Reading the Word and the World: Empowering Mozambican Health Teachers through Video Production

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Abstract

The aim of this chapter is to present an experience related to a professional teacher development program conducted in the Republic of Mozambique with in-service teachers from the Ministry of Health. An educational program for professional development was designed to support the improvement of teachers' skills in the use of different media in classrooms. The program was established in 15 health training institutes across the country. Data was collected from the analysis of pre- and post-questionnaires, interviews, and the materials produced (videos) during the educational program. The results showed that an important achievement of this educational program was the production of digital video as teaching material for health education. Moreover, the introduction of media literacy helped them to develop a critical vision in which teachers recognized the importance of representing the context in instructional materials, as well as promoting basic health care for the Mozambican population who are not literate in Portuguese, so that the videos produced can disseminate basic health information to improve the lives of these people who speak other languages.

Keywords: health education; Africa; teacher training; video production; empowerment.

Academic literature on media and information literacy and related education typically indicates that teacher training institutions were based on older technologies, such as books and writing activities. However, new digital technologies have offered great potential for exploration since the end of the 20th century. New digital technologies are widely regarded as beneficial for improving education (Tornero & Varis, 2010).

"*Today's advancement in information technologies and the diffusion of new digital media and learning environments can stipulate the growing importance of media literacy, which is now recognized almost universally as one of the key competencies in the educational system* (Tornero & Varis, 2010, p. 5)."

Considering that context-based learning has an apparent, important contribution to student understanding because students can learn more meaningfully when engaged in context. Knowledge is stored in various discourses and linguistic contexts, and it acquires meaning and significance only in these contexts. Thus, when the use of media resources (video here) is articulated into the classroom, the goal is to enable students connect to social issues with science and technology through the audiovisual context (Arroio, 2010).

A major concern in these circumstances is to maximize this situation and use information and communications technologies (ICTs) to improve access and quality of education in different contexts. UNESCO's definition of media literacy enables such articulation in Education and Communication.

"*Media literacy is the ability to access, analyze, and evaluate the power of images, sounds and messages that we encounter every day and play an important role in contemporary culture. It includes the individual's ability to communicate using media in a competent manner* (Tornero & Varis, 2010, p.5)."

According to Moreno (2005), in a model of learning from multimodal design, which was named Cognitive-Affective Theory of Learning with Media, the receptor is a stimulated sensory agent with verbal and nonverbal instructions. Part of this information is selected for the working memory where multiple representations are organized, integrated, and recycled, i.e., where mental models are formulated.

However, the long-term memory (where the new knowledge is introduced and stimulates motivation and metacognition in the viewer) is classified into two parts: the semantic (structured record of facts) and episodic (emotional context of the event). In this sense, diversified instruction modes are used to stimulate sensory memory in more than one pathway (auditory and visual).

Thus, the use of video in health education, in the context under study, may be relevant to enable students to recognize its context, history, social reality, ethnicity, and language, fostering an affective and emotional relationship. By exploring the visual and auditory channels, the message can be better assimilated by the students, the teacher can improve his or her teaching practice, and the educational process becomes more efficient.

However, the crucial question concerns teachers' skills and competences in the use of such resources in the classroom. The question is about how to integrate ICT in the practice of teachers who have not been trained for this situation, many of whom are still undergoing initial training and have not experienced curricula that integrate ICT in education while many others have not had access to in-service training on the subject.

Bingimlas (2009) highlighted several advantages of the use of ICTs and several barriers to the successful integration of these resources into the teaching and learning process. The review noted that "While new technologies can help teachers to improve their pedagogical practice, they can also help students in their learning" (p. 236). Cited by Bingimlas (2009), Grabe and Grabe (2007) state that ICT can play a relevant role in students' skills, motivation, and knowledge, ICT can be used to present information and help students to perform their learning tasks.

Introducing media literacy can favor the integration of ICT in health education as well as enable the development of a critical view of these teachers (Torres & Mercado, 2006). The development of the autonomy of teachers in service is necessary to enable them produce their own teaching materials according to their local demands. These teachers must be competent in teaching their students to deal with daily situations. As the teachers will become health professionals, they need to have autonomy to make life-saving decisions considering the local situation. It is insufficient to train a teacher to be a consumer of teaching materials; it is crucial that these teachers can produce their own materials based on different media and that they can make decisions.

According to UNESCO's Global Framework for Media and Information Literacy Cities (2019), "the integration of media and information literacy (MIL) into formal and lifelong learning education systems has not progressed as rapidly as it should" especially for low-income countries, such as Mozambique. The need to introduce media and information literacy is urgent, and a good approach would be to articulate this theme with education. In this sense and considering the MIL cities, an important objective must be the empowerment of citizens, giving them some competences to communicate health information to communities marginalized because of their illiteracy in Portuguese. This objective can be achieved by bringing the health training center closer to the communities, initially guaranteeing the right to information, and then enabling access to basic health care for this marginalized population.

