

2010 Archived Student Presentations

Thesis

The Influence of Technology in Changing Sedentary Lifestyles of the Working Adult



Erin McMahon

The purpose of this descriptive pilot study was to explore changes made in the sedentary lifestyle of the office worker when the option to engage in more physical movements, via the Wii Fit. Data collection included pre/post COPM interviews with the participant and collection of activity logged and stored on the Wii Fit and Wii console system. The participant's occupation would be classified as clerical in nature, requiring a sedentary level of activity. Analysis suggests that participant's weight and BMI decreased as she used the Wii Fit during work break times. Results suggest that through consistent use of the Wii Fit, the participant's perception of abilities, balance, and fitness endurance improved. The results will further the understanding of potential options for environmental changes to support the sedentary worker and may also help establish a profile of the sedentary worker and serve as a model to be applied in other work settings. *Erin completed her thesis under the direction of Dr. Leonard Trujillo.*

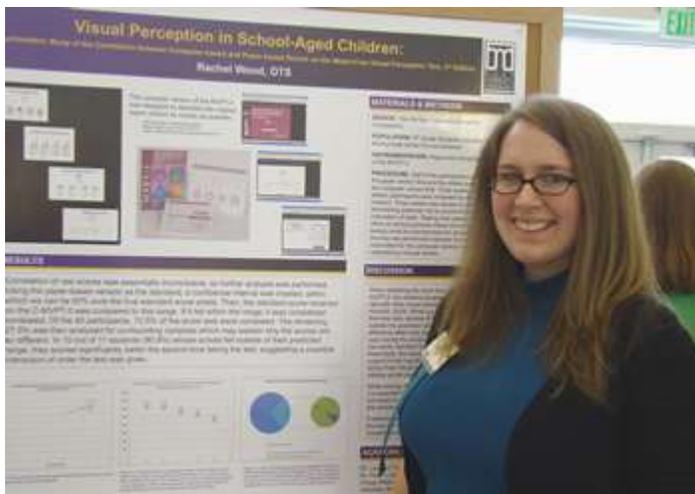
Effects of the Pre-K Handwriting Without Tears® Program on Handwriting Readiness Skills of Preschoolers with Pre-Writing Deficits in a Rural Eastern North Carolina Head Start Program



Melissa Maxwell

The purpose of this study was to determine if preschoolers with pre-writing deficits who received additional small group exposure to the Pre-K Handwriting Without Tears® (HWT) program will improve more in their fine motor and pre-writing skills as compared to similar students who only received whole class Pre-K HWT handwriting instruction. Pre and post-test data was collected using the Shore Handwriting Screening, the HWT Check Readiness screen, the Bruininks-Oseretsky Test of Motor Proficiency, 2nd edition, and the Learning Accomplishment Profile, 3rd edition. The 10 lowest scoring students were assigned to both control and experimental groups by matched pairing based on scores. The entire class received instruction twice weekly while the experimental group received additional exposure to the handwriting program twice a week over a 5 month period. Data analysis indicates that there is no statistical significance when comparing the fine motor and pre-writing skills between control and experimental groups. The handwriting screening tool did indicate significant motor pre-writing skill improvement of the control group compared to the experimental group. Preschoolers at Head Start with pre-writing deficits do not need to receive additional small group exposure to the HWT program if it is being implemented twice a week with the whole class. *Melissa completed her thesis under the direction of Dr. Carol Lust.*

Visual Perception in School-Aged Children: A Psychometric Study of the Correlation between Computer-based and Paper-based Scores on the Motor-Free Visual Perception Test, 3rd Edition



Rachel Wood

This study aims to establish the reliability of the Computerized Motor-Free Visual Perception Test, 3rd Edition against the traditional paper-based version. Both versions of the assessment tool were administered to 3rd grade students recruited from a local private school using a test-retest method. Preliminary results indicate a fairly strong correlation of age adjusted raw scores on the computer-based version of the MVPT-3 is as reliable as the paper-based version. *Rachel completed her thesis under the direction of Dr. Leonard Trujillo.*

Effectiveness of the Nintendo ® Wii Fit™ Games on the Balance of a Community-Dwelling Older Adult in Eastern North Carolina



Brittany Gardner

The aim of this study was to determine if the Nintendo ® Wii Fit™ is an effective and motivating intervention tool for improving balance with an older adult in Eastern North Carolina. In phase one of three phases, the participant played the Nintendo ® Wii Fit™ balance games, and engaged in his typical activity of walking outside daily. In phase two, the participant replaced his daily walk for selected games on the Nintendo ® Wii Fit™ and his motivation level was recorded and in three, the participant resumed walking outside and recorded his motivation level for each session; no Nintendo ® Wii Fit™ games were played during this phase. Results indicated there was a significant improvement in balance, as measured by the Four Square Step Test and Timed Get Up and Go Test after for phases one and two which suggested that Nintendo ® Wii Fit™ was effective in improving balance for this individual. *Brittany completed her thesis under the direction of Dr. Jane Painter.*

