

Discussion on the Writing Skills of the National Natural Science Foundation of China

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Abstract

The National Natural Science Foundation of China (hereafter called NSF) is an important part of the national innovation system, which has always been paid attention to by the domestic researchers and universities. The science fund project application quality is to obtain peer review experts recognized the important factors, which requires the applicant in written application to fully display the value and innovation of the academic thinking of novel, research route of the feasibility and the research work. Requires applicants not only to "lay the facts", but also "bring out the facts and reasons ", to provide a high quality application to the Council of experts and the National Natural Science Foundation of the Commission.

Keywords

National Natural Science Foundation (NSF), Writing, Skills.

1. Introduction

National Natural Science Foundation of China(hereafter called NSF) is an important part of the national innovation system. With the basic framework of natural science, engineering science and management science, NSF major funding basic research and applied basic research of mathematics, physics, astronomy and other 19 natural disciplines^[1]. It is the only financing channel for the study of the freedom to choose the topic at the national level. And in the field of basic research, it trains talents and promotes the development of the discipline. NSF encourages freedom to explore and to have original, prospective study, whose review has a standardized procedure. From a certain angle, it reflects the academic ability of the applicants, but also reflects the level of the basic research areas of the University. It plays an important role in the colleges and universities to enhance the academic status, strengthen discipline construction and promote the development and personnel training in basic research. Therefore, the NSF has always been very important research projects for researchers, which has also become the core elements of the competitiveness of scientific research in Colleges and universities. In recent years, with the implementation of the national science and technology innovation development strategy, the government's financial investment in NSF is expanding year by year, more and more projects and individuals have been supported by it. Since the beginning of the new century, the its budget has increased by 17 times^[2].

2. The preparation before writing the application

A high quality NSF application, should be the embodiment of long-term research work. At the same time, it should be established on the basis of the applicant's familiarity with the NSF, and have a clear understanding of the basic research and the orientation of the fund.

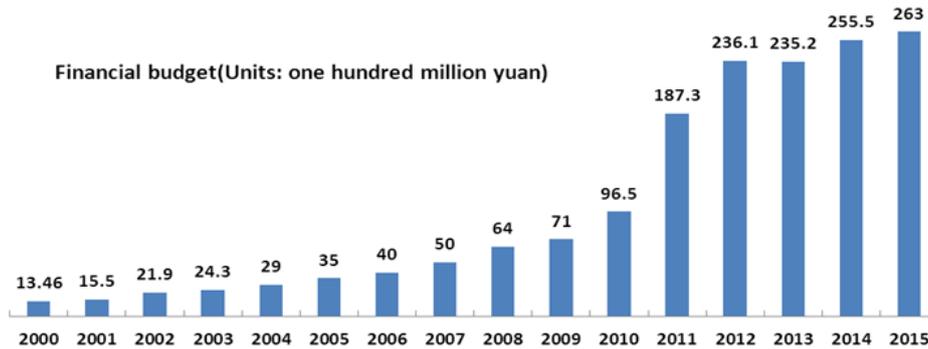


Fig.1 The budget investment amount of NSF project in 2001-2015

2.1 To correct the purpose of writing the fund application

For applicants, especially in colleges or institutes of scientific research, writing science funds to apply for the NSF projects to declare a lot of time is a semi compulsory task, which is the applicant for research funding, as a way and tools to contribute to the title assessment. But for the science foundation, it set up the goal and the task is to encourage the freedom to explore, to support basic research, to accelerate the pace of scientific and technological innovation^[3]. This requires the applicant to explore the scientific truth from the point of view, in the actual research work to find some scientific problems, to organize the research ideas, try to solve these scientific problems, which should be the basic motivation and the highest pursuit of writing science fund applications.

2.2 Deep understanding of the positioning of NSF

Since its establishment, "support basic research, adhere to the freedom to explore and play a guiding role" has been the strategic positioning of NSF. Applicants should deeply understand the "Basic Research" four words before preparing the fund applications, so as to accurately choose the topic. For some efforts to solve the technical difficulties, the specific objectives of the practical research topics, is not suitable for the declaration of NSF.

2.3 Fully grasp the structure of application

The NSF application includes two parts, the information form and the main body. The most important content of information form is about the application of the subject and the main direction of selection, specifically reflected in the choice of the application codes, which is an important basis for the assignment of experts in the late project evaluation^[4]. The applicant must have a deep understanding of the meaning of each subject code, and give full attention to the selection of subject code. The text is the outline of the application, the discussion part and research steps is the same (see below). In the process of writing, application must fully understand the content and purpose.

