

# An Investigation of Soccer Coaches' Preferred Learning Style and Gender

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## Abstract

The objective of this study was to investigate learning style preferences of soccer coaches to improve coaching efficacy. Limited research exists on the best methods to instruct coaches, especially underserved groups (e.g., women and minorities), in developing their craft. Understanding individual learning styles can influence performance and achievement in learning outcomes of educational programs (Manolis *et al.*, 2003). The Kolb (1984) Learning Style Inventory (LSI) was distributed amongst the United Soccer Coaches (USC) association (n = 1,852) to understand members preferred learning styles. Data was processed to determine the subjects' preferred learning style: Convergent (32.97%), Divergent (11.52%), Accommodative (39.46 %), and Assimilative (16.20%). Chi squared analysis (189.63) and z-score test (z = 13.49) revealed gender was a factor in learning style choice. Female coaches were more likely to possess a CON learning preference than male coaches. 46.78% of CON coaches were female, while females made up only 26.31% of all responding coaches. Male coaches were 53.21% of coaches favoring CON, yet accounted for 73.69% of all participating coaches. These findings could be a catalyst to refocus soccer coaching education to accommodate all learning styles with broader ideas of purposely designing educational curricula to meet the needs of all learners.

**Keywords:** Coaching education; learning styles; gender; Kolb; soccer.

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## Data Availability Statement

Raw data were generated with Qualtrics. Derived data supporting the findings of this study are available from the corresponding author on request.

## Implications for Practitioners

- Understanding Kolb's (1984) diverse learning styles and their associated needs provides an all-encompassing approach to designing curricula, instruction, and concept attainment.
- Sharing this insightful and often neglected perspective with multiple varied groups of practitioners can improve performance through individualized and strategic development.
- Coaches, teachers, and sport administrators who focus on engagement maximize athlete's potential through meaningful growth experiences.

## INTRODUCTION

The objective of this study was to investigate learning style preferences of soccer coaches to improve coaching efficacy and the influence of gender on favored learning style. Learning is a personalized experience affected by the style of instruction and the preference of the learner (Goulding & Syed-Khuzzan, 2014). A "one size fits all" approach can impede learning and oftentimes may prove to be ineffective (Watson & Hardarer, 2005). Acquiring more data about individuals' learning preferences can improve educational offerings. More effective training can guide instructors to create plans that increase performance, motivation, and efficiency of educational programs (Goulding & Syed-Khuzzan, 2014). Despite these benefits, coaching education and coach educators have only begun to attempt understanding the learning styles of coaches.

Limited research exists on the best methods to instruct coaches, especially underserved groups (e.g., women and minorities), in developing their craft (Belenky *et al.*, 1997; Hammond & Perry, 2005; Kulturel-Konak *et al.*, 2011; Philbin *et al.*, 1995). Understanding individual learning styles can influence performance and achievement in learning outcomes of educational programs (Manolis *et al.*, 2003). Purposefully designing instruction to meet the needs of differentiated learning styles can optimize concept attainment and application (Fletcher *et al.*, 2008). The Learning Styles Inventory (LSI) provides valuable insight to students and instructors, enhancing learning and teaching practices (Kolb, 1984). Developing coaching education programs based on a greater understanding of coaches' learning styles may lead to improved experiences and performances of athletes.

Ensuring coaching education programs accommodate all learning styles may influence groups currently under-represented in the profession to pursue coaching and coaching education. Numerous studies found coaching education produced more effective coaches who increased athlete satisfaction as well as athlete performance (Maleté & Feltz, 2000; Sullivan, Paquette, Holt, & Bloom, 2012). Athletes reported higher quality experiences (Kim & Cruz, 2016) and performances (Maleté & Feltz, 2000; Sullivan, Paquette, Holt, & Bloom, 2012), often through increased coaching efficacy, when working with coaches who completed coaching education programs. With this understanding, creative coaching education could engage diverse practitioners, improve efficacy, and enhance athlete proficiency.

Currently, women occupy a disproportionately low number of coaching positions. Collegiate sports in the US are indicative of the problem. In 2019-2020, 41.7% of NCAA Division 1 women's teams head coaches were women; specific to this study, 28.4% of NCAA Division 1 women's soccer teams head coaches were women (Tucker Center, 2020). Providing more effective coaching education for women may be a possible method for addressing this concern by improving the experience of female coaches and their impact on their athletes. Discovering more about the preferred learning styles of women coaches may facilitate adapting coaching education programs to benefit more female coaches.

