a response rate of 58%, mostly because of the effects of the COVID-19 pandemic. Semi-structured interviews were also conducted with 15 students from the two HEIs to complement the survey data.

Data analysis

Quantitative survey data were analysed using Stata to provide descriptive statistics on key indicators, whereas qualitative data from the open-ended questions and post-test interviews were content-analysed and summarised using theme frequency. The qualitative analysis involved identifying significant statements, creating distinct descriptive codes based on participants' exact words and creating clustered themes of similar descriptive codes, which were then arranged by the number of participants mentioning content related to a particular

theme. By dividing this number with the total number of participants in the group, the theme frequency can be calculated, which enables statistical comparisons (Wao *et al.*, 2010).

To analyse the workshop interviews, we used inductive thematic analysis, as defined by Braun and Clarke (2006). The reason for using a different qualitative analysis here was to identify the deeper *meaning* of students' experiences regarding possible directions of their thesis work. Thus, in contrast to the previous analysis, inductive thematic analysis advances from descriptive to more interpretative levels. In this process, the transcripts were initially analysed at an individual level, which generated a number of semantic descriptive themes (e.g. "I can do the same") from each interviewee. These themes were then interpreted across individual cases by analytically asking for their core meaning (e.g. self-confidence), which created a set of initial clustered themes. By further interpreting their nuanced and essential meanings, our analysis ended up with three thematic key experiences. Throughout this analytical process, we were sensitive to possible gender differences within and across the themes.

Results

Participants

The students were generally in their early thirties (mean: 30 years pre-intervention and 31 post-intervention) and most were men. Table 1 presents details of gender distribution at three periods.

Status before the workshop

Of the 64 students who responded to the question about the status of their thesis work, almost one-third (29%) reported that they had already chosen a thesis topic and were ready to start working on it. When asked about what strategies they had used to frame their thesis topic, only 10% of them had started from *problems found in their communities*. A majority (64%) had used a conventional and theoretical approach involving *literature review*, for instance, by "first reading about the topic and [then] identifying the gap". While all students mentioned challenges related to their thesis work, male students mentioned more challenges than female students. These included difficulty in accessing resources, inadequate supervision, insufficient research skills and scarce funding.

Accordingly, students' primary reasons for participating in the workshop were to overcome general challenges in their thesis work rather than community development. According to 31 students who specified their reasons, they either sought support in *conceptualising their research* (45%) or wanted to better *understand the research process*

Data	Gender	Pre-intervention			Immediately after workshop			Post-intervention		
Quantitative		First survey			Second survey			Third survey		
		U1	U2	Total	U1	U2	Total	U1	U2	Total
		n ₁ = 50	n ₂ = 14	N = 64	n ₁ = 50	n ₂ = 14	N = 64	n ₁ = 26	n ₂ = 11	N = 37
	Male	60%	79%	64%	60%	79%	64%	62%	82%	68%
	Female	40%	21%	36%	40%	21%	36%	38%	18%	32%
Qualitative		<i>Pre-intervention interviews were not conducted</i>			First interview			Second interview		
					U1	U2	Total	U1	U2	Total
					n ₁ = 5	n ₂ = 5	N = 10	n ₁ = 11	n ₂ = 4	N = 15
	Male				60%	60%	60%	45%	75%	53%
	Female				40%	40%	40%	55%	25%	47%

Table 1.
Gender distribution
by data collection
periods

(45%). However, in the interviews immediately after the workshop, it turned out that some students had specifically chosen to participate because they wanted support for including social factors in their research, as one interviewee said:

Many times, postgraduate students just do their research for the paper and those studies will end up in a thesis which has no impact on society. So, I came to be trained on how to think about how to come up with research that has a social aspect (Female 2, U2).

Students' immediate experience with the workshop

Immediately following the workshop, all students were asked to share their experiences in a survey including open-ended responses. Irrespective of gender, they had an overall positive experience of the workshop. Generally, most students (68%) reported that the gender of the social innovator did not matter. Students noted that the innovators delivered (ungendered) *quality knowledge* and that one could *learn* equally much from both male and female presenters.

