

DEVELOPMENT OF COMPETENCES IN PREVENTION OF ADDICTIONS BY USING ICT IN SECONDARY EDUCATION

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Abstract

Our work deals with Preventing Addictions while studying the Human Nervous System in 3rd ESO group, -14 to 15 years old. It's the right time to help our students to develop a critical attitude to such problem, preventing them to consume drugs, one of the most important objectives in education.

In our proposal, learners approach the topics through a personal and group research work, using ICT - Information and Communications Technologies-, which skills are reinforced while teaching them how structure, explain and present their work to the rest of the class.

The main steps that have been followed were:

- Attending to their personal characteristics and relationships within the class, students were divided in heterogenous work groups of three or four components, in order to perform a collaborative work. Every group had to study a different drug.
- Each working group received a list of several items to be studied during the research phase and later explained with their slide show. Among the topics, for every drug they had to find out details on where and how we obtain it, which are its major effects in short, medium and long term, and so on. But also, each group had to deal with an important aspect related with all drugs, like traffic, therapeutical use, advertisement (for legalized ones), rehabilitation or the relation between drug and society.
- Participants had to decide how to conduct the research and who was responsible for each of the different tasks: finding information, images and data tables, designing the slides and the presentation, and so on.
- As a final task, they had to explain to their fellows their work, using their own slides and attending their doubts and answering their questions. As in most peer education experiences, questions placed by their fellows are easily understandable and show their real doubts and thoughts.
- During the first sessions, participants discussed and fixed common criteria for assessing their tasks and their output. So, lastly, they assessed themselves and the other participants.

As shown later in this paper, we have achieved optimal results on the development of preventing attitudes and health promotion, as also in general education.

Keywords: health education, prevention of addictions, health competences, school health.

1 INTRODUCTION

Health Education has been considered as one the innovation fields in the Spanish Educational Reform and one the transversal items in its plans and syllabuses since the LOGSE - Ley Orgánica General del Sistema Educativo (1990) [1]. From then on, it has gained more and more importance in education, both formal and informal and also in social education, as it focuses on health prevention and life quality improvement. One of its main objectives from twelve years on is preventing drug addictions, as at such age drugs will begin to appear in their life, while they haven't still develop neither criteria nor resources to confront them. Preventing drug addictions does not only request good information. It is also even more important our youths to built up attitudes and behaviours that help them to act correctly. In fact, among the Basic Competences to be developed, the competence "Interaction with the surrounding world" holds a specific chapter for Health Education.

In addition to such proposal of the European Commission, WHO -World Health Organization- planned the Health Promoting Schools initiative [2] which tends to introduce new innovative elements that

surpass the traditional way of transmitting knowledge. Schools are demanded to adopt an active and dynamic role by offering unique environment where youths can acquire integral compromises on health promotion [3].

And although it's a fact that school are always promoting healthy behaviours, now society is also demanding a new effort with a new perspective: their contribution to Health Promotion by fostering an active participation, contributing to establish the health related politic and creating healthy inner and outer environments. By this, health promotion becomes an add-on value to the school ones [4].

Using ICT for finding information and designing a presentation to the class, performing an oral exposure and a later directing a debate between the students, improves their education, as they have to find out, organize and expose information, and at the same time increases their interest, as they become active players in the on-going events. By these new approach education abandons the monotonous and repetitive way of teaching.

1.1 Competences in the Education

Competences where first approached in the sixties, in the labour market where companies looked for qualified and competent workers [5]. In fact, competence is easily related with concepts like ability, skill, proficiency, attitude, etc., grown under the need of specifying practical activities to be used to assess efficiency.

In Education, our target, competences have acquired recently a special significance. Summarizing a revision of the different definitions of competence, we can conclude that [6]:

- Competences pretend the achievement of effective or excellent tasks.
- These tasks are related to the specifications of an occupation or a clearly defined professional performance.
- Competence raises always in a context where the competition is located. Alone, it is empty. For this reason, it can not be static, since it owes to a context in constant change and evolution.
- The competence is structured and organized and it involves implementing a set of different elements as knowledge, skills, attitudes, behaviors, among others.
- The competence is always linked to action.
- It can be generalized to a wide diversity of situations.