Kolb (1984) indicated that learning occurs on two levels - a cycle of four stages and four learning styles. Four learning stages form a cycle, and for an individual to effectively learn, a person must travel through all four stages. The four stages include Concrete Experience (doing or having an experience), Reflective Observation (reviewing or reflecting on the experience), Abstract Conceptualization (concluding from the experience), and Active Experimentation (trying out new ideas based on the experience including

applying the information from the experience). Effective learning means one must work through all these four stages.

Because all four stages are essential, a stage cannot be skipped. Kolb (1984) described learning styles based on two continuums - a Processing Continuum (how we approach a task) and a Perception Continuum (how we think or feel about it). These two continuums are differentiated into learning based on thinking versus feeling and doing versus watching. The four learning styles are: Accommodative - preferring to learn through feeling (how you feel about an action or event) and doing; Divergent - preferring to learn through feeling and watching; Convergent - preferring to learn through thinking and doing; and Assimilative - preferring to learn through thinking and watching.

Coaches have the ability to learn using all of these styles, however many tend to favor one prevalent style (Kolb, 1984; Turesky & Gallagher, 2011). Kolb (1984) posits people using one component over the other (e.g., thinking over feeling or feeling over thinking). Accommodative (ACC) learners tend to prefer a hands-on approach, using others' ideas rather than perform their own analysis (this style is prevalent within the general population). Divergent (DIV) learners learn best in situations where brainstorming can go on. DIV learners may use several perspectives to view a concrete experience. Convergent (CON) learners favor finding applications of ideas and theories to practical settings, including experimenting with new ideas. Assimilative (ASM) learners prefer a concise, logical approach to organize abstract concepts into clear formats.

This study will expand understanding of how coaches best learn. This knowledge will enable coach educators to develop programs more attuned to coaches' favored learning styles and increase program acceptance and effectiveness. Ultimately, this investigation may lead to higher quality athletic experiences and performances.

## **MATERIALS AND METHODS**

Upon Research Review Board approval, an email invitation was sent to 32,000 members of a soccer coaches association. The assessment used to understand coaches' preferred learning methods was the Kolb (1984) Learning Survey Inventory (LSI). This instrument was selected as many coaches attribute their learning to experience. Kolb (1984) emphasized experience in his ideas. Responses were collected for four weeks to allow coaches time to complete the survey as well as inform other coaches about the survey. 3,059 responses were received. After review, 1,852 were acceptable responses.

Data was processed to determine the number of Convergent, Divergent, Accommodative, and Assimilative learners. Following that, the gender (Male, Female) was included attempting to learn if gender was a factor in the learning styles of coaches.

A chi squared analysis was used to determine if a difference existed between the observed number of coaches of each of the learning styles favored and what the expected distribution of coaches would be. Additionally, a z-score test was used to determine if gender was a factor in the distribution of coaches within learning styles.

## RESULTS

Several interesting findings were apparent following analysis. Most notably, female coaches were more likely to possess a CON learning preference than male coaches (see Table 1). The data also revealed that 46.78% of CON coaches were female while females made up only 26.31% of all responding coaches. Male coaches were 53.21% of CON coaches yet males accounted for 73.69% of all participating coaches.

The Chi-square Test Statistic for learning style preference and gender (see Table 2) was 189.63 that was markedly greater than the critical cut off value of 7.82 indicating that coaches' learning style preferences are not independent of gender. To further investigate possible associations with a specific learning style preference, a statistical comparison of proportions with z-tests was pursued. The resulting z-score was highly significant ( $z = 13.49$ ; critical value for  $p < 0.01 = 2.327$ ) for coaches with a CON learning style preference indicating female coaches are more likely to prefer a CON learning style than male coaches.

*Discussion.* Kolb (1984) suggested that it is essential to understand the epistemology of knowledge, most notably methods, to best engage and educate. When instructors' styles mesh with students, full potential is given the opportunity to be reached. Synergizing learning styles with instructional practices can promote flourishing for average learners and prevent floundering of top performers. The findings of this study provide coach educators with insight to coaches' learning styles and best practices in which to develop competent coaches. Purposefully designing coaching education curriculum to meet the learning needs of women could improve the female coaching experience and athlete's performance. Understanding coaches' learning styles will allow for curricula and instruction to be strategically designed maximizing coaching efficacy (Gyeong & Myung, 2008). Modifications such as these could increase concept attainment, broader inclusion of members, satisfaction of athletes, and performance of athletes and coaches.

