

E-Learning Content Development Process

1. Planning content development

1.1 Identifying the courses in the curriculum

Nursing and midwifery council curriculums for (General Nursing and Basic Midwifery programs) were reviewed and compared with some schools modified curriculum to identify major courses or subject areas. Since Nursing and midwifery curriculum is standard and therefore serves as guide to the schools toward forming their respective curriculum. Its, mandated that schools must covered the areas in NMCN curriculum (its possible to add but cannot go below the standard). Therefore, instead of looking at different schools curriculum within the project states, the focus was on NMCN curriculum for both Nursing and Midwifery programs, 2016 updated curriculum were used. The overall aim of this stage was to identify the courses in the curriculum along with the learning objectives.

1.2 Define courses suitable for e-learning (from the NMCN curriculum)

Course that are suitable for e-learning were also carefully reviewed and selected from the NMCN curriculum for Basic Nursing as well as Basic Midwifery Programs, based on availability of man power and learning tools.

The purpose is to ensure unsuitable courses are filtered out while developing the e-learning content. So it is directly geared towards core subject matter without digressing on extra field of endeavor just to make the learning easier and efficient.

Moreover, some of the clinical practical classes may not be good or achievable online due many conditions and human variation. But theoretical courses could be absolutely superb because it is interactive in nature whereas later physical present is of utmost important.

The greatest preferred position of an online course (Moodle) is that student's study hall and educator (hypothetically) are accessible 24 hours per day, seven days every week. Your solitary reason for missing class isn't getting on the web! Something else, everything is accessible to you. You can get declarations, get to notes, audit tasks, take practice tests, talk about inquiries, visit with individual

understudies and study whenever you need. Other than sure due dates, you make your own calendar for finishing the necessities of the course.

1.3 Identify and select the tutors from the schools

Head of schools (Nursing and Midwifery) within the project state were contacted to identify and forward the list of tutors for content development. The school managements screened and forwarded the list of tutors primarily based on pedagogical view to their field of study, computer literacy and competency in quality of presentation and technical knowhow in operating multi-media learning tools, applying SCL and authenticity in author references. List of selected tutors were forwarded to the national office through the state program officers (SPOs).

1.4 Invite the tutors to a central location for content development

Selected tutors were invited to a central location and re-examined based on their experience, qualification, ability to access student's needs, enthusiasm and passion for the course and job, Good reputation in community, professionalism, patience, positivity and encouragement, ability to teach, persistence, availability, knowledge of technology, reliability, resourcefulness, wanting the student to succeed.in order ensure effectiveness and efficiency of the whole process. The qualified tutors were invited from various local institutions. Training venue and accommodation/hotels (ASA Pyramid Hotel Kaduna) and duration of training (5days) were indicated in the invitation card and forwarded to various HTI. The tutors were grouped according to specialization to a particular facilitator. for symposium to commence.

2. Content selection and development

2.1 Identify work group members and group tutors

The selected tutors were prepared for content developing by facilitators who are knowledgeable in content development (Nurse and Midwifery Educators) whose origin are from health training institutions. The tutors were group into various groups to handle difference course content e.g. tutors taking anatomy or physiology from different schools were grouped and given a task to work together for better, understanding with common objectives, and plan on how to achieve these objectives, under the supervision of facilitators and in accordance with policy of regulatory body of Nigeria (Nursing council). The factors which affect content selection are:

The learner factors that affect selection and use of media include their preferences, perceptual difficulties, experiences and backgrounds, interests, level of motivation, individual differences, physical ability amongst others (Laver, 1990). While inviting the tutors for content development, they were asked to come along with all their relevant books, lecture notes, power points (e-copies and hardcopies where possible) were provided. They were also encouraged to use online materials. The five (5) days spent by each batch is as follows:

2.1.1 Day one (1)

The first presentation (for each batch) started with the task “ how do you define SCL (Student Centered Learning), what are the benefits and are there possible draw backs. After then, the participants were divided into 3 groups to work within 10minutes.Their experiences on SCL as a strategy was presented and discussed. The outcome of the presentation showed that majority of the participants have knowledge on SCL but the level of implementation is weak.

The session continued with the formal introduction to concept of SCL, adult learning and learning styles was presented and discussed during which participants assessed themselves using a designed questionnaire on learning styles. Participants evaluated themselves to identify which domain they belong to, be it activists, theorists, reflectors or pragmatists. Group work were issued on teaching strategy

on achieves SCL and plenary session. However, two presentations on teaching methodology [SCL] concept and on the topic Blooms Taxonomy for learning were presented to the participants.

