

RESEARCH

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**MULTIMEDIA CONCEPTUAL REPRESENTATIONS OF WORK AREAS IN SOCIAL EDUCATION PREPARED BY UNIVERSITY STUDENTS (2015-2018)**

**REPRESENTACIONES CONCEPTUALES MULTIMEDIA DE LOS ÁMBITOS DE ACTUACIÓN EN EDUCACIÓN SOCIAL ELABORADOS POR ESTUDIANTES UNIVERSITARIOS (2015-2018)**

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*This piece of research arises from the guideline set by the Teaching Innovation 2.0 project with Information and Communication Technologies in the European Higher Education Area, developed within the framework of the Teaching Innovation and Development Projects of the Pablo de Olavide University (UPO), funded by the Vice-Rectorate for Teaching and European Convergence of said University.*

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## ABSTRACT

The present study arises from the *Teaching Innovation 2.0 project with Information and Communication Technologies in the European Higher Education Area*, developed within the framework of the Innovation and Teaching Development Projects of the Pablo de Olavide University (UPO), financed by the Vice-rectorate of Teaching and European Convergence. The research describes a diachronic study on the conceptions of the specific fields of work in Social Education through the elaboration of multimedia conceptual maps. An innovative planning is carried out and it is developed with 266 students from the courses of Degree of Social Education and Double Degree of Social Education and Social Work of the Pablo de Olavide University, during the academic years 2015/16, 2016/17 and 2017/2018. Through a qualitative methodology, with virtual and quantitative ethnography techniques, the intervention areas in Social Education and Social Work were analyzed with the following results: people with disabilities and mental health (15.37%), drug dependence (14.70%), third age (14.03%), adults (11.25%), childhood (9.47%), immigration (8.35%), sociocultural animation (7.57%), gender violence (6.12%) and adolescence (4.34%).

**KEY WORDS:** higher education – online learning – virtual teaching strategy – multimedia conceptual map – educational innovation – training for university teaching – on-line resources.

## RESUMEN

El presente estudio emana del proyecto *Innovación docente 2.0 con Tecnologías de la Información y la Comunicación en el Espacio Europeo de Educación Superior*, desarrollado en el marco de los Proyectos de Innovación y Desarrollo Docente de la Universidad Pablo de Olavide (UPO), financiado por el Vicerrectorado de Docencia y Convergencia Europea de dicha Universidad. La investigación describe un estudio diacrónico sobre las concepciones acerca de los ámbitos propios de la Educación Social mediante la elaboración de mapas conceptuales multimedia. El desarrollo de la misma plantea un carácter innovador y se desarrolla con 266 estudiantes pertenecientes a los cursos de Grado de Educación Social y Doble Grado de Educación Social y Trabajo Social de la Universidad Pablo de Olavide, durante los cursos académicos 2015/16, 2016/17 y 2017/2018. A través de una metodología cualitativa, mediante técnicas de etnografía virtual y cuantitativa, se analizaron los ámbitos de intervención en Educación Social y Trabajo Social con los siguientes resultados: personas con discapacidad y salud mental (15,37%), drogodependencia (14,70%), tercera edad (14,03%), adultos (11,25%), infancia (9,47%), inmigración (8,35%), animación sociocultural (7,57%), violencia de género (6,12%) y adolescencia (4,34%).

**PALABRAS CLAVE:** educación superior – aprendizaje en red – estrategia de enseñanza virtual – mapa conceptual multimedia – innovación educativa – formación para la docencia universitaria – recursos en línea.

## REPRESENTAÇÕES CONCEITUAIS MULTIMÍDIA DOS ÂMBITOS DE ATUAÇÃO EM EDUCAÇÃO SOCIAL ELABORADOS POR ESTUDANTES UNIVERSITÁRIOS (2015-2018)