As proposed in the MIL cities framework, this introduction of MIL in the training of in-service teachers at the health training center can strengthen the public health system in a more inclusive way. Teachers and students can develop public health communication projects using accessible equipment, for example, by producing videos in local languages to ensure that information about the right to vaccination reaches people who do not have access to information.

Even for people who do not have an internet connection or access to television, when they attend community centers for health care, a television is often available, which can be used to broadcast health information in a video format while patients await care.

Mozambican Context

According to data from the United Nations, Mozambique's Human Development Index is the tenth lowest in the world among 189 nations, averaging 0.437. The country is located in southeastern Africa and is bordered by Tanzania (north), Malawi (northwest), Zambia and Zimbabwe (west), South Africa and eSwatini (south-west), and the Indian Ocean (east). After more than four centuries under Portuguese rule, the Republic of Mozambique became independent from Portugal in 1975 and suffered a civil war for 16 years. The war killed thousands of Mozambicans and destroyed the existing infrastructures from the colonial period.

Since 1992 after a pacification process, the former Portuguese colony has been rebuilt. Faced with such a situation, the country needed to rebuild the human resources beyond infrastructure, one of the great needs in this process. For example, in the context of health care, the country had 1,106 doctors with a college degree in the last five years. In 2010, 22% of the medical doctors of the National Health System were expatriates, mostly Cubans and North Koreans, who were mostly specialists living outside the country's capital, Maputo.

The country's population is estimated to be approximately 24 million, and approximately 66% of health professionals working in Mozambique are holders of basic and intermediate level diplomas (equivalent to elementary and high school education). Consequently, this context presents a significant difficulty in considering the qualification of and quality of health care provided by these professionals. Thus, ensuring that the health professionals can meet the demands and multiple problems experienced on a daily basis calls for urgency.

Under this circumstance, the National Human Resources Development Plan 2008–2015 (PNDRH) aimed to improve the capacities of the health training institutions (IdF–Instituição de Formação–in Portuguese language) of the Ministry of Health (MISAU). The Ministry of Health has a network of 17 IdFs located in the 11 provinces around the country. Based on a situational research, the urgency to improve the training of health teachers of these institutions was highlighted in the National Human Resources Development Plan for Health (PNDRH) 2008–2015 (Ministry of Health, 2008).

Owing to circumstantial and organizational issues during the country's reconstruction process, all decisions were centralized. Consequently, the production of didactic materials used by teachers working in the most diverse training institutions was elaborated, produced, and distributed by the Ministry of Health. Additionally, in the context of the reconstruction of the nation as established in the peace agreement, the Portuguese language was instituted as an important strategy for national union for all the ethnic groups constituting Mozambique.

During this period, several international cooperation' agencies and organizations contributed to the elaboration of curricula, teaching proposals, didactic materials, and programs of initial and long life training of health professionals; these were largely elaborated abroad and translated into the Portuguese language. Notably, over the last two decades, training institutions have received many materials, such as computers, equipment for practical classes, books, handouts, among others. However, the difficulties surrounding the enhancement of the quality of trained professionals persist.

Therefore, improving the training of managers and teachers who work in these institutions became crucial to the necessary changes. The Training Department of the National Directorate of Human Resources of the Ministry of Health of the Republic of Mozambique (MISAU), supported by the Japan International Cooperation Agency in collaboration with the Faculty of Education of the University of São Paulo - Brazil (FE-USP), developed the "Project to strengthen the health teacher's technical and pedagogical skills" (PROFORSA I).

The project was executed from 2012 to 2015 through different actions. One of the actions refers to the program of improving the in-service health teachers' training with emphasis on teaching methodologies. This program was developed in each of the 15 IdFs (from 2013 to 2015, today the MISAU network has 17 IdFs) in all the 11 provinces across the country, with the aim of reaching most of the health in-service teachers (on full- and part-time jobs).

As mentioned earlier, Mozambique depends on international aid. Many countries, international agencies, and nongovernmental organizations develop activities and projects in Mozambique. On average, the projects last between 4 and 5 years, but they sustainability. When a project ends and the partner leaves the country, new partners present new proposals and practically start afresh while abandoning the previous project. Many curricula are developed, such as support materials for implementation, which are produced or are in the process of being translated into Portuguese. It is common to find materials based on texts and few images; when images are used, they are from contexts different from that of Mozambique, being produced by non-Mozambicans. Unfortunately, even in materials containing some images, Mozambicans do not connect with these images because using images is unusual to them.

Therefore, an educational professional training program for teachers in health centers was planned, which could create opportunities for developing teachers' autonomy to create their own educational materials. With computer digitalization, a camera, and a video editor, teachers can produce videos, for example, that portray daily situations to contextualize the contents in a more meaningful way for the students. The video can also demonstrate important health techniques for students to learn better and improve learning outcomes, reducing student failures and dropouts.

