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THE ARMY IN SPAIN AS AN OBJECT OF RESEARCH AND DEVELOPMENT

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ABSTRACT:

This text analyzes university R&D research that may be applicable to the Spanish military field in order to optimize the technological development of military institutions.

The analysis establishes a quantitative and qualitative methodology by means of which the non-existence in Spain of doctoral theses subject to capitalization for and by the current Spanish Army is proved. In order to introduce a comparative study, an identical analysis is made between the universities and the US Army, in order to establish that a correlation between the academic world and the army, not only can be possible, but even necessary and beneficial for both sectors. Finally, as a corollary and conclusion, the main factors that limit the establishment and development of this army capitalization system in Spain through the university civil sector are detailed, and strategies to achieve the highest development of this social and economic model are proposed.

INTRODUCTION

The importance of university R&D studies aimed at the military sector lies in the fact that applied research allows the development of military institutions through technological innovation and not only through their strategic and human capacity.

To evaluate the implementation of a capitalization strategy of the Spanish Army through the education sector, the United States of America have been taken as an example. In this area, this country stands for a model of success, since many research studies developed in the universities of this country are aimed at promoting innovation, development and capitalization of their army.

It is important to highlight that the digital databases of doctoral theses TESEO (Spain) and OATD (United States of America) have been used in the methodology, and important differences between the two countries have been founded according to the same research parameters, highlighting the United States as a country model in military development through applied university research.

This difference between Spain and the United States is mainly marked by the deep interference of the academic and research world in other institutional orders, such as the military. For that reason, the huge technological development of the US Army can be explained to a large extent.

From an economic point of view, the existence of a proven, reliable and current research facilitates, among other things, greater budget items. In other words, R&D studies, mainly generated through doctoral theses, promote the technological development of military institutions, and act as a legitimate and empirical source of investment.

This research essay provides keys for the establishment of this army capitalization model through the Spanish university education sector.

MAIN CONSTRAINTS ON DOCTORAL R&D STUDIES FOCUSED ON THE SPANISH ARMY

One Currently in Spain, doctoral studies are based on the basis of the official education regulation arising out of the RD 99/2011 of January 28th, which indicates the precepts to be met by doctoral studies in the national territory. This RD 99/2011 modifies the system implemented until then for postgraduate studies development as well as the application of doctoral research. This legal amendment aims to harmonize Spanish studies with the European Higher Education Area (EHEA). Main changes are focused on the duration of doctorate studies, dissemination of research results and practical use of doctorate research.

Specifically, with regard to the relationship between research and R&D development in the Spanish military scope, the inclusion of RD 99/2011 is an advance, since doctoral theses are to be capitalized as applied science, thereby solving problems from the action of a doctoral research. Doctoral theses carried out on the basis of this new regulation are aimed to be more factual and involving a progress applied to an organization or group. Obviously, basic science (theoretical studies) still remain in the university framework, but research development is oriented to a contribution not only intellectual but applied to a tangible reality. This orientation at its best would mean for the Spanish Army a bank of ideas and practical solutions coming from experts in different scientific disciplines found in the Spanish universities.

Another important issue of the RD 99/2011 is the dissemination of results, which means that findings will be offered to the scientific, organizational, political community and society at large. Consequently, the Spanish doctoral studies are committed to disseminate and offer their results to the usefulness of

the social setting. For the army this would mean not only to get scientific resources but also the promotion in front of society of the applied science used by the military institution in cooperation with the university.

In the methodological development, a practical study of doctoral research in Spain linked to R&D has been generated based on the analysis of the results obtained by TESEO. In this analysis, only a historical thesis meets the necessary parameters. This means that from year 1976 (when TESEO started), only a doctoral thesis has been related to the army. Compared to the university research development associated to the US Army needs in the last nine years, 23 theses effectively represent the capitalization of scientific and university resources applied to the US military institution.

Unfortunately, at present there has been no case of combination between the doctoral research associated to R&D and focused on the capitalization of Spanish military resources. There are different factors that can be detailed hereafter which are determining for the absence of cooperation between doctoral R&D research and army:

1. Lack of promotion of military needs among the university scientific community.
2. Lack of knowledge on the part of PhD researchers regarding the possibility of applying their studies to the benefit of the military institution.
3. Little connection between the Spanish university and the Spanish army
4. Lack of an articulated and effective structure of military needs according to the knowledge banks of the university and the potential doctoral studies.
5. Little military culture and lack of involvement of the research community in dealing with military needs.
6. Little existence and diffusion of incentives to doctoral research oriented to the military scope.

STRATEGY FOR INCREASING MILITARY R&D STUDIES UNDERTAKEN BY THE SPANISH UNIVERSITY COMMUNITY AND THEIR CAPITALIZATION

The previous section has provided us with some limitations that put the break on the effective relationship between doctoral R&D studies and the Spanish army.

Eliminating these barriers will mean for the military institution to capitalize human, scientific and university resources that are found in the university centers of their area.

This offers a triple benefit. The obvious one is the prototype sourcing, advances and practical solutions to army tangible needs, but there are two inherent advantages to this one. One of them is the use of scientific communities that have first-hand knowledge of the main futures of the institution and their contribution to it. The other is the possible diffusion of this common work, boosting the role of the army in the context of civil society, which will perceive the cooperation of science from the university academy and its benefits to the military institution.

In order to build an effective and lasting work between PhD R&D research and the army, it is vital to implement a strategy that will solve the weaknesses identified in the previous section.

This strategy is mainly based on the relationship between university and army and could be focused on the basis of the following guidelines:

1. Carrying out a prospective study of the existing research groups and doctoral programs at the Spanish universities.
2. Creating a census of researchers working in the field of doctoral management in Spain.
3. Establishing a scientific work agreement with the Spanish university based on the needs of the army.
4. Scheduling strategic actions focused on the dissemination of the army search for doctoral research sources that would be interesting for the institution progress.
5. Constantly promoting the army interests in the doctoral research focused on the military field in order to attract PhD theses.
6. Establishing a mixed program (army–university) to promote PhD theses focused on military capitalization.
7. Fostering research networks including members of the military field and university researchers in order to identify research and military development opportunities from the scientific area.
8. Implementing a program to promote the joint efforts intended to be carried out between the army and the university, to create military knowledge culture in the university and social environment. This would guarantee the permanence of this model of work and integration, same as in other countries where the relationship between army-university does exist.

CONCLUSION

After studying and analyzing the doctoral R&D studies related to the Spanish army, the following conclusions are reached:

1. There is a clear development of doctoral studies and R&D research in Spanish universities. The study shows 8244 theses in the last twenty years.
2. There is a gap of PhD R&D studies focused on the Spanish army. There is only evidence of a thesis from the University of Navarra, dealing with historical issues.
3. The cooperation between PhD R&D and military studies is feasible, as shown by the work developed in the US, with 23 theses in the last nine years.
4. The constraints for the cooperation between the Spanish army and the PhD research are based on the lack of promotion, incentives and connection.
5. Doctoral studies in Spain are currently based on practical guidance and they can offer scientific and university resources to the military institution.
6. The military capitalization of doctoral research in Spain is possible under a schedule focused on joint work and previous prospection of military needs.
7. The university – Spanish army link will make possible to increase the socioeconomic model in Spain.
8. The development of PhD studies focused on military development will promote the military culture in the university field and society in general.

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