Discussing about competences in education means to consider both social and market requirements. These requirements are determined by a number of social changes and transformations that request undeniable adjustments and reforms of the educational systems, which have to establish the pertinent mechanisms and tools to provide an answer to the needs and demands of our society.

Under these conditions, the approach for competences in education gets sense and arises as an ideal solution for the challenges of our society that demands "to mobilize knowledge to solve problems in an a autonomous and creative manner adapted to the context and to the problems" [7], taking into account the proposals of the OECD DeSeCo report included in the six main characteristics which clarify the term competence [8] shall apply:

- Competences are holistic and integrated: giving response to complex situations implies that they integrate external demands, individual attributes and the peculiarities of the nearby and distant contexts and scenarios.
- Competences will be interpreted and intervened by every subject and they do not lay only in each person, but also in the cultural and professional wealth that exists in every context.
- Competences compromise values and attitudes. Closely related to intentions, emotions and values, it is necessary to highlight the need for individuals wanting to learn, finding sense and enjoyment in the adventure of knowing, in discovering new horizons and in acting.
- Competences involve an important ethical component, which supposes being able to know and applying different dilemmas since any human concrete situation supposes confronting, choosing and prioritizing between different moral principles usually in conflict. Finding sense to what one does implies always moral decisions.

- Competences are thoughtful and transferable to new situations. The ability to transfer the acquired competences to new situations must be understood as an adjustment process, which requires comprehension, investigation and a new application of knowledge and skills.
- Competences are improvable and extendable, they have an evolutionary character.

In short, the distinguishing features of competences are: they constitute complex and adaptive know-how, this is, a knowledge that is not applied in a mechanical but in a reflective way, capable of being adapted to a diversity of contexts and with an inclusive character, covering knowledge, skills, emotions, values and attitudes. Namely, any competence includes "to know", "to know-how " and "to want to do" in particular contexts and situations depending on personal intentions and wishes [9].

So, we can establish that competence is all that a human being needs to give response to the problems he will face in his life of an effective way, using concepts (to know), procedures (to make) and attitudes (to be). It is in this "all" where we combine knowledge and action, providing a response which is effective and coherent with the particular situation.

1.2 Competences in the prevention of addictions

In order to elaborate an instrument that guides the acquisition of competences preventing drug addiction, we conducted a bibliographical search in both areas, general prevention and, specially, school prevention. At present, both the offer and availability of drugs and the existing demand have pushed drugs and drug addictions to the top place they occupy in our social nightmares. Therefore, preventive actions against drugs must focus on these two fields:

- Reduction of the offer of drugs: those are legislative, judicial and police measures tending to diminish the availability of such substances.
- Reduction of the demand of drugs: habitually known as preventive measures addressed to individuals and social groups.

In this way, prevention is defined as "an active process implementing initiatives that tend individuals to modify and improve their integral formation and their quality of life, promoting self-control and collective resistance against drugs" [10].

A preventive action will be any action tending to avoid or diminish the consumption of drugs or to relieve its effects in consumers, their families and relatives and also in the society; all that performed in and on the society and persons, looking for the raise of personal and community resources and fostering persons and social groups to be freer, safer and more solidary when facing problems caused by drugs. Therefore, the prevention is consolidated as a fundamental tool in order to avoid or to delay the abuse of drugs.

Taking into consideration the principles of prevention pointed by the NIDA [11], principles that must be the base of any program of prevention, we have defined the competences involved in the prevention of addictions by specifying their three dimensions of knowing (knowledge), knowing-how (procedures) and being (attitudes), adapted to the problems that closely affect such aged youths (Table 1).

