Pedagogy of notation: Learning styles using a constructivist, second-language acquisition approach to dance notation pedagogy

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***Note: Tables 2 and 3 have been added using an image capture tool and are non-compatible with screen reader software programs.

Abstract:

Four undergraduate dance majors learned Motif Notation and Labanotation using a second-language acquisition, playful, constructivist approach to learning notation literacy in order to learn and dance the Parsons Etude. Qualitative outcomes were gathered from student journals and pre- and post-tests that assessed for levels of improved language fluency. A Kolb Learning Styles Inventory 4.0 was completed by the students and was also conducted on the teaching-learning activities to determine if affinities existed between activities and Learning Style preferences. Results were compared to level of engagement and contentment among students to determine whether preferred Learning Style is an indicator of learning engagement among dance students who study notation.

Keywords: dance | dance education | motif notation | labanotation | Parsons Etude | Kolb Learning Styles

Article:

In the Journal of Dance Education 2010 special issue titled "Postsecondary Dance Education Today," Doug Risner (Citation2010) implored educators leading postsecondary education to take responsibility for the success of dance education and dancers' futures by rethinking, redirecting, and reshaping curricula to better serve needs of future dancers. Risner argued, "every instance in which we fail to articulate the significance of teaching, pedagogy, community awareness and engagement, technology, and research that is made possible through dance education contributes to the marginalization of the field" (98). Exploring how these areas relate to agency and ability for dancers to communicate and succeed with dance in cognitive, affective, and psychomotor aspects of their lives is critical to education. Literacy and understanding of brain-based learning is of utmost importance, and our curricula and teaching methods should be aligned with the latest research in these areas. By using the existing performance-based model and applying a wider array

of teaching and learning methods, we could challenge students in ways that stretch their capacities for learning to support interaction and communication.

To explore the simultaneous application of a wide array of teaching methods including notation, a research project was designed around an independent study course using Labanotation and Motif Notation to learn and perform a famous choreographer's dance. The curriculum used what second language theorist Stephen Krashen (Citation2009) would call a

TABLE 1 Activities and Timeline of Fall Independent Study Course and Spring Performance

Date	Activity	Measures
Fall Term	Focus on learning first 2/3 of dance and learning to read and write Motif Notation as well as use it creatively.	1–67
Aug. 30	(1) Pretest.	
Sept. 6	(2) Action, stillness, balance, turns, and composition.	1–12
13	(3) Pathway with springing on pathway.	13–20
27	(4) Effort Qualities, body part (pelvis) leading, "fly swatting hands," kinesphere.	21–24
Oct. 4	(5) Describing in English salient features learned so far. Exploring what we know to be able to write out measures 25–34.	25–34
11	(6) Worked on "Sleep Section" because dancers are weary at this point in semester. Breath, Shape-Flow, Flexion, Extension, body's relation to gravity: uplift, weighty, upward pressure, drop.	
18	(7) Quiz to measure retention of concepts/symbols.	
25	(8) So dancers could practice reading and dancing from a score, I prepared Motif Notation score of measures 29–36 in advance.	29–36
Nov. 1	(9) My own writing of measures 35 and 36 needed improving, so I asked students to assist me by writing measures together on the board.	35–36
8	(10) Explored skipping and jumping on a pathway. Used action strokes to write and adapt movement to explore changes in Body and Timing.	21–24
15	(11) Some students had completed homework. Some needed to work together to make sense of it. I prepared a lesson, but abandoned it to process writing Motif Notation together.	
22	(12) Finish learning measures 1–67.	1–67
29	(13) Drilled the dancing to videotape work-in-progress submission for student-organized dance concert.	
Dec. 6	(14) Quiz day. We met for a final exam—part of semester grade.	
Spring Term	Focus on learning final 1/3 of dance and running the dance for performance readiness, give direction, coaching, corrections.	68–101
Jan. 14	(15) 2-hour rehearsal. Watched DVD of Koeppen performing. Skill and drill. Videotaped and observed, gave notes, repeated run-through.	
21	(16) Same as last week.	
22	(17) " "	
28	(18) Worked on altering pathways and spacing of dancers in first half of dance to bring them into relationship with each other and space without changing choreography.	
29	(19) 1.5-hour session. Worked spacing and pathways of latter half, employed interweaving pathways.	
3	(20) TECH. Earlier in the week, dancer tore a meniscus in technique class resulting in surgery. She practiced preperformance commentary about learning the dance using literacy practices.	
4	(21) Final run-through, 1.5-hour rehearsal. Reblocking of dance with three dancers. We drilled the dance, checked details. Performance occurred that evening.	
	Posttest.	

