Η δομή και η συγγραφή μιας επιστημονικής εργασίας

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Η ατζέντα του σεμιναρίου

- Εισαγωγή : οι τύποι των papers

- Η δομή ενός paper

- Η αναζήτηση papers

- ΠΩΣ διαβάζουμε ένα paper

- Η καταχώρηση (annotation) των papers & reporting

- ΠΩΣ γράφουμε ένα paper

Οι τύποι των άρθρων

Peer-Reviewed Articles

- Are written by scholars and researchers (look for a university or laboratory affiliation in the article)
- Include an abstract and a bibliography or cited list of references
- Have a specialized format (this will be discussed later under "Dissecting an Article")
- Use discipline-specific language
- Many of the Library article databases allow you to limit your search to "peer reviewed" articles.

Popular/News Articles

- Are written by journalists or writers who may or may not have expertise on the article's subject.
- Rarely have an abstract or bibliography
- Do not follow a specialized format
- Use language understandable by the general public
- Undergo a limited editorial review

- The research paper is **an essential part of scientific education**. From it, the student learn the basic research skills that will need for gathering information and writing papers in a variety of courses as well as methods used for life-long learning, on the job and off. **In nearly every job, you will be asked to write reports and document your work.** The research paper is an exercise that will help you develop these skills.

- There are two main types of *scientific* paper: a **research paper**, which will become part of the primary literature and **a review paper**, which will become part of the secondary literature.

- A scientific paper is <u>a written report describing original research results</u>. A well-written scientific paper explains
  - the scientist's motivation for doing an experiment,
  - the experimental design and execution, and
  - the meaning of the results.

Types of journal articles

It is helpful to familiarize yourself with the different types of articles published by journals. Although it may appear there are a large number of types of articles published due to the wide variety of names they are published under, most articles published are one of the following types:

- Original Research,
- Review Articles,
- Short reports or Letters,
- Case Studies,
- Methodologies.

https://www.springer.com/gp/authors-editors/authorandreviewertutorials/writing-a-journal-manuscript/types-of-journal-articles/10285504