In order to establish which competences in the Prevention of Addictions were most relevant in the obligatory education we have carried out a work that consists of different phases: 1) bibliographical review; 2) internal consensus on the elements that shape the Prevention of the Addictions and, 3) study conducted under Delphi method by external experts.

The members of the COMSAL group (grupo de Investigación en Comunicación y Salud, Research group in Health and Communication) obtained first from the existing bibliography and agreed later a set of problems and competences that students should acquire, specifying the knowledge, skills and attitudes related to the Prevention of the Addictions.

Validation and reliability of the table was fixed using the next strategy:

1. Two components of COMSAL research group, belonging to two different universities elaborated separately a first draft version of the table.
2. COMSAL researchers agreed to the first version of the table.
3. Such version was checked by a fifth researcher of the team, which also added his contributions, to produce a second version.

4. Finally the members of the group met together and conducted a preliminary analysis that improved the table to a final third version.

Following this document, a questionnaire was designed to collect systematically data on competences in the Prevention of Addictions, that allows a former comparison between its data and the results of the Delphi method.

1.3 Competences in the Prevention of Addictions

1.3.1 Table of Competences.

Table 1.- Competences in the Prevention of Addictions and the contents necessary for their acquisition.

COMPETENCE: " TO DETECT AND PREVENT ADDICTIVE BEHAVIOURS "
To know: the effects that the different substances in the produce in the human body and the risky behaviors that conduct to addiction.
To do: to detect risky behaviours, to resist assertively the pressure of the group and to use adequately the sanitary resources.
To be: critical with the consumption of drugs, to accept the addiction as a disease. To foster self-esteem and to take decisions responsibly, to enjoy leisure and free time in a healthy way
TOBACCO
Knowledge
Anatomy and physiology of the organs and devices affected by its consumption.
Components of the tobacco and of its smoke.
Effects produced by tobacco at biological, psychological and social levels.
Problems for passive smokers.
Basic legislation on the consumption of tobacco.
Procedures
Anatomy and physiology of the organs and devices affected by its consumption.
Components of the tobacco and of its smoke.
Effects produced by tobacco at biological, psychological and social levels.
Attitudes
Critical attitude against smoking. Recognition of the dangers and risks of its consumption.
Promotion of the assertivity and self-esteem.
Responsible decisions on the consumption of tobacco.
Respect to the health of non-smokers.
ALCOHOLIC DRINKS (SPIRITS)
Knowledge
Anatomy and physiology of the organs and systems affected by this consumption.
Effects of alcohol and diseases related to its consumption.
Components of alcoholic drinks and possible adulterations.
Knowledge on the use and abuse of alcoholic drinks and advantages of not consuming it.
Basic legislation on the consumption of alcohol.
Effects and consequences of the consumption of alcohol when driving vehicles.

Procedures
To be able to look for and to use trustworthy information about problems related with alcohol and to use the sanitary system for information, prevention and treatment.
To analyze advertisements of alcoholic drinks
To develop and to use the necessary skills to resist the pressure of group.
The Standard Drink Units and its maximum recommended values.
Attitudes
Recognition of the risky behaviours in alcohol consumption
Social relationships without alcohol.
Civic responsible attitude confronting driving vehicles and alcohol consumption.
Healthy enjoyment of leisure and free time.
Critical position against the cultural permissiveness on alcohol consumption
Sensibility to consider alcoholism as a disease.
CANNABIS
Knowledge
Anatomy and physiology of the organs and systems affected by the consumption of cannabis.
Effects and consequences of the consumption of cannabis.
Forms of presentation of the cannabis.
Legislative principles on the possession and consumption of cannabis.
Myths and beliefs on the consumption of cannabis and its therapeutic uses.
Procedures
To develop and to use the necessary skills to resist the pressure of group.
To be able to look for and to use trustworthy information about problems related with cannabis and to use the sanitary system for information, prevention and treatment.
Attitudes
Responsible decisions on cannabis and its consumption.
Recognition of the dangerousness and risks of its consumption. The thin line of "I control".
Healthy enjoyment of leisure and free time.
Promotion of the assertivity and self-esteem.
OTHER DRUGS
Knowledge
Classification and characteristics of the drugs after their effects on the Nervous System.
Ways of consumption and related diseases.
Personal and social repercussions of the consumption of drugs and drug trafficking.