From the perspective of introducing media literacy, basic concepts of audiovisual language, notions of screenplay writing, image capture, and video editing were introduced, articulating them with classroom situations or teaching labs to demonstrate the use of health equipment and procedures related to health education content. The topics were articulated considering the perspective of teacher empowerment to master language and knowledge and for a more appropriate contextual use.

Teachers with a critical view could portray in the materials produced the situations of inequality they experience, better preparing students who will work in such contexts to understand daily life in such context. These contexts are different from those of imported materials that do not portray the Mozambican context.

The program also contained topics such as helping to disseminate knowledge and good practices to local communities regarding hygiene habits for cholera prevention, malnutrition prevention, the use of mosquito nets against the vector of malaria transmission, and the use of condoms for HIV prevention and other sexually transmitted infections, among other topics.

Moreover, the program respected cultural, ethnic, and linguistic aspects of preservation as well as appreciated the identities of different ethnic groups. The importance of the development of teachers' autonomy was emphasized. Although the Portuguese language is the official language of national unity, many communities and many students had difficulty using the language, and many of them communicated in their local languages. More than 40 languages were used, which were closely linked with different ethnic, cultural, and social practices.

The Experience

Between years 2013 to 2015, under the PROFORSA-I project, an educational training program was conducted in 14 of the 15 health training institutions (IdFs), reaching 11 provinces. The training could not be conducted in one province during 2013 to 2015 because of armed conflicts in the central region of the country, limiting travel through restrictions of the international cooperation security protocol of the

Japanese Embassy in Mozambique. Within the scope of the project, the in-service teachers training program was organized for one week in each center (IdFs).

Initially the in-service teachers were volunteers. The teachers were sensitized about the importance of developing their autonomy as well as the relevance and impact of locally producing educational materials based on different media, which could improve the teaching–learning process at IdFs. The sensitization was expected to reduce the students' failures and dropouts and also improving the quality of health students' education. It was also expected to recognize the culture, language, and identity of the communities from different provinces.

Examples of educational materials prepared in different media were presented to expand the participants' repertoire. As reported by the teachers, they did not produce the materials; they always received the materials from the partners to be used. The programs were aimed at training teachers to only apply the materials.

In the current educational program, teachers were supported in preparing comic stories and photonovelas, first on paper with an emphasis on storyboard planning and later using computers (Mauaie et al., 2014). The need to incorporate health content into the narratives created for the videos was considered. To perform these activities, free licensed software (MKGibi), text editor, and digital camera were used. Teachers were encouraged to invite students to participate in the health practice and procedure demonstrations in classrooms, laboratories of demonstrative practices (humanistic laboratories), or multidisciplinary laboratories, situations with the community, etc. Teachers chose health contents or demonstrations of health procedures that they would like to address in the videos, as this would be authored by the teacher. Authorship is crucial in developing teachers' autonomy because it makes the teacher feel responsible and recognized as references by students.

As teachers were to choose themes and content, some videos were presented to expand the participants' repertoire; this step was important to ensure that the participants were involved.

Most teachers clearly did not understand that they would produce the materials. For example, immediately after showing the videos, they requested copies; their justification was that they did not have access and that they could use the copies their classroom practices. Most teachers did not foresee the possibility of authoring educational materials. Unfortunately, their self-esteem was so low, in view of their previous experiences of always receiving the curricula and materials prepared by others; they were used to the consumer's perspective of not envisioning the possibility of being material producers.

Thus, the introduction of media literacy could expand possibilities beyond consumers, now critically, and producers of educational videos.

During the implementation of this educational professional training program for teachers, it was deemed necessary to further study the process, program, and

results obtained. For data collection, questionnaires were applied at the beginning of the training (expectations) and at the end (evaluation). Interviews were also conducted with in-service teachers; their authored productions and field notes during the process were analyzed. The data were analyzed according to content analysis (Bardin, 2011). The qualitative approach was chosen because of the nature of the project developed. The use of interviews also enhanced the understanding of the training context, since their expectations, perspectives, concepts and practices could be determined during the educational training program (Bogdan and Bliken, 1997). Considering the numerous productions made, some videos produced by in-service teachers were selected during the program conducted at the IdFs between years 2013 and 2015. This chapter provides a corresponding discussion.

Outcomes

This chapter presents the results obtained in Niassa province, which was selected for being one of the most distant provinces from the country's capital, Maputo. The presence of the state in the province is little, especially for the unassisted populations. Unfortunately, in the neighboring province, Cabo Delgado, violent conflicts increased because of the insurgency caused by ISIS. The province of Niassa has the lowest population density and the worst indicators of malnutrition.