Οι τύποι των papers

- Βιβλίο

- Book Chapter

- Special Issue

- Review

- paper σε περιοδικό
    - Διεθνές
    - Τοπικό

- paper σε συνέδριο
    - Διεθνές
    - Τοπικό
    - Νέων Ερευνητών

Οι τύποι των papers: βιβλία

- Βιβλίο

- Book Chapter
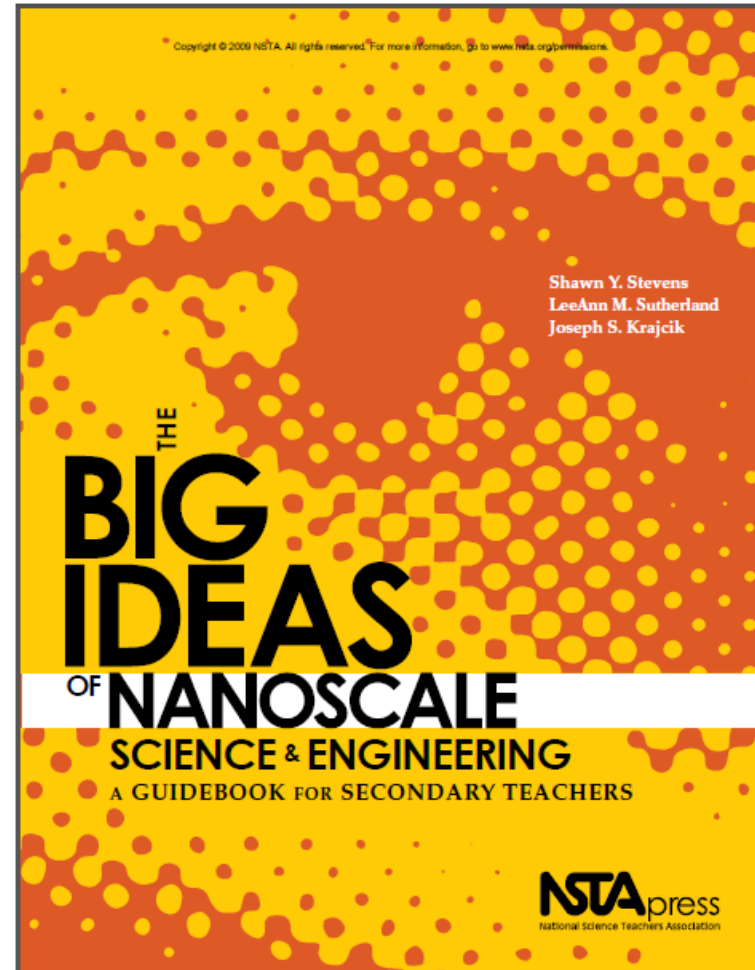
- Special Issue

Οι τύποι των papers: Book Chapters

- Βιβλίο

- Book Chapter

- Special Issue

Dimitris Psillos · Petros Kariotoglou
Editors

Iterative Design
of Teaching-
Learning
Sequences

Introducing the Science of Materials in
European Schools

Springer

Οι τύποι των papers: special issue

- Βιβλίο

- Book Chapter

- Special Issue

Different journals may put different meaning into "special issue" It could mean:
- papers have been invited around a certain theme,
- papers come from a workshop or symposia, or
- the journal have decided to gather papers around a specific topic.
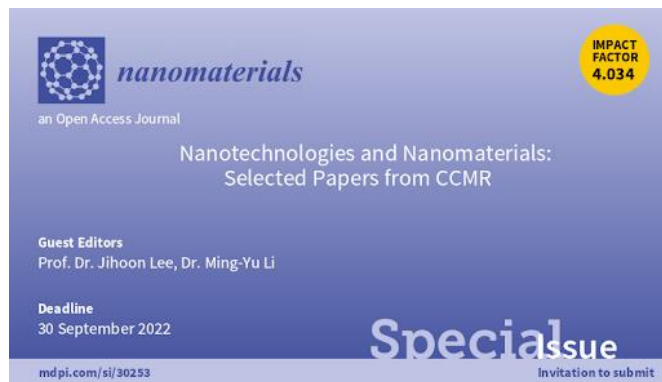
The point is that a special issue differs from a regular issue in that the papers constitute a collection around a theme or coming from a specific group of authors or event.

nanomaterials
an Open Access Journal

IMPACT FACTOR 4.034

Nanotechnologies and Nanomaterials:
Selected Papers from CCMR

Guest Editors
Prof. Dr. Jihoon Lee, Dr. Ming-Yu Li

Deadline
30 September 2022

Special Issue

mdpi.com/si/30253
Invitation to submit

ΔιΦΕΤ

ν papers

- Review

- paper σε περιοδικό
  - Διεθνές
  - Τοπικό

- paper σε συνέδριο
  - Διεθνές
  - Τοπικό
  - Νέων Ερευνητών

Οι τύποι των papers

4. What does it report?

- It reports each step of the study in detail. This includes an abstract, the hypothesis, background study, methodology, results and an interpretation of the findings.

- It also includes a discussion of the possible implications of the results, of how the study contributes to existing literature and suggestions for further research.

- It identifies & reports commonalities between the results of the chosen studies. If there are discrepancies then the authors try to provide reasons for conflicting results.

- With a balanced perspective, the authors analyse available information from published work and report any problems with or gaps within the existing literature.

5. How long should it be?

- It depends on the word count specified by the journal but word limit usually ranges between 3000 to 6000 words. For some journals the word limit might even go up to 12,000.

- The word limit usually ranges between 3000 and 5000 words. In some cases, a longer or relatively short review paper might also be published, depending upon the journal.