### RESUME

O presente estudo emana do projeto *Innovacion docente 2.0 con Tecnologias de la Informacion y la Comunicacion en el Espacio Europeo de Educacion Superior*, desenvolvido no marco dos Projetos de Inovação e Desenvolvimento Docente da Universidade Pablo de Olavide (U.P.O.), financiado pelo Vice-Reitorado de Docência e Convergência Europeia desta universidade. A investigação descreve um estudo diacrônico sobre as concepções sobre os âmbitos próprios da Educação Social mediante a elaboração de mapas conceituais multimídia. O desenvolvimento da mesma propõe um caráter inovador e se desenvolve com 266 estudantes pertencentes aos cursos universitários de Educação Social e Trabalho Social da U.P.O., durante os cursos acadêmicos 2015/16, 2016/17 e 2017/18. Através de uma metodologia qualitativa, mediante técnicas de etnografia virtual e quantitativa, se analisaram os âmbitos de intervenção em Educação Social e Trabalho Social com os seguintes resultados: pessoas com incapacidade e saúde mental (15,37%), toxicômanos (14,70%), terceira idade (14,03%), adultos (11,25%), infância (9,47%), imigração (8,35%), animação sociocultural (7,57%), violência de gênero (6,12%) e adolescência (4,34%).

**PALAVRAS CHAVE:** educação superior – aprendizagem em rede – estratégia de ensino virtual – mapa conceitual multimídia – inovação educativa – formação para docência universitária – recursos online.

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## 1. INTRODUCTION

The concept of education requires a reconceptualization, by teachers and students, in the face of the challenges of the digital revolution in communicative terms, which directly impact educational processes (Rodríguez-García, 2017). In this sense, in the university context, an oriented, methodological and evaluative change is necessary to enhance the integral training of students through the development of their social, intellectual and technological competences (Aguaded, López-Meneses & Jaén, 2013). In this sense, multimedia conceptual maps can be relevant curricular elements in the processes of methodological innovation and in the development of

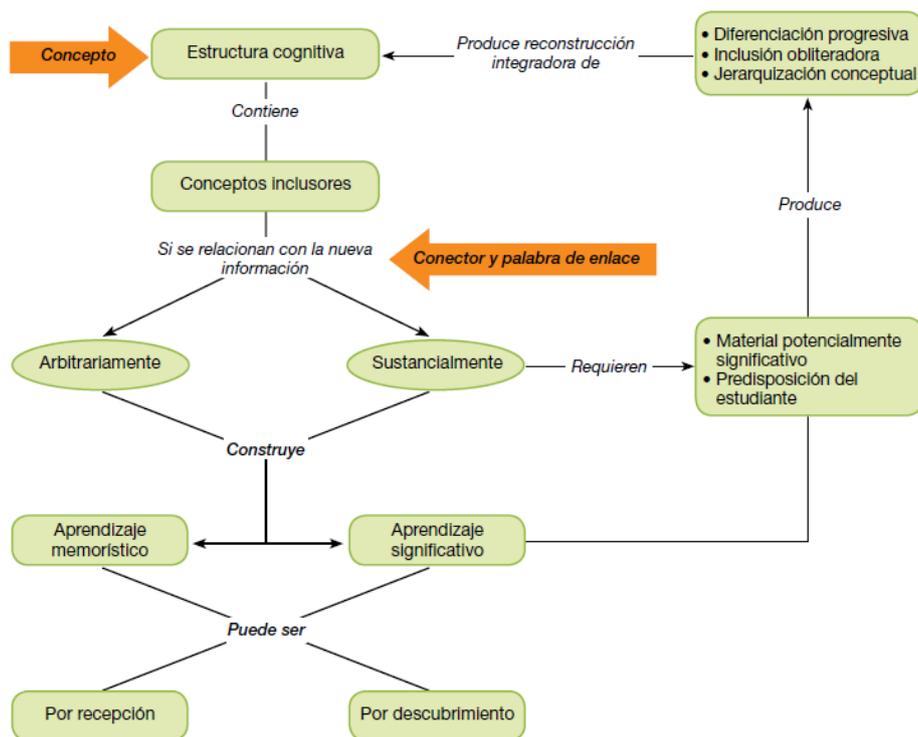
metacognitive strategies (Fernández-Márquez, Vázquez-Cano & López Meneses, 2016; López Meneses, Vázquez-Cano & Jaén Martínez, 2017).

