

Learning Styles & Teaching Perspectives: A study of BC Pharmacy Practice Residents and Preceptors

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Background

- Learning styles are approaches to, or ways of learning; teaching styles (or “perspectives”) are approaches to, or ways of teaching.
- Several learning styles and teaching perspectives have been described.
- Evidence suggests that learning is maximized when teachers adapt approaches to those preferred by learners.
- Misalignment between learning and teaching styles can result in suboptimal learning due to boredom, disengagement, and/or discouragement.
- Tools to characterize learning and teaching styles have been developed and validated.
- Pharmacist’s Inventory of Learning Styles (PILS)¹**
 - Designed and validated in the context of pharmacy practice.
 - Characterizes learning styles as: **Assimilator, Accommodator, Converger, and Diverger.**
- Teaching Perspectives Inventory (TPI)²**
 - Developed and used in the pedagogical (andragogical) world for summarizing beliefs, ideas, intentions, and practices about teaching.
 - Characterizes teaching perspectives as: **Transmission, Apprenticeship, Developmental, Nurturing, and Social Reform.**
- Awareness of learning and teaching styles can foster personal reflection, dialogue, and create a common vocabulary for learners & teachers, thereby enhancing learning.¹
- There is no published research characterizing the learning styles of pharmacy residents and preceptors, and no research on the relationship between residents’ learning styles and the teaching perspectives of their preceptors.

Objectives

- To characterize the learning styles of BC pharmacy practice residents and whether these evolve during the residency program.
- To characterize teaching perspectives (in the experiential learning context) and learning styles of BC pharmacy practice residency program preceptors.
- To identify and describe potential alignment/misalignment between residents’ and preceptors’ styles.
- To describe the effects on teaching and learning during the residency program of discovering one’s learning style and/or teaching perspective.

Methods

Design: Prospective observational survey-based study.

Tools: Online questionnaires: Health Professional’s Inventory of Learning Styles (PILS)¹, and Teaching Perspectives Inventory (TPI).²

Participants:

- All 2011-2012 B.C. pharmacy practice residents (N=29) and all B.C. pharmacy practice residency preceptors (N=306).
- Preceptors completed the PILS and TPI. Since teaching perspectives are context-dependent, they were asked to think of the experiential teaching context for their TPI.
- Residents completed only the PILS within 3 months of starting their program, then again during the last month of their program (data collection in June 2012).
- Residents & preceptors were questioned regarding the implications, uses, & impacts of knowing/discussing their learning and/or teaching styles (data collection in June 2012).

Data collection: Online survey instruments. Immediately upon completion, respondents were told what their Learning Style and/or Teaching Perspective was, provided with an interpretation guide, and asked to reflect upon it and discuss it with future learners/teachers.

Analysis: Descriptive statistics, between-group inferential statistics (using crosstabulation), and informal comparative analysis using methods and reporting advocated by the instrument authors.

	Preceptor	Resident	Preceptor Practice Region	Health Authority	Survey weight
PILS # of Responses (Rate)	186 (61%)	29 (100%)		LMPS	80.2%
TPI # of Responses (Rate)	94 (30%)	N/A		VIHA	8.7%
				IHA	8.2%
				NHA	1.4%
			Others	1.4%	

Table 1: Characteristics of study participants.

