










Joint examination moderation, benefits and challenges: Experiences of tutors from the Lake and Western Zones health training institutions in Tanzania

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Background. In Tanzania, health training institutes in the Lake and Western Zones initially conducted their examination moderation independently. To improve the examination process, the Ministry of Health has initiated efforts to establish a joint examination moderation system.

Objectives. To determine the extent of joint examination moderation in the Lake and Western Zones of Tanzania, evaluate tutors' experiences and benefits as well as identify challenges associated with joint examination moderation.

Methods. This cross-sectional study employed both quantitative and qualitative methods for data collection and analysis. This study was conducted in Kigoma from 20 to 23 February 2024, following the completion of moderation activities. The study focused on government health training institutes in the Lake and Western Zonal Health Resources Centre. A Likert scale was used to determine the level of joint examination moderation, while we assessed tutors' experience as well as the benefits and challenges of joint examination moderation using structured interviews.

Results. The study reports that more than half of the participants ($n=21/39$, 53.8%) rated the level of joint examination moderation as high. Tutors highlighted several benefits of joint examination moderation including standardisation of examinations, improved use of assessment plans, enhanced computer skills, teamwork and networking opportunities. Challenges encountered by participants during moderation included poorly prepared examination papers, insufficient time for moderation, limited tasks for semester 1 in the assessment plan, incomplete submitted examination papers, lack of reference materials and regular power outages.

Conclusion. The study found that tutors rated the level of joint examination moderation as high, highlighting several benefits and challenges. We recommend ongoing capacity building programmes for tutors to improve examination quality.

Keywords. Benefits; challenges; joint examination moderation; Lake Zone; Western Zone.

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Moderating end-of-semester examination papers is crucial for ensuring quality in teaching, learning and assessment.^[1] It promotes consistency and fairness across assessments within a programme.^[1] In 1956, Bloom^[2] identified six cognitive domains: knowledge, comprehension, application, analysis, synthesis and evaluation, that should guide the moderation process to ensure high-quality examinations. Effective moderation not only enhances the examination process but also provides tutors with insights into the effectiveness of their teaching methods and the extent of learners' understanding in both classroom and practicum settings. Therefore, examinations are an essential part of quality teaching and learning.^[3] Evidence suggests that examination moderation ensures assessments are valid, fair, accurate and consistent, reinforcing the credibility of awarded qualifications.^[4-6] A study in Australia^[7] highlighted four key benefits of moderation in higher education: equity, justification,

professional relation building and accountability. However, challenges include limited resources, insufficient training in test item construction and internal moderation, unclear assessment tools for learning outcomes and differing interpretations of the scope of moderation practices.^[4,8-11]

Tanzania's examination guidelines state that moderation ensures test and examination questions, along with marking schemes for theory, oral, practical and clinical assessments, align with the assessment plan.^[12] It also ensures consistency, a balance from simple to complex questions based on competence level descriptors and clarity without ambiguity.^[12] Previously, health training institutes in the Lake and Western Zones conducted independent examination moderation, resulting in lower levels of standardisation, validity and reliability potentially attributed to tutors' insufficient knowledge and skills in assessing student performance.

The Lake and Western Zone Health Resource Centres were established in the mid-1980s as part of the Ministry of Health's Continuing Education Unit, following decentralisation and health sector reforms. The Lake Zone includes Mwanza, Geita, Kagera, Mara, Simiyu and Shinyanga regions and comprises eight government-owned health training institutions involved in examination moderation. The Western Zone includes Kigoma, Katavi and Tabora regions, with six government-owned health training institutions participating. The examination moderation process was limited to government-owned institutions.

The Ministry of Health initiated efforts to establish joint examination moderation across zones to enhance the examination process. Following a series of meetings with principals and zonal coordinators, a joint resolution was reached on 14 October 2023, marking the first joint examination moderation between the Lake and Western Zone Health Resources Centres. This study explored tutors' experiences as well as the benefits and challenges of this joint examination moderation.

Methods

This cross-sectional study employed both quantitative and qualitative methods for data collection and analysis. It was conducted in Kigoma from 20 February 2024 to 23 February 2024, focusing on government health training institutes in the Lake and Western Zone Health Resources Centres following the completion of moderation activities.