2.1.2 Day two (2)

The day's activities began with role play on teaching methodology [small group activities] by the facilitators. This was followed with regrouping of participants into 8 and work on each method by planning a typical classroom lecture. The group presented their work in small group activities i.e. brainstorming and mind map, buzz, trigger& enquiry, debate, line-ups etc. comment raised observation discussed and resolved.

- A presentation on team teaching was preceded with a video show on the concept followed with a discussion session. Participants were informed that the N&MCN has adopted team teaching as a strategy for schools of Nursing & Midwifery in the country
- The facilitators went round and assisted the participants in planning the classroom session using the small group activity. Thereafter it was followed by presentation on strategies to achieve SCL in a case study form as follows: power failure, managing group dynamics, noncompliance, non engagement and large number of students/classrooms.

Each of this was accompanied with questions: what do you do?

- Power failure - the group proffered to have printed copy of the prepared material, use of UPS and alternate source of power i.e. solar or standby generator
- Managing group dynamics - this group suggested for changing the membership, assign role i.e. group leader considering the personality or class the student belongs to.
- The day closed with the last paper title myths and misconception of SCL in an interactive session. Group work was on classroom management strategies in a case studies during SCL.

2.1.3 Day Three (3)

The activities began with a presentation of different forms of evaluation scale for tutors and students to support the implementation of SCL. Introduction to e-

Learning and content development in each of the subject areas was conducted. However, in preparation of content development, the tutors were not only guided by the facilitators on how to source for online material, where to source and how credible it is, but also:

- Take into cognizance the legal implication of ethical issues, plagiarism and intellectual and copy right.
- Make good reference by citing book authors' journals, charts graphical illustrations and all other materials used during the content development.
- They were advice to use multimedia (images, video links, demonstrations), considering all ethical and legal issues concerned.
- They were oriented on how navigates sites that offers free images and videos on-line.
- How to navigate to sites that offer free images

Each group by subject areas started the development of contents.

2.1.4 Day Four (4)

The day began with a presentation by each of the subject areas aimed at assessing level of work done in the assigned areas. Each group presentation was discussed with necessary corrections made. The participants continued with the development of the content for the rest of the day.

2.1.5 Day Five (5)

Continuation of presentation of completed work on day 4 was done with needed corrections. The expectations submitted by the participants were discussed to ensure coverage based on their concerns.

2.2 Quality assurance related to content development

The tutors presented according to groups under the watch of facilitators. Observations questions were made. Courses/topics that need amendment were pointed and rectified accordingly.

2.3 Compiling the contents for quality assurance

All contents were submitted per group for final quality assurance. A senior nurse and midwifery educators who are not part of the initial facilitators were called to objectively examine the whole process in order to have efficient quality assurance for nursing and midwifery contents respectively. Finally reviewed contents were submitted for uploading to moodle site in batches.

3. Content implementation

Courses were designed on the moodle software for all subjects' areas of their respective tutors.

The courses were designed in topic format according to semesters, level, courses etc.

3.1 Course design

Course design involves creating a new course in moodle. However, while creating the new course its important to select the appropriate course format. The appropriate formats particularly for moodle mobile are 'topics' and 'weekly'. The type of format relates to the layout of the course. A 'topics' format show content by topic and 'weekly' format shows content week by week, but topic format was used throughout the course design. All courses (according to the subject area) were designed. In Moodle, courses consist of section i.e. course sections and those sections are used to divide learning subjects. When a new course is created in Moodle, it shows empty. It needs to be filled with course content.

Before the course design, categories were created on the local server with top category bearing the school program name either Basic Nursing Program or Basic Midwifery Program. Sub categories were then created Year 1, Year 2 and Year 3 each with its own child category as First Semester and Second Semester. Refer to appendix A for the category structure used on the local server.

3.2 Adding content

The first section of the course (topic one was renamed to Introduction to 'the course name'), its an introduction to the course and overall course objectives as appeared in the curriculum, a warm welcome from the tutor or tutors (this section is left blank for tutors to add to their various courses). The subsequent sections were renamed as Unit by Unit, each unit consist of learning objective and content developed by tutors were uploaded. Adding course contents were done by using "activities and resources". In Moodle terminology, an Activity, such as Forums or Quizzes, properly means something students can contribute to directly, and is often contrasted to a Resource such as a File or Page, which is presented by the teacher to them. However, the term activity is sometimes for convenience also used to refer to both Activities and Resources as a group. The content developed by HTI

tutors were added using book format (book as resources). The purpose of using book format is to ensure that the content are well organized, presented and ensures a clear navigation through the course and a sense of recognition in the overall structure of the website by using the same format. Enriched study materials and interactivity are key-factors. The following factors were taken into account while adding content to the course.