Fear of Falling and It's Perceived Impact on Older Adults Living in a Continuing Care Retirement Community



Carolina Berry

The purpose of this qualitative study is to understand the experience of falling and the fear of falling in older adults living in a Continuing Care Retirement Community. Fifteen older adult residents living independently are being interviewed to determine what impact falling and the fear of falling have on their lives. Data analysis suggests that living in a retirement community is an important piece in understanding how these older adults manage community mobility, sociality, and tasks of daily living. Most of the older adults have some fear of falling, yet live full and active lives. These results will further the understanding of the impact that falling and the fear of falling have on older adults. *Caroline completed her thesis under the direction of Dr. Jane Painter.*

Comparing Outcomes for Normal Aging and Post Stroke Populations in Interactive Metronome Therapy



Annie Slye

The purpose of this study was to compare post-CVA and normal aging populations' outcomes on the Interactive Metronome and functional motor measures after completion of IM protocols. Data from healthy participants were compared with data gathered from post-CVA participants. Percentages of change from pre- to post-test measurement with the IM's Long Form Assessment and the Nine Hole Peg Test were compared. Overall, both groups showed improvement on the outcomes, with the healthy participants averaging higher percentages of change. Data analysis did not find statistically significant differences between groups on any measure, indicating that the IM may equally be effective with a post-CVA population as with the healthy aging population. *Annie completed her thesis under the direction of Dr. Leonard Trujillo.*

Master's Projects

Evaluating the Driving Potential of a Teenager with Cerebellar Ataxia: A Case Study



Sharon "Beth" Faircloth

The purpose of this case study was to examine the use of a driving simulator as an effective occupational therapy tool for determining potential to drive for an individual with a physical disability who has never driven. Initial data was collected through medical history, interviews and formal testing which included typical pre-driving assessments. Following the initial assessment, the participant was instructed on the principles of driving on the simulator with the opportunity to practice the skills through several developed scenarios. A therapist used guided feedback and direction to facilitate the skill training. During a second session on the simulator, the client was expected to demonstrate increased knowledge and abilities. Results indicated that after only two trials with the simulator improvement in performance was evident. This suggests that a driving simulator may be an appropriate tool for evaluation of driving potential as well as an intervention for gaining skills and knowledge for individuals not ready for on the road driving. *Beth completed this project under the direction of Dr. Anne Dickerson.*

Developing the Transportation Resource Guide for Occupational Therapy Practitioners



Lesley Evans and Lindsie Webster

This project was designed to develop a clinical reasoning process to be used by occupational therapists to address community mobility with clients, particularly after driving retirement.

The objective was to increase awareness and facilitate the use of alternative modes of transportation to provide individuals the opportunity to continue to participate in the community when cessation of driving becomes necessary. Data was collected through semi-structured interviews of older adults drivers, retired drivers, caregivers, and healthcare practitioners. The Guide was developed based on the results of these interviews and designed it to be used jointly by the occupational therapy practitioner and client. Seven occupational therapy practitioners were asked to use the Guide with their clients and pre, mid, and post-questionnaires were conducted to determine the usability of the Guide.

Results found that the Guide was helpful in inpatient rehabilitation, driving rehabilitation, and skilled nursing facilities; would be easier to use in an electronic version, and assisted therapists in leading a driving cessation discussion with clients. *Lesley and Lindsay completed this project under the direction of Dr. Anne Dickerson.*

Advocating for Occupational Therapy: Results from Presentations at a National Conference



Jaclyn Wilkerson and Melissa Colcord

The purpose of the project was to determine whether face-to-face advocacy of occupational therapy at a national conference increased public awareness and knowledge of the profession and its benefits. Data were collected using a pre/post survey before and after each conference presentation and analyzed to compare any changes in participants' knowledge of occupational therapy. Results indicated a significant increase in participants' knowledge of occupational therapy, suggesting that public presentations are an effective way to advocate and increase public awareness of the profession. *Jaclyn and Melissa completed this project under the direction of Dr. Mike Bradley and Dr. Anne Dickerson.*

Effects of The Alert Program for Self-Regulation in Pre-School/Kindergarten Children Who Have a Speech Production Disorder



Dale Harris and Jane Quinn Loftin

The purpose of the project was to test the hypothesis that children who received Alert strategies in conjunction with speech therapy will show greater improvements in articulation development and sensory processing when compared to children who did not receive Alert strategies. All children participated in four weeks of a sensorimotor/speech summer program. The experimental group continued with ten sessions of Alert strategies during individual speech therapy and the control group received individual speech therapy without Alert strategies. Results indicate the experimental group showed improvements in articulation from the mid-point and post-test scores on the Goldman Fristoe Test of Articulation. The experimental group also showed improvement in the following factors of the Sensory Profile: Sensory Seeking, Low Endurance/Tone, and Poor Registration. *Dale and Jane Quinn completed this project under the direction of Dr. Carol Lust.*