The major findings of this study highlighted female coaches as more likely to have a CON learning style preference than male coaches. This could be a catalyst to refocus soccer coaching education to accommodate all learning styles, increasing universal concept attainment, most notably female CON learners. Similar to the findings of this study, Belenky *et al.* (1997) sought to better understand how learning styles differed between genders. It was revealed that women prefer learning through hands-on experience instead of abstracting knowledge from theories or lectures (Belenky *et al.*, 1997). Experiential learning allows women to connect with material through deductive reasoning while engaging empathy, compassion, problem-solving, and listening skills. Participants reported feeling that modes of learning conducive to women's preferential style were primarily ignored for male favored styles - direct instruction, primarily lecturing, fueled by rationalism and objectivity (Belenky *et al.*, 1997; Hammond & Perry, 2005). Belenky *et al.* (1997) suggested that women would benefit from an instructional pattern with experience preceding theory and opportunities for personal connections, inferences, and conclusions.

Philbin *et al.* (1995) combined the work of both Kolb (1984) and Belenky *et al.* (1997) and examined the application of the LSI to different genders. A sample of 72 adults revealed that women predominantly prefer the CON/DIV style, while men were more attuned to the ASM style. Those favoring CON and DIV styles may better learn through experience, application, and reflection (Montgomery & Groat, 1998). Many programs are designed to find clear answers to problems through the rigid scientific method and focus on disseminating information from a singular source (Philbin *et al.*, 1995). This method involves presenting concrete theory focused on gaining knowledge, with the expectation of abstraction, before experience and application. Conversely, women prefer to experience first and then have that experience supported by theory (Belenky *et al.*, 1997). Addressing this gap could improve female concept attainment and engagement, but also spotlight deficiencies in curriculum to connect other underrepresented groups. Augmenting curriculum can accommodate diverse learning styles, and also strengthen an organization with members from a variety of backgrounds.

Creating a training course that involves experiential learning, application, experimentation, and problem-solving with traditional learning techniques (e.g., teacher-centered methods, lecture, or homework) could increase comprehension, engagement, and applicability in women and other ignored groups (Montgomery & Groat, 1998). This will engage and target individual learning styles as well as additionally allow learners to pass through all stages: Concrete Experience, Reflective Observation, Abstract Conceptualization, and Active Experimentation (Kolb,

1984). To tailor coaching education programs for coaches with ACC and CON learning style preferences, feeling can be associated with having physically performed similar actions. Thinking can be aligned with discussing ideas or viewing a presentation of material. Thus, courses should include thinking (that can be done remotely/virtually via online methods) and doing (that could be done face-to-face or by completing activities remotely – with exercises provided and coaches physically participating with a group remotely).

**Limitations.** This study investigated learning style preferences of soccer coaches. Coaches of other sports, including individual sports such as golf and tennis, may have different preferences based on demographic data. As the survey was administered to members of the association results should be considered in light of this. Additionally, there was not a statistically significant number of coaches identifying with a gender beyond male or female. Coaches identifying with a gender other than male or female may prefer a learning style other than what is described with this

investigation. This would be a direction for future study.

**Concluding Thoughts.** This study has several implications for educating coaches and broader ideas for designing soccer coaching education programs with a secondary purpose in recruiting female soccer coaches to partake in coaching education. The results of this study suggest several questions. How does the consideration of learning styles when designing and implementing curricula influence concept attainment and application for the learner? Secondly, in predominately male fields, is content delivered to engage all organization members regardless of gender? Finally, could coach efficacy and participation in coaching education programs increase when curricula are purposefully created to reach underrepresented groups of coaches?

**Disclosures of Interest.** The authors report no conflict of interest.

**Table-1: Coaches by Learning Style**

Learning Style	Total	Percentage
1. Accommodative (ACC)	687	39.46 %
2. Assimilative (ASM)	282	16.20%
3. Convergent (CON)	573	32.97%
4. Divergent (DIV)	199	11.52%

**Table-2: Coaches Learning Style and Gender Chi Square values**

Learning Style	Chi Square
1. Accommodative (ACC)	33.13
2. Assimilative (ASM)	32.96
3. Convergent (CON)	122.06
4. Divergent (DIV)	1.38

Chi-square 189.63

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