Study population

The target population were tutors from various professions, including nurses, doctors, pharmacists, environmental officers, physiotherapists, health records technicians and Information Communications Technology officers (ICT). Inclusion criteria required tutors to be appointed by their principals through invitation letters, with more than one year of work experience, attendance in teaching methodology and student assessment performance courses and experience in conducting at least five examinations. This included at least four moderations for continuous assessment tests and at least one for end-of-semester examinations. Thirty-nine participants were recruited through invitation letters from their principals at health training institutes. Fourteen public health training institutes—10 in the Lake Zone and four in the Western Zone Health Resources Centres—were involved in this study.

Data collection tools

Quantitative

Structured questionnaires were used to collect data on the prevalence of examination moderation and quantifiable information about the study participants. The tool gathered general information on participants' characteristics and included a 5-point Likert scale: (1) lowest; (2) low; (3) moderate; (4) high and (5) highest. This scale assessed the prevalent level of joint moderation activity.

Qualitative

In-depth interview guides were used to collect data on tutor experiences, along with the benefits and challenges of joint examination moderation.

Data collection procedure

Researchers and trained research assistants convened the study participants in the moderation room, explained the study's purpose and provided informed consent forms for them to sign. Questionnaires were distributed to study

participants to collect quantitative data. Following this, in-depth interviews were conducted with each participant to explore their experiences, as well as the benefits and challenges of joint examination moderation. Examples of open-ended questions included: 'What are the benefits of the whole process of joint zonal moderation activity in Kigoma?'; 'What challenges have you experienced during this period of joint examination moderation?' and 'Can you explain the reasons for your ranking/rating of this moderation?'

The interviews, conducted in Swahili, were audio-recorded, accompanied by written notes, and transcribed verbatim.

Data analysis

Participants' general characteristics were entered into SPSS (IBM Corp., USA) to analyse categorical data. Descriptive statistics, including frequencies and percentages, were calculated. Data on the prevalent level of joint moderation among tutors were collected using a 5-point Likert scale (ranging from lowest to highest), and corresponding frequencies and percentages were computed. Qualitative data, derived from printed English transcripts, were manually analysed using the content thematic approach guided by the Graneheim and Lundman framework.^[13] During analysis, two researchers independently reviewed the interview transcripts, coded the text according to predetermined themes and met to compare notes. Discrepancies in coding were resolved by cross-checking the main transcripts while emerging themes were discussed and either adopted or rejected. Direct quotations were extracted and used to present the study findings.

Ethical considerations

The study adhered to all ethical protocols involving participants. Approval to conduct the study was obtained from the zonal coordinators of the Health Resources Centre and informed consent was obtained from participants during data collection.

Results

Quantitative

Demographic profile of participants

A total of 39 participants took part in the study, 11 (28.2%) of whom were from the Mwanza region. Most participants ($n=26$, 66.7%) were aged between 18 and 40 years. The majority were males ($n=30$, 76.9%), while 15 (38.5) had 1 - 4 years of work experience. Approximately half ($n=19$, 48.7%) held tutor positions at their workplaces. The main professional group included nurses ($n=14$, 35.9%), doctors ($n=8$, 20.5%), pharmacists ($n=6$, 15.4%), environmental officers ($n=4$, 10.3%), physiotherapists ($n=4$, 10.3%), health records technicians ($n=2$, 5.1%) and one participant from computer science (2.6%).

Prevalent level of the joint moderation process

Joint moderation activities conducted in Kigoma were evaluated using a 5-point Likert scale. The mean (standard deviation (SD)) score was 4.05 (0.69), with a prevalence level of 53.5% (Table 1).

Qualitative

The study identified three major themes from the qualitative data analysis: the prevalent level of joint examination moderation, tutors' experiences regarding the benefits and challenges of joint examination moderation. Sub-themes emerged under these two themes of benefits and challenges of joint examination moderation, accompanied by quotes that best describe the selected topic.

