The act of writing presents difficulties for about 10-30% of elementary school-aged children. Other adults and children develop handwriting problems as a result of various pathologies (e.g., Cancer, Parkinson's disease, C.V.A, M.S, Schizophrenia). The examination of handwriting difficulties is important due to the variety of academic, emotional and social consequences that such difficulties impose. Many methods have been developed to evaluate the writing difficulty, most of which are based on analyzing the written product and measuring writing time. Relatively little work has been done to use computerized quantitative assessment tools to examine the writing process of children.

The purpose of this investigation was to achieve greater insight into the handwriting process of children, and to identify those factors that discriminate between poor and proficient handwriters.

Two groups (50 proficient and 50 poor handwriters) third grade pupils, aged 8 and 9 years old, were recruited from regular public schools. They performed writing tasks that were recorded on WACOM X-Y digitizing tablet using a wireless electronic pen with pressure sensitive tip. Temporal and spatial variables of the handwriting process were measured while children performed graded handwriting tasks.

Results indicate significant differences between poor and proficient handwriters in many of these outcome measures. These results demonstrate the value of using computer based data collection analysis techniques to evaluate children’s handwriting since it makes available outcome measures that cannot be otherwise obtained. In the future it should be possible to apply this methodology to the examination of handwriting in various languages, and to the examination of handwriting difficulties that result of different pathologies.

Key words: Handwriting difficulties, Computer, Digitizer,