Novak and Cañas (2008) indicate that a conceptual map is a tool for hierarchical organization of concepts (perceived regularities in events or objects, or records of events or objects, designated by labels) and of determining relationships between these concepts, which constitute coherent semantic units or propositions (sentences that allow a self-sufficient description of an object or event contained in the universe of study). And they are used for the generation, visualization, structure, and taxonomic classification of ideas, and as internal help for the study, organization, decision making and problem solving (Ortega-Jiménez, 2016). In turn, in agreement with different authors (Valdés, Menéndez & Valdés, 2006; Kinchin, Streatfield & Hay, 2010; Muñoz-González & Ontoria, 2014; Muñoz, Ariza & Sampedro, 2015), conceptual maps can help us organize, represent and store our knowledge.

The creation of mind maps relies on the use of different elements, such as images or iconic images loaded with semantic value, color codes, different types and sizes of letter, etc., in order to create a mental model capable of explaining the relationships between different levels of information about a concept or topic (Villalustre-Martínez & Del Moral-Pérez, 2010; Vázquez-Cano, López Meneses & Sánchez-Serrano, 2015; Vázquez-Cano, López Meneses & Jaén Martínez, 2017). Also, Novak (2000) indicates the main elements that make up a conceptual map:

- Concept. Concept is understood as the word or term that manifests regularity in the facts, events, ideas and / or qualities.
- Proposition. It is established from the union of two or more concepts linked by linking words in a semantic unit. It corresponds to the main unit of meaning.
- Linking words. They are words that unite the concepts and indicate the types of relationship between them.

Image 1 shows the main structure and element of a multimedia conceptual map (MCM).



**Image 1:** Structure and elements of multimedia conceptual maps.

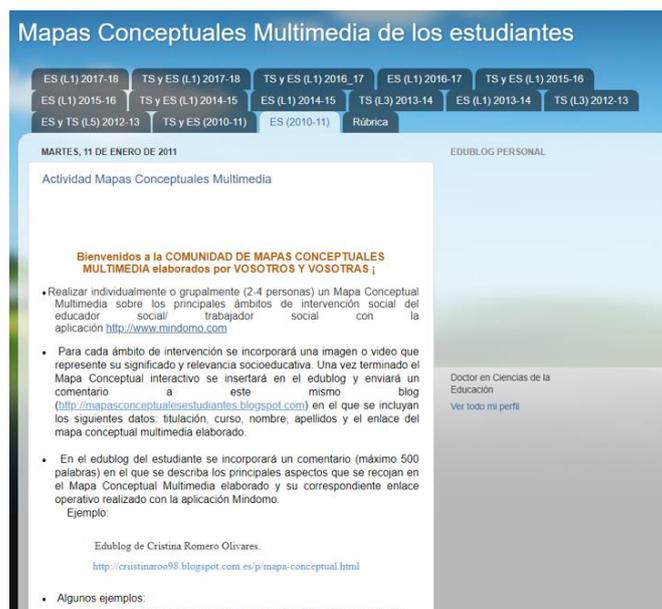
**Source:** Self-made based on Maglione and Varlotta (2011).

Also, according to Novak (2010), a conceptual map is useful in teaching to organize the contents dealt with during a didactic unit, it is a means to visualize concepts and hierarchical relationships between known concepts.

### 1.1. Research scenario

This piece of research describes a diachronic study on conceptions about the fields of Social Education through the elaboration of multimedia conceptual maps. Its development has an innovative character and is developed with 266 students belonging to the Social Education and Double Degree in Social Education and Social Work courses in Pablo de Olavide University, during the 2015/16, 2016/2017 and 2017/2018 academic years.