Table 1. Prevalent level of joint moderation process ranked by participants

Statement	Highest	High	Moderate	Low	Lowest
Level of joint moderation activity	10 (25.6%)	21 (53.8%)	8 (20.5%)	0	0

Theme 1: Prevalent level of joint examination moderation

The common reasons reported by tutors to justify their choice including;

'Generally the process was very good and convincing one. I wish this moderation process for joint zonal continues in the coming academic year and I do hope it will be much improved comparing to the previous moderation process'. [P1]

'Moderation process was good also cooperation and communication was good'. [P38]

'The environmental is conducive for the moderation process however, some areas to be improved like question preparation'. [P37]

'The activity was well organised but the activity need more time especially for proofreading moderated examinations'. [P7]

Theme 2: Benefits of joint moderation

The study highlighted several benefits of joint examination moderation, including standardisation, use of assessment plan, computer skills, teamwork and networking.

Sub-theme 1: Standardisation

Standardisation emerged as a key sub-theme among tutors in joint examination moderation. Moderated papers result in standardised examinations for students. One moderator emphasised the importance of joint moderation in ensuring uniformity in examination papers.

'[...] Moderation should be done as a group work and all instructions should be prepared in advance for uniformity, this will also help to bring about the standardised papers to all students of lake zone and western zone'. [P9]

Sub-theme 2: Use of computer skills

The application of computer skills was a prominent theme among the tutors interviewed about joint examination moderation. Moderators highlighted the benefits of using computer skills during the moderation process.

'I have learnt, the use of computer skills in formatting and moderating questions'. [P34]

'I have learnt that many tutors need more skills on computer usage so I will motivate tutors in my workplace to practice more'. [P1]

Sub-theme 3: Use of assessment plan in question construction

The use of an assessment plan was another common theme identified among tutors in joint examination moderation. Moderators highlighted the success of applying assessment plans and shared lessons learned in question construction during the moderation process.

'How to set the question papers and the importance of setting question paper using assessment plan'. [P15]

'How to carefully use the assessment plan when constructing question'. [P5]

Sub-theme 4: Teamwork and networking

Tutors highlighted teamwork and networking as key strengths contributing to the effectiveness of joint examination moderation, as illustrated by the following quotes:

'I have gained experience from other programs especially the importance of using assessment tools during moderation process'. [P8]

'Sharing of work experience from the colleagues who participated on moderation'. [P34]

'Positive teamwork among others'. [P16]

'Moderation process is an intensive process and it needs teamwork'. [P7]

'Good cooperation with moderators from other college and learn new ideas about moderation'. [P39]

Theme 3: Challenges experienced during joint moderation activity

The interview data revealed several challenges faced by tutors during joint examination moderation including poorly set examination papers, insufficient time for moderation, limited tasks outlined for Semester 1 in the assessment plan, delays in allowance payments, submission of incomplete examination papers, lack of reference materials, power outages and differing perceptions of moderation understanding.

Sub-theme 1: Poor setting of examination papers

One challenge faced by tutors in joint examination moderation is the poor setting of examination papers. As one interviewee explained:

'Some setters did not follow assessment plan that led to set a new questions examples microbiology, parasitology and entomology OSPE'. [P19]

Another stated, 'Many questions were not set by adhering to assessment plan'. [P24]

Another interviewee cited the challenges of poor setting of multiple-choice questions, stating that, 'Some stems being in statement format instead of question format and some distracters being quite different leading the answer to be chosen easily'. [P21]

Tutors faced the challenge of setting questions for modules they were not well-versed in.

'Not able to construct the question from the module that I do not teach, but rather to moderate the question provided'. [P5]

Sub-theme 2: Insufficient time for examination moderation

Another challenge evident among tutors in joint examination moderation is the inadequate time allocated for the activity. One interviewee described how this limitation negatively impacted the moderation process:

'Time was very limited that made the process to be difficult and less accuracy'. [P24]

'Pressure from other participants that they were rushing to finish moderating exams without being carefully to make accurate examination'. [P24] This statement highlights the limited time tutors experienced during moderation.

Another tutor emphasised, 'The time was short compared to the task and importance of the activity'. [P26]

Sub-theme 3: Delay of allowances payment

The issue of delayed allowance payment was also clearly highlighted during the interviews.

