

Engagement of stakeholders in the development of generic medical and nursing curricula in Tanzania through media outlets and social media

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Background. The Catholic University of Health and Allied Health Sciences, Kilimanjaro Christian Medical University College and Muhimbili University of Health and Allied Sciences teamed up to address gaps in the training curricula for medical doctors and nurses with the aim of developing harmonised curricular templates that would be comprehensive and suit national objectives.

Objectives. To share experiences and lessons learned in engaging stakeholders using social media as an additional method to collect information on curricular gaps and ideas to develop harmonised medical and nursing curricula.

Methods. Pictures, newsprint extracts, and videos of face-to-face events in the curriculum development process and project and a curriculum advert were posted on Facebook, Twitter and YouTube and used to engage stakeholders, including regulatory bodies, health professional councils, graduates, students, practitioners, health training institutions, private and public employers, internship supervisors, faculty and the public. Reactions, comments and post insights from stakeholder postings, in both Swahili and English, were analysed manually and categorised into four types of messages: congratulatory, comments on the process and expected outcomes, curricular gaps, and faculty development needs to implement new curricula.

Results. A total of 69 290 stakeholders were engaged via Facebook and 229 via Twitter. A total of 13 553 (19.6%) Facebook and 179 (78.2%) Twitter comments were directly related to gaps in current curricula and graduate competencies. Other inputs received through social media were on faculty development needs to implement harmonised curricula and the project in general.

Conclusion. This was the first attempt to engage curriculum stakeholders using social media for the development of harmonised curricula in Tanzania. The impact of social media in providing relevant inputs for curriculum development was significant. Use of social media, with multiple language options, is an economical and efficient way to reach a large number of stakeholders for curriculum quality improvement.

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The main goal of a successful educational programme is to meet the current demands of the nation and the societies it serves. A well-designed competency-based curriculum attempts to ensure that the core competencies needed by employers and stakeholders are included in the curriculum and are mastered by learners by the end of the programme. However, developing such an all-encompassing curriculum requires a comprehensive needs assessment that engages as many stakeholders as possible. The traditional needs assessment approach for curriculum development for health sciences programmes generally utilises Kern's six-step approach. Identification

of problems and general needs assessment using this approach have traditionally been conducted using mixed-methods approaches including online surveys, the Delphi method, stakeholder engagement meetings, surveys of alumni, faculties, employers, ongoing students, graduates, supervisors, patients and clients, focus group discussions and in-depth interviews, to mention just a few.^[1-4]

The use of social media in health professions education has changed during the past decade. Students and teachers in various settings have adopted social media platforms such as Facebook, Twitter and YouTube to

share information formally or informally, engage learners, or supplement learning and assessment activities.^[5]

Although social media is an accepted inexpensive, flexible and widespread communication method for health promotion, sharing information and opinions, its use as a method to conduct needs assessment for curriculum design has been limited.^[6-8] This article describes how social media was used in addition to face-to-face meetings to engage additional curriculum stakeholders who would probably not have been reached using conventional methods, and to collect additional specific inputs for developing harmonised generic curricula for medical and nursing programmes.

Methods

Use of conventional and social media to advertise THET project harmonised curriculum development

In 2018, a consortium of three institutions, the Catholic University of Health and Allied Sciences, Kilimanjaro Christian Medical College and Muhimbili University of Health and Allied Sciences (MUHAS), together with two US universities (the University of California at San Francisco and Duke University), were awarded a Fogarty International Centre grant to engage in the transformation of the educational environment for undergraduate doctors and nurses to improve health outcomes in Tanzania. A major objective of the Transforming Health Professions Education in Tanzania (THET) project was to develop and implement harmonised undergraduate medical and nursing curricula that would be used by all health training institutions in the country in the future. To develop these curricula, the THET project used traditional needs assessment methods as described by Mloka *et al.*^[1]

In addition to the conventional needs assessment methods for curriculum development, the THET project used conventional print media, radio, television, and electronic and social media in a needs assessment approach for the development of the proposed harmonised medical and nursing curricula. Conventional print media, radio, television, and electronic and social media were involved from the outset of the project. Each played its role by covering and disseminating information about the THET project and expected outcomes. Print media, radio and television acted to inform curriculum stakeholders that social media platforms could be used to collect their views and inputs. Local newspaper clippings on the project launch on 19 February 2019 and on the three stakeholders' meetings, from the *Daily News*, headlined '3 medical varsities join forces' (page 1, front page), *The Guardian*, 'Medical Varsities to harmonise their curriculum competencies' (page 1, front page), *Mwananchi*, 'Health higher learning institutions intend to use one curriculum' (page 5), *Mtanzania*, 'All health higher learning institutions to adopt one curriculum' (page 4), *The Citizen*, 'Education project to help improve health services' (page 3), *The Guardian*, 'Medical varsities commended for curriculum harmonisation' (page 3), *Mwananchi*, 'Graduates from Health Higher Learning institutions to be examined before being awarded licences to practice' (page 2), *The Citizen*, 'Health professionals face tighter quality measures' (pages 1 - 2), and *The Citizen*, OP-Ed, 'New dawn for healthcare professionals', were posted onto the THET project Facebook and Twitter accounts to encourage potential undergraduate medical and nursing stakeholders to comment on the process and the content of the proposed harmonised curricula.