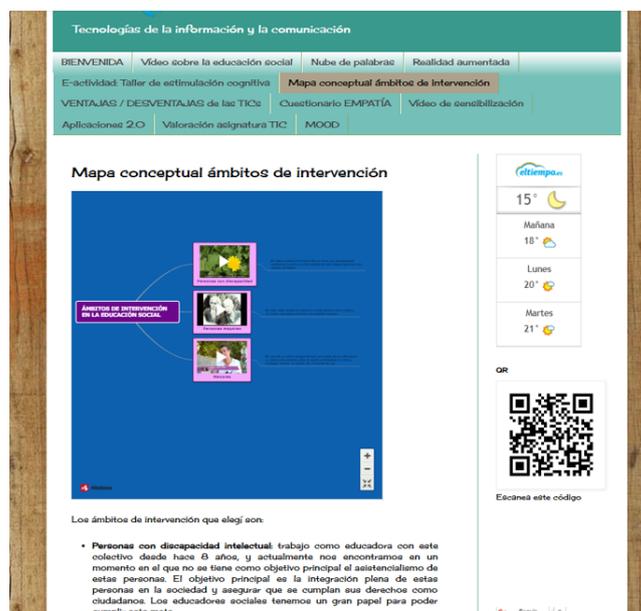
The experience was based on presenting to students an introspective reflection through multimedia conceptual maps (MCM) on the fields of action of Social Education professionals, which were to be expressed with Mindomo application (<http://www.mindomo.com>), which makes it possible to design conceptual maps (*Mind Maps*) in a dynamic and easy way based on the concepts that are indicated. Subsequently, they sent the MCM link with a brief comment to the email and sent them as comments to the edublog (<http://mapasconceptualesestudiantes.blogspot.com.es/>) (Image 2).



**Image 2:** Virtual space of the innovative university experience.

**Source:** <http://mapasconceptualesestudiantes.blogspot.com/>

Finally, each student had to prepare a personal edublog for the subject on the evidence of the activities carried out, one of their tabs being the Conceptual Maps or a similar title where they should add a comment (maximum 500 words) in which they describe both the structure and the main aspects that are included in the Multimedia Conceptual Map and its respective link made with Mindomo application (image 3).



**Image 3:** Edublog of a Social Education student of the 1st Social Education Degree Course. 2017-18 Academic year.

**Source:** <https://rvm3000.blogspot.com.es/>

Below, we show the didactic intentions, the development of research and the most relevant results achieved during the development of this study.

## 2. OBJECTIVES

This diachronic study is based on the following educational intentions.

- Research the main areas of social intervention of the future social educator selected by the students in the first course of the ICT and Social Education course of the degrees of Social Education Degree and Double Degree in Social Education and Social Work corresponding to the 2015-16; 2016-17 and 2017-18 academic years.
- Analyze the styles of graphic representations used by students in the first year of the Bachelor's Degree and Double Degree in Social Education and Social Work in the three academic years (2015-18).

## 3. METHODOLOGY

Regarding the methodology we used, let us note that it was qualitative and descriptive. For the analysis, the 266 contributions made by the students were reviewed by analyzing the words or sets of meanings as registration units. Subsequently, the conceptual plot was categorized based on the guidelines established by different authors (Bogdan & Biklen, 1992; Miles & Huberman, 1994):

- First Phase: Data reduction. This phase constitutes the realization of rational procedures that consist in the categorization and codification of data, identifying and differentiating units of meaning. The procedures are:
  - Categorization of data. Categorization implies the simplification and selection of information to make it more manageable. This process involves several subphases:
    - Unit separation It consists in separating segments of information by following some type of criteria such as spatial, temporal, thematic, grammatical.
    - Identification and classification of units. It consists in conceptually classifying the units that are covered by the same topic with meaning. The procedure can be inductive, that is, as data are being examined, or deductive, having previously established the system of categories on which categorization will be carried out, following the review of specific literature on the subject under study. Normally this classification is usually mixed.
    - Synthesis and grouping. This phase is really linked to the previous one since categorization implies synthesis. This phase is also present once the categorization process has been completed and some categories are grouped into metacategories.
    - Coding. It is really the concrete and manipulative operation by which each category is assigned to each textual unit. In this regard, each selected unit has been coded for its frequency

counting, by statistical analysis program IBM SPSS Statistics 20.0, which is “one of the programs most commonly used in the United States and in Latin America [ ...] it makes it possible to manage large-scale data banks and also to carry out very complex statistical analyses” Castañeda, Cabrera, Navarro and Vries (2010), they are easy to use and their implementation has made it possible to change the statistical analysis processes in teaching (Green & Salkind, 2011). Since the beginning, there were clear criteria for distinguishing units of registration, since most students chose 3 concepts framed in each category.