'Delay of allowance which was required to be paid to participants from their respective training institutions.' [P32]

'Institutions have to prepare enough fund for participants, they have to pay before coming to the centre for food and *per diem*.' [P28]

'*Per diem* was not provided plus travel allowances during the whole process of the activity.' [P35]

'Delay of money for accommodation.' [P31]

Sub-theme 4: Limited tick on related tasks for Semester 1 in the assessment plan

Some tutors highlighted the challenge of limited ticked tasks related to the end-of-semester section in the assessment plans for certain modules. One tutor stated that:

'In few modules there were few related task for semester examination in assessment plan.' [P27]

'Some questions were not for semester I examination.' [P27]

This indicates that some papers submitted by tutors did not align with the assessment plan.

'Some assessment plans of the selected task do not give room to assess skills as all were assessed during CATs.' [P11]

Another tutor expressed the assessment plan itself as a challenge.

'No standardized assessment plan for environmental health training.' [P8]

Sub-theme 5: Incomplete submission of examination papers

The theme of incomplete submission of examination papers was also noted by the tutor during joint examination moderation. They reported that some papers were not submitted at the moderation site, complicating the implementation process.

'Presences of incomplete examination papers make the process hard to be completed in time and some papers have no complete sections and repetition of questions in the section.' [P36]

'Missing of papers from certain Health training institutes.' [P16]

'Inadequate papers for some modules especially practical.' [P18]

Sub-theme 6: Power outages

Tutors highlighted that they occasionally experienced power outages.

'The missing of electricity power in some times.' [P3]

'Electricity problems for one day.' [P4]

Sub-theme 7: Insufficient reference materials

The insufficiency of reference materials was identified as another challenge for tutors. They reported the absence of certain materials such as assessment plans for particular modules.

'Reference materials should be prepared standby like facilitator guides.' [P9]

'Lack of assessment plan to some examination.' [P22]

'Reference materials were not available in specific time.' [P30]

'Shortage of reference materials.' [P31]

Sub-theme 8: Different perceptions of moderation understanding

Participants reported differing perceptions regarding the understanding of

moderation. They highlighted varying approaches to setting questions and conducting moderation across their respective colleges.

'Each college has their own modality of moderation and questioning skills which is difficult to change each other's perspectives.' [P9]

Examples of meaning units, sub-themes and themes derived from the thematic content analysis of tutors' experiences, benefits and challenges of joint examination moderation are summarised in Table 2 below.

Discussion

The study aimed to explore tutors' experiences, benefits and challenges of joint examination moderation in the Lake and Western Zones. The present study found a high level of joint examination moderation, with a mean score of 4.05. This indicates that most tutors who participated in the study were satisfied with how the process was conducted in alignment with Tanzania's examination guidelines.^[12] These findings align with those from another study conducted in Tanzania that reported a mean score of 4.18 for the quality of joint examinations.^[14] The high level of joint examination moderation observed in the present study could be attributed to the presence of experienced zone coordinators and the availability of necessary guideline tools such as examination guidelines, curricula and assessment plans.

Standardisation of examination papers emerged as a key benefit reported by tutors during joint examination moderation. Moderated question papers were the same across all health training institutions in the Lake Zone and Western Zone, facilitating a sense of validity, reliability and fairness. This aligns with findings from a study^[4] conducted in New Zealand, which showed that moderation ensures consistency, accuracy and well-designed assessment. Therefore, joint examination moderation should continue to enhance the quality of assessments and eventually produce skilled human health resources to serve the community.

Tutors gained valuable insights into using assessment plans for constructing questions through orientation and shared learning experiences. Before joint examination moderation, many tutors lacked adequate knowledge of effectively using assessment plans, which are essential tools for aligning assessment tasks with learning outcomes to maintain standards in the assessment system. This finding corroborates findings by Gardner^[15] that show that assessment practices help tutors enhance their skills, stay updated and contribute to their professional development.

The present study results revealed that tutors improved their computer skills in typesetting and formatting questions. Similar observations were noted in a study^[3] conducted at universities in East Africa and the United Kingdom (UK), which examined the processes of setting, moderating and marking examinations. Tutors attributed this achievement to the orientation on examination guidelines provided before the moderation activities commenced. However, a Kenyan study^[8] reported different findings, revealing that the lack of orientation prior to examination setting resulted in poorly constructed examination papers.