Handwriting Grasp, Quality, and Speed: How Tools Affect Performance of First and Second Grade Students



Kimberly Gouldin and Jennifer Richardson

The purpose project was to determine if the use of different writing tools affected grasp patterns, handwriting quality and rate of first and second grade students. Twenty-four first grade students and nineteen second grade students completed the Minnesota Handwriting Assessment using a standard full-length #2 pencil, a standard size Bic Cristal Gel pen, and a Livescribe™ Pulse™ pen in random sequence. The Grasp Pattern Checklist was utilized during each administration to identify predominant grasp patterns used. A descriptive

analysis was done on the Grasp Pattern Checklist to determine immature versus mature grasp patterns. Results indicate a statistically significant differences in mean handwriting form scores between pencil and Bic pen, between pencil and Pulse™ pen, and between Bic pen and Pulse™ pen. Eighty-eight percent of the students maintained a mature grasp pattern while using the three different writing tools. *Kimberly and Jennifer completed this project under the direction of Dr. Denise Donica.*

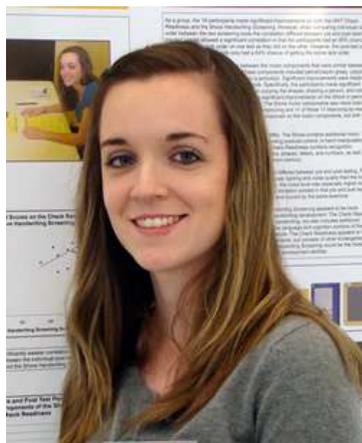
The Effectiveness of a Community Education Program on Fear of Falling and Activity Level: A Matter of Balance®



Amanda Drozdowski and Heather Frisbie

The purpose of this project was to determine whether A Matter of Balance® affected activity level and fear of falling in community dwelling older adults. Data from the Falls Risk for Older People – Community Setting and the Survey of Activities and Fear of Falling in the Elderly were collected through interview with nine participants. The Activities-Specific Balance Confidence Scale and the Matter of Balance® Class Evaluation were self-administered by participants and were given Yamax Accusplit Eagle pedometers, and a Step Log to record the amount of steps taken each day over 10 weeks. Data analysis indicated that A Matter of Balance was effective at reducing fear of falling for 77% of the participants, most participants agreed they were more comfortable talking to others about their fear of falling, and most they felt more comfortable increasing activity level. Additionally, four participants increased their confidence they would not fall or lose their balance while participating in daily activities. The Step Log showed three participants increased overall activity level. These results suggest that a community education program was effective on reducing the fear of falling. *Amanda and Heather completed this project under the direction of Dr. Jane Painter.*

Pre and Post-Test Effectiveness between the Pre-K Handwriting Without Tears – Check Readiness and the Shore Handwriting Screening for Early Handwriting Development in a Pre-School Classroom



Melissa Jones

The purpose of this study was to compare pre and post test scores of the Pre-K Handwriting Without Tears Check Readiness and the Shore Handwriting Screening for Early Handwriting Development to determine which screening tool is more appropriate to measure handwriting readiness in preschool children. Pre-testing was conducted on 19 children ages 4-5 that were enrolled in a preschool class in the Head Start program. The children then participated in handwriting sessions consisting of multi-sensory activities designed to develop handwriting readiness skills. After five months of these sessions, post-testing data was collected using the two screening tools. Statistically significant improvements were made on the Check Readiness and the Shore Handwriting Screening between pre and post testing. Statistics show a significant correlation between individual pre test scores on both screenings, but not a significant correlation between individual posttest scores. This suggests that the Check Readiness and the Shore Handwriting Screening do not show consistent performance in measuring handwriting readiness skills. The Shore was better at predicting the motor aspect of handwriting readiness, while the Check Readiness was more capable of picking up on language and cognitive skills. *Melissa completed this project under the direction of Dr. Carol Lust.*

A Survey of Handwriting Instruction Practices in North Carolina: Perceptions of Elementary Teachers and Education Professors



Michelle Larson and Abbey Zinn

The purpose of this study was to investigate perceptions of North Carolina elementary school teachers on training in handwriting instruction received during their education, as well as current classroom practices. Two online surveys developed by the researchers were sent via email invitation to every North Carolina public elementary and teacher education program for appropriate distribution. A combination of open- and closed-ended questions was used to inquire about handwriting instruction practices. Results from 505 teacher and 16 professor responses indicated that while handwriting instruction content is valued by both teachers and professors and varied levels of training are provided. Teachers also indicated inconsistencies in the type and amount of handwriting content provided during their post-secondary education. Results suggest that there is a need for a consistent method of teaching future educators effective handwriting instruction. It is suggested education programs review their methods of teaching handwriting instruction and institute a more comprehensive program. *Michelle and Abbey completed this project under the direction of Dr. Denise Donica.*