Notably, almost one-third (32%) of the students thought that the gender of the innovators *did* matter. Among these, most were male respondents (58%), who felt that the *social innovations* demonstrated were connected to traditional gender roles in society. Yet this circumstance did not define their perceived significance of an innovation, as one male student specified: "Gender clearly played a role, but both genders produced equally important innovations". In contrast, the female students rather emphasised the *interaction* between the social innovators and the students, as one of them commented, "Different people feel free with different sexes especially when interacting".

Ten students consented to be interviewed after the workshop. Even though most of these students had already defined their research problems (generally with weak links to the issue of poverty), they found the workshop valuable for several reasons. In relation to the purpose of this study, three overall themes emerged in the students' experiences: *increased critical awareness, adoption of transdisciplinary community-serving approaches and strengthened self-confidence*.

Increased critical awareness. Interviewees could relate to the social innovators in one way or another. Many had similar backgrounds as the innovators, while others found it highly relevant to listen and *realise* the "everyday problems in real life" within their own society. One student explained:

I didn't know that someone can miss school and even decide to drop out, because of their menstrual cycle. But today, I actually realised this (Female 6, U1).

Another student, who had an agricultural family background, realised that "really there is a knowledge gap in the population" (Male 8, U1) and now thought that developing farmers' knowledge about how to improve their farming was a key to combating poverty. The same student also critically recognised that all people are dependent on others for sustainable economic development:

When you have a neighbour who is poor, who is not informed, your life is at risk as well, because I am the type of person who doesn't believe in being rich and on top when your neighbours are poor. You would rather be averagely rich so that when there is a call for support, you get support from various people [. . .] I think that would be sustainable (Male 8, U1).

Overall, the social innovators' stories had become an eye-opener for students, as they realised that their research could actually be used to solve societal problems. One interviewee said:

The one thing I will not forget about this workshop is that you first identify your problem in society [. . .] In our everyday life, you just have to be observant [. . .][If] my research is not really directed toward solving a problem, it's not worth doing (Male 1, U1).

Adoption of transdisciplinary community-serving approaches. For some students, the presentations had opened their minds to transdisciplinary community-serving approaches. For instance, they were now prepared to “go beyond [their] own discipline” (Female 2, U2) and “think outside the box, for example, how to innovatively use bamboo” (Male 7, U2) to improve the social relevance of their research. As they had learned from the presenters, such simple measurements could make a big difference for poor people by increasing their incomes. Another student emphasised that technology must “hit the ground” (Male 4, U2) by combining technical and social innovations. Others came up with more concrete project ideas on how to combat poverty. One student commented:

In the workshop we were trying to find a way to alleviate poverty and I thought if women were more educated they would maybe have fewer children and even educate their children – like coming up with better ideas in a home that can lead to alleviation of poverty [. . .]. So, since the main issue today was finding ways on how to reduce poverty in Uganda and East Africa, I came up with that topic – with that idea (Female 6, U1).

In the small group discussions, some students realised that a transdisciplinary approach was dependent on linguistic flexibility. They noticed that they were not so far from each other after all (in spite of their different disciplines), because it was sometimes just a matter of different wording and meanings, as one of them explained:

We discovered that there were some areas which were a matter of the words used. Words can have various meanings depending on the ideas used [. . .][a] particular word may be used in a different sense and another person could bring out that aspect of it (Female 9, U1).

That the use of synonyms facilitates communication about one's innovative ideas was thus an important insight for some students. Good communication, in turn, was key to reaching poor people – a lesson learned from the social innovators.

However, in one case, the student missed connections to his own discipline. Even though he found the issues interesting in general, he thought that “the things discussed would not add much to his project” (Male 5, U1). This student further explained that the agricultural and poverty issues addressed in the workshop were too far away from his planned research:

I have somehow missed out – what I can call the engineering sense [. . .] because it was more of a social science, the social problems, social challenges and how to approach them (Male 5, U1).