Regarding teamwork and networking, tutors reported sharing their working experiences and establishing friendly professional relationships, which facilitated the joint examination moderation process. This outcome can be attributed to the involvement of diverse cadres and tutors from various regions within the Lake and Western Zones. Similarly, Adie *et al.*^[17] highlighted that moderation fosters professional relationship-building and accountability. This suggests that joint moderation emphasises collaborative efforts in reviewing and evaluating assessment tasks while promoting a

Table 2. Themes, sub-themes and meaning unit/quote

Meaning unit/quote	Sub-themes	Themes
'Moderation should be done as a group work and all instructions should be prepared in advance for uniformity, this will also help to bring about the standardised papers to all students of lake zone and western zone'. [P9]	Standardisation	Benefits of joint examination moderation
'I have learnt, the use of computer skills in formatting and moderating questions'. [P34]	Use of computer skills	
'I have learnt that many tutors need more skills on computer usage so I will motivate tutors in my workplace to practice more'. [P1]		
'How to set the question papers and the importance of setting question paper using assessment plan'. [P15]	Use of an assessment plan in the construction of questions	
'How to carefully use the assessment plan when constructing question'. [P5]		
'I have gained experience from other programs especially the importance of using assessment tools during moderation process'. [P8]	Teamwork and networking	
'Sharing of work experience from the colleagues who participated on moderation'. [P34]		
'Positive teamwork among others'. [P16]		
'Moderation process is an intensive process and it needs team work'. [P7]		
'Good cooperation with moderators from other college and learn new ideas about moderation'. [P39]		
'Some setters did not follow assessment plan that led to set a new questions examples microbiology, parasitology and entomology OSPE'. [P19]	The poor setting of examination papers	Challenges during joint examination moderation
'Some stems are in statement format instead of question format and some distractors being quite different leading the answer to be chosen easily'. [P21]		
'Not able to construct the question from the module that I do not teach, but rather to moderate the question provided'. [P5]		
'Time was very limited that made the process to be difficult and less accuracy'. [P24]	Inadequate time for examination moderation	
'Pressure from other participants that they were rushing to finish moderating exams without being carefully to make accurate examination'. [P24]		
'The time was short compared to the task and importance of the activity'. [P26]		
'In few modules there were few related task for semester examination in assessment plan'. [P27]	Limited tick on related tasks for semester 1 in the assessment plan	
'Some assessment plans of the selected task do not give room to assess skills as all were assessed during CATs'. [P11]		
'No standardized assessment plan for environmental health training'. [P8]		
'Presences of incomplete examination papers make the process hard to be completed in time and some papers have no complete sections and repetition of questions in the section'. [P36]	Incomplete submission of examination papers	
'Missing of papers from certain Health training institutes'. [P16]		
'Inadequate papers for some modules especially practical'. [P18]		
'The missing of electricity power in some times'. [P3]	Power outage	
'Electricity problems for one day'. [P4]		
'Reference materials should be prepared standby like facilitator guides'. [P9]	Inadequate reference materials	
'Lack of assessment plan to some examination'. [P22]		
'Reference materials were not available in specific time'. [P30]		
'Shortage of reference materials'. [P31]		

shared understanding of standards, developed through social interaction and communication.^[6]

The present study revealed that some tutors demonstrated inadequate skills in setting examination papers, including failure to adhere to assessment plans and poor construction of multiple-choice questions, particularly in designing stems and distractors. Similar challenges were identified in a study^[8] conducted in Kenya on issues faced by tutors during examination preparation. These findings corroborate those of Rubeba,^[9] noting that university instructors often struggle with test construction and internal

moderation commitments. However, these findings contrast with the National Guidelines for Continuous Quality Improvement of Health and Allied Science Training and Examination,^[12,16] which emphasises the need for all tutors at health training institutions to undergo workshops or seminars on student assessment performance to improve examination quality.

