

## Παιδαγωγικά ρεύματα στο Αιγαίο

Τόμ. 4, Αρ. 1 (2009)

Τεύχος 4

παιδαγωγικά ρεύματα στο Αιγαίο  
διεθνής περιοδική έκδοση παιδαγωγικών προβληματισμών



Τεύχος 4, Δεκ 2009

Η Εννοιολογική Χαρτογράφηση σε Ηλεκτρονικά Περιβάλλοντα: Μια Εναλλακτική Στρατηγική Μάθησης

Αλιβίζος Σοφός, Βασιλική Λιάπη

doi: [10.12681/revmata.31059](https://doi.org/10.12681/revmata.31059)

Copyright © 2022, Αλιβίζος Σοφός, Βασιλική Λιάπη



Άδεια χρήσης [##plugins.generic.pdfFrontPageGenerator.front.license.cc-by-nc-sa4##](https://plugins.generic.pdfFrontPageGenerator.front.license.cc-by-nc-sa4/#).

### Βιβλιογραφική αναφορά:

Σοφός Α., & Λιάπη Β. (2022). Η Εννοιολογική Χαρτογράφηση σε Ηλεκτρονικά Περιβάλλοντα: Μια Εναλλακτική Στρατηγική Μάθησης. *Παιδαγωγικά ρεύματα στο Αιγαίο*, 4(1), 59–78. <https://doi.org/10.12681/revmata.31059>

H :

\*

Isofos@rhodes.aegean.gr

\*

premnt04019@rhodes.aegean.gr

**Abstract**

This article studies Concept Mapping as a cognitive tool in the education process. It studies also the supportive role of New Technologies (PC, software, internet) in constructing educational scenarios to help learning and teaching. The study is a literature review based on 27 research papers from Greek and international literature aiming to outline the main theoretical foundations for Concept Mapping development and application. Especially, this review highlights the importance of Concept Mapping as an important tool in every educational level (primary & secondary education, university, adult education), in a variety of school subjects (Language, History, Biology, etc.) and in multifunctional ways in the education process (learning, teaching, evaluation, metacognitive thinking, co-operation, and research).

ο ( / , ) , 27

( / , , . .) , ( , , , . .).

ό :

1. « terra incognita terra cognita. »

∅ Romance & Vitale (1999),

---

\*

\*

«...», (concept map).  
 (1984), «...» Novak and Gowin  
 Ausubel (Novak, 1984),  
 (meaningful learning).

∅ «...» (meaning)  
 Ausubel, «...»  
 / anchorage) ( -

μ  
 (mind mapping). Ο «...» (mind map)  
 Buzan (1995), 5-10 5-10 5-10  
 «...» «...»  
 «...»  
 ( , 2000 · Kinchin & Hay, 2000).

1.2

20

Gordon Pask (1977 Fisher, Wardersee et al. 2000)

1950 1970,

Joseph Novak (Novak 1990)

-12.

Novak

Ausubel (Novak 1984),

Novak

1980, Fisher, Falleti, (1990 Fisher, Wardersee et al. 2000) SemNet ®

Macintosh

Quillian (1968),

Wardersee et al. 2000)

1980, Wandersee (1987 Fisher,

1990, Horn (1989) Buzan (1995)

Buzan

MindMan

ó

ó

Inspiration®.

Novak (1990)

IBM Macintosh, SemNet

pencil).

õ

ö (paper-and-

(sticky notes) ( )

( , , )

18

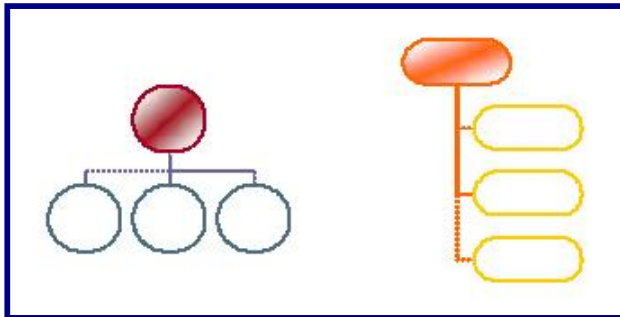
1:

