

Physics and Physics' Education, as a means of conceptualizing, interpreting and opposing to warfare internationally. Physics Education and Education for Peace

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Abstract. Physics Education is strongly related to moral and ethical issues, the role of scientists in the society, as well as with Active Citizenship. Thus, in teaching Physics, the conceptualization of war and the advancement and establishment of peace, worldwide, are both central issues. This proposed Discussion Workshop (of the GIREP Thematic Group “Physics and Society”), invites participants and contributions about: teaching nuclear energy, teaching the destructive results of weapons, teaching and learning the moral and ethical role of physicists as scientists, teaching about the distribution of resources worldwide as a cause for war, as well as other possible topics.

Introduction

The amount of warfare increases internationally nowadays and Physics' Education – we believe – is strongly related to it. Citizens and adolescents being properly educated in Physics are in a position to negotiate about war or warfare, oppose to it both with rigid argumentation and with action and, finally, help establishing peace [1] The main idea of the current proposed Discussion Workshop is how to bring such topics into the classrooms, and what are the expected outcomes in Primary, Secondary and Tertiary Education.

Theoretical framework and some proposed research topics

The current proposed (online) Discussion Workshop addresses participants who have worked or taught (or would wish to do so), in issues of Physics instruction, such as:

- Nuclear energy and its use in the creation of weapons [2].
- Energy resources as cause of war [3].
- The role of physicist as a scientist, towards the governmental decisions and towards the public.
- What argumentation has Physics to offer against war and in favor of peace.
- Educating young people through Physics, for peace and for active citizenship, and other possible issues.

Central research topics of the proposed Discussion Workshop would be:

- a. In what ways have we brought or can we bring the aforementioned topics in the Physics Classroom Praxis?
- b. What are the expected outcomes for learners (both regarding knowledge but also stances) of

the above methods of teaching Physics?

c. Are there ways to measure what these strategies finally achieve, as regards the students?

Methods and potential findings of the Discussion Workshop

It is suggested that each contribution is given a 15 - 20 minutes time of presentation by one of the contributors. Then a discussion of this contribution, lasting maximum 20 minutes, would follow, within the plenary session of the Discussion Workshop. Finally an (around) 15-minute discussion would sum up the findings of the Workshop, with everyone participating (the contributors and the simple attendants). An aim would be to gather all the contributions to some form of printed text or Proceedings.

Conclusion

It is hoped that this proposed Discussion Workshop will have a lot to contribute to the teaching of Physics as a central tool in the anti-war education and education for advancing and establishing peace. So, everyone is invited to contribute with a contribution and/or attend it.

References

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- [3] G. Giordano, G. (2015). The Physics of Warfare, *The Physics Teacher* **53**(3) (2015) 151-154.
- [4] W. Brouwer, The image of the physicist in modern drama, *American Journal of Physics* **56**(7) (1988) 611-617.