Figure 01 shows the title of the video produced at the health training center in Lichinga, capital of Niassa, in February 2014. This province is located in the north of Mozambique on the border with Tanzania (north) and Malawi (west). In addition, as in the other northern provinces, the most distant provinces from the capital are have less economic development, reflecting in serious malnutrition among the population (especially children) as well as a lack of access to information for those who live in rural areas with low levels of education. Health information does not circulate adequately; moreover, the literacy level in Portuguese is low, which further increases the exclusion of this population. For example, they make little demand for vaccines because they do not understand the importance.

Given this context, a group of six health in-service teachers chose to address the issue of vaccination as students had learning difficulty on the subject, and no adequate teaching materials were available. Some videos and their respective screenplays were first presented as examples to problematize audiovisual production with simple equipment (digital camera, pen-drive, and laptop with the Windows movie-maker program). Teachers began the elaboration of the screenplay; they also researched manuals and books about vaccination in the center's library. (This practice was highlighted as an important change in their teaching practices.)
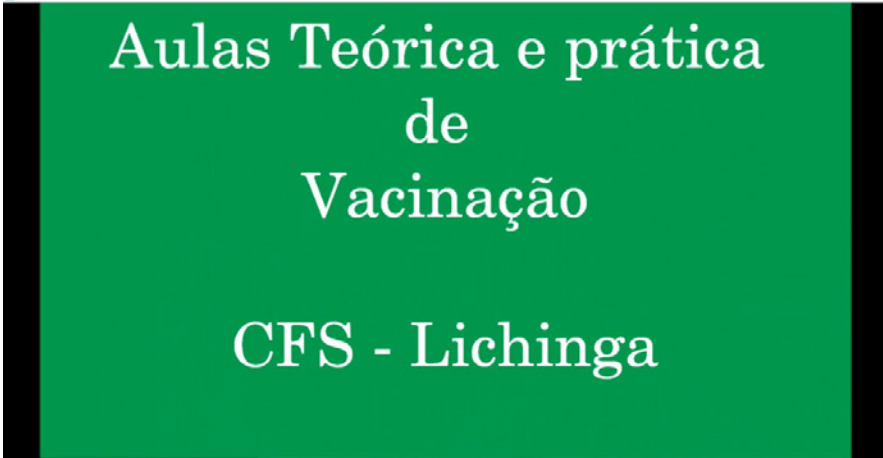
Figure 1: *Video frame (Theoretical and practical classes of vaccination–Health Training Centre–Lichinga) (Video title) produced in the CFS - Lichinga.*

Source: Agnaldo Arroio

Unfortunately, when they attended prior training programs, they typically used the same materials in the so-called "*replicas*" approach, that is, they asked students to copy the contents presented in the materials used for teacher training. It is rare to prepare classes tailored to class needs. When questioned, a teacher reported "*If there is content that a nurse needs to know, we have to give the replicas to have a good professional*," showing that there were no lesson designs for classes. Another teacher said, "*if the student does not learn it is because he does not study or sacrifice himself*." Teachers blamed students who failed.

After deciding the content to be covered in the video, the teachers were allowed to have some audiovisual experiences to express themselves because they never produced videos. In this sense, practical activities for capturing, editing, and displaying video images were developed to promote this experience, as well as listening to one another, which is really important in this case (Larrosa, 2002). From the initial experiences of capturing images, the possibilities of locating the recordings were explored. The teachers researched the necessary materials that were available for producing the intended video; thus, the teachers reworked the screenplay for the video.

Figure 2: *Video frame with the identification of the institution in the CFS–Lichinga (Republic of Mozambique–Niassa Province–Health Provincial Direction–Health Training Centre).*

Source: Agnaldo Arroio

The teachers knew that the videos produced by the health institutions would be organized by the Ministry of Health. Figure 02 displays the identification of the institution (CFS - Lichinga). Because the subject of the video would be vaccination, the teachers showed the institution extensively. This decision was important because it was a new perspective of work to the teachers. Thus, they needed to listen professionally, which is unique for each participant, to connect the past and the present through reflection on the practice (Larrosa, 2002). This situation was emphasized in the video about the relationship of belonging to the group and institution. An important concern for the teachers was what would be "shown" in the video and how the people (of the central administration) of MISAU would receive it. The teachers started becoming aware of the possibility of controlling the narratives of the video; a teacher reported, "*now this video will show what I would like it to show.*"

At the moment of the scene in Figure 03 showing students arriving at the institution, it was possible to discuss the hierarchical relationships present in the center between students and teachers.