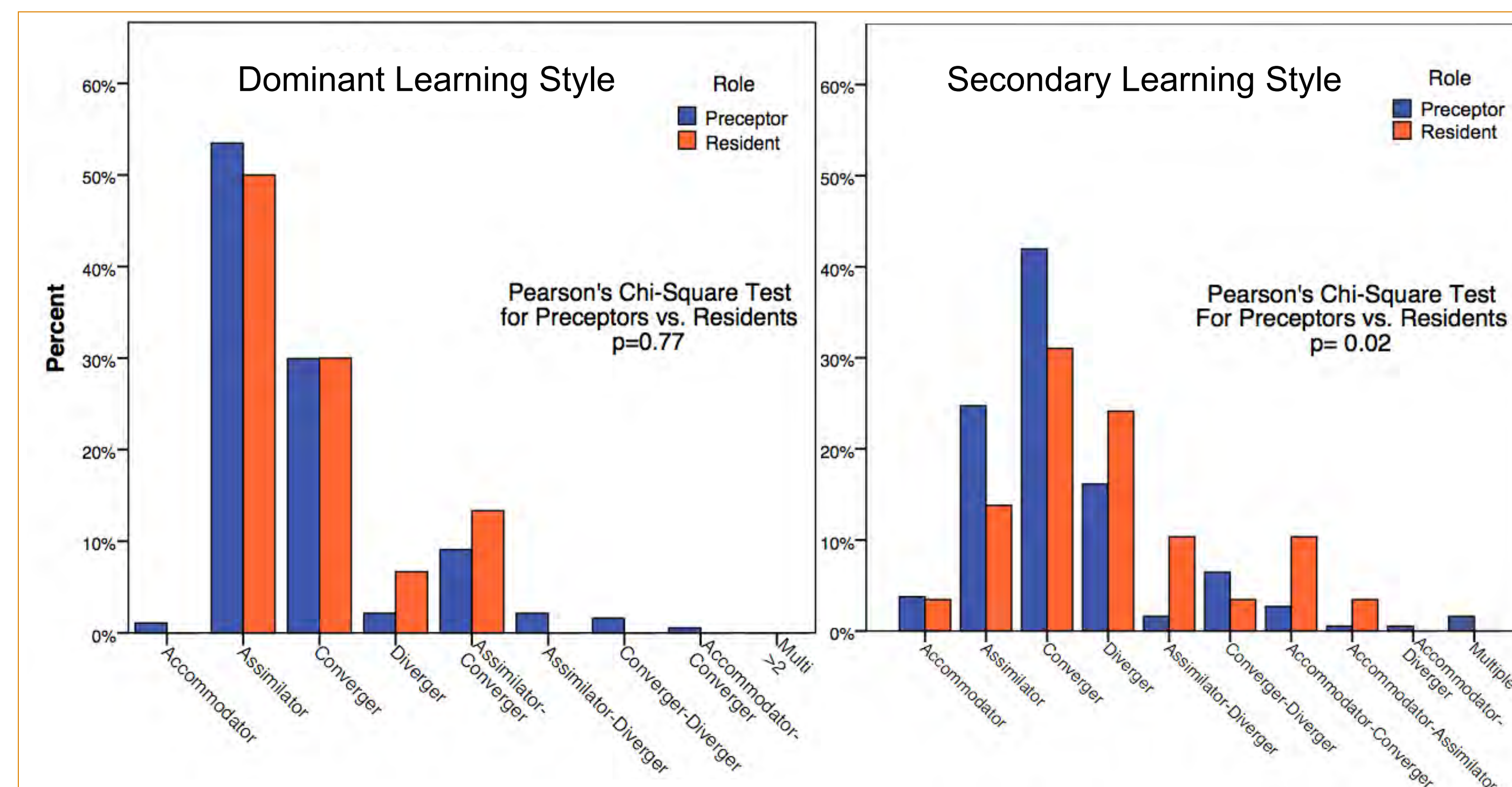


Figure 1: Preceptor and resident dominant and secondary learning styles.

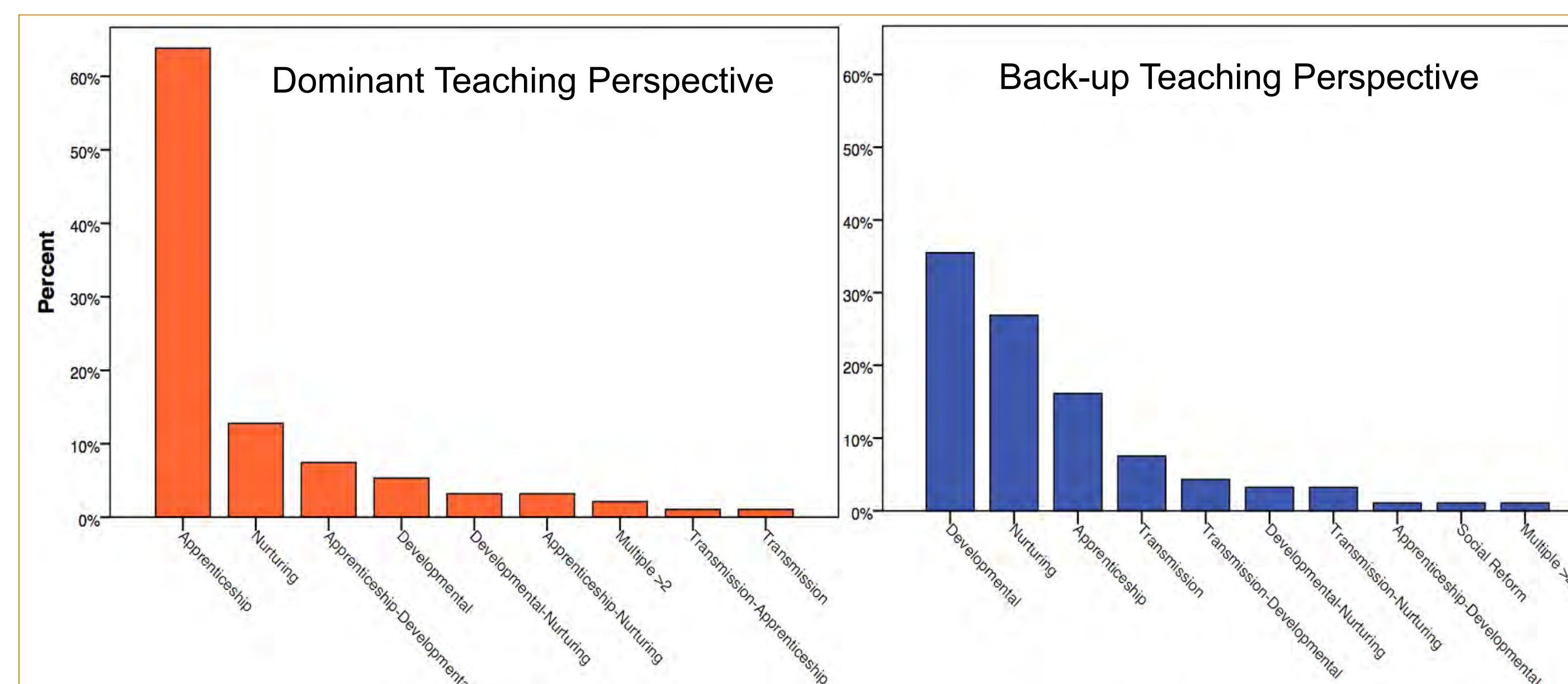


Figure 2: Preceptor dominant and back-up teaching perspectives.

PILS Sample Question:
“Q: I like to consult a manual, textbook or instruction guide first.”
Rarely Sometimes Usually Hardly

TPI Sample Question:
“Q: My intent is to challenge people to seriously reconsider their values.”
Never Rarely Sometimes Usually Always

Table 2. Sample Questions PILS and TPI surveys.

Results

- Responses & Rates: see Table 1.
- The most common dominant learning style among residents and faculty was Assimilator and 93% were either Assimilators, Convergents, or both.
- The distribution of dominant learning styles between residents and faculty was not different (Pearson’s Chi-square test p=0.77).
- The distribution of secondary learning styles was different between preceptors and residents (Pearson’s Chi-Square test p= 0.02), with more Assimilators and Convergents among preceptors and more Divergers and Accommodators among residents.
- The most common dominant teaching perspective among preceptors was Apprenticeship, and Developmental was the most common back-up perspective.

Learning Styles & Teaching Perspectives

PILS Brief Interpretation¹

- Accommodator** (favours ACTING & DOING) = hands-on learner, acts on gut feeling vs. logical analysis, impatient with abstract & theoretical, dislikes excessive feedback and talking.
- Converger** (favours DOING & REFLECTING) = practical problem-solver and decision-maker, prefers technical vs. social aspects, less concerned with details & others’ feelings than with success.
- Assimilator** (favours WATCHING & REFLECTING) = organized, detail-oriented, enjoys creating theories/models, requires structure & rehearsal time, hard on themselves.
- Diverger** (favours ACTING & WATCHING) = values harmony & relationships over success, analyzes problems from various angles, prefers observation vs. action, enjoys brainstorming, acutely sensitive to environment & negative feedback.

TPI Brief Interpretation²

- Apprenticeship** = values socializing students into new behavioral norms and ways of working.
- Developmental** = values teaching planned and conducted “from the learner’s point of view”.
- Transmission** = values commitment to content or subject matter.
- Nurturing** = believes long-term persistent effort to achieve comes from heart, not head.
- Social Reform** = seeks to change society in substantive ways.

Interpretation & Conclusions

- Residents & preceptors have similar learning styles, which is mostly reassuring, although individual pairings of resident & preceptor could involve styles which require more communication and adaptation to optimize learning (e.g. Converger + Diverger, Accommodator + Assimilator, Accommodator + Transmission perspective preceptor, Converger + Nurturing perspective preceptor)
- Pharmacy residents & preceptors appear to have a different dominant learning style than medical residents (most commonly Convergents³) and nurses (most commonly Accommodators⁴), the implications of which in an interdisciplinary environment deserve further study.
- The dominance of the Apprenticeship teaching perspective is comforting, since it is the most appropriate for the experiential learning setting² and aligns with the “signature pedagogy” of health educators⁵.
- It is not clear how a preceptor with a dominant Nurturing (11%) or Transmission perspective (1%) precepts effectively in this setting, which deserves further study.
- Whether an Assimilator or Assimilator/Converger-oriented pharmacist workforce is ideal to meet the practice challenges of the future deserves reflection by student/resident recruiters.
- We await the results of our end-of-residency PILS assessment and the implications, uses, & impacts of knowing/discussing learning and/or teaching styles.

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