Engaging and consenting curriculum stakeholders through social media

To engage and consent curriculum stakeholders, in February 2019 the THET project developed and placed a special advert on its goal to develop harmonised curricula for medical and nursing undergraduate programmes. The advert targeted specific types of users and was posted on the project's Twitter and Facebook accounts, the social media accounts of health professions influencers with Twitter accounts, for example, @DrMabula, who is followed by over 270 000, and @seifkabelele, who is followed by over 8 500, and the Facebook pages of the Medical Association of Tanzania, the Tanzania Midwives Association and the Tanzania National Nursing Association. The advert had a specific feature that, when clicked on, directed users to a web-based screening tool. This tool assessed the user's eligibility to participate (age ≥ 18 years), asked questions about the user's profession, gender and current workplace, and requested the user to consent to have their comments analysed and their information used by the project. In addition, the THET project's face-to-face session video clips were posted on YouTube, and specific inputs on comments on gaps in the curricula were collected and analysed.

Analysis and compilation of comments and tweets for social media accounts

The project team manually compiled both the Swahili and English tweets and comments from the social media accounts. All reactions, comments and post insights from stakeholders were counted and analysed using an approach similar to qualitative data content analysis. The analysis focused on counting the number of similar inputs and on interpreting the comments. The comments were ranked in terms of frequency and coded into four types of messages: comments on the curriculum process and expected output, faculty development needs to implement new curricula, curricular gaps, and congratulatory messages. To determine engagement in the case of tweets, the number of engagements was determined by counting the total number of times a user interacted with a tweet. Engagement was a compilation of all tweets, including re-tweets, replies, follows, likes, links, cards and hashtags. For Facebook engagement, the number of engaged users was divided by total page reach and multiplied by 100. This formula was used at both the per-post and per-page levels.

Results

Table 1 summarises different events that were conducted between introducing and launching the project in February 2019 and the third stakeholders' meeting when the draft generic medical and nursing curricula were presented to stakeholders for inputs. The table shows the number of posts on the THET Twitter account, indicating the number of posts made for each event. Analysis and weighting of dissemination have been placed into three categories: the number of posts, the number of retweets that occurred, and the 'like' responses, which may be interpreted as indirect approval of the initiative. The highest numbers of retweets and comments from the stakeholders' meetings occurred after the first meeting, and the lowest number after the third meeting to harmonise the generic curricula. In terms of 'like' posts, the highest number was after the first stakeholders' meeting (total 229 likes), followed by the launching meeting (179 likes) and the second stakeholders' meeting, when stakeholders were invited to participate in the development of competence domains for the medical and nursing curricula (178 likes). The lowest number came from posts

on the Community of Young Research Peers (24 likes), which concerned publicising the activity to mentor and groom a community of young researchers.

Table 2 shows posts on Facebook, mainly featuring the launching of the THET project stakeholders' engagement to develop the competence domains for the medical and nursing curricula. The second stakeholders' meeting on developing competence domains was the most prominent on Facebook, where 69 290 people were reached, of whom 13 553 (19.5%) engaged in active discussion about the whole exercise of developing harmonised medical and nursing curricula. The majority of posts centred on whether the intention was to develop one curriculum for all institutions or develop a generic curriculum for each of the two programmes. A few posts specifically addressed gaps in the current curricula. In addition, comments on newspaper clips from print media indicated that there was some confusion about the type of curricula to be developed, which added further flavour to the debate, but made one thing clear – that there is a need for more correct health reporting by the media in Tanzania.

Table 3 presents samples of actual comments posted on Twitter, YouTube and Facebook in response to the posts that MUHAS was creating, presented as posted and all translated into English. The posts gave the general impression that the initiative being spearheaded by the three collaborating institutions was appreciated, with people making specific comments on gaps in the present curricula and faculty development needs, but also wanting to know what would happen in the case of those training institutions that were not part of the initiative.