In addition to the procedural issues of formality in the educational environment, there was a strong social marking between them. For example, when the teacher walks around the institution and passes in front of the students, they stop talking

immediately and look down. If they are seated, they stand quickly; the situation resembles continence for superiors in military institutions. Thus, to create the video, some students were invited to participate. This experience can bring students and teachers together during the activity because of how the students felt when approaching the teachers and acting together in a collaborative activity such as this. In a way, this experience was very positive as it promoted situations of symmetry, which are vital in an educational environment, as the students are being prepared to work in the health sector. Developing empathy is highly relevant; thus, in addition to conceptual content, procedural and attitudinal content were considered. In other words, preparing people with a humanistic approach is fundamental because they will act in contexts of high social inequality. This type of superiority experience is easily reproduced in the relationship between the patient and the health professional, which can cause several problems. The introduction of media literacy had an important contribution to promoting situations of equality in collaborative, such as the promotion of empathy. It is important to disseminate this type of good practice to teachers across health training institutions. As teachers needed to put themselves in the others' shoes when preparing the lines in the screenplay, the attitudinal contents of interpersonal relationships in group activities could be highlighted in organizing the recording set and in the direction of the video recordings.

Figure 3: *Video frame showing the arrival of students at the institution.*

Source: *Agnaldo Arroio*

However, cultural changes take time. Social markers persist during collaborative activities involving teachers and students (Hargreaves, 1998). As shown in Figure

04, the students' behavior was observed when the teacher entered the room: they stood up and waited for the teacher to start the interaction:
Teacher: Good morning students!

Students (respond in unison): "Good morning, sir!"
Students remain standing.
The students will remain standing until the teacher asks them to sit. It is possible to observe closely that students did not look directly to the teacher; they generally looked down, except two students placed in front of the laptop that to be used in the vaccination theory class.

Figure 4: *Video frame showing a teacher's arrival to the classroom in the CFS - Lichinga.*

Source: *Agnaldo Arroio*

The meaning of the interaction between students and teachers from a dialogical perspective was problematized during classes to value the communicative processes in the classroom. The teachers agreed with the importance of the dialog and elaborated two questions that would be asked by the students during the class to interrogate important aspects about the subject covered in the video. The teachers chose these questions based on their teaching experiences: the difficulties presented by the students. However, two students who positioned themselves at the front and who asked the questions, as seen in Figure 04, were not students but two characterized teachers (that is, teachers acting as students). The relationships between them are very asymmetrical: the superiority of one to the other, and this was naturally reproduced in the video.

The issue persisted despite problematizing it. Thus, it would be inappropriate to exclude them from the screenplay. Before screening the general audience, a session was held only for teachers, and some questions were asked about situations represented in the video to allow teachers to reflect on pedagogical issues seeking to denaturalize such situations and behaviors; although such situations did not seem strange, a more critical reading could be started by analyzing the video together.

When teachers were asked about the decision not to allow students to speak but to select two teachers to act as students, the justified the choice by stating the need to ensure that there would be no errors during the recordings because the errors would remain in the videos. They had not mastered the audiovisual language, did not realize that it would be possible to record as many times as necessary, and were unaware that there the videos would still be edited. The teachers were still being introduced to the subject and needed time to process the new knowledge.

In addition, their justification demonstrated the perception that everything recorded would stay in the video, as if there was no possibility of changes in the material, such as a live recording. Thus, the introduction of media literacy is crucial to enable a less naive reading of the media, promoting a more critical view (Arroio, 2017).

According to the situation "visualized" in the video scenes, it was possible to problematize the pedagogical issues arising from this type of practice as well as the conception of education seeking to denaturalize such practices. However, as the situations analyzed were experienced by the teachers, the strangeness was intense, which might have enabled a more meaningful reflection that triggered change.

Figure 5: *Video frame showing students in a practical class of vaccination at the demonstrations laboratory, CFS–Lichinga (vaccination setor).*

Source: *Agnaldo Arroio*

As shown in Figure 05, a clear difference is observed between the participating characters and observing students during a demonstration of vaccinating children. One of the students had an assertive posture, with the head facing forward and the arms folded backward, unlike the others who had a more contained posture with the arms forward or to the side and with their eyes kept away from facing the teacher.

In the practical class, a teacher demonstrated the procedure for preparing and applying the vaccine on a child's dummy, as well as the approach to patients. In this case, a mother (student in civilian clothes) is wrapped in a "*capulana*" fabric, with prints typical of the northern region. When the video was shown in another region of the country, participants recognized the patterns of "*capulana*" fabric, and the music, rhythms, and beats were typical of the predominant ethnicity in the region, constituting elements of identification as shown in Figure 06.

This point was essential to engage the participants who were proud to hear their local music as a soundtrack, dress in "*capulana*," and feature in the video as actors.

Figure 6: *Video frame of vaccine administering demonstration in the practical class.*

Source: *Agnaldo Arroio*

To develop needle-handling skills, vaccine students are used to reading the description of the procedure from a book containing text without images; in the demonstration, the watched the teacher perform a demonstration during practical laboratory classes. Unfortunately, students were assessed without practical evidence, causing less learning and poor assessment results. Even in a demonstration class, the practical occurred only once, and students did not practice but were theoretically evaluated on the application of the vaccine.