Strengthened self-confidence. After the workshop, the students felt that they had attained more ideas on how to develop their master's theses. The discussions with tutors and peers had contributed to this positive development because of their focus on concrete ideas and possible ways forward, which “helped make our ideas realistic” (Male 4, U2). Some students reported that they now knew how to proceed, as expressed by one student:

I was able to figure out actually what I really want to do [. . .] yes, because now I understood: Actually, it is the problem first [. . .] I had been looking at the method first, which I think probably has been the reason for my being stuck (Male 1, U1).

The social innovators had contributed to the students' experiences of strengthened self-confidence as well. Inspired by their stories, one male student had learned that:

I can have a positive impact on society [...] in owning my own demonstration farms [...] and I [now] think the best way for those people [poor farmers] to access information is to organise workshops in local sub-counties (Male 8, U1).

Female students affirmed that they now *believed* in their own capacity to carry out social change and that the social innovators had played an important role in this sense of empowerment. For instance, one female student had noticed that “they started small and now they are having a great impact, so small beginnings really matter” (Female 9, U1). Another explained:

I haven’t grown up in a rich community [...] I’ve seen the struggles, especially for the poor [...] What I learnt [from the female innovator in the workshop] is that you shouldn’t give up no matter how difficult it seems (Female 2, U2).

Students’ post-intervention experiences

In the post-intervention survey, most students agreed that the workshop had more or less influenced their thesis work. The most common positive experience was related to being exposed to new areas of research (63%), while 50% had refined their topic, 44% had made good thesis progress since the workshop and 21% had created networks with social innovators and community members. With respect to how the students’ theses had developed towards community development, about 91% of the participants who responded to this question reported that their theses now had such features.

By gender, all male respondents and 67% of females now explored possible ways to mitigate a specific social challenge in the community. In the interviews, this was exemplified by one student who said that her thesis addressed “the problem of external debt [...] [and] that can be used to revive other sectors” (Female student, U1). Furthermore, another 11% of female respondents stated that they now planned to test the applicability of a new idea to combat poverty in the target community. However, some female respondents (22%) indicated that their theses were either not about poverty or not based on community problems (see Table 2).

Students who reported that they had revised their theses (in socially innovative ways) after the workshop indicated that they were motivated by different influences. Most (30%) were inspired by interactions with social innovators during the workshop. This was especially true for male students (34%) who gave this response – twice as many compared to female students (15%). Otherwise, female students had mainly been inspired by lessons learned from the workshop and from interactions with peers afterwards (see Table 3).

Moreover, from the interviews, it appeared that married women who wanted to advance their education typically struggled more than men because of traditional gender roles. Yet their supervisors did not seem to appreciate their circumstances:

Table 2.
Motivation for
revising thesis topic
after the intervention
workshop

Statement	Female <i>n</i> = 9 (%)	Male <i>n</i> = 23 (%)	Total <i>N</i> = 32 (%)
I ensured that my thesis explores possible ways to mitigate a specific social challenge (e.g. poverty) that exists in the target community	67	100	91
My thesis is not about poverty/not based on a community problem	22	0	6
I revised to make it possible to test applicability of a new idea to combat poverty in the target community	11	0	3

You find that most men won't do anything at home, but for a lady [...] you have to balance your family, your work, the research and sometimes it becomes overwhelming – and your supervisors may not understand that. They will just push you and push you (Female student, U2).

Discussion

This study aimed at investigating how master's students within the social sciences and STEM fields, respectively, experienced a workshop about social innovation to combat poverty in East Africa and how this educational intervention influenced development of their theses. It also explored possible gender differences in the students' experiences.

Gendered experiences with the workshop

Results clearly indicated that interactions with the innovators led to student experiences of *increased critical awareness* about social problems, *adoption of transdisciplinary community-serving approaches* to address such problems and *strengthened self-confidence* in one's capacity to make a difference. While similar student experiences have been noticed in a range of other studies on service-learning (Marco-Gardoqui *et al.*, 2020; Myers, 2020), our findings add a new perspective by focusing on master's students from a gender perspective. Female students especially reported that they now felt more confident in carrying out social innovation themselves. Also, from the workshop interviews, we learned that the gender of the innovators mattered for female students with respect to their interaction with them. Accordingly, to optimise the opportunities for service-learning, both genders should be represented among innovators interacting with students. Otherwise, there is a risk that female students do not fulfil their potential as social innovators.