- Second phase: Interpretation and inference. SPSS software facilitates the creation of data files in a structured way and the organization of the databases that can be analyzed with various statistical techniques (image 4).

Nombre	N	Porcentaje	N	Porcentaje	N	Porcentaje
1 Drogo dependencia	2	100,0%	0	0,0%	2	100,0%
2 Tercera Edad	2	100,0%	0	0,0%	2	100,0%
3 Menores	2	100,0%	0	0,0%	2	100,0%
4 Discapacidad	2	100,0%	0	0,0%	2	100,0%
5 Inmigración	2	100,0%	0	0,0%	2	100,0%
6 Violencia de Género	2	100,0%	0	0,0%	2	100,0%
7 Adultos	2	100,0%	0	0,0%	2	100,0%
8 Integración	2	100,0%	0	0,0%	2	100,0%
9 Animación Sociocultural	2	100,0%	0	0,0%	2	100,0%
10 Integración Laboral	2	100,0%	0	0,0%	2	100,0%
11 Atención Comunitaria	1	50,0%	1	50,0%	2	100,0%
12 Interculturalidad	2	100,0%	0	0,0%	2	100,0%
13 Medidas judiciales	2	100,0%	0	0,0%	2	100,0%
14 Educación	2	100,0%	0	0,0%	2	100,0%
15 Igualdad de género	2	100,0%	0	0,0%	2	100,0%
16 Medioambiente	2	100,0%	0	0,0%	2	100,0%
17 Adicciones	2	100,0%	0	0,0%	2	100,0%
18 Educación de calle	2	100,0%	0	0,0%	2	100,0%
19 Maltrato Infantil	2	100,0%	0	0,0%	2	100,0%
20 Marginación Exclusión	2	100,0%	0	0,0%	2	100,0%
21 Prostitución	2	100,0%	0	0,0%	2	100,0%
22 Bullying	2	100,0%	0	0,0%	2	100,0%
23						
24						
25						
26						

**Image 4:** Categorical analysis prepared with IBM SPSS Statistics 20.0.

**Source:** Self-made.

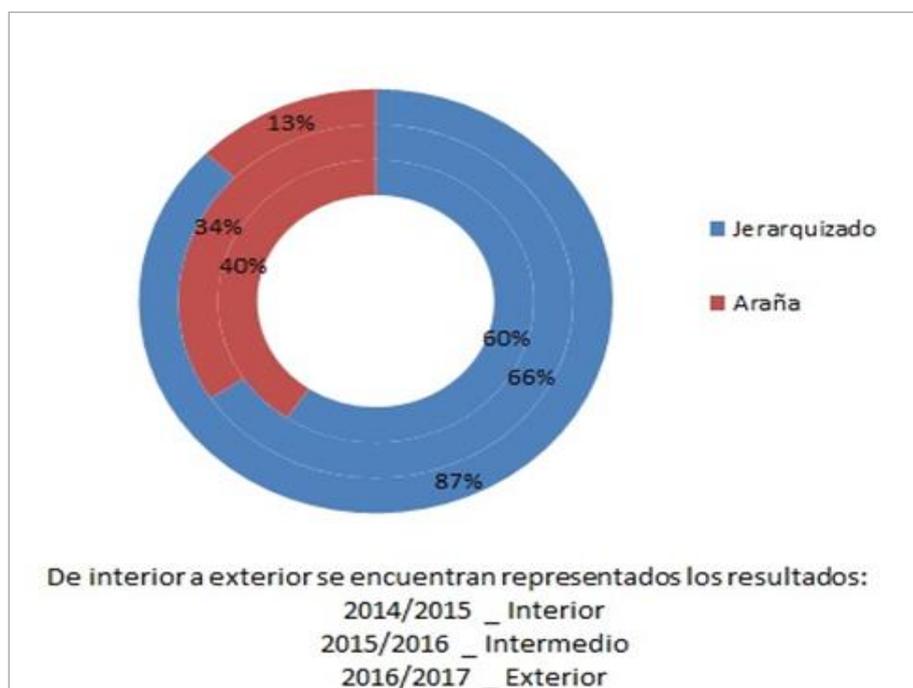
## 4. RESULTS

In this section we show the results obtained from two different analyzes: the MCM and the fields of action in Social Education.