<b>AXON Idea Processor</b>	AXON Research, Chan Bok		, , , ,
<b>Activity Map</b>	Time/System Int.		,
<b>Belvedere</b>	University of Pittsburgh		,
<b>CLASS</b>	Heriot-Watt University		
<b>CMap</b>	IHMC (Joseph D. Novak)	Freeware tool	, , , ,
<b>Decision Explorer</b>	Banxia Software		( , ) ,
<b>Inspiration / Education Edition</b>	Inspiration Software, Inc., USA		, , ,
<b>Kidspiration</b>	Inspiration Software, Inc., USA		, K-5
<b>Kmap for mac</b>	University of Calgary, Alberta		, ,
<b>Mind Manager</b>	Michael Jetter		,
<b>Mind Mapper</b>	Sim Tech Systems		, ,
<b>Mind Mapper Junior</b>	SimTech Systems		, K-5
<b>PIViT</b>	PBS group at the University of Michigan		, , , ,
<b>Representation Tool</b>	IACM/FORTH		, ,
<b>SEMNET</b>	Sem Net Research Group, San Diego California		, , ,
<b>Smart Ideas</b>	SMART Technologies		( , , ),
<b>VisiMap Lite</b>	Coco Systems		,

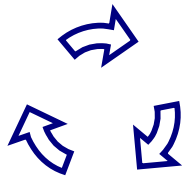
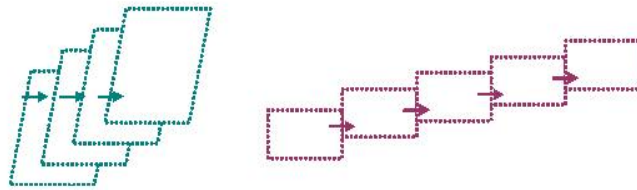




2. " " (Hierarchy) :



3. ð ö (Flowchart):



4. ð ö (Systems):

2.1.

(2001),

(... ).



(2001):

- 
- 8 20,
- 
- 2,3 4 6 8
- 
- 
- Novak cross-links
- 

2.2.

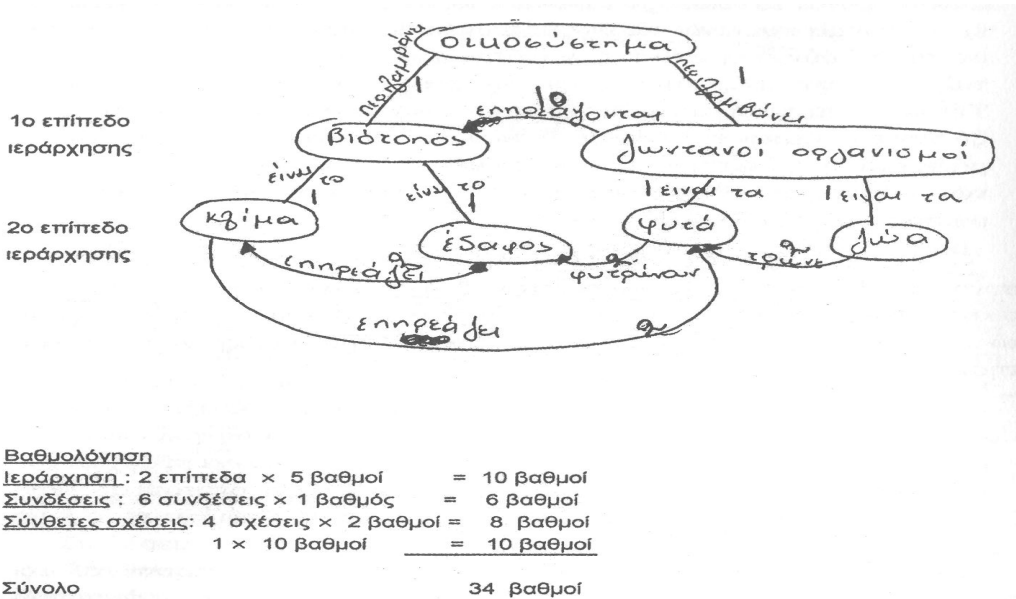
( , ... ) ,

μ (structural method) (Novak & Gowin, 1984), μ μ μ 1 μ μ

, 5 μ , 10 μ

1 μ 184

Novak (Novak & Gowin, 1984), (hierarchy), 2. (links), 3. (crosslinks).



