

# The Relationship Between The Physical Therapist Clinical Performance Instrument Scores and Doctor of Physical Therapy Student Learning Styles

Joachim Courtright, SPT

Jacqueline van Duijn, DPT, OCS; Rose Pignataro, PhD, DPT, CWS, CHES; Ellen Donald, PhD, PT

## Introduction

- Improving the quality of new DPT graduates elevates the profession as a whole.
- In order to accurately assess learning and development, DPT programs conduct a variety of standardized student assessments. Two of these are:
  - The PT Clinical Performance Instrument (PT CPI)
  - The Kolb Learning Styles Inventory (LSI ) version 3.1

## Study Purpose

- Identify relationships between DPT students' preferred learning style as assessed by the Kolb LSI-3.1 and the change in their performance during full-time clinical experience as measured by the PT CPI.
- To provide information for directors and coordinators of clinical education, CIs, and students in selecting opportunities and instructional strategies that are best suited for each individual.

## Methods

- Sample consisted of FGCU entry-level DPT students (n = 103); Class of 2012, 2013, 2014, and 2015.
- The research design utilized retrospective, cross-sectional de-identified data previously obtained by FGCU faculty
  - DPT students and their clinical instructors completed the PT CPI online during each of 5 full-time clinical experiences.
  - The Kolb LSI-3.1 was completed in class during the DPT students' first semester.

## Research Questions

- Is there a statistically significant relationship between DPT students' learning style and the progression of knowledge and skills as demonstrated by the difference in CPI score from midterm to final during each of the 5 clinical experiences?
- Is there a statistically significant relationship between DPT students' learning styles and the progression of knowledge and skills as demonstrated by the difference in midterm CPI scores obtained during introductory clinical education (Clin I through Clin III)?
- Is there a statistically significant relationship between DPT students' learning styles and the progression of knowledge and skills as demonstrated by the difference in midterm CPI scores obtained during advanced clinical education (Clin II through Clin V)?

## PT CPI

- Developed by the APTA; first used in 1997.
- Questionnaire completed by the student and CI at midterm and final of each of clinical experience (only CI scores were included in this study)
- Contains 18 performance criteria
  - Students may receive a rating of "Beginner," "Advanced Beginner," "Intermediate," "Advanced Intermediate," "Entry Level," or "Beyond Entry Level."
  - All ratings are broken down into gradations of 3 except for "Beyond Entry Level" which has only 1 grade. This gives a total of 21.

