



Z-Xaloc: A Strategy to Train Communication Skills in Veterinary Studies

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Abstract

Z-Xaloc is a proposal of practical activities designed to improve communication, a part of the non-technical skills necessary for professionalism, in veterinary students. It has been implemented into the official program for Zoonoses and Preventive Medicine subject along with the last course of the Veterinary degree at the University of Zaragoza (Spain). Z-Xaloc is focused on training communication and decision-making ability under the umbrella of preventive medicine contents and knowledge handling. Although non-technical skills have been identified as important components of the Veterinary Professional Identity (VPI) and are a social demand to the veterinary professionals, it is common they are poorly trained during their veterinary studies. Z-Xaloc proposal involves a diverse range of people playing different roles along with the activities: from students to health professionals, farmers and consumers. In all the activities, veterinary students are the primary addressees of the training process. Non-students, inside and outside the university, are the secondary addressees of the activities. The activities of Z-Xaloc are mainly supported under a “teamwork” strategy and “problem-based learning” (PBL) methodology. Various “real health-care cases” adapted under a PBL structure are the nexus between veterinary students and the non-student people involved. An assessment of the proposal indicates that both the communication and decision-making ability of veterinary students have been enhanced and also contributions to social education from the people involved have been applied. Students indicated, by the way of questionnaires and meetings with the responsibility for the proposal, that it effectively contributed to them acquiring non-technical competencies necessary for veterinary professionals, while non-student evaluations revealed that their educational interactions with veterinary students were highly positive.

Subject Areas

Veterinary Medicine

Keywords

Preventive Medicine, Competencies, Communication Skills, Decision Making, Veterinary Studies

1. Introduction: Why Z-Xaloc?

In 1998, the Sorbonnés declaration signed by France, Germany, Italy, and the United Kingdom established the first political step to changing the Education model in Europe. In 1999, a group of representatives from European countries, including Russia and Turkey, signed Bologna's declaration. It defined the European Higher Education Area (EHEA) to adapt university education to social demands. Linked to it, the "Tuning Educational Structures in Europe" project included strategies to develop this EHEA one of them was the Learning Process Based on Competencies

(https://eacea.ec.europa.eu/national-policies/eurydice/sites/default/files/ehea_bologna_2020.pdf).

"Tuning" defined generic and specific competencies and ways to acquire them. Generic competencies included: instrumental (use of methodologies), interpersonal (social interaction), and systematic (comprehension) skills, suggesting that not only technical skills (as a specific competency) are required. Non-technical skills (individual competencies) are also essential in the learning process of future professionals.

In health-related areas, in which professionals work to improve human, animal, and environmental health, final success depends on their interaction with the different components of the problem [1]. The interactions of veterinary professionals with other social groups such as: patients, farmers, pet owners, or colleagues, are part of the most important factors influencing the final health result.

In order to improve these interactions in the working environment, it is essential to use communication skills (non-technical competencies) correctly, which requires paying special attention to the communication training process. The improvement of these skills in universities using training courses or specific practical activities seems to be the optimal method of preparation for future health professionals [2].

The European Association of Veterinary Establishments (EAVE) identifies resources to assist the "Veterinary students learning". Non-technical competencies, such as communication skills are included: communication with clients, the public, and colleagues using appropriate language, are competencies for graduates (Day One Competencies 1.4) [3]-[9].

The experience has demonstrated that communication should be integrated into the continuous educational subjects of the veterinary curriculum because multiple interactions affect the Veterinary Professional Identity (VPI): vet-patient interaction (animal-owner, farmer or consumer), vet-institutions (administration), vet-colleagues (other health professionals) or vet-environment (social fac-

tors affecting decision making) [9]-[19]. The use of communication skills allows for interesting feedback of information during those interactions [1]-[20], but also affects the personal satisfaction of veterinarians [21] [22] [23].