Furthermore, among the one-third of the students who felt that the gender of the innovators mattered for their overall learning experience, male students noted that the social innovations presented reflected traditional gender roles (e.g. a female innovator had invented smokeless cooking to prevent lung disease in women). Yet, they did not evaluate the importance of the social innovation in gendered terms, rather, all innovations were "equally appreciated", as one male student stated. Clearly, the context mattered most for these students' approaches to social innovation. This finding adds new knowledge to existing gender research where women's innovations otherwise tend to be less valued (Alsos *et al.*, 2013; Lindberg *et al.*, 2015; Sardeshmukh and Smith, 2016).

Half-way to community development

In the workshop interviews, the students stated that they now felt that they could actually make a difference in their communities – through *and* beyond their theses – and that the workshop had also enabled them to critically consider social problems from various angles. Such results indicate embodied service-learning in which, e.g. sensitivity to diversity,

What influenced thesis development	Female <i>n</i> = 9 (%)	Male <i>n</i> = 23 (%)	Total <i>N</i> = 32 (%)
Interactions with social innovators during the workshop	15	34	30
Lessons learned from the social innovation workshop	30	22	24
Interactions with peers after the workshop	25	17	19
Interaction with thesis supervisor after the workshop	15	17	16
Interactions with my community members after the workshop	15	10	11

Table 3.
Influences on
revising thesis topic
following the
intervention
workshop

professional development and increased confidence in community service contributions, are typical learning outcomes (Cashman and Seifer, 2008; Peterson *et al.*, 2006; Reeb, 2010; Rooks and Rael, 2013).

Results from the post-intervention survey confirm that students still felt the workshop had positively influenced their thesis work and the most frequent response was that they had been “exposed to new areas of research” (63%). In line with this experience, most students now addressed social challenges (e.g. poverty) in the communities targeted by their studies. According to many students, meeting social innovators had been important specifically for this development. This result is comparable to the pre-intervention study in which research interest in social challenges was initially rare. Among the third of students who already had a project proposal prior to the workshop, only 10% had anchored their ideas in a community problem.

Hence, in relation to the cognizance of four areas required for initiating service-learning programmes (Eyler and Giles, 1999), we see that the workshop gave the students *the opportunity to make credible and significant contributions to communities* through active participation. Moreover, directly after the social innovators’ presentations, the students were invited to *reflect on and discuss* together their experiences. However, because of the limited timeframe, conditions were not optimal to encourage service-learning. Research ideas and solutions to global problems such as poverty are not formulated overnight but must be developed over time with continuous educational support (Ide and Theda, 2011). For this reason, the workshop format did not adequately allow the students to *apply academic content learned in real-life situations*, or to *develop their communities*.

Educational support needed to encourage service-learning

It appeared that many students had already approached their problem fields from a theoretical angle before the workshop, while only a few had used social problems in their communities to inspire their projects. Furthermore, only one-fifth of the students at post-intervention stated that they “created networks with social innovators and community members” and only 3% (all female) reported that the workshop made it possible for them to test the applicability of a new idea for combating poverty in their target communities. These findings are crucial in two ways. First, the idea of combining master’s studies with social innovation does not come naturally for all students, but service-learning should be an integral part of the educational programme for such purposes (Ide and Theda, 2011; Rooks and Rael, 2013). Second, even though the social innovation workshop was designed to encourage socially innovative research, it turned out that one-third of the students had already started their projects in other directions. Thus, the timing of the workshop was not optimal in relation to our intentions, but we did learn that it should have been implemented earlier in the master’s programme to increase its potential impact.

