ΧΑΡΙΣΜΑΤΙΚΟΤΗΤΑ ΣΤΑ ΜΑΘΗΜΑΤΙΚΑ: Η ΣΥΓΧΡΟΝΗ ΕΡΕΥΝΑ ΚΑΙ Η ΑΞΙΟΠΟΙΗΣΗ ΤΗΣ ΣΤΗ ΔΙΔΑΣΚΑΛΙΑ ΤΩΝ ΜΑΘΗΜΑΤΙΚΩΝ

GIFTNESS IN MATHEMATICS: RECENT RESEARCH AND ITS UTILITY IN MATHEMATICS TEACHING

της

Μαρίας Μπεμπένη

Μεταπτυχιακή διατριβή που υποβάλλεται

στην τριμελή επιτροπή για την απόκτηση του μεταπτυχιακού τίτλου του

Προγράμματος Μεταπτυχιακών Σπουδών Εξειδίκευσης

του Τ.Ε.Φ – Δ.Π.Θ. σε συνεργασία με το Ε.Κ.Ε.Φ.Ε. Δημόκριτος – Ινστιτούτο

Πληροφορικής και Επικοινωνιών

με τίτλο: «Εξειδίκευση στις Τ.Π.Ε. και Ειδική Αγωγή – Ψυχοπαιδαγωγική της ένταξης»

Η τριμελής επιτροπή:

1. ΑΘΑΝΑΣΙΟΣ ΔΡΙΓΚΑΣ

ΔΙΕΥΘΥΝΤΗΣ ΕΡΕΥΝΩΝ ΚΑΙ ΕΡΕΥΝΗΤΗΣ Α΄ ΒΑΘΜΙΔΑΣ– Ε.Κ.Ε.Φ.Ε. «ΔΗΜΟΚΡΙΤΟΣ»

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Περίληψη

Στην παρούσα βιβλιογραφική μελέτη γίνεται μία απόπειρα να προσεγγίσουμε την έννοια την χαρισματικότητας ειδικά στο πεδίο των μαθηματικών. Αναλύονται οι βασικές γενικές θεωρίες για τη χαρισματικότητα που εφαρμόστηκαν στο πεδίο των μαθηματικών καθώς και οι ειδικές κατά πεδίο θεωρίες που κατασκευάστηκαν αποκλειστικά για το πεδίο των μαθηματικών με σκοπό να προσδιοριστούν τα χαρακτηριστικά των χαρισματικών μαθητών στα μαθηματικά. Όπως προκύπτει από τη μελέτη που βασίζεται σε εκτενή ανασκόπηση της βιβλιογραφίας, η κατασκευή εργαλείων για τον εντοπισμό της χαρισματικότητας είναι ένα δύσκολο εγχείρημα γι' αυτό περιορίζεται στη μέτρηση της νοημοσύνης ή/και της μαθηματικής ικανότητας που μπορούν να ποσοτικοποιηθούν ενώ τις περισσότερες φορές αγνοούνται πτυχές της χαρισματικότητας όπως για παράδειγμα η δημιουργικότητα στα μαθηματικά. Επιπλέον, η υψηλή ακαδημαϊκή επίδοση δε συνδέεται πάντα με τη χαρισματικότητα στα μαθηματικά. Μία πιθανή εξήγηση είναι ότι παραδοσιακά η διδασκαλία, στην Ελλάδα αλλά και διεθνώς εστιάζει και αξιολογεί τη διαδικαστική γνώση, δηλαδή στην εκμάθηση αλγορίθμων χωρίς αυτή να συνοδεύεται από τη αντίστοιχη εννοιολογική κατανόηση, δηλαδή την κατανόηση των εννοιών. Τέλος, συζητώνται η αναγκαιότητα υποστήριξης των πολλά υποσχόμενων παιδιών στα μαθηματικά καθώς και ο επαναπροσδιορισμός των στόχων της διδακτικής διαδικασίας με σκοπό την ανάπτυξη της δημιουργικότητας καθώς και την ανάδειξη της χαρισματικότητας στα μαθηματικά.

Λέξεις κλειδιά: Χαρισματικότητα, Μαθηματική Εκπαίδευση, Μαθηματική ικανότητα Δημιουργικότητα, Εννοιολογική γνώση

Abstract

In the present review, we attempted to approach the concept of giftness in the field of mathematics education. The basic domain-general and domain-specific theories targeting identification of mathematics giftness are elaborated. The construction of instruments assessing mathematics gifteness is proved to be a difficult process and it is limited to measures of intelligence or/and mathematical ability which can be quantified but, in this way, important aspects of giftness such as creativity are neglected. Moreover, academic performance in mathematics does not necessarily related to mathematics giftness. A possible explanation is that, traditionally, instruction emphasizes and assesses procedural knowledge, namely the knowledge of algorithms and procedures against conceptual knowledge referring to the knowledge of the concepts and principles that govern a domain. Finally, we discuss the need of providing support to mathematics gifted students and redefining the aims of mathematics instruction to encourage creativity in mathematics and facilitate the identification of the gifted in mathematics.

Keywords: Giftness, Mathematics Education, Mathematical ability, Creativity, Conceptual knowledge

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