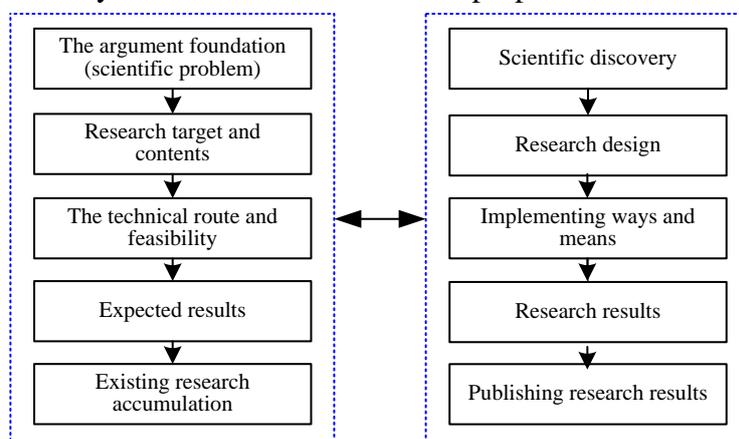


Fig.2 Application structure: steps of scientific research

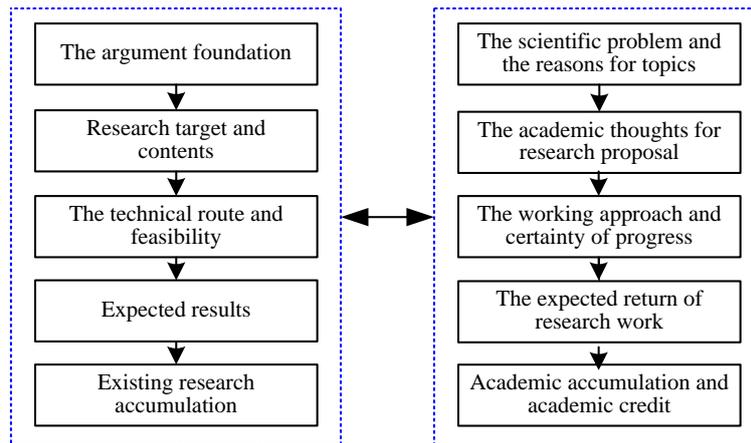


Fig.3 Application structure: the purpose of dissertation

3. Discussion on writing skills

The application of NSF is the accumulation of the accumulation of previous studies of the applicant, and it is the condensation of the innovative academic thought. How will their years of academic accumulation in accordance with the requirements of the fund application concisely, each applicant must master the skills. Below, we will be in accordance with the application of the structure of the analysis and discussion.

3.1 The argument basis-- Scientific question put forward

The basis for writing outline: an analysis of the status quo and development trends of domestic and international research, research significance. In combination with scientific research and development trend, the paper discusses the scientific significance; or the key technology problems which are urgently needed to be solved in the development of national economy and society^[5]. If it is written in this outline, it is easy to write a summary and description of a research direction that is easy to write about a research direction or field, which leads to the difficulty of the expert review in grasping the applicant's own innovation. The deep meaning of the basis part is: are you ready to study which scientific problems? What is the basis for choosing this scientific question? What is the importance of scientific development and social development? In the analysis of the current situation and significance of the study, what new problems, new methods and new data you can find out or put forward. Can these new things form a breakthrough point, Can the scientific question you study produce new research value. In simple terms, it requires the applicant to find the scientific significance and research value of innovation from the existing research, which is the focus of the review expert cares.

3.2 Research content and objectives and key scientific issues

This part is the focus of the application part, the purpose of writing this part is finishing for selected scientific problems to carry out research ideas, contents and expounds, and to find out the breakthrough point through the analysis of the content of the work. It should be organized, focused, and should be properly explained and discussed. From a small point of view, through a certain length of analysis and discussion, to find and establish research in the possible difficulties and breakthroughs. It is worth noting that the research content must have its own characteristics (new ideas, new methods and new means). Do not to use the words like "system research", "comprehensive summary", "fill the gaps" and so on as a feature to render.

3.3 Research scheme and feasibility analysis

The research scheme is to decompose the research content into specific research work according to the overall research ideas. The applicant can put the total technical route in front, so that the experts will review the whole study of the implementation of a general impression. Research scheme must be written in detail, according to the research content, choose what material, what method, how to do step by step.

The feasibility analysis is mainly to demonstrate the implementation of research work and make effective progress. Can be in accordance with the mature theoretical basis (theory feasible), research objectives in the existing technical conditions can be achieved (technically feasible), the existing technology and equipment of the experimental materials complete (materials and equipments feasible), the ability to complete the research of members of the project group (knowledge and skills of feasible),and other few layers to discusse.

3.4 Applicant profile

This part is a presentation for the applicant and the project team to show their academic accumulation, academic reputation have the ability to support the smooth completion of the research activities. The applicant must be taken seriously in order to state the implementation of the main, objective and fair, practical and realistic. In the writing of the applicant and the project team members, attention should be paid to the direction of the research direction, and with the study of the division of labor.

3.5 Budget

The requirements for the preparation of the budget are: carefully study the relevant fund management approach, as far as possible to reduce the cost of the project which does not meet the requirements. The expenses of each course of study must be consistent with the research content and the implementation of the program, the total funding to apply for the project in which the subject of the average funding intensity for reference. Avoid becoming a layman who does not understand the cost of funds management or the basic research costs in the market.

4. Conclusion

Science fund project application is not equivalent to the research work itself. A high quality application, is the only asteping-stone to succeed the NSF project support. For the applicant, how to comprehensive and in-depth understand of Science Fund for common sense, master scientific fund proposal writing skills, will be the accumulation of their own long-term academic into a high quality application, each basic research workers must learn the course.

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