After the discussion, in-service teachers realized the possibilities of using video as a teaching tool to support students' learning about practical procedures. They understood the possibilities of using video to demonstrate the correct ways of performing the procedures, and they could even attend as many times as necessary to learn and improve the equipment handling skills. Instead of merely watching a demonstration of practice by the teacher, students could watch the videos as many times as they deemed necessary. They could also use the video to promote good practices for the general illiterate community who could not read informative texts. Thus, the community could understand the basic health information presented in the videos. It is vital to empower the inclusion of the illiterate community members for better health care and reduction in inequalities in basic health care in Mozambique.

Another relevant aspect was the introduction to media literacy, considering that the teacher had no prior training on the subject, making his conceptions naive. To the participants, everything that appeared in the video was true, as if it were a real-life record. Hence, when they started to realize that they could decide what would be reported in the video, they became less naive in reading the media.

For example, during the video recordings, errors were made by the in-service teacher when demonstrating the application of the vaccine to repeat the procedure; perhaps he was too conscious of the recording. Each time the teacher wanted to open a new syringe, the work was interrupted because he was not convinced that he could simply demonstrate by acting and that it unnecessary to perform the actual procedure. Some insisted on the need to record the complete procedure as it happened without interruptions, despite the conception that everything that was recorded would appear in the video as if it were a record of reality.

At the end of the video, as shown in Figure 07, the in-service teachers chose a location in front of a "*machamba*" (plantation) showing the corn field and the "*maçarocas*" (corn cobs). Although there is no association between "*maçarocas*" (corn cobs) with the vaccination theme, the group considered it imperative to include it in the video. The group was proud of their "*machamba*" (plantation) that was cultivated by students as extracurricular activity on weekends as well as for food enrichment, given the malnutrition situation of the population in this region.

The most impressive experience occurred during the video presentation for the school community. During the video presentation at the final scene when the "*machamba*" appeared on the screen, positive reactions were provoked among the general audience, indicating an element of immediate identification with the audience of the training center.

In this sense, it was crucial to know how to listen to the participants to understand the reasons for including such elements in the video (Ferrés & Piscitelli, 2012).

An essential point to be considered is related to the sustainability of these practices based on media because of production costs. It is imperative for Mozambique to

produce low-cost educational materials that are more appropriate to their needs and demands (Mauaie, Ito and Arroio, 2014).

Figure 7: *Video frame showing the end of the vaccination class, CFS - Lichinga.*

Source: *Agnaldo Arroio*

The final credits in the video were vital for recognizing the work done, naming everyone involved in the process. Positive reactions were observed among the audience at the time of showing the credits, including the names of the teachers, students, and employees of the center who participated in this collaborative activity.

Considerations

During this activity, videos were presented, and the teachers started analyzing the message, content, and intention of the video. They began to discuss what could have been done differently, reflecting on the search for evidence-based solutions, as in a cycle started by interpretation, analysis, explanation, and evaluation. It was important for them to be interested in the audiovisual language so that they could plan and create their own videos (Thoman and Jolls, 2005).

The results showed that many institutions already had basic equipment such as computers; however, their practices remained the same and they did not realize the need for training human resources. Perhaps the lack of appreciation of the teacher and human resources as well as an overvaluation of equipment reinforced this distraction.

An in-service teacher noted, "*I had never had this type of training since I graduated as a nurse, I need pedagogical training.*" Some in-service teachers had already attended other trainings, but noted that they were technical trainings for instruction in the use of materials already created by partners and referred to this type of training. Unfortunately, that kind of training reinforced the "replica" practice, as mentioned above. As they received the information in a transmissible perspective, they merely reproduced it by transmitting it to students inadequately. This practice could not be reflected on. However, as observed, reflection is an important step toward the development of critical vision.

Another opinion reported by the teachers was "*Now, I can work out my materials for each class. If I do not have any material of a theme I can produce.*" The teacher's enthusiasm was noticeable in the perception that after the educational program, they could produce their materials according to their needs. As this is a process, it is expected to take time.

Through a South African study on teachers' empowerment, Mokhele (2013) noted as presented here some examples of how a professional development program can begin to reshape a teachers' identity. It was also observed that the teachers were not confident about changing practices. For example, by the statement "*We need monitoring after training, to help us when we have difficulties, a monitoring process,*" in-service teachers showed interest in continuing the production of educational materials afterward but still felt insecure.

It is necessary to recognize the amount of new information the teachers will encounter in the process of change, which takes time. Hence, when using the equipment with new possibilities, it is natural for the teacher to feel insecure and demand technical support. For example, a teacher remarked, "*This is not complicated, with a basic computer we can do many beautiful things, but we need help from the ministry, because if we have problems or difficulties who will help us?*"

As the country has a high level of diversity, the problems are also highly different in the territory. Thus, each institution should be able to prepare its materials according to its own needs and consideration of local problems and contexts. Centralizing the production of materials makes local context unfeasible; moreover, as practices are centered on mere transmission, teachers reproduce the information received without adapting them. They ask no questions and perform no reflection on the practices and local problems. Consequently, they prepare students for a different reality from that encountered daily.