## Kolb LSI 3.1

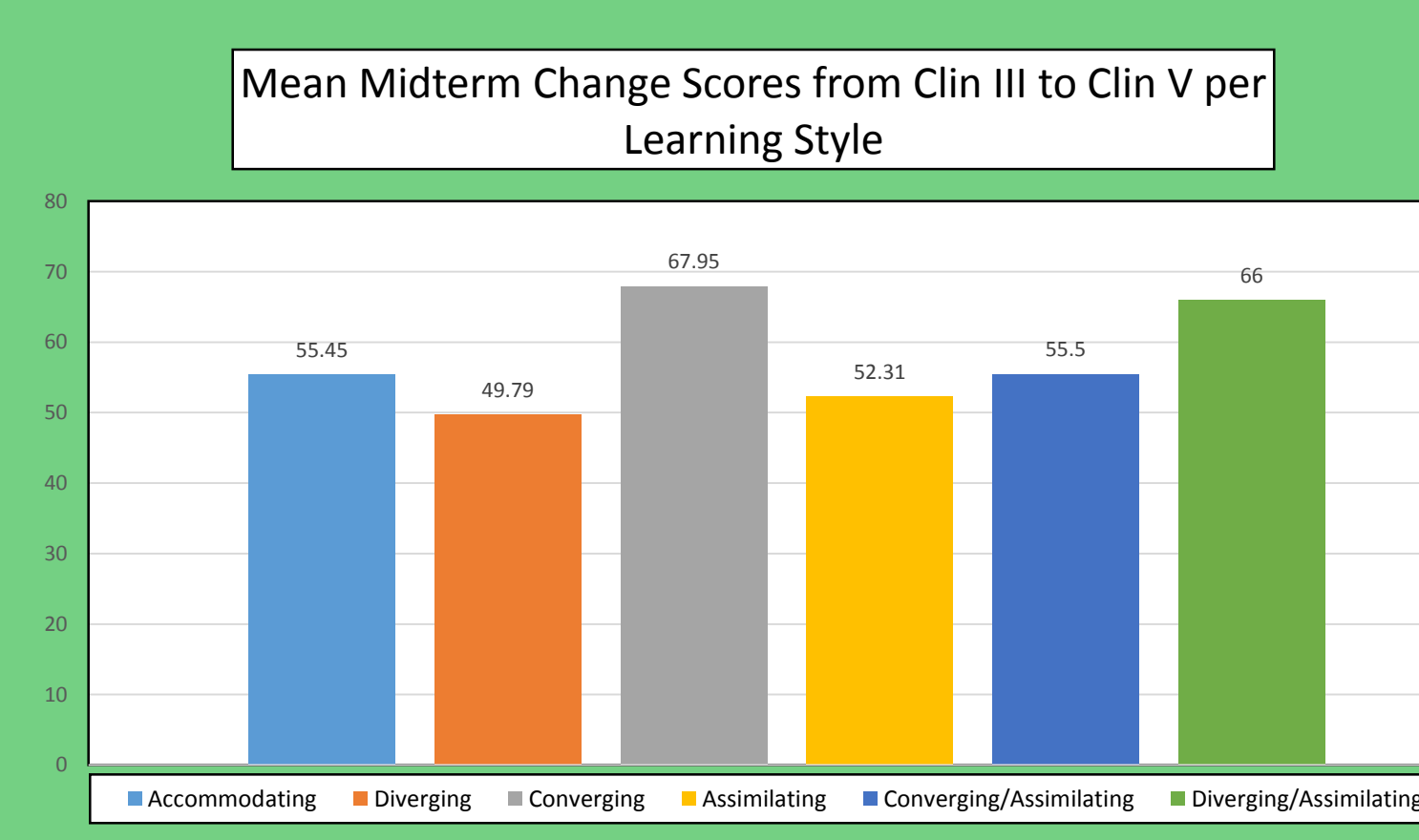
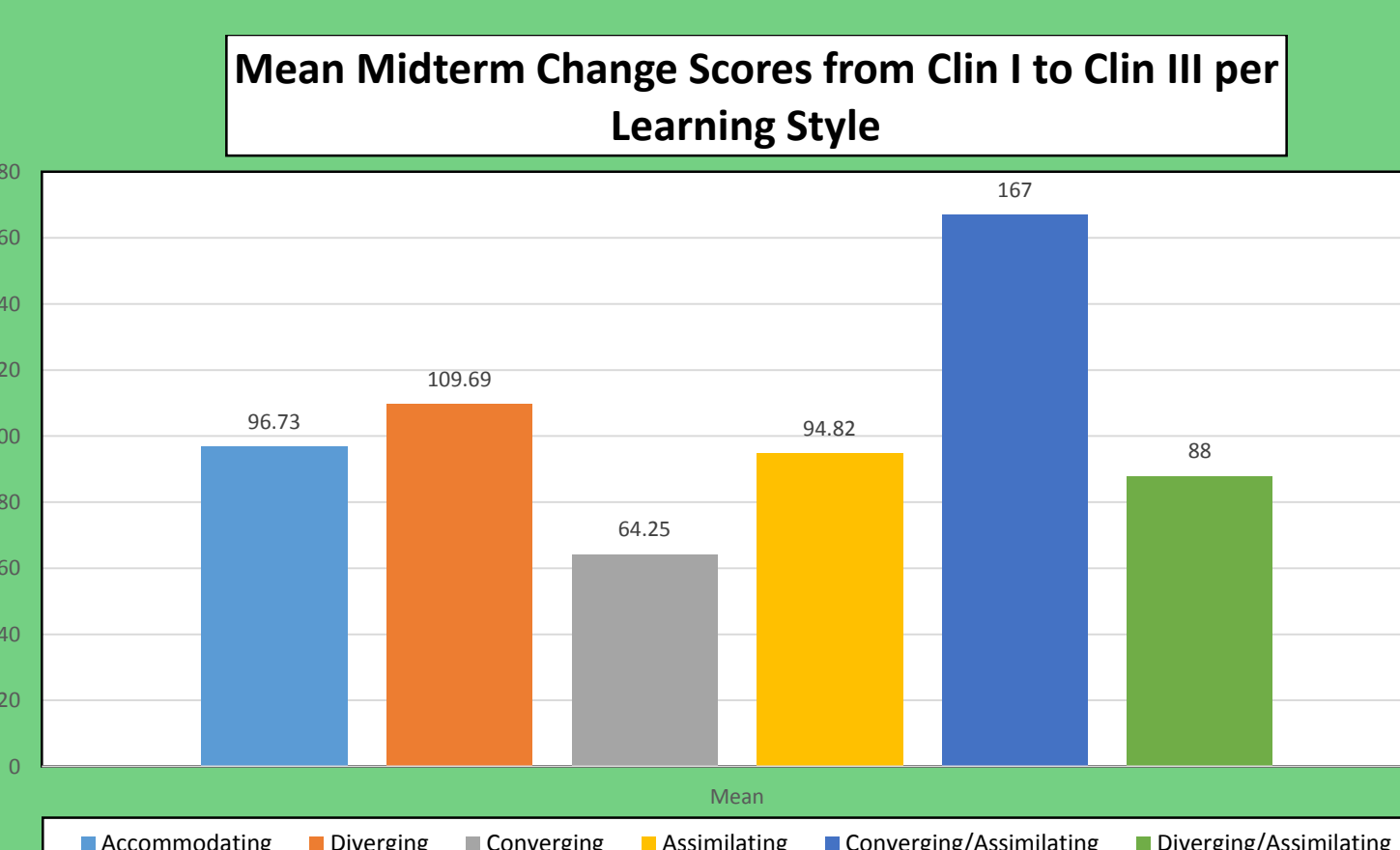
- Developed in 1976 by David Kolb. Version 3.1 was the latest version available during data collection.
- Kolb believed that learning was a cycle between grasping experience and transforming it to practical use
  - To grasp experience, individuals use "Concrete Experience" and "Abstract Conceptualization."
  - Transforming experience requires "Reflective Observation" and "Active Experimentation."
- Although learning requires all 4 styles, the LSI uses questions to determine what combination is preferred:
  - Accommodator: prefers concrete experience with active experimentation
  - Diverger: prefers concrete experience with reflective observation
  - Converger: prefers active experimentation with abstract conceptualization
  - Assimilator: prefers reflective observation with abstract conceptualization

## Results

### Descriptive Statistics of Participants

- Of 103 potential participants, data of 77 were used (75%); 26 participants had missing data.
- Accommodating learners were the most prevalent (28.6%) followed by Converging (25.3%), Assimilating (23.1%), and then Diverging (16.5%). The remaining students (6.6%) identified close to the line between two different styles.
- Clinical settings were Acute Care, Inpatient Rehab, Skilled Nursing Facility (SNF), Outpatient Rehab (Adult), Pediatrics, and Home Health PT. The most common was Outpatient Rehab.

### Mean Midterm Change Scores per Learning Style



- Results from the Kruskal-Wallis test of relationship between learning style and clinical proficiency (p= 0.05):
  - From midterm to final Clinic I: 0.43, Clinic II: 0.17, Clinic III: 0.57, Clinic IV: 0.99, and Clinic V: 0.70.
  - Midterm from Clinic I to Clinic III: 0.15 and midterm from Clinic III to Clinic V: 0.96.

## Data Analysis

- The Kruskal-Wallis one-way non-parametric analysis of variance was selected to examine the relationship between learning styles and CPI performance.
- PT CPI change scores were calculated for midterm to final for each of the 5 clinical experiences.
- PT CPI change scores were calculated for midterm from Clinic I to Clinic III (beginning of the curriculum) and from Clinic III to Clinic V (end of the curriculum).
- Descriptive analyses of data included frequency counts, percentages, as well as means, and standard deviations (where applicable) regarding number of participants, distributions of learning styles, CPI scores, and clinic types.

## Discussion

- Mean PT CPI scores tended to increase over the progression of clinical experiences, but change scores from midterm to final decreased. This suggests that DPT students have a steeper learning curve earlier in the clinical education experiences.
- None of the results returned from the Kruskal-Wallis tests of the 3 main research questions were under the p value (p= 0.05) which indicates that there is no statistical relationship between learning styles and progression of clinical proficiency in DPT students.

## Conclusions

- This study shows that there is no statistically significant difference in students' progression in clinical performance during entry-level DPT education when compared with student learning styles.
- This information is valuable because it shows that students of all learning styles have an equal opportunity for clinical success.
- Future research may wish to consider whether learning preferences change throughout the PT curriculum, and whether ongoing assessment of learning styles has any impact on clinical performance as measured by the PT CPI.