- **Review**

- **paper σε περιοδικό**
  - Διεθνές
  - Τοπικό

- paper σε συνέδριο
  - Διεθνές
  - Τοπικό
  - Νέων Ερευνητών

Η δομή ενός paper

Η δομή ενός paper

Title: Fishing for readers

Abstract: The "Reader's Digest" version

The body of the paper: The whole story

A scientific paper is really three (3) separate entities.

This fact is critically important when you set out to write a paper, or to read one.

Title, Author, Abstract, Keywords

- Descriptive information that lets readers search for an article.

Introduction

- What is the context for this project?
- How does it fit in with other research on the topic?
- *What is the research question?*

WHY?

Methods

- What did the author(s) do to answer the research question?

HOW?

Results

- What was the answer to the question?
- This is often shown in tables and figures.

WHAT?

Discussion/Conclusion

- What is the significance of this project?
- How does it fit in with what else is known about the topic?

SO WHAT?

References

- Materials the author(s) cited when writing this paper.

The body of a paper in a typical journal

- Introduction
- Materials and Methods (or "Experimental")
- Results
  - Text
  - Tables
  - Figures
- Discussion
- Conclusion
- Acknowledgments
- Appendices
- Literature Cited

Ανάλυση της εργασίας που δόθηκε πριν από το συνέδριο

ΔιΦΕΤ

Ανάλυση των εργασιών που δόθηκαν πριν από το συνέδριο

1. Να προσδιορίσετε ποια papers περιγράφουν έρευνα (research papers) και ποια αναφέρονται σε «καλές πρακτικές» (good practice papers).

2. Να προσδιορίσετε ποια papers έχουν τη δομή επιστημονικής εργασίας.

3. Να προσδιορίσετε ΤΙ ερευνά κάθε paper και ΠΩΣ το ερευνά.

4. Να καταγράψετε τη δομή του κάθε paper.

5. Να προσδιορίσετε τον αριθμό των αναφορών σε κάθε μέρος του κάθε paper.

Η αναζήτηση της βιβλιογραφίας (ΠΩΣ ψάχνουμε papers)

Academic Search Engine	URL	Disciplines
Google Scholar	scholar.google.com	All
ScienceDirect	http://www.sciencedirect.com/science/search	All
Pubmed	www.ncbi.nlm.nih.gov/pubmed	Life sciences
IEEE Xplore	ieeexplore.ieee.org/Xplore/guesthome.jsp	Electronics, Electrical engineering, Computer science
National Agricultural Library (AGRICOLA)	agricola.nal.usda.gov	Agriculture
Education Resources Information Center (ERIC)	eric.ed.gov	Education

ΔιΦΕΤ

Εργασία: αναζητήστε και προσανατολιστείτε στο θέμα m-Learning

Αρχικά αναζητούμε review papers (βιβλιογραφικής επισκόπησης)
αλλά **ΔΕΝ** διαβάζουμε ολόκληρο το paper που μόλις εντοπίσαμε.

Here are a few hints to improve literature searches:

- Do the literature search before performing the research, and certainly before writing the paper.

- The next most promising papers to read are often those referenced in the relevant papers you have already found.

- Look in fields outside your discipline (this often means looking for different search keywords, which one recursively discovers when reading the literature outside of one's discipline).

- While your memory of which previous papers are worth citing is a good start, no one ever knows the full scope of the literature in even the smallest of niche fields. Do not rely on your memory alone.

- When finishing up the manuscript, look for recent publications on the subject. Often, other researchers are working on similar topics and may have published papers that should be read to ensure that your manuscript captures the latest communal knowledge in the field.

ΠΩΣ διαβάζουμε ένα paper (HOW to read a paper)

Η γλώσσα ?

Most of us never read a paper from start to finish:

Read the **title** first,

then the **abstract**,

then the **last paragraph of the Introduction (In this work…)**,

then the **conclusions**,

look at the **figures and tables**.