### 4.1. MCM: How students represent their knowledge

In accordance in the first instance with the results obtained after the codification and interpretation of the information extracted from the MCMs made by the students, it should be noted that, in the form students organize and express

contents, hierarchical structuring stands out mainly and mostly, which prevails significantly (around 70%), over spider structuring (30%) as shown in graph 1.

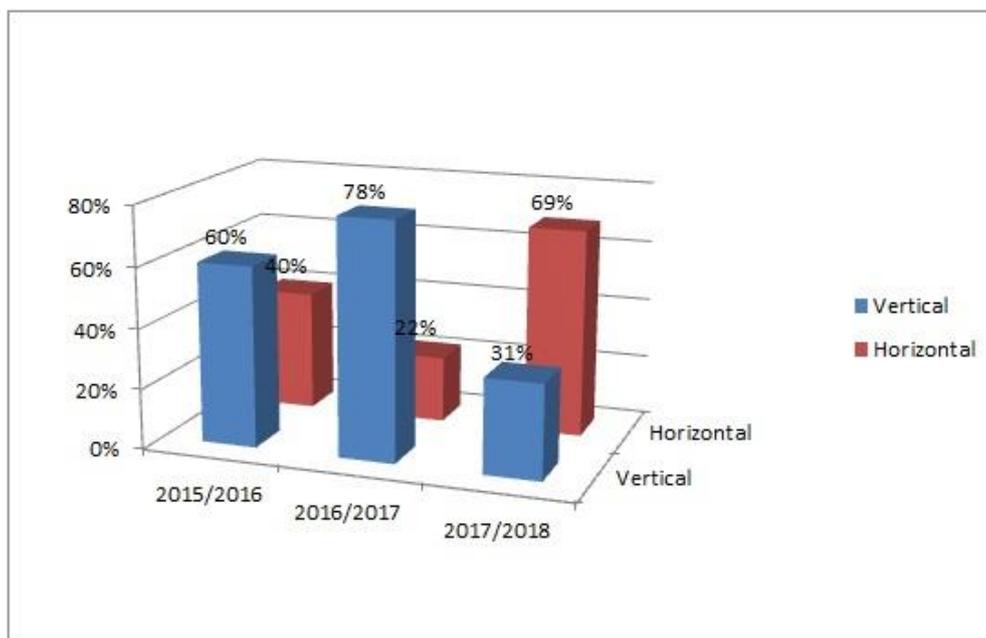


**Graph 1:** Structuring the graphical representation in the MCM.

**Source:** Self-made.

Also, it is noteworthy that, during the analysis and categorization of the contributions, it is observed that the students who opt for a spider representation have not well integrated what conceptual maps really consist in, since they do not use (in no case) linking words or connections between the concepts of secondary levels .

Of those who opt for a hierarchical presentation, we observe how vertical representations prevail over horizontality (60%-40%), a greater differentiation in the last academic years being found, a change in trend in the last academic year (graph 2) being detected.



**Graph 2:** Modality of hierarchization of the MCM.

**Source:** Self-made.

#### 4.2. Conceptions of the students on what the fields of action in Social Education are

Focusing, on the other hand, on the analysis of the areas of action indicated by the students as a whole, it should be noted that they have established an average of 3.4 own concepts associated with the main areas of social intervention of the social educator.

Based on their contributions, inadequate conceptual delimitation is denoted, population sectors that benefit from the actions (childhood, youth, senior citizens, homeless people, immigrants...) being mixed with areas of action (socio-cultural animation, drug addiction, gender violence, prostitution, prison, socio-community care...).