The paradox is that veterinarians do not feel prepared to manage these particular skills in most circumstances, nor do veterinary students comprehend their significance in veterinary professionalism. The Calgary Cambridge guide describes the importance of clinician-patient communication and how to improve it, resulting in enhanced case solving and personal satisfaction [10]-[25].

The perception of these social demands for veterinarians and the comprehension of the VPI requirements, along with our experiences in international public health projects [26] [27] [28], suggested a paradigm: “only correctly informed people apply correctly the proposed preventive medicine strategy”.

In 2008, this observation, together with comments of other authors [3]-[29] emboldened us to introduce the first Z-Xaloc activity which was created to improve communication with farmers. According to the good results, the activity was included in students learning program and, in the later years, new activities have been added to complete the current proposal.

Z-Xaloc is proposed as a “dynamic” package of activities designed to improve non-technical skills. The proposal adopts working strategies, contents, or evaluation criteria, thereby considering the suggestions of all proposal participants. In order to improve non-technical skills, we considered it interesting to implement the “teamwork” strategy in all of the activities.

2. Methodology: How Does Z-Xaloc Work?

2.1. General Organization of the Proposal

Currently Z-Xaloc proposal involves Veterinary students and lecturers of: Zoonoses and Preventive Medicine in the Veterinary degree at the University of Zaragoza, and other social collectives: farmers, external veterinary professionals, bachelor students and the pharmaceutical industry.

The Z-Xaloc package of activities is included in the official learning program of the subject. A part of these activities (biosafety poster, risk analysis technical report and vaccine evaluation) are compulsory contributions to the final evaluation. Nevertheless, the rest of the activities are voluntary.

Students are organized into working teams of 2 to 6 people depending on the activity. The majority of the activities use PBL methodology that replicates real experiences which are basic in veterinary education [30] [31] [32] [33] [34].

After cases presentation to the students, homework and tutorial sessions with lecturers allow them to advance, gather new information and to explore the case. In the final step of the activities, each team has to explain their particular case to diverse audience, depending on the objective of the activity. This information process is performed by using different communication channels and presentation strategies.

In addition to communication improvement, students use other parallel skills

such as: research, analysis criteria, external information processing (channel, language or verbal expression), team organization, personal organization, communication and leadership ability, that also are improved as identified previous studies [34] [35].

2.2. Activities Package

Z-Xaloc includes seven different activities with the next structure and development:

1) Farm biosafety “poster” design.

Objective: To train students in farmer-veterinarian communication-presenting vital information to the farmer using a simple and comprehensive approach.

Method: Twenty-four teams (of 5 - 6 students per team) are organized with the objective of designing a biosecurity strategy after visiting a farm and informing the farmer about it. The biosafety strategy must be presented in a poster that is exhibited in the school for a predetermined number of days and comments can be sent to the lecturers.

2) Animal movement risk analysis “technical report”.

Objective: To train students in administration-veterinarian communication by way of designing a technical report including risk analysis and risk communication, to be applied at the health policy level.

Method: Following an animal movement case presentation, each team must develop a qualitative risk analysis of this movement and define additional preventive measures to the designated health police. A final risk assessment is conducted according to a standardized model that has been presented in theoretical classroom sessions [36]. The risk assessment is presented in a tutorial session and finally, a technical report, including risk analysis and proposed Preventive Medicine measures, must be written.

3) Vaccine “evaluation” and uses investigation.

Objective: To learn how to acquire knowledge about a vaccine’s quality, their associated benefits or risks and how to evaluate and communicate them.

Method: Every team receives a commercial vaccine that they have to analyze using the information contained in the product information. They have to examine the information and prepare an vaccine evaluation documenting the quality of the product and its recommended usage.

The structure of the three compulsory activities involve tutorial “face-to-face” sessions (classroom or farm visits) and “homework” as parts of them. The rest of Z-Xaloc activities are voluntary.

4) “Debate” presentation and moderation in a professional open seminar.

Objective: To train public-veterinarian communication. Through oral discussion, the personal ability to debate is improved.