Discussion

A stakeholder may be defined as an individual, organisation or group of organisations with a common interest or stake in an issue or seeking to prevent or facilitate a strategic decision.^[9] One of the pillars of curriculum development and renewal or revision is the engagement of stakeholders.^[2] Apart from inviting stakeholders to meetings to share and develop ideas for developing the medical and nursing curricula, we also used social media to contribute and feed into the discourse on key points to include in the

curricula to train graduates who would be ready to address the health problems of the communities they serve. To our knowledge, this is the first study of the use of social media as a complementary method to solicit and get ideas from stakeholders for developing harmonised curricula. The use of social media outlets to enhance curriculum needs assessment activities is particularly novel. This approach may have overcome some of the physical and financial problems and low response rates encountered with face-to-face and online needs assessment methods.^[10] Moreover, the use of social media may have facilitated and enhanced the participatory approach to curriculum development by allowing curriculum stakeholders to remain anonymous and supporting the THET consortium team in continually collecting ideas and thoughts all through the development process.^[11,12] This ability to continuously receive stakeholder inputs all through the process may have helped ensure that stakeholder inputs that could have been missed during stakeholder mapping were incorporated, hence improving the quality of curricula developed. We postulate that the use of social media as a complementary curriculum needs assessment method may have supported the THET consortium universities in establishing and developing new connections with old and new stakeholders, providing useful and pertinent information on graduates' competencies, much needed in view of the continual challenges posed by complex health issues such as antimicrobial resistance and emerging and re-emerging pandemics. Institutions that train health professionals are faced with increasing demands from both employers and students to develop curricula that prepare graduates for the workplace by bringing real-world relevance into the classroom.^[13]

The engagement of the THET project social media sites, the sites' health profession influencers, and the sites of professional associations to connect to, and gather stakeholders' opinions about harmonised curriculum development, proved to be an effective and inexpensive approach. The finding that more stakeholders were engaged by Facebook ($n=13\,553$) than by Twitter ($n=229$) in providing comments can probably be explained by the fact that Facebook is more popular and readily accessible in Tanzania than Twitter, as many mobile phones sold in Tanzania have the Facebook application pre-installed. In contrast, in other countries social media users

Table 1. THET Twitter account posts during and after stakeholder meetings

Type of post	Posts, <i>n</i>	Retweets, <i>n</i>	Likes, <i>n</i>
Introducing THET project and launch	11	75	179
First stakeholders' meeting	11	119	229
Graduate survey result presentations of curriculum gaps	3	25	37
Second stakeholders' meeting for curricula – developing competence domains	6	69	178
Faculty development and HPEG training	7	42	148
Community of Young Research Peers	2	4	24
Curriculum development process	6	16	94
Third stakeholders' meeting for harmonising curricula	2	17	53

THET = Transforming Health Professions Education in Tanzania; HPEG = Health Professional Educators Group.

Table 2. THET Facebook posts

Type of post	Posts, <i>n</i>	People reached, <i>n</i>	Engagement, <i>n</i>
Launch of project	2	30	7
Curriculum development process	1 (boosted)	69 290	13 553
Faculty development and HPEG training	2	62	8

THET = Transforming Health Professions Education in Tanzania; HPEG = Health Professional Educators Group.

Table 3. Samples of comments on Twitter, Facebook and YouTube posts

Category of posts	Source	Post	Comments
Curriculum development process and impact	Twitter	Health sciences experts participating in a meeting to discuss the agenda for developing generic curriculum to be adopted by all health higher learning institutions in the country.	This is a very good idea; even those of us who have already graduated from these institutions agree with this initiative.
Reply: The aim is to develop a curriculum which will be adopted by all the health higher learning institutions, but to begin with only the three experienced universities/colleges will be involved.			Does it mean that in future graduates from the other non-participating health higher learning institutions will be irrelevant in the health industry?
	YouTube video comment	Health sciences experts participating in a meeting to discuss the agenda for developing generic curriculum to be adopted by all health higher learning institutions in the country.	This is a good idea because if every university is allowed to use its own curriculum it will be difficult to regulate them. Hope the feedback will be public! I hope the emerging technologies in health and digital health had a remarkable attention. I hope also ... The new curriculum will be transformative. They are just my hopes ...! I hope they are hopeful hopes ...!
Faculty development needs to implement new curriculum	Facebook	Training of Trainers HPEG at KCMUCo. The aim is to produce a critical mass of HPEGs who will be pivotal in scaling up innovative educational and assessment strategies for health training institutions in Tanzania.	This a great step, it will help health professionals to work professionally with the required competencies. I personally am excited as it will reduce the variation in graduate competencies from one university to another associated with different training. It will also increase the employability prospects of these graduates. Faculty particularly young faculty tended to give lower marks than more experienced faculty.
	Twitter	Stakeholders' meeting for the development of the harmonised generic undergraduate curricula for medical and nursing programmes in Tanzania. @muhimbiliumiver	I hope in this new curriculum they will use more than lectures to teach students. Our major problem is that we think graduates must get all As and high GPAs to be good doctors, engineers or teachers. No one needs your GPA to solve their problems, all they need is your innovation and creativity to build products that will change their lives for the better!
Curricular gaps	Facebook	Varsities set aside Sh7bn for improvement of health services. https://thecitizen.co.tz/News/Varsities-set-aside-Sh7bn-for-improvement-of-health-services/1840340-4989618-14palusz/index.html ... via @TheCitizenTZ	I think the curriculum would be very nice if evaluation would be that would evaluate the basic skills and knowledge to make somebody be a doctor, who can do diagnosis, who can do initial management of patients before the patients is referred. Will the new curriculum deal with professionalism? Last week I wanted to discharge a patient, I went to the computer found an intern using it, I requested to quickly use it to discharge the patient, he answered me 'wait till I finish.'