THEN READ THE WHOLE PAPER

2. THE THREE-PASS APPROACH

The key idea is that you should read the paper in up to three passes, instead of starting at the beginning and plowing your way to the end. Each pass accomplishes specific goals and builds upon the previous pass: The *first* pass gives you a general idea about the paper. The *second* pass lets you grasp the paper's content, but not its details. The *third* pass helps you understand the paper in depth.

2.1 The first pass

The first pass is a quick scan to get a bird's-eye view of the paper. You can also decide whether you need to do any more passes. This pass should take about five to ten minutes

2.2 The second pass

In the second pass, read the paper with greater care, but ignore details such as proofs. It helps to jot down the key points, or to make comments in the margins, as you read.

2.3 The third pass

To fully understand a paper, particularly if you are re-viewer, requires a third pass. The key to the third pass is to attempt to *virtually re-implement* the paper: that is, making the same assumptions as the authors, re-create the work. By comparing this re-creation with the actual paper, you can easily identify not only a paper's innovations, but also its hidden failings and assumptions.

Εργασία: (1st pass) προσδιορίστε στο paper "Teaching Science Pulleys" ΠΟΙΟ είναι το αντικείμενο της έρευνας και περιγράψετε-το με 2-3 προτάσεις.

ΔιΦΕΤ

Η καταχώρηση (annotation) των papers

How to annotate a paper

Bibliographic Details of the Text

↓

Brief Overview/Description of the Content

↓

Critical Analysis of the Text

↓

Statement of Relevance/Usefulness

Increasing degree of complexity →

Annotated Bibliography

Literature Review

Systematic Review (Meta-Review)
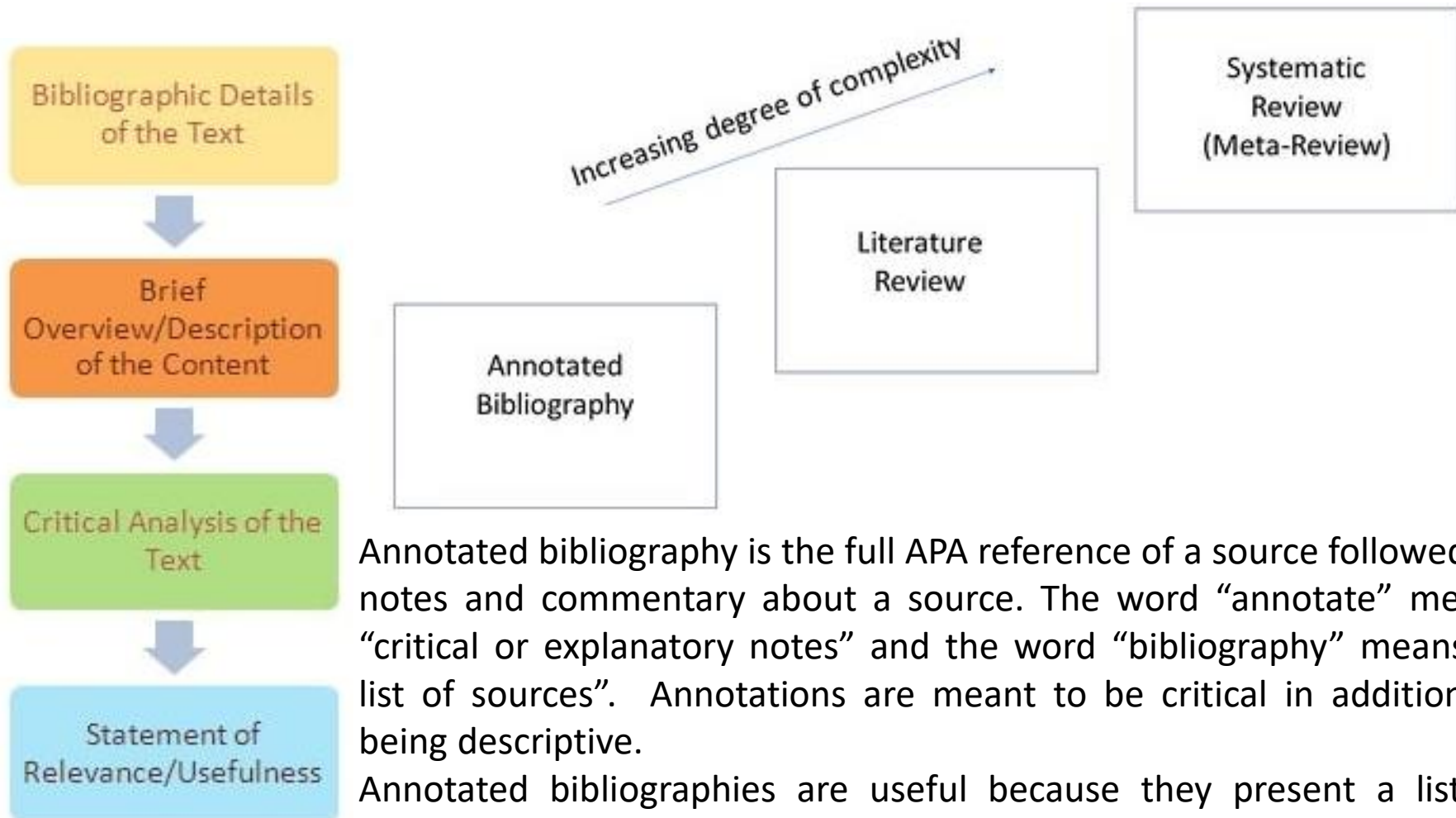
Annotated bibliography is the full APA reference of a source followed by notes and commentary about a source. The word "annotate" means "critical or explanatory notes" and the word "bibliography" means "a list of sources". Annotations are meant to be critical in addition to being descriptive.

