THE TALL- VINNER PROBLEM. AN OPERATIVE REFORMULATION

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In order to identify conceptual comprehension problems, Tall & Vinner [1], [2]
introduce the notions of *concept-image, evoked concept image,* and the differences
between the *formal definition* and the *personal definition (PD)* of a mathematical
concept. We will define these problems as the Tall-Vinner problem (TVP). This
problem is manifested as incoherencies among the *meanings associated to the concept*
or when the *meanings* associated with the name of the concept do not agree with its
formal definition. This is observed when the subject responds to cognitive demands in
different situations.

In [3][1], we construct an *operative definition of the basic comprehension of function.
(BCF),* inspired by Vergnaud's definition of concept [4], in order to identify the
measure in which a student possesses a comprehension level of function that would
allow him to successfully overcome the TVP.

We will present and discuss quantitative indicators which make the definition of the
BCF operative, defining the concepts of a *stable PD, a mathematically well-adapted
PD, the coherence of a stable PD in relation to function.* Our purpose is to provide an
instrument of TVP analysis that can be generalized to the study of other concepts.

NOTES

REFERENCES

[1] Tall, D. & Vinner, S. (1981) Concept Images and Concept Definition in
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[2] Vinner, S. (1991) The role of definitions in the teaching and learning of
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[3] Grupo de Educación Matemática (2001) *El problema del concepto imagen en el
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[4] Vergnaud, G. (1993) La Teoría de los Campos Conceptuales. Didáctica de la
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