- Text content were formatted by breaking them into short paragraphs and using headings, bullets, graphics (diagrams and images) and other formatting devices that make books chapters easier to read and comprehend.
- When presenting video, brief description and information about the length of the clips were included.
- The contents were strategically chunked so as to helps students to absorb the information, and avoid information overload and exhaustion as described by (Garrison, Anderson & Archer in vanderbilt.edu).
- Help your students digest the chunks of material by providing short recall or application questions after each one. Student task were added at the end of every unit to.
- Reference were provided

Questions were developed related to specific courses and uploaded to the last topic of each course. All the content developed were first uploaded to the international server before sharing to local servers.

3.3 Publish the course

Once the content upload completed, the uploaded content were backup from the international server (in mbz format) and shared with ICT of the schools via mail with guide on how to restore the courses back to the schools local servers. The ICT staffs create user accounts for those who do not have a user account yet (a user account is necessary to be able to log on to Moodle) and then published the courses by making it available to the tutors who will be teaching each course. Each tutor(s) taking a specific course was/were added as a content developer (by so doing they have the access right to add/remove or modify the course content).

3.4 Create cohort

The ICT staffs (moodle administrators) create cohorts for students and tutors to be able to easily manage users on the moodle platform. A cohort is a group of students working together through the same academic curriculum e.g Nursing Y1, Y2 and Y3, Midwifery Y1, Y2 and Y3. By forming a cohort, teacher can easily enroll students into a course(s) in bulk rather than adding them one by one, cohort is always done by moodle administrator or (someone with that privilege), therefore is handle at system level.

3.5 Enroll students

the first step of enrolment is adding or enrolling a teacher into the course, tutors were added to their courses who then added or enrolled students (taking their courses) into the course using cohort enrolment e.g by enrolling Nursing Y1 cohort, a teacher may enroll 100 students in year one class into his/her course as the case may be. By so doing the enrolled students have access to the newly developed e-learning contents and practice quizzes and other activities added by the teacher those may include assignment.

3.6 Adding content (content &resources) Lecture materials

Contents were uploaded according to the courses

- Publish the course: this covers main area of study within relevant scope of leaning materials e.g. text book multimedia, audio-visual etc.
- Create student cohorts: the stages of learning are arranged according level of study from basic to intermediary to expert in learning skills. For each HTI, cohort for each set of students were created and uploaded so as to make handling students that belongs to a particular cohort much easier, this involves bulk enrolment to a course by a tutors rather than enrolling students individually.
- Enroll tutors/students: provision was made for addition tutor/student for first time, beginning, of continues study as the case may be.

4.0 Capacity building

4.1 Capacity Building for HTI

Series of trainings were conducted to HTI staffs with the aim of building their capacity around the moodle platform, the training centred toward learning on technical know-how on e-learning and use of devices. Different types of training conducted as follows:

4.1.1 Training for Moodle Administrators

The supported HTIs were asked to identify Moodle administrator known as (HTI Moodle Manager) who will serve as the care takers or driver of the e-learning platform, most of the schools identified their ICT officers as e-learning focal person while schools without permanent ICT officers identified a nurse educator (for school of nursing) and midwife educator (in case of school of midwifery). Those focal persons were training on how to use the e-learning platform in general (it's important to understand the basic functionalities of the e-learning system) and this including login and how to navigate around the system. Slowly, the administrators were explored to system administration task which including enrolling the new user on the platform, this is because for anyone to have access to the system, it requires a user account and creating user account is one of the responsibilities of moodle administrators. The HTI Moodle Manager is responsible for administering the system. This role can be given to any trained ICT person, Tutor or Librarian, the HTI moodle administrator is the first contact when issue come up.