Annotated bibliographies are useful because they present a list of resources that others can use for research, and each resource has information that describes what is in it and that evaluates it (describes what makes it unique, useful, or helpful).

ΔιΦΕΤ

How to annotate a paper

Bibliographic Details of the Text

↓

Brief Overview/Description of the Content

↓

Critical Analysis of the Text

↓

Statement of Relevance/Usefulness

Steps for Writing an Annotated Bibliography

Writing an annotated bibliography can be tedious, but it doesn't have to be painful! As you begin your assignment, use these guidelines to help make the process easier.

- Begin by formatting your citation. Pick a format and cite the source.

- Next, begin the annotation part by briefly explaining what the resources is about. For example, what is the article about? Keep it to 2-4 sentences.

- Now is the tricky part. You need to assess and reflect upon the resource. This will be the longest part of your annotation. Focus on answering these questions in your write up:
    - What information does this source contribute to your research question?
    - How does the source relate to other sources in your bibliography?
    - If it's an article, what are the strengths and weaknesses of the article?
    - How does the source fit into your research paper? Is it useful? Why is it useful?

ΔιΦΕΤ

Παράδειγμα annotation ενός paper

1. Reference

The citation information in the same format as it would be in the Reference List.

McFarlane, J.K. (1973). Standards of care - what do we mean by care? Nursing Mirror. 143 (23), 40-42

2. Describe

A short summary of the theory, research findings or argument.

The article examines the meaning of the word 'care' within a nursing context. The responsibility of nurses to provide care legitimised in numerous documents, and the author goes on to identify key concepts related to nursing care.

A short statement of the author's viewpoint.

In particular, these concepts include assisting, helping and giving a service; offering this service to people who need help with daily living activities and to others who are affected by health deviations or illness of some kind. Moreover, the nurse's caring role is legitimised by the patients. Finally, the article concludes by relating how these concepts are put into operation by using the steps of the nursing process - assessing, planning, implementing and evaluating the patient's need for nursing care.

3. Evaluate

Comments on the usefulness and/or limitations of the text for your research.

The main limitation of the article is that the research was only conducted in large city hospitals.