3:

( , 2001)

(2002)

μ ( , μ , μ μ ) μ

μ ( , μ , μ μ ) μ

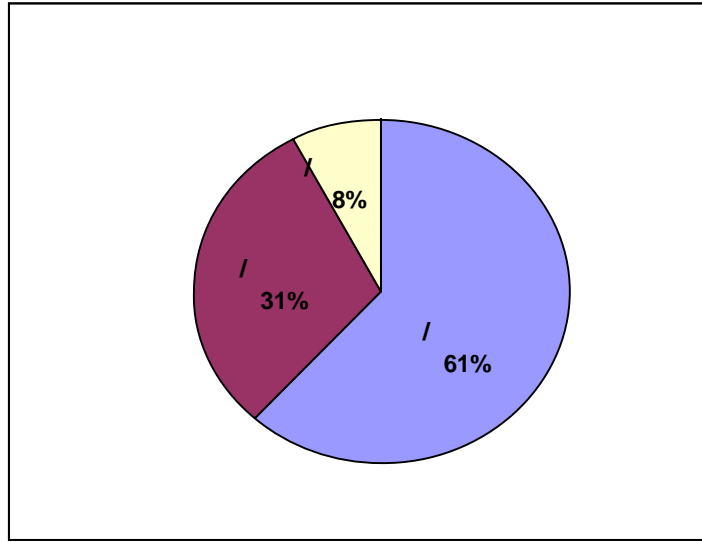
μ , μ , μ

3.

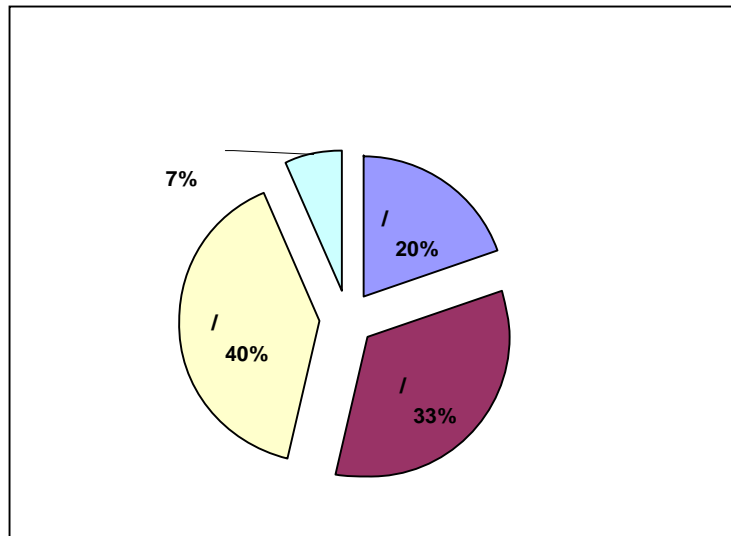
«...» (Kron & 2007).  
 , K , & , (2006)  
 ∅  
 «Inspiration»,  
 & ό (2006) Inspiration ό  
 , ,  
 (2002),  
 ∅

3.1.

& 2005, & 2006,  
 2002, 2004, & 2002,  
 2000,) 13 (Daley 2004,  
 Pearson & Somekh, 2003, Rye, 2001, McClure, Sonac et al, 1999, Markow & Lonning, 1998,  
 Thomson 1997, Taber 1994) 14 ,  
 / , 4 / ,  
 1 / ( .1) , ( .  
 2) ∅ (5 ) ∅ (5 ) ∅  
 ) 1 (Rye 2001) 3 /