Apart from this aspect, we obtain the following table of response frequencies (table 1):

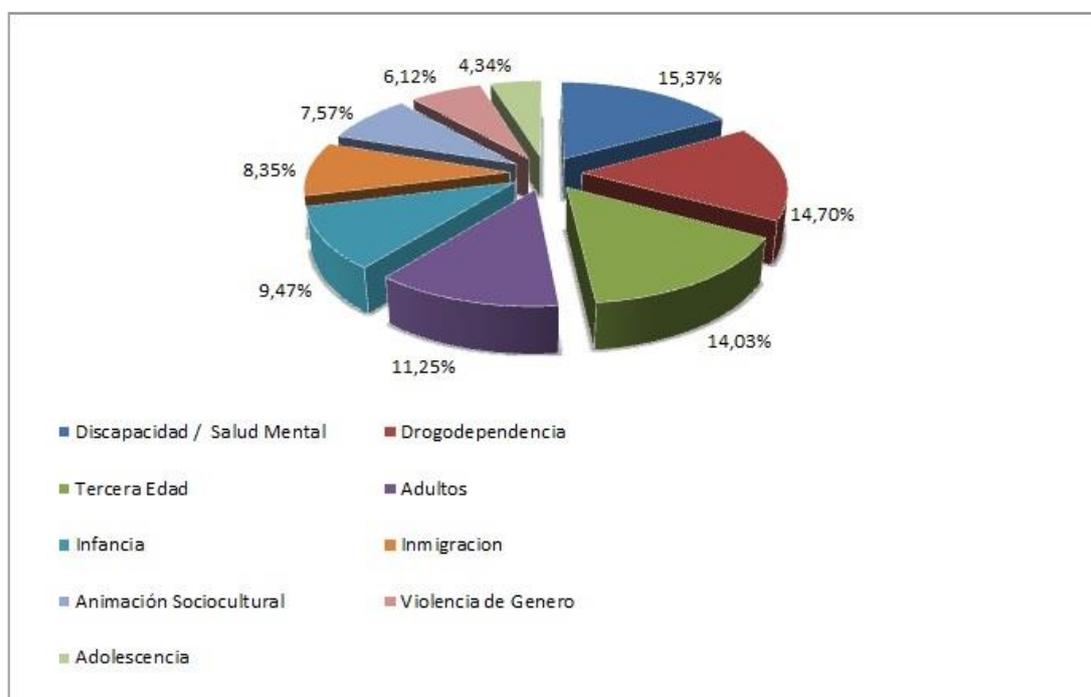
**Table 1.** Frequency of responses on the areas of intervention in Social Education.  
*Frequency of responses on the areas of intervention in Social Education.*

Social Education intervention areas	Frequency of Response	Social Education intervention areas	Frequency of Response
Addictions (to technologies)	35	Childhood	85
Adolescence	39	Immigration	75
Adults	101	Integration	23
Alcohol in Minors	11	Labor integration	26

Sociocultural animation	68	Interculturality	8
Community Attention	26	Family Mediation	7
Disability / Mental Health	138	Judicial measures	23
Gender discrimination	5	Environment	10
Drug dependence	132	Poverty	1
Education	16	Prostitution	5
Street education	13	Racism	5
Social exclusion	22	Health	5
Child exploitation	2	Homeless / Homeless	13
Training / Advice	5	Seniors	126
Gender	6	Gender Violence	55
Homophobia	2	Child Violence (Abuse, Bullying)	10
Gender equality	4		

**Source:** Self-made.

Analyzing percentages, we show in graph 3 the most outstanding ones, they are: people with mental disabilities and health (15.37%), drug dependence (14.70%), senior citizens (14.03%), adults (11.25%), childhood (9.47%), immigration (8.35%), socio-cultural animation (7.57%), gender violence (6.12%) and adolescence (4.34%).