Method: An open seminar on Preventive Medicine is organized under a pharmaceutical industry support. In the seminar two or three expert professional conferences are presented and at the end of the seminar, a debate about any

related topic (for example: advantages of vaccination or antibiotic use) is presented and moderated involving two team with different points of view about the topic.

5) “Critical reading” of health-related documents.

Objective: To train a veterinarian’s critical point of view about a paper.

Method: Health-related articles published in communication media are presented to the student teams. They have to analyze them and final present and discuss every article in a face to face classroom session (topics are selected according to their social impact, in example: “to vaccinate or not vaccinate”).

6) Animal disease “comic design”.

Objective: To train the ability to inform about a disease and its control strategy in an enjoyable and comprehensive way, a comic.

Method: Every academic year an infectious disease is selected as “the disease of the course”. Groups of 3 - 4 students are required to design a comic that will be used as an educational tool for farmers. Students must collect information about the disease after they design a comic using the background research. All designed comics are displayed at the school and the best comic is selected by a group of external professionals. Currently, 5 different diseases have been studied and presented in the comics.

7) “Scholar educational workshops”.

Objective: To train the educational ability of veterinary students to contribute to the education at school level.

Method: This activity is carried out in collaboration with two Bachelor schools of Zaragoza. The activity has been implemented into the students’ biology course during the 1st and 2nd year of the Bachelor’s program in agreement with the lecturers of the school. Every year, some health topics related to the contents of the biology program are selected (for example: emerging diseases and microorganisms, antibiotic resistant microorganisms, immunology and vaccination or diseases and climate change).

Teams including 2 or 3 veterinary students must prepare a presentation about these topics based on the example of any real case that has been popular in mainstream media. Under school supervision and university lecturer supervision, students design a presentation and finally they exhibit the lesson to their fellow students in a classroom setting. During the previous days, in order to allow Bachelor’s students to visit the exhibition, school lecturers introduce the exhibition topics in the classroom.

As previously stated in the objectives of the presented activities, the different environments of the cases trigger different ways to improve communication skill; however, in all the activities, working and handling decision-making ability is necessary since solutions are required and/or questions must be answered.

3. Results and Discussion: Preliminary Evaluation of the Proposal

Communication skills are components of the VPI that must be used on a profes-

sional level [9]. In our practical activities we have detected that these skills are not correctly used by our students when we required them to solve a case where communication is a part of the solving strategy. We concluded there was a lack of training in these skills which made it necessary to introduce their training along the veterinary curriculum, with various role play scenarios, as suggested by some authors within the last 20 years [9]-[29].

In agreement with other studies, it was detected the difficulties to teach all the necessary communication skills to veterinary students because of the time limit in the curriculum. Additionally, teaching these skills require a lot of experimental or practical methods. Only providing both, didactic and experiential training, allows students to learn the use of communication skills in a successful and interdisciplinary way, which will be a guarantee of quality information in health-related topics [28] [29].

The majority of the communication training programs carried out until today include specific courses for communication skills training [20]-[29]. Our proposal integrates the use of different communication skills into technical subjects of the veterinary curriculum, linking these skills with the acquisition of veterinary knowledge.

In the design of the proposal, we assumed that communication skills include some components to consider: what to communicate, how to communicate and communication attitudes [11]. The diversity in the work environment of the Z-Xaloc activities suggests that all of them are trained. Students must play different veterinary roles and must decide what to communicate and how to communicate, questions that have been considered relevant by other studies [1].

Our general view of the proposal application and the evaluations of the participants indicate that decision making and communication skills have been largely enhanced. In the first scenario, posters and comics have been identified by students as useful information tools to help the farmers to know the way to prevent diseases in a simple way. They suggest that their use contributed to understand their utility.

In the second scenario, risk analysis technical report and vaccine evaluation activities help the students to understand that communication requires technical language, the handling of epidemiological and medical information, and the organization and the presentation of this information according to scientist criteria.

The third scenario is based on the use of information for social education in school, which contributes to young people's education and it lets veterinary students understand the need to adapt the required information to the audience (the importance of oral and written expression).