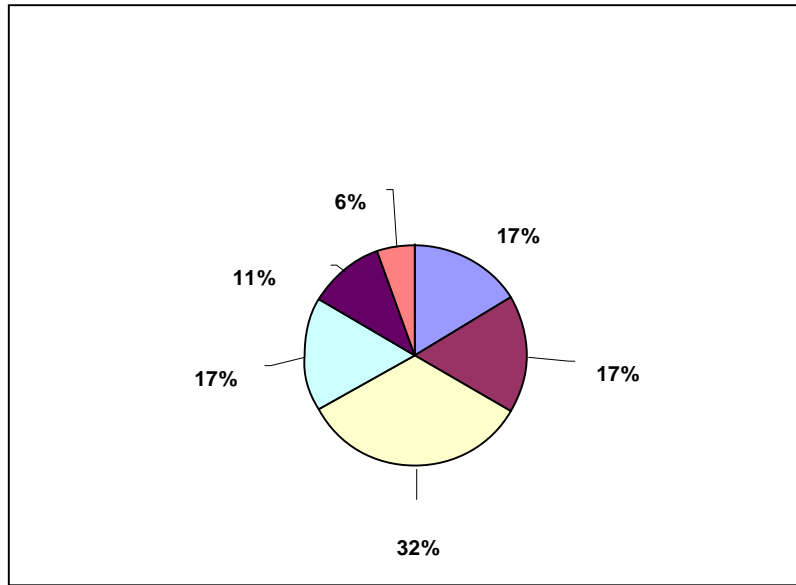


1:



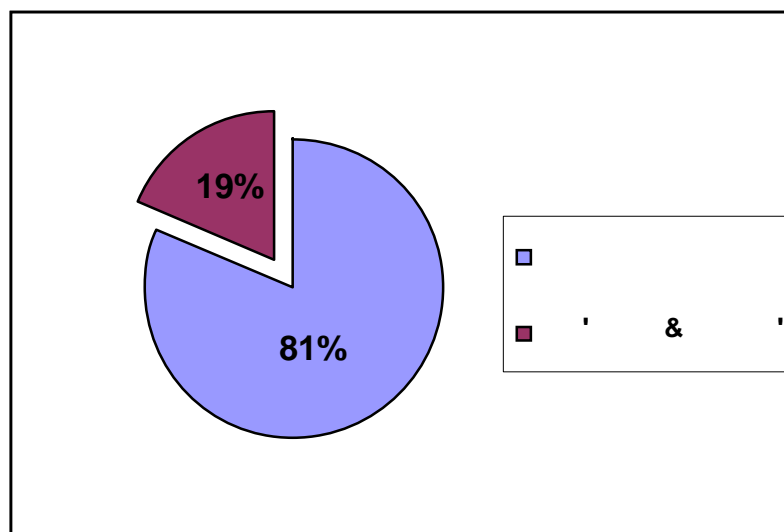
2:

(.3).



3 :

( / , , )  
 ( ÷ & ø), ( . 4), ( , , )  
 , 22 , . .). ø 27 , 5  
 , , , ,  
 ,  
 (Inspiration, kidspiration, . .).



4 :

( 2004)

- 1. ( project, / , ... )  
( . 5).  
: 27  
14
- 2. :  
2004, & 2005, Chang, Sung et al. 2001).  
( 2002, &
- 3. : μ  
(Novak, 1998)  
( . . ) 3 / ( 2003).  
27 21
- 4. :

Peukert & Fisher (1999)

Palmer (1994)

11

27

5.

&

2005) μ

:

( ,

μ

(i)

, (ii)

μ

, (iii)

(advance organizer),

μ

μ

μ

(iii)

/

μ

(i)

(ii), (iii)

(iii) μ

μ

- μ

27

6

6.

:

( 2001).

27

7.

1994),

:

(Taber

27

2





,  
 ,  
 ( , , , , . . )  
 .  
 , . & , . (2004).  
 : , 36, 53-67.  
 , . (2001).  
 , .. , .. , . & , . (2005.)  
 μ  
 http:// hermes.di.uoa.gr/lab/cvs/papers/gouli/ggg-Didactics-2005.pdf .  
 , . (2002). ό μ μ μ  
 μ : μ 3  
 ð ö, ( . 47-56). :  
 -Inter@ctive.  
 , . & , . (2006).  
 "Inspiration"  
 , , , , , , . ( . ),  
 , ( . 89-115) :  
 Kron, F., , . (2007). : Gutenberg.  
 , . (2002).  
 :  
 , .. . (2000).  
 μ 2 μ μ μ  
 , 297-308. :  
 , . (2002).  
 ,  
 ,  
 , . (2004).  
 :  
 , . (2003). :  
 , E., , X., , . (2002).  
 . ð , 26- 29/9/2002, ö,  
 , 3  
 , .. K , .. , . (2006).  
 :  
 :  
 / , / / , .