Procedures
To develop and to use the necessary skills to resist the pressure of peers group.
To be able to look for and to use trustworthy information about problems related with drugs and to use the sanitary system for information, prevention and treatment.
Attitudes
Responsible decisions on cannabis and its consumption.
Recognition of the dangerousness and risks of its consumption. The thin line of "I control".
Healthy enjoyment of leisure and free time.
Promotion of the assertivity and self-esteem.

2 METHODOLOGY

We carried out this educational action in the academic year 2014-15 with students of 3rd ESO in IES " Joaquín Sorolla" Secondary School, in Valencia, namely 15 pupils with an heterogeneous profile: learning problems, hyperactivity or with very low academic results. The class was divided in four groups of 3-4 persons.

We considered which drugs were closer to the students of our school, in order to study them and to approach the problems involved in their consumptions. The chosen drugs were: tobacco, alcohol, marijuana and cocaine.

Every group had to study a different drug and, for that, each group received a template with the points to be handled during their research and that should be mentioned in their final presentation. All templates included several common items for any of the studied drugs:

- How the drug is obtained, ways of consumption, legal situation, consumption by countries or social groups, short-term and long-term effects, how to contribute to keep your fellows informed and aware about this drug.
- They also had to write down several interesting questions that could be placed to the students in order to open a debate after their presentation.

In addition, every group had to carry out a specific research involving a special problem related with drug consumption. Their conclusions of this part, although specific and different, could be applied to most drugs:

- The tobacco group had to study also the economic, sanitary and environmental costs of farming and smoking tobacco and the recent changes laws and social tolerance to tobacco.
- Alcohol presentation had to include also the sociology of drinking alcohol, when and in what events is consumed, how is it advertised and the social tolerance to alcohol drinking.
- The marijuana research had to study also the legal consumption of marijuana under therapeutical use: countries or regions which are allowing or considering such possibility and the diseases in which the marijuana is used by therapeutic purpose.
- The cocaine study should also include adulterations of the drugs and their consequences, drug trafficking, and addicts rehabilitation.

First duty for every group was to assign different tasks to each members who, from this moment on, was responsible for it. Also, there was a common discussion on the assessment criteria in order to follow them when performing an auto-assessment and a co-assessment. Groups worked using school computers, looking for the requested information and designing and organizing their presentations. Work was also completed at home, showing their great interest in the research. While cooperating, group reached a major efficiency in their research, being critics with what they were finding and selecting web pages that had better and more reliable information.

With this first stage concluded, most information collected and their work properly structured, group and class discussed the next steps, mainly the major characteristics of the slide show so that they should provoke interest in their companions and bring them later to a successful debate.

Each group built up their presentation, taking special account in the doubts that could arise when explaining their drug and its problems to other students. All those doubts were carefully checked to find the proper answer. Finally, each group organized the final presentation, assigning each component a specific role, so that all had to explain data and facts to the rest of the class. Prior to such sessions, there was a final check and several assays.

During a two-hour session, every group explained their results and conclusions to the whole class. Students were the real main actors in this play, describing the data or the images, explaining the problems caused by each drug and answering the questions of their fellows. Attendants placed quite important questions on the drugs and the drug addiction and after each presentation, a small discussion took place to clarify doubts.

At the end, they organized a debate beginning with the questions that had chosen. We just sat around in a wide circle in the classroom so that everyone could face anyone, and the debate took place in a respectful way, as they established a right to speak and attend to other's opinions. Each one could speak freely, he just needed to share his thoughts in a correct manner.