As observed from the experience report, the teachers experienced a motivating learning environment in the production of the video and developed their communication and collaboration skills. As the teachers created the video narrative with the inclusion of local elements, they developed creative skills as they adapted to their everyday contexts by choosing the "what" and "how" of the video. Through discussion sessions in which the teachers referred to the books consulted to produce

the video screenplay, they researched the conceptual contents that would be presented in the video, making decisions by critical thinking based on evidence and knowledge (Kivunja, 2015).

In general, previous educational programs focused on training using books or manuals already prepared by foreign organizations. Hence, the teachers noted that "they had never participated in this type of training" in which they were the protagonists of their actions, made decisions, and defined what needed to be produced. The results showed that the impact on the educational and professional processes was perceived. In preparing the videos, teachers needed to review the content and procedural content by conducting research through books, manuals, and curricular guidelines on the topics. Change was observed because the teachers initially received the presentation slides but later started planning and preparing the necessary materials by themselves in consideration of the local context. Thus, the reconciliation of pedagogical training with the provision of equipment is essential (Buckingham, 2007).

According to Borko (2004), intensive professional development programs can help teachers to improve their practices and increase their knowledge. In addition to researching to prepare for classes, which was not the routine, the teachers reproduced the materials received. In this sense, participation in training enabled the acquisition of knowledge about education and the media. As stated by Schmidt (2013), training and experience can promote interest in media-literacy education.

As stated by Schlichting et al. (2007), tailored media-based materials are effective for communicating with the general public that has a low level of health literacy. Videos with a high level of identification elements can be used to publicize and promote health care, especially for the part of the population excluded because of illiteracy in Portuguese. The information was produced on advertising posters and posted on the walls of health centers, but many people could not read it. Thus, video production, even in local languages, would allow the display of basic information for the illiterate population.

In-service teachers can become agents of change in health education when provided with knowledge of education, health, media, video production experiences, equipment, and support. As highlighted by UNESCO's proposal for MIL cities (2019), the public health system can be more inclusive for communities and interact with other sectors of society, such as educational and health care institutions.

According to Wilson (2012), it is crucial to promote a network of teachers who are implementing MIL initiatives to enable the implementation of such practices in the curriculum as suggested in the curriculum proposal for MIL teachers (Wilson *et al*, 2011). In this case, in-service teachers are beginners, since they were introduced to MIL; mutual support can strengthen the creation of a community of practice in MIL in the context of health education.

Conclusion

The impact of the professional development educational program and the introduction of media literacy for in-service teachers at the Ministry of Health's health training center were investigated. With the expansion of their knowledge and repertoire of experiences for new practices of using video in health education, teachers were able to value their cultures, languages, and local contexts, depending on their professional development for decision-making autonomy.

The use of the media in a competent way clearly brought students and teachers together in collaborative activities, aroused students' interest in classes, and motivated them in the health training process. In the professional development of teachers, their local contexts and demands should be prioritized; they should become less dependent on foreign organizations and should be able to choose and decide what and how wing practices and classes will be held. The teacher should analyze, research, and plan classes according to the students' needs from a more critical perspective unlike reproducing received slides and reinforcing the "*replicas.*"

It was possible to start a more critical reading about the media, especially the video, decreasing the perception of video as record of reality. Teachers also realized that they could choose the narratives as well as the "what" and "how" of the video.

The Republic of Mozambique has more than 40 languages in use, although Portuguese is the official language. This implies that the development and local production of educational material, according to their real demands and considering the different languages and cultures, can have a great impact on promoting basic health for all citizens. Notably, the teachers realized the potential of communication on basic health care for the illiterate population through video.

Summarizing the practice of empowerment in a context of inequality seems to be fundamental to free teachers from the vices of centralized decisions, making changes slow and bureaucratic. The introduction to media literacy can contribute to teacher autonomy by developing materials supported by simple equipment such as a personal computer and digital camera. This would enable the sustainability of the practices through a change process by eliminating the need for reallocating major financial resources for such changes. Teachers now start their journeys as content producers and not just naive consumers; they can access, analyze, and choose what they need and decide for themselves what would be best for the situations they face every day.

As said by Freire and Macedo (1987), the student and teacher have the right to "*read the word and the world*." An articulation of MIL with education can enable an understanding of written text or images in the video. This foster students' emancipation and teachers' empowerment to analyze and evaluate the information (especially their representations of the world) portrayed and broadcast by the media.

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References

Arroio, A. (2017). Is media literacy an urgent issue in education for all?, *Problems of Education in the 21st Century*, *75*(3), 416-418. http://www.scientiasocialis.lt/pec/node/files/pdf/vol75/416-418.Arroio_Vol.75-5_PEC.pdf

Arroio, A. (2010). Context based learning: A role for cinema in science education. *Science Education International*, *21*(3), 131-143. https://files.eric.ed.gov/fulltext/EJ904864.pdf

Bardin, L. (2011). *Content analysis*. Issues 70.