"second language acquisition" approach to learning dance notation using his "comprehension hypothesis" (81). This approach focuses more on exploration with the second language rather than rote learning. The second language in this case was notation, and it was explored through technique, composition, movement analysis, reading, and writing while working to prepare for a performance. Rather than presenting Motif Notation as a tool for cognitive understanding, it was used as a tool for gaining conceptual and physical clarity and to access a physically challenging dance style. Combining activities dancers enjoy (technique, composition, performance, and history) with notation—an anomalous experience for the students—provided a teaching approach that gave new access points for exploration in dance education. See Table 1 for a list of activities used in the course.

This article reveals the results of a small, pilot case study of teaching and learning using a Language of Dance® (LOD)Footnote1 approach to learn an American Dance Legacy Initiative masterwork while engaging with Laban Movement Analysis (LMA), Motif Notation, and Labanotation. The study revealed the qualitative outcomes of four undergraduate dancers learning the Parsons Etude (Parsons, Powell, and Corey Citation1999) and how their preferred learning styles of the Kolb Learning Styles Inventory 4.0 (KLSI) related to their engagement and commitment with learning from notation.

DANCE NOTATION AS A TOOL IN THE CLASSROOM

Course Background
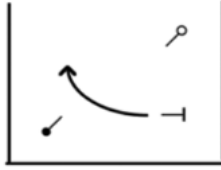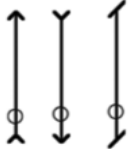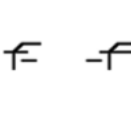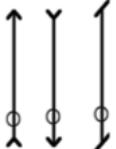
When a dance is reconstructed from a notation score, the reconstructor might set the work on the dancers without the dancers ever having seen the score. The opposite approach might be taken. The dancers might be involved in reading the score, learning their own parts, and exploring the style and history as they learn the dance. Tina Curran (Citation2010) discussed this comprehensively in her dissertation. The extent of educational approaches explored is limited mostly by time. Because the students in this study had little opportunity to experience written forms of notation prior to this project, I devised educational approaches that would suit their lack of notation literacy. Krashen (Citation2009) suggested that if we explore a second language in playful, nonstressful, creative, substantive environments, students will acquire a second language naturally—rather than through rote memorization. Using Krashen's second language acquisition approach to create the curriculum, reading and writing in Motif Notation and Labanotation were integrated into dance activities using composition activities, technique classes, group work, discussion, coaching, journaling, and performing. Connections were forged among the creative process, reflective and interactive dialogue, meaning making, artistic growth, cultural analysis, embodiment, and critical reflection in community to comprehensively fulfill the performance preparations of the Parsons Etude. See Table 2 for a chart of the notation explored during the course and how it related to the dance skills and concepts.

Experiential Learning Theory and This Study

Much learning occurs in dance education without notation literacy, but literacy with notation takes learning in directions that a nonliterate dance community cannot go. The breadth of learning is represented by the KLSI (Kolb and Kolb Citation2013) framework, which is based on experiential

learning theory (Kolb Citation1971). David Kolb, Richard Boyatzis, and Charlampos Mainemelis (Citation2000) stated:

TABLE 2 Concepts and Motif Notation Explored, by Measures

Meas #	Concept and Motif Notation Explored
1-12	Any Action — Stillness — Any Action arriving in Any Shape — Pivot Turn left/right — Balance — Cross-Lateral
13-20	Traveling — Floor Plans — Degree of Turning, Circling — Springing
21-24	L leg — R Leg — L Arm — R Arm — Chest — Pelvis — Hand — Hands — Head
	Form of Relating: Contact — Indications of Paths for limbs — "Pelvic Bounding" — "Fly Swatting" — "To heaven" — Effort Qualities (Free- & Bound-Flow diminished)
25-34	L leg — R Leg — L Arm — R Arm — Chest — Pelvis — Hand — Hands — Head
	Indications of Paths for Limbs — Central, Peripheral, Transverse Spatial Tension — Gesture Drawings — Lead by Bow — Insertion Bow — Accents
29-36	Breath — Flexion & Extension — Shape-Flow — Slight rise in energy against gravity, uplift — A drop in energy to make use of gravity, a sense of weight—weighty — Marked rise in energy against gravity, upward pressure, buoyant — A marked drop in energy to make use of gravity, a heavy gesture, weight dropped

Experiential Learning Theory (ELT) provides a holistic model of the learning process and a multilinear model of adult development, both of which are consistent with what we know about how people learn, grow, and develop. The theory is called "Experiential Learning" to emphasize the central role that experience plays in the learning process, an emphasis that distinguishes ELT from other learning theories …, which tend to emphasize cognition over affect, and behavioral learning theories that deny any role for subjective experience in the learning process. (249)