Assessment was divided in two parts, one conducted by the teachers, the other by themselves. During the firsts sessions, the class had discussed and agreed the different assessment criteria and their percentage in the global mark. In both cases it was used the same assessment rubrics.

The agreed criteria fixed that 60% of the mark was assessed by teachers, while 40% was the student's one, with this distribution:

- ✓ Teacher's 60%: 10% attitude, 10% proposed questions, 20% group work, including the search for information, 20% the presentation and its explanation, including their role as teachers and debate moderators.
- ✓ Student's 40% was split in two: 20% self-assessment of the group work and coordination, 20% was given by the other participants co-assessing their presentation and explanation.

3 RESULTS

For fixing the results we will use several surveys. First day of the experience, without knowing still what was going to happen, our students filled a questionnaire about their knowledge and attitude towards drugs and drug addiction. When concluded the experience, a similar survey was performed, in this case including also questions on the methodology that we had used.

And there is still a third one, to be conducted in June, that's it, three months after finishing this experience, which should help us to find out the efficiency and the persistence of learning with this methodology. Comparison will included questionnaires collecting the knowledge and opinion of three different types of students: students that had prepared and explained the presentation, students that had assisted to the presentations and took part in the debate, and students of the same course that were taught this theme in a traditional way and neither attend to the presentations nor conducted any debate on drugs.

At this moment, we can conclude that the methodology we used, active learning and peer education, is highly appreciated by our students. Table 2 shows the data

Table 2.- Students opinion on the used methodology (N=15).

Item	1	2	3	4
I find this study quite interesting			1	14
I have liked to work in a group			2	13
I have learned to work coordinately in a group	2	1	3	10
I consider the search for information difficult	2		6	7
I find interesting this way to show my work	3	3	4	5
It is important to participate in fixing the assessment criteria	1	2	5	7
It has awakened my interest on this theme	2		3	10
I have felt motivated during these activities			4	11
I have enjoyed the classes, respecting all time the established rules				15

Number of students grading each item

from 1 = No / Less to 4 = Yes / Very much

Such results show that the used methodology has increase their interest and has improved their group work and their coordination, has awoken their interest on these topics and in the diffusion of their work, has brought them to speak in front of others providing arguments and, from the utmost importance, to enjoy the experience. Nevertheless, there are still some difficulties, most of them related with the search of information.

We can concluded that this learning experience has conducted to acquire knowledge and develop a personal attitude which has been shared later with other peers. Peer learning, performing debates, self-assessment and co-assessment has promoted their active participation in their own education.

4 CONCLUSIONS

Health Education is an important objective for schools since it is essential for our learners. Interesting is to treat those topics with the collaboration of the families, something that, although tried, could not be achieved in our case. Such combined education is necessary to deal with topics like those included in this paper and to change attitudes and ways of thinking.

Drug consumption has a special relevancy since our pupils face every day such problem. In most cases, there is great ignorance of its origin and effects, and a lack of personal skills to resist the great social pressure that influences us to consume drugs. In addition to provide information, we have tried to develop responsible attitudes and behaviors.

The methods we have used to inform about drugs and drug addiction have been a right choice and they are an innovative way of studying such substances. Working in a group promotes the cooperation between students, the discussion and the search for agreements. In addition, having distributed the students in heterogeneous groups but taking also in account their friendship, we have contribute to increase their interest in such way of working.

By only denying something to our students or just telling them that something is bad or harmful, such information is not sufficient, since they do not assume its real importance. For them, is just another inquisitorial order from a superior, in this case a teacher, that tries to arrange their thought and feelings. On the other hand, receiving such messages from peers, and discussing them in an open debate places them to consider it from a different point of view and to think about those topics, which helps them to arrive to personal conclusions.

ICT and computers widely used in the search of information and the later slides presentation help our students to use such technology with responsibility, increasing their argumentative capacities and their critical thinking. Deciding of their own assessment fosters their personal commitment in their work and the others ones, being self-confident and recognizing that his opinion is worthy.

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