The last scenario, focused on the promotion of personal opinion and critical analysis of documents in technical seminars and critical readings, has demonstrated the importance of prior research in decision making.

In addition to communication skills improvement, parallel non-technical skills such as conflict resolution capabilities or leadership initiatives also have

been enhanced in all the activities. Z-Xaloc has been carefully organized and structured in order to give continuity in their link with the specific contents of the subject Zoonoses and Preventive Medicine.

Teamwork is the first pillar of this transversal training project. Lecturer supervision of every team and tutorial action lets us demonstrate the contribution to the emergence of leadership in every team. The second pillar is the use of real cases adapted to PBL methodology which generates a scenario that was identified by the students as personally challenging. Our results using the PBL strategy agrees with the results of other authors [30] [31] [32] [33] [34]. We also could conclude that students consider it a preferable method in comparison to traditional courses that are assumed as boring and irrelevant [31]. The use of PBL methodology together with teamwork, where multiple types of people can be found (regardless of gender, geographical origin, culture, personality), benefit the learning process because it introduces the diversity of criteria or opinion and the need to arrive at a final consensus.

The general balance is considered positive from two different points of view. The first one is the “opinion of the veterinary students” that conveyed their satisfaction for the training in non-technical skills without losing Preventive Medicine perspective. In addition, students considered it important to include the activities as part of their evaluation of the subject removing the weight of the traditional theoretical exam. The second valuable perspective is the “point of view of the non-veterinary students” that regarded the newly acquired information as very useful.

A special challenge for us was the result of the scholar educational workshops (activity 7) attending to the unknown reactions of undergraduate students when they had their fellow university students in front of them instead of their lecturers. The high level of interaction between the bachelor students and their active participation in the classroom questions and discussions was impressive. In the other side, the involved number of students interested to take part in the activity increased along the last years: 8, 12, 16 and 25.

Days after the activity development, a survey was given to those undergraduate students. Questions related to the future value of the activity for them or their opinion about the continuity and improvement of the workshops in subsequent years, were included in the survey. Results were that 100% of the students considered the contribution of the activity in their undergraduate learning process as positive.

Moreover, school lecturer evaluation of the activity indicates their satisfaction with the learning results in their students, which emboldened us to increase the number of workshops every year.

Although the activity has been interrupted because COVID19 pandemic over the years 2020-21 and 2021-22, we consider a significant result of the strategy, the quantitative evolution of the student participation in the voluntary activities. In the course 2017-18, a total of 53.1% of the students took part in any of these activities evolving to 63.4% in 2019-20. In the comic design activity this evolu-

tion was highly significant: a single participant team in 2014-15, followed by eleven teams in 2015-16, thirteen teams in 2016-17 and fourteen teams (the maximum number of teams admitted) in 2017-18, 2018-19 and 2019-20.

Additionally, the activities contributed to the results of the subject Zoonoses and Preventive Medicine in the student's evaluation annual survey at the University of Zaragoza, belonging to the group of the best evaluated subjects (score in the last year: 4.13 out of maximum of 5 points).

The link between non-technical skills and the presented activities provided students with an innovative, practical and fun learning process. Other studies, reflecting greater insights in non-technical competencies improvement support our conclusions on the significance of communication skills training in veterinary students [18]-[29].

4. Conclusion

Z-Xaloc has demonstrated that it is possible to improve the specific knowledge and ability of the future Veterinary Professionals during their University learning stage by means of the inclusion of transversal competencies and their skills in the learning program of some disciplines. The use of skills such as poster design or risk analysis, together with the use of Problem Based Learning and the team working methodology, contribute to increasing the analysis ability, decision making, and critical view of the students. At the same time, the user of some tools such as Scholar educational workshops or debate can contribute to increasing the health education level of the general population, a critical point in the health promotion program, as a consequence of the interface between Veterinary students-general population (society).

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Conflicts of Interest

The authors declare no conflicts of interest.

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