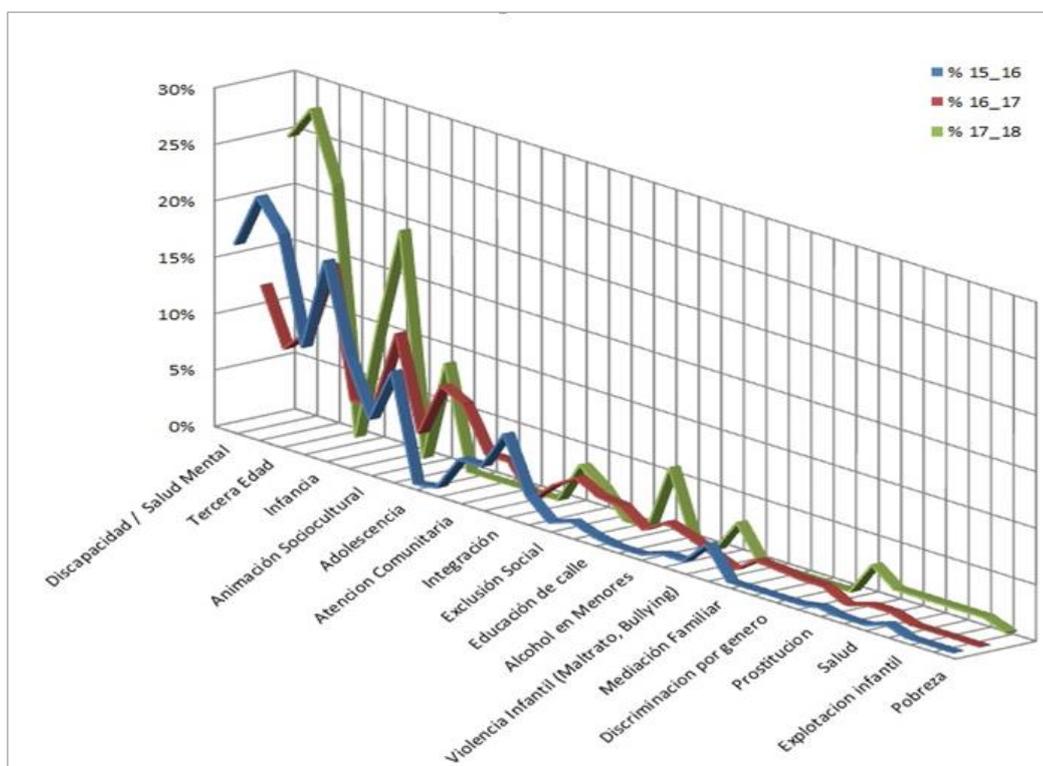


**Graph 3:** Main areas of action in Social Education.

**Source:** Self-made.

Based on the diachronic analysis between the 2015/2016, 2016/2017 and 2017/2018 academic years, (graph 4), a progression and emergence of new

concepts between conceptions or how other aspects have ceased to be important are inferred.



**Graph 4:** Comparison of the Social Education intervention areas. Diachronic analysis.  
**Source:** Self-made.

## 5. DISCUSSION AND CONCLUSIONS

In the first instance, it is inferred in accordance with Reyes-Santander, P. A. and Ramos-Rodríguez (2018) that the generation of maps poses initial difficulties for students and is even more complex when they are invited to express and communicate it. However, throughout the experience, it is corroborated with Valverde-Berrocoso and Garrido-Arroyo (2002) that this type of didactic visual-learning technique helps students in the process of acquiring and retaining new information by establishing connections between new and existing knowledge.

With respect to the areas of intervention of this study, they are similar to other research studies (Kearney *et al.* 2000; British Association of Social Workers, 2002; Cunningham, 2004): social services, gender violence, immigration or homeless people.

Also, about this experience using edublog and MCM, as authors such as O'Donnell (2006), Farmer, Yue and Brooks (2008), Cabero, Ballesteros and López-Meneses (2015) point out, it is worth highlighting the good assessment that our students make of Mindomo software and blogs as easy-to-use, collaborative, intuitive and very useful applications with the possibility of adding images, comments, links, graphics

and videos of all kinds and disseminating them through the Internet. That is, they make it possible to corroborate how the use of applications related to social software is an appropriate and useful practice so that students can play an active role in their training process and put into practice higher order learning skills.

Finally, in the same discursive line of Pontes (2014), it is necessary to highlight the fact that this type of maps, used in these types of training activities, oblige those who carry them out to reflect on their own knowledge and help to visualize the deficiencies of the process of learning any subject at any given time.

With reference to the lines of the future, it is verified that didactic studies of this type make it possible to explore, reason and analyze the curricular contents of subjects and, in turn, they are optimal metacognitive methodological instruments for the enrichment of students' competence. In this line of research, currently, from the research group Eduinnovagogía® (HUM-971) URL <http://bit.ly/1sGHwqO> we are studying its feasibility to develop it in other Latin American educational institutions.

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