4. Link

A final comment on the work, taking into account how this work will fit into your research on a topic.

Therefore, while the article is useful for an analysis of nursing care, the limitations of its research base will require some adaptation to meet the needs of this assignment that requires a commentary on services in both city and country area hospitals.

ΔιΦΕΤ

How to index a paper

Mendeley Desktop

Introduction

01. Desktop interface

02. Adding documents

03. Organizing documents

04. Read, highlight & annotate

05. Find & import new content

06. Writing & citing

07. How sync works

Next steps

↑ Back to top

ΔιΦΕΤ

Your new reference manager

The new Mendeley Reference Manager has been built using researchers' feedback to give you what you need to manage your references even more quickly and effectively.

Store all your references in one place

Build your personal Mendeley library to organize, search and read all your references
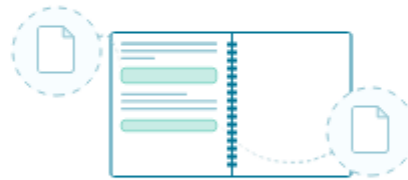
Keep all your thoughts together

Mendeley Notebook helps you collate all your highlights and notes from multiple PDFs

Cite seamlessly

Also available: Mendeley Cite, the new citation add-in for Microsoft® Word, takes the time out of referencing
Get Mendeley Cite from Microsoft AppSource

ΔιΦΕΤ

Η συγγραφή ενός paper (HOW to write a paper)

Η γλώσσα ?

The Process of Paper Writing

- Create an outline first

- Plan on multiple drafts:
  - Filename with dates
  - One filename written over with new draft

- Tables/figures early: prompt more analysis

- Deadlines for you and coauthors

Recommended strategy is to write your manuscript

Following this order will help you write a logical and consistent manuscript:
1. Materials and Methods
2. Results
These can be written first, even as you are doing your experiments and collecting the results.

3. Introduction
4. Discussion
5. Conclusion
Write these sections next, once you have had a chance to analyze your results, have a sense of their impact and have decided on the journal you think best suits the work

6. Title
7. Abstract
Write your Title and Abstract last as these are based on all the other sections.

Answering Questions

- This order is really quite logical and could apply to almost any report you might write. An effective way to proceed is to answer these four questions, in order:

- **1. What was the problem?** Your answer is the Introduction.

- **2. How did you study the problem?** Your answer is the Materials and Methods.

- **3. What you found?** Your answer is the Results.

- **4. What do these findings mean?** Your answer is the Discussion.

Σκέψεις για τη συγγραφή των εργασιών του Συνεδρίου

Οι τύποι των papers σε ένα τυπικό συνέδριο

A regular **full paper** is your basic standard peer-reviewed paper (~ 8 pages).

A **short paper** is for work that is worth publishing, but doesn't rise to the level of quality or significance of a full paper. It has the structure of a full paper, with a combined Results and Discussion section (~4 pages).

A **position paper** is for ideas that don't have and results, per se, but are worth communicating to the community, or for announcing a result that has been published with another community (~ 2 pages).

Short papers are generally significantly less respected than full papers, but may be worth it anyway: a short paper in a high-profile conference is often better than a full paper in a less significant conference. Position papers are in a different category: they aren't attempting to be the same as a full paper, and are typically judged more by a standard of "interesting to discuss."