continued

Table 3. (continued) Samples of comments on Twitter, Facebook and YouTube posts

Category of posts	Source	Post	Comments
Congratulatory messages on the initiative	Twitter	Health sciences experts participating in a meeting to discuss the agenda for developing generic curriculum to be adopted by all health higher learning institutions in the country. #THET	I've been doing work on curriculum design and antimicrobial resistance and stewardship. Are you considering this topic?
	Facebook	Faculty development workshop 10 - 14/8/2020 at MUHAS to improve teaching skills, gain confidence and experience in using new teaching methods, understand curricula design and assessment methods, and learn to teach in an interdisciplinary manner. The workshop was sponsored by HEPI-THET.	Congratulations MUHAS, a best idea so that's to produce competent health personnel for benefits of Tanzanians to get good health services.
	Twitter	MUHAS, CUHAS and KCMUCo have teamed up under a consortium to enhance the academic environment in #Tanzania to attract and retain the best early-career faculty by mentoring them to use innovative competency-based skills development and collaborate to build their research portfolios.	Good news! This will bring tremendous impact in solving vast challenges existing in healthcare sector in Tanzania

HPEG = Health Professional Educators Group; KCMUCo = Kilimanjaro Christian Medical University College; GPA = grade point average; HEPI-THET = Health Education Partnership Initiative-Transforming Health Professions Education in Tanzania; MUHAS = Muhimbili University of Health and Allied Sciences; CUHAS = Catholic University of Health and Allied Health Sciences.

rely more on Twitter sites to learn and interact, because it is considered to promote true knowledge acquisition.^[14]

Several valuable lessons were learned from the use of social media for conducting curriculum needs assessments. Notwithstanding the fact that social media is an effective and inexpensive complementary tool for conducting curriculum needs assessment, the first lesson was that we had underutilised social media to obtain stakeholders' input. When we conducted the face-to-face workshops with stakeholders, several questions were posed around the process of curriculum development, faculty development needs to implement new harmonised competency-based curricula, and the application of these curricula in other health training institutions. This would have been an opportunity to engage distant curriculum stakeholders by posting the meeting questions and having people respond online as the meetings proceeded. Doing this would have stimulated participatory discussions that would have led to curricular enrichment. The second lesson we learned was that the flexibility provided to the stakeholders in terms of being able to post inputs in both Swahili and English gave those with English language barriers the opportunity to also contribute, even though the majority of the posts were in English. A further missed opportunity was that all three collaborating institutions should have launched the curriculum advert simultaneously on their respective social media accounts. Because each has different stakeholders who have helped to provide more inputs, this would have enriched the curricula. The fourth lesson, another missed opportunity, was failing to place the curriculum advert into the social media accounts and WhatsApp accounts of student alumni groups of the three institutions. Doing this would have been particularly useful considering that the perspectives of alumni serve to provide a clearer insight into how the training is being used and how it has prepared graduates for their work practice.^[15] The fifth lesson learned was the importance of accurate reporting of research project activities and goals by conventional media. Although conventional media outlets were brought on board from the outset of the project to advertise the project curriculum activity goals, there was distorted reporting of these goals in some cases, as exemplified by a caption in a leading local Swahili newspaper stating: 'Graduates from Health Higher Learning institutions to be examined before being awarded licenses to practice' (*Mwananchi*, 22 February 2019). This headline, which had nothing to do with the THET project objectives, may have put off some stakeholders from making contributions to the curriculum, especially considering that graduate exit practice licensing exams is a long-established practice in Tanzania. This observation underscores the need to train journalists in Tanzania to report research objectives accurately, as is done in other countries.^[16] If and when conventional media are able to report research objectives accurately, it will pave the way for the use of social media, not only to support the development of new curricula but also to market them in the future.^[17]

Conclusion

This was the first time that diverse stakeholders have been engaged in curriculum development in Tanzania using social media. The impact of social media was most significant in curriculum development, but it is also worth noting that appropriate use of social media, using multiple language options, is an economical and efficient way to reach a large number of stakeholders for curriculum quality improvement. These findings contribute to the process of effectively engaging stakeholders for curriculum development activities in resource-strapped settings and inform on how to use this approach in future similar initiatives.

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