- , T., , M.(2005). : μ μ , : - 2 , . Vygotsky, L. S. (1997). : : Gutenberg. , . (1998). Curriculum: . .
- Anderson-Inmn, L. & Ditson, L. (1999). Computer-Based Concept Mapping ó A Tool for Negotiating Meaning. *Learning & Leading with Technology*, 26(8) (7-13).
- Brullard, E. & Baron, G.-L. (2000). Computer ó based Concept Mapping: a Review of a Cognitive Tool for Students, Institut National de Recherche Pédagogique (INRP), France. Available on <http://www.iflp.or.at/con2000/iceut2000/iceut10-03.pdf> .
- Buzan, T. (1995). *The Mind Map Book*. (2ed.). London, UK: BBC Books.
- Daley, B. (2004). Using Concept Maps with Adult Students in Higher Education, Concept Maps: Theory, Methodology, Technology Proceedings of the First Int. Conference on Concept Mapping, Pamplona, Spain. Available on <http://cmc.ihmc.us/papers/cmc2004-059.pdf> .
- Fisher, K., Wardersee, J. & Wideman, G.(2000). Enhancing Cognitive Skills for Meaningful of Domain Specific Knowledge, American Association for the Advancement of Science, Annual Meeting, Washington, DC, February 17-22, p.p.1-22, NJ: Prentice Hall Inc
- Horn, R. (1989), *Mapping Hypertext*, The Lexington Institute, Lexington, MA, USA.
- Jonassen, D. H. (1996). *Computers in the Classroom: Mindtools for Critical Thinking*. Englewood Cliffs.
- Kinchin, I., Hay, D. & Adans, A.(2000). How a Qualitative Approach to Concept Map Analysis can be used to aid Learning by illustrating Patterns of Conceptual Development. *Educational Research*, 42(1), (43-57).
- Kron, F. & Sofos, A. (2003). *Mediendidaktik*. Munchen: Ernst Reinhardt.
- Markow, P. & Loaning, R. (1998). Usefulness of Concept Maps in College Chemistry Laboratories: Studentsø Perceptions and Effects on Achievement. *Journal of Research in Science Teaching*, 35(9), (1015-1029).
- McAleese, A. (1998). The Knowledge Arena as an Extension to the Concept Map: Reflection in Action. *Interactive Learning Environments*, (6), (1622).
- McClure J., Sonak, B., Suen, H. (1999). Concept Map Assessment of Classroom Learning: Reliability, Validity, and Logistical Practicality. *Journal of Research in Science Teaching*, 36 (4), (4756492).
- Novak, J.D. (1984). *Learning how to Learn*, Cambridge: Cambridge University Press
- Novak, J.D. (1990). Concept Mapping: A Useful Tool for Science Education. *Journal of Research in Science Teaching*, 27 (10),( 937-949).
- Novak, J., & Gowin, D. (1984). *Learning how to Learn*. New York: Cambridge University Press.
- Pearson, M., Somekh, B. (2003).Concept- Mapping as a Research Tool: A Study of Primary Childrenø Representations of Information and Communication Technologies (ICT). *Education and Information Technologies*, 8(1), (5622).
- Quillian, M.R. (1968). Semantic Memory, In M. Minsky (Ed.), *Semantic Information Processing* (227-270). Cambridge, MA: MIT Press.
- Romance, N. & Vitale M. (1999). Concept Mapping as a Tool for Learning: Broadening the Framework for Student-Centered Instruction. *College Teaching*, 47(2), (74-79).
- Rye, J. (2001). Enhancing Teachersø Use of Technology through Professional Development on Electronic Concept Mapping. *Journal of Science Education and Technology*, 10(3), (223-235).

- Taber, . (1994). Student Reaction on Being Introduced to Concept Mapping, *Physics Education*, (29), (276-281).
- homson, J.(1997). Concept Mapping as a Means of Evaluating Primary School Technology Programmes. *International Journal of Technology and Design Education* , 7, (97-110).
- Wandersee (1990), Concept Mapping and Cartography of Cognition, *Journal of Research in Science Teaching*, 27, (10), (932-6).