Power outages were identified as a key challenge encountered during joint examination moderation because of the lack of power backup systems. Tutors relied on computers to moderate the examination papers, and interruptions caused by power failure increased their workload as they

had to compensate for the lost time. Similar findings were reported in a study^[17] conducted in Tanzania, which showed how frequent power cuts and a lack of backup systems disrupted the preparation and production of examinations. Likewise, another study^[18] conducted in Nigeria found that training institutions experience power failures that adversely affect the efficiency of assessment and teaching processes.

The study found instances of incomplete submission of examination papers for examination moderation. In some health training institutes, tutors failed to submit papers for particular modules, complicating the moderation process. A similar issue was reported in a study^[19] at the University of Hong Kong, where incomplete examination papers led to unfair assessments. Additionally, a study^[17] conducted at the Open University of Tanzania found similar results, noting that some sections of the examination papers were missing.

Another challenge reported by examination moderators was the delayed payment of allowances to cover accommodation and personal expenses. Tutors urged the administrations of health training institutions to provide these payments in advance to facilitate the moderation process. This finding aligns with those from a study^[18] conducted in Nigeria, which found that delayed incentives negatively impacted organisational performance. However, it contrasts with findings from a study^[17] at the Open University of Tanzania, which reported that academic staff were demoralised by the low rates of allowances, rather than the delay in payment.

Moderators observed that limited alignment of tasks in the assessment plan for end-of-semester examinations created challenges during moderation, particularly in modifying questions for certain modules. This finding suggests that some assessment plans failed to adequately capture the learning outcomes specified in the curriculum. Tutors noted an imbalance, with many tasks aligned to continuous assessment tests but fewer linked to the end-of-semester examination, leading to difficulties in adhering to the assessment plan. Similarly, a study^[10] conducted in Australia found that assessment tasks often lacked clarity or connection to unit or course learning outcomes.

Inadequate time for examination moderation was another challenge reported by tutors, affecting the quality of the process. The allocated time was insufficient given the scope of the moderation activities. This finding aligns with studies conducted at the University of Cambridge in the UK^[20] and in Kenya,^[8] which noted that time pressure compromises the fairness of examination instruments. Insufficient time for moderation may be linked to increased workloads, resulting in inadequate proofreading and error detection in examination papers.

Inadequate reference materials including missing assessment plans for some examination questions, facilitator guides and reference books for review, were reported by tutors as obstacles to conducting joint examination moderation. Streatfield and Markless^[21] reported that limited library resources can negatively affect the effectiveness of the educational process. These findings highlight the need to have up-to-date reference materials available during the moderation period.

Varying perceptions among tutors regarding the understanding of examination moderation was another challenge reported in the present study. Tutors had different backgrounds and approaches to constructing questions and conducting examination moderation. This finding is consistent with those from other studies conducted in the UK^[11] and Australia.^[10] The differences in perceptions of examination moderation may stem from inadequate knowledge and skills in moderation, as well as varied experiences at the institutional level.

Limitations

The study had a few notable limitations. First, we enrolled a limited number of tutors from two regions, thus these findings may not be representative of all tutors at health training institutions in Tanzania. It is possible that the experiences, benefits and challenges reported by tutors in the Lake and Western Zones differ from those faced by tutors in other regions such as the Central, Southern and Eastern Zones, which warrants further study. In addition, the majority of the study findings are qualitative in nature, which limits the generalisability of the results beyond the study setting. Nevertheless, the exploratory nature of the study is consistent with findings documented elsewhere and the integration of quantitative methods. Thus, the study findings may have broader applicability.

Recommendation

Based on our study findings, it is evident that tutors need to be equipped with the necessary skills for setting and moderating examination papers, along with ensuring the availability of all relevant reference materials to facilitate the joint examination moderation process according to established standards. The findings also reveal the need for zonal coordinators to allocate enough time for upcoming joint examination moderations and ensure the availability of power backup. Moreover, the study calls for the Directorate of Human Resources Development within the Ministry of Health to revise the assessment plans for specific modules to improve the quality and efficiency of the moderation process.

Conclusion

The study found a high level of joint examination moderation, as reported by tutors. It also noted various benefits and challenges experienced by tutors during the moderation process. The findings suggest a need for health training institutions to implement ongoing capacity building programmes for tutors on setting and moderating examination papers to improve the quality of examination.

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