Κατανομή του περιεχομένου στα άρθρα του Συνεδρίου
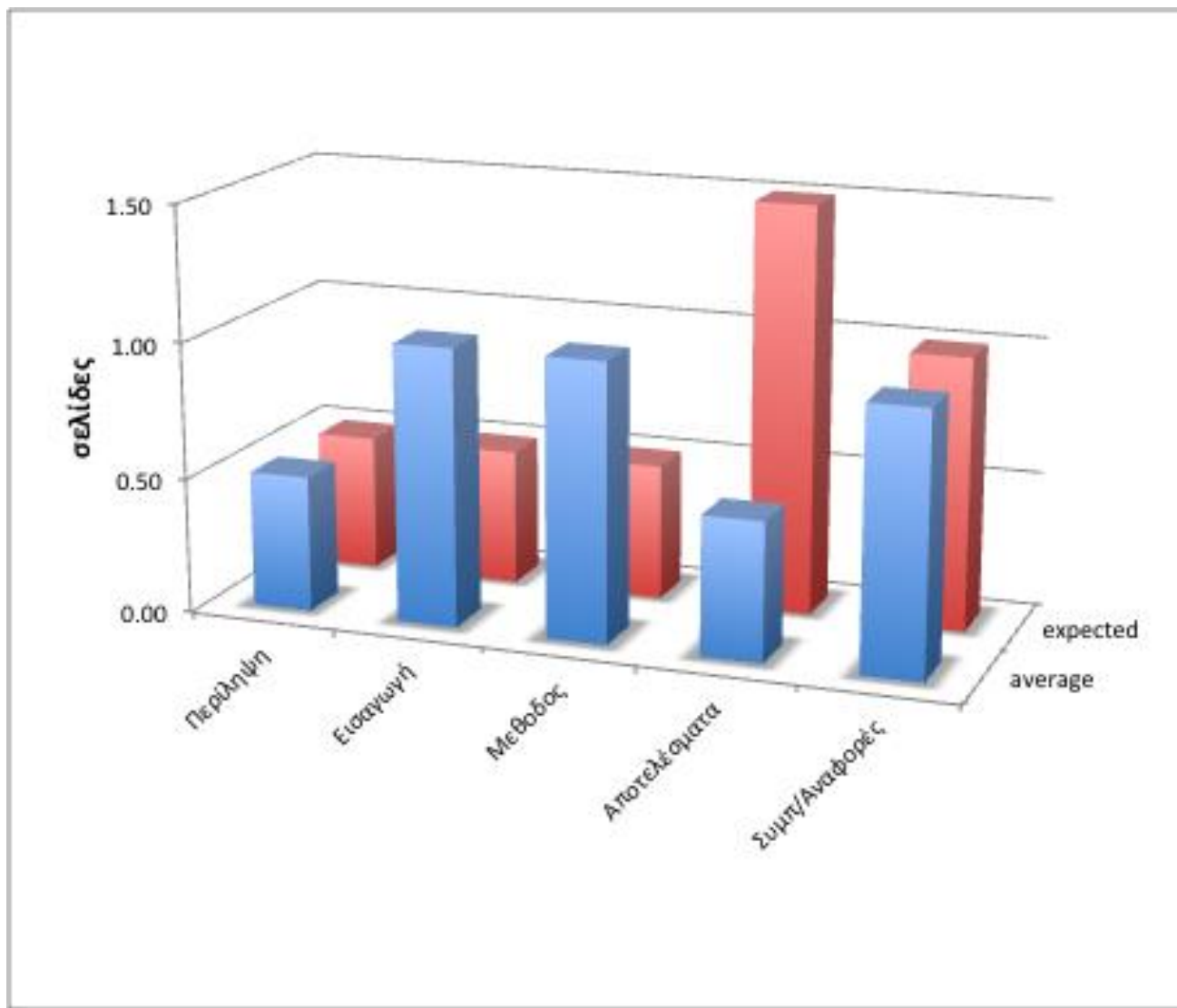
Παράδειγμα αποτελεσμάτων

Αποτελέσματα: Η παρούσα μελέτη βρίσκεται σε αρχικό στάδιο και με ιδιαίτερο ενδιαφέρον αναμένονται τα πρώτα αποτελέσματά της από την πιλοτική εφαρμογή της.

ΤΙΤΛΟΣ της εργασίας ?

ΕΡΕΥΝΗΤΙΚΑ ΕΡΩΤΗΜΑΤΑ ?

Ευχαριστώ
για την προσοχή σας