The administrators were trained on how to enroll users using different methods as follows:

- Add a new user (add user one by one)
- Upload users (bulk upload using csv file)

It's also vital for administrators to understand how to manage users and these including updating users accounts, recover lost password, suspend a user account, un-suspend user and creating as well as enrolling or adding users to cohort. Cohort is a set of users sharing similar characteristics example, year one students are added to cohort called Y1 Students, year two to cohort called Y2 Student and year three into Y3Students respectively. Moodle administrators or HTI Moodle Manager were trained on how to create a new course (because by right teacher does not create a course template unless he/she has special permission to do). When a new course is created in Moodle, it shows empty. It needs to be filled with

course content. Adding course content needs be done by a teacher or tutor or anyone with such capabilities. During the training, HTI moodle managers were encouraged to used topic and weekly course format while creating new courses for tutors to upload content, considering the fact that the two formats mentioned are more suitable and appropriate when using moodle mobile. The HTI moodle managers were also trained on the following areas:

- How to edit front page
- How to setup question bank
- How to setup user permission
- How to create and manage course
- How to manage plugin and appearance
- How to upload content (in case of assisting tutors)
- How to take site, and course backup and restore respectively etc

4.1.2 Training for tutors

It's important to let the users, the students and the tutors, gain familiarity and the required skills to use the e-learning system before they formally have to engage with it (Atef&Medhat, 2015).

Since all users are relatively new to the e-learning system and new to formally using the system, there should be time to practice first i.e. be guided in using the system. As such, tutors were explored to the e-learning platform as in general introduction, and this involves how to login (step by step right from launching a browser), how to update profile and change password and how they can navigate around the system and access courses. Tutors were trained on how to update the uploaded contents and add in new. Primarily, a teacher does not create a course but can populate course with content and this is usually done by turn-editing-on. Tutors were trained to understand the power of turn-editing-on and how they can add and remove in or out of the course (only tutor with editing right can modify a course content). Tutors were trained how to add activity and resources to their courses. In Moodle terminology, an Activity, such as Forums or Quizzes, properly means something students can contribute to directly, and is often contrasted to a Resource such as a File or Page, which is presented by the teacher to them. However, the term activity is sometimes for convenience also used to refer to both Activities and Resources as a group.

There are 11 different types of activities in the standard Moodle that can be found when the editing is turned on and the link 'Add an activity or resource' is clicked. All activities and resources have their own functionalities and will be shortly

described in the following paragraphs and in more detailed described in Annex 3, 4, 6 and 7. Having exploring tutors how to add content which including adding activities and resources, they tutor were also trained on how to add student to a course.

4.1.3 Training for Tutors

The HTI tutors were trained and guided not only how to use the moodle platform but also setup and upload learning materials. The tutors were trained how to edit an existing (uploaded) contents for better and up-to-date learning materials. Those HTI tutors were trained how to use different activities and resources on the e-learning moodle for better learning outcome. Series of capacity buildings were conducted to ensure the tutors to upto the task on the moodle platform. Moreover, they were guided how to enroll students into courses using manual enrolment and cohort, they were also guided on how to enable other enrolment methods such as self-enrolment (when certain conditions are met), or enabling guess access to a course.

4.1.4 Training for HTI Management

The HTI management provost, directors and principles along with other management staffs were introduced to the moodle and trained how to access the system. The raining for HTI managements focused on accessing the reporting components of the moodle so as to enable the managers to have a clear picture of what is going on within the system. The reporting aspect of the moodle provide the HTI managers with series of information which includes who does what, when it was done and series of actions and activities perform. Its based on the outcome of the reporting training, the project agreed with the HTI managements to forward a report of e-learning utilization on monthly basis.

4.1.5 Training Students

Series of capacity buildings were conducted for different HTI students, the training carried out were inform of sensitization and re-sensitization. The first training for students (in each supported HTI) were conducted by facilitators supported HTI moodle focal person supported. However, the subsequent training were carried out

by the HTI moodle focal person supported by some tutors in-line with the agreed policy and timing between the project and school management.

Students were first introduced to the e-learning and specifically moodle and its benefits. The capacity building for students focused on training the end users how to access learning materials uploaded by tutors, and how to respond and act on activities such as assignments, tests, quiz, survey, and class work etc. The students (as the consumers of the e-learning system) are equally guided on how check their grades and feedback on the moodle platform. Moreover, as part of training the student introduction to moodle mobile and its benefits to students such as ability to download learning materials for offline usage, ability to work on assessment such as assignment from hostel and so on were fully explained, this helped tremendously on simulating the student to use the moodle mobile app. The students are guided how to download and configured the app, and how content can be download for offline usage and so on.