The Kolb framework is structured around a cycle of learning that has four phases, any of which could be entry points to learning: Concrete Experience and Abstract Conceptualization are inroads into grasping experience, and Reflective Observation and Active Experimentation are paths toward transforming experience. We might or might not engage in all four phases in any learning situation, but David Kolb and Alice Kolb (Citation2013) argue that when we do, we "can fully engage in a learning process and expand our learning power" (4). Concrete Experience (learning by experiencing) involves learning from specific experiences, relating to people, and being sensitive to people and feelings. Reflective Observation (learning by reflecting) involves carefully observing before making judgments, viewing issues from different perspectives, and looking for the meaning of things. Abstract Conceptualization (learning by thinking) involves logically weighing and analyzing ideas, planning systematically, and acting on an intellectual understanding of a situation. Active Experimentation (learning by doing) involves showing ability to get things done, taking risks, and influencing people and events through action (Kolb and Kolb Citation2013, 6). In 2012, the KLSI was expanded to include nine additional categories that reveal more detail about a person's preferred learning styles including a rating of flexibility moving among the learning styles. The KLSI assesses which of nine preferred learning styles an individual relies on most, which could consist of more than one of the four learning phases.

Four of the nine learning styles are in direct alignment with the concepts of the learning phases (i.e., Concrete Experience = Experiencing, Reflective Observation = Reflecting, Abstract Conceptualization = Thinking, and Active Experimenting = Acting). Four new learning styles depict the styles lodged between the four main categories: Initiating, Deciding, Imagining, and Analyzing. A ninth category, Balancing, is a used to depict when a person is equally comfortable with all eight of the learning styles. See Figure 1 for a diagram depicting the nine learning styles and their relationships within the framework of the four learning phases.

Kolb and Kolb's (Citation2013, 4) research shows that most people do have a preference for one or two of the four learning phases. People might even skip phases in which they feel less comfortable, thereby possibly restricting the breadth and depth of learning possible. Because switching among learning styles expands learners' comfort zones and enables learners to deepen and enrich their knowledge and understanding, the KLSI assesses the learner's ability to adapt to the demands of different learning situations by assigning a Flexibility score. This score represents a person's skill with moving freely around the learning cycle and modifying approaches to learning as needed. Students' learning style preferences and Flexibility score could point toward why some people resist study with notation.

FIGURE 1 Four learning phases of the Kolb learning cycle (in outside frame) and nine learning styles (in boxes) that indicate learning styles and their relationships to each other.
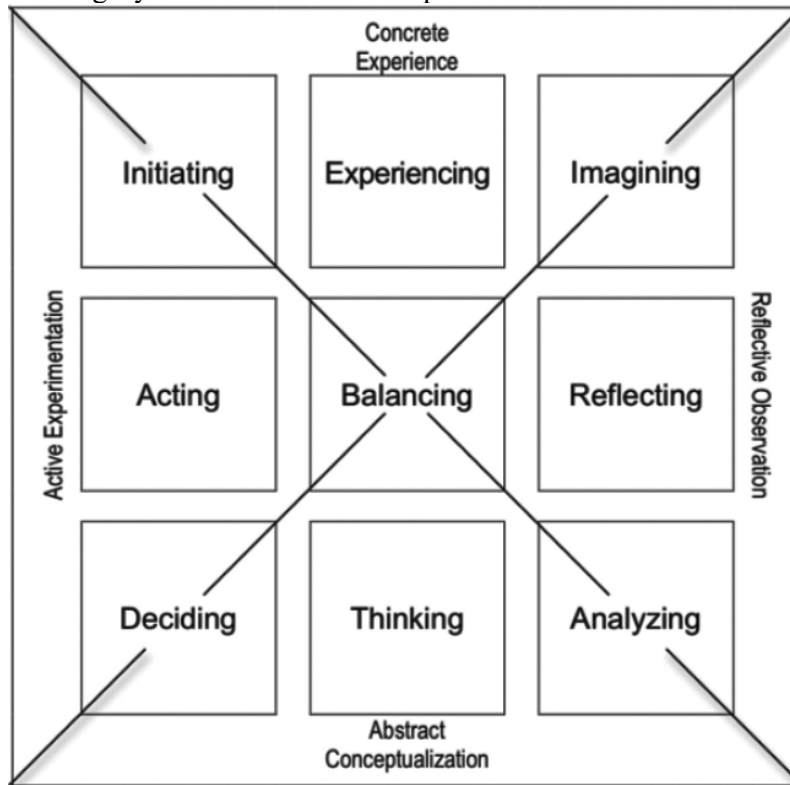
Kolb Learning Styles

Risner (Citation2010) argued that over the last 25 years, commendