

2017

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Recommended Citation

Bane, Theresa M., "Assessing Learning Styles of Adults in Different Learning Environments" (2017). *Current/Present Programs & Posters*. 28.

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Assessing Learning Styles of Adults in Different Learning Environments

Theresa M. Bane, PhD

Abstract

To support the development of more supportive learning environments, Kolb's Learning Styles Inventory (LSI) was used to assess learning styles in adult students of online, classroom, and combination learning environments. There were no significant differences in learning styles between learning environments in the sample population, though learning styles correlated with some demographic measures.

Problem

An aspect of recent learning research has been how adults learn and what is needed to better support their learning. Creating learning environments based on learning styles may contribute to better learning experiences. Much of the research on learning has been based on Kolb's (1984) model of experiential learning while incorporating the associated LSI (see Akkoynunlu & Soylu, 2008; Almeida & Mendes, 2010; Kolb et al., 2001; Massey et al., 2011; Topçu, 2008), though some previous studies have been limited in design and often demonstrated inconsistent results (Akkoyunlu & Soylu, 2008; Almeida & Mendes, 2010; Spears et al., 2008; Topçu, 2008).

Purpose

The purpose of this quantitative study was to identify significant differences in the distributions of learning styles of adult students in three different learning environments—online, classroom, and combination (blended).

Relevant Literature

Theoretical Framework

Kolb's (1984) experiential learning model:

- **learning is a holistic process**
- a person's experience forming is the core of a person's understanding (Kolb et al., 2001).
- **the process of learning is a combination of grasping and transforming experience** (Kolb et al., 2001)
- is a **constructivist** approach to learning (Brooks, 1990; Harasim, 2000).
- In this model, **there are four predominant learning styles**: divergent, accommodating, convergent, and assimilating.

Background

- Many degree-granting institutions are recognizing **student learning needs for real-world applicability** (Miller, 2006).
- Researchers have been recently seeking to **identify how adults learn**, and ultimately, **how to support their learning**. Many researchers have based their ideas on Kolb's (1984) model and the related LSI (Akkoyunlu & Soylu, 2008; Almeida & Mendes, 2010; Kolb et al., 2001; Massey et al., 2011; Topçu, 2008).
- **Previous research** in the area of learning styles using Kolb's model, however, have often used **participant groups limited to particular fields of study or had small sample sizes**, and several studies demonstrated **unexpected results leading to conflicting conclusions** (Akkoyunlu & Soylu, 2008; Spears et al., 2008).

Research Questions

Is there a significant correlation between learning style and any demographic variable - age range, sex, ethnicity, course level, or GPA?

Are LS different between students in different learning environments (classroom, online, or combination)?

Procedures

Design

A nonexperimental, quantitative survey design.

Sample

The convenience sample ($N = 180$) included adults 18 years or older who

- were taking courses online or in a traditional classroom at US-based institutions
- were taking courses delivered in the English language
- were applying their courses towards a bachelors degree or higher.

Instrumentation

The *Learning Styles Inventory – 3* or LSI-3 (The Hay Group, n.d.) was used in conjunction with a demographic survey.

Procedures

1. Recruitment was conducted through a university's participant pool and a large social media site.
2. Remuneration was provided upon verification of completed participation.

Data Analysis

Spearman's *rho* was used to identify correlations between learning styles and demographic variables in each of the three learning environment groups.

Kruskal-Wallis *H* test was used to identify any significant (dominant) learning style in each learning environment.

Findings

- The **online** group showed a **significant** relationship between **learning styles and age** only.
- In the **classroom** group, only **learning styles and grade level were significantly correlated**.
- There were **no significant correlations in the combination** group.
- Results **did not identify any significantly dominant learning style in any of the learning groups**, however, the **divergent learning style was predominant in all three learning environments**.

Limitations

1. Use of convenience sampling with limited recruitment sources.
2. LSI scores previously determined to be valid (Kayes, 2005), however, there has been mixed psychometric results in previous studies.
3. Due to anonymous online recruitment and testing, individuals could not be identified. Participants self-attested to their eligibility to participate.

Conclusions

- This study contributes to the body of recent research in educational psychology that intends to identify how adults learn and how to support their learning.
- There appeared to be a **predominance** in adult students **to prefer the divergent learning style**. This is **supported by previous studies** that also identified the divergent learning style as predominant (Almeida & Mendes, 2010; ALQahtani & Al-Gahtani, 2014; Massey et al., 2011).

Social Change Implications

Using learning styles to create learning environments that better support student learning needs may result in better learning outcomes that support greater applicability to the workplace.

Thank you to my dissertation committee members, Drs. **Elisabeth Weinbaum, Leann Stadlander, and James Carroll**.