Study limitations

The findings from this study should be interpreted in light of the following limitations. First, the study was based on students from only two master’s programmes at each of the two participating HEIs. Second, only one university each, from Kenya and Uganda, respectively, participated in the study and the study sample was small (U1 = 50, U2 = 14 in the first and second surveys, respectively, and U1 = 26, U2 = 11 in the third survey). For these reasons, country-specific contexts could not be accounted by the data. Consequently, the findings can neither be generalised to other populations and subpopulations nor to all students joining the workshop because not all students attending the workshop participated in the post-intervention study. Given that students who participated in the surveys did not answer all

questions, our conclusions do not provide an all-inclusive picture of the effects of the intervention; they are only based on the *responding* students' experiences. Additionally, the results from our gender analyses might have been different if the entire population was included. However, our findings provide a knowledge orientation and, therefore, should be valuable for future studies, policies and educational development.

Policy and programmatic recommendations

Overall, positive results from this study motivate integration of service-learning into master's programmes in East Africa. Implementing such a curriculum would be consistent with the global trend, where HEIs now integrate community service approaches for their effective outcomes (Russell-Stamp, 2015). We further suggest that the curriculum relates to social innovation and SDGs of clear relevance for the East African context where poverty reduction is of the highest priority. Implementing courses for service-learning in the first year of the master's programme may increase the chances of students coming up with research projects of this kind. Table 4 outlines a possible curriculum for such purposes.

In parallel with this curriculum, we also suggest training supervisors because they too might need support for facilitating service-learning and supervising action research. Furthermore, as mentioned earlier, ensuring gender balance among the social innovators is important to optimise students' learning opportunities.

Implications for research, practice and policy

This study brings a new perspective to community development research through its focus on master's students as agents of social change and in its gender-sensitive analysis. Our results indicate that the intervention had noteworthy effects on students' views of how they could make a difference in their communities. This, in turn, may have a positive effect on poverty alleviation, thus meeting the first SDG: no poverty. Evidence from our findings suggests that students need continuous educational support to use socially innovative research in practice. Therefore, there is a need for the development of curricula that integrate service-learning into master's training programmes. In this article, we have suggested one such possible curriculum, where students could interact with both female and male social innovators to optimise their learning. Policies that support integration of service-learning into curricula must also address capacity development of lecturers and supervisors. Moreover, such policies need to be designed not only at the university level, but also at the governmental level because social innovation is a national concern.

Conclusion

The intervention underpinning this study was based on a specific workshop for master's students in East Africa, which aimed at encouraging their socially innovative thinking through

	Year 1	Year 2
First semester	Course 1: SDGs and social innovation (identify social problems, meet innovators and design innovative research projects) Course 2: Action research (theories, methods, community engagement, etc.) Course 3: Discipline-specific theories/instruments	Thesis work
Second semester	Course 4: Research design and methods Course 5: Scholarly writing Course 6: Public outreach	Thesis work

Table 4.
Possible curriculum
for service-learning
in master's education

interaction with social innovators from their communities. Through students' experiences as expressed before, during and after the workshop, it can be concluded that many students became motivated to address social problems in their communities – through *and* beyond their thesis work. Given that social innovation is needed to combat poverty in East Africa, such educational outcomes are promising. Because extreme poverty and other serious social problems exist across continents, our study may be a starting point for similar educational development studies in developing countries in Africa and beyond. Because traditional gender roles dominate large parts of the world, different innovative solutions will be required to improve conditions for both men and women living in poverty – a lesson learned from the social innovators' stories. Combined with the fact that the gender of the social innovators mattered to one-third of the students, we conclude that educational efforts to promote service-learning should continue to be gender-sensitive in this manner to optimise the learning experiences of all students. In the long run, this could contribute as well to increased gender equality in society overall, because students may recognise and innovatively solve different social challenges dependent on their various gendered life experiences.

Although we cannot verify the long-term effects of this study, our findings show that the intervention seems to be a step in the right direction towards social development. To increase the impact of service-learning, we suggest that similar content be integrated to a larger extent into curricula at the master's level – and that service-learning be implemented at the beginning of the programme. However, before introducing such an educational development, there is a need to involve other stakeholders as well, including teachers, study directors and policymakers, to increase the possibility of successfully implementing service-learning into master's education in East Africa.

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