Bimgimlas, K. A. (2009). Barriers to the successful Integration of ICT in Teaching and Learning Environments: Review of the literature. *Eurasia Journal of Mathematics & Technology Education*, *5* (3), 235-245. https://doi.org/10.12973/ejmste/75275

Bogdan, R., Biklen, S. (1994). *Investigação qualitativa em educação*. Porto Editora.

Borko, H. (2004). Professional development and teacher learning: Mapping the terrain. *Educational Researcher, 33*(8), 3-15. https://doi.org/10.3102/0013189X033008003

Buckingham, D. (2007). Digital media literacy: Rethinking media education in the age of the internet. *Research in Comparative and International Education*, *2*(1), 43-55. https://doi.org/10.2304/rcie.2007.2.1.43

Ferrés, J., Piscitelli. A. (2012). *La competencia mediática: Propuesta articulada de dimensiones e indicadores. Comunicar*. 38, 75-82 https://doi.org/10.3916/C38-2012-02-08

Freire, P., Macedo, D. P. (1987). *Literacy: Reading the word & the world*. South Hadley, Mass: Bergin & Garvey Publishers.

Grabe, M., Grabe, C. (2007). *Integrating technology for meaningful learning* (5th ed.) Houghton Mifflin.

Hargreaves, A. (1998). *Teachers in times of change: the work and culture of teachers in the postmodern age*. McGraw Hill.

Kivunja, C. (2015). Exploring the pedagogical meaning and implications of the 4Cs "super skills" for the 21st century through Bruner's 5E lenses of knowledge construction to improve pedagogies of the new learning paradigm. *Creative Education*, 6, 224-239. http://dx.doi.org/10.4236/ce.2015.62021

Larrosa, J. (2002). Notes on experience and experience knowledge. *Revista Brasileira de Educação*, *19*, 20-28. http://dx.doi.org/10.1590/S1413-24782002000100003

Mauaie, C., Ito, L. S., Arroio, A. (2014). Media literacy and health education: Empowering teachers in the Republic of Mozambique. *Problems of Education in the 21st Century*, *60*(1), 114–124. http://www.scientiasocialis.lt/pec/files/pdf/vol60/114-124.Mauaie_Vol.60.pdf

Ministry of Health of Mozambique-Human Resources Directorate, (2008). National Plan for the Development of Human Resources for Health 2008-2015, Maputo: MISAU.

Mokhele, M. (2013). Empowering teachers: An alternative model for professional development in South Africa. *Journal of Social Sciences*, *34*(1), 73-81. https://doi.org/10.1080/09 718923.2013.11893119

Moreno, R. (2005). *Multimedia learning with animated pedagogical agents*. In R. Mayer (Ed.). Cambridge handbook of multimedia learning (pp. 507–524). Cambridge University Press, 2005.

Ministry of Health. (2008). *National Human Resources Development Plan for Health (PNDRH) 2008-2015*. Ministério de Saúde, Moçambique.

Schlichting, J A.., Quinn, M. T., Heuer, L. J., Schaefer, C. T., Drum, M. L., & Chin, M. H. (2007). Provider perception of limited health literacy in community health centers. *Patient Education & Counseling*, *69* (1-3), 114-120. https://doi.org/10.1016/j.pec.2007.08.003

Schmidt, H. C. (2013). Media literacy education from kindergarten to college: A comparison of how media literacy is addressed across the educational system. *Journal of Media Literacy Education, 5*(1). https://digitalcommons.uri.edu/jmle/vol5/iss1/3

Thoman, E. & Jolls, T. (2005). *Literacy for the 21st century: An overview & orientation guide to media literacy education*. CML Media Lit Kit.http://www.medialit.org/sites/default/files/01_MLKorientation.pdf

Tornero, J. M. P., Varis, T. (2010). *Media Literacy and New Humanism*. Institute for Information Technologies in Education - UNESCO.

UNESCO's Global Framework for Media and Information Literacy Cities. (2019). https://en.unesco.org/sites/default/files/global_framework_for_mil_cities.pdf

Torres, M. & Mercado, M. (2006). The need for critical media literacy in teacher education core curricula. *Educational Sciences*, 39, 260-281. https://eric.ed.gov/?id=EJ739736

UNESCO. (2019). Global Framework for Media and Information Literacy Cities. https://en.unesco.org/sites/default/files/global_framework_for_mil_cities.pdf

Wilson, C., Grizzle A., Tuazon, R., Akyempong, K., Cheung, C. (2011). *Media and Information Curriculum for Teachers*. UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000192971

Wilson, C. (2012). *Media and information literacy: Pedagogy and possibilities.* Comunicar, 39, 15-24 https://www.scipedia.com/wd/images/2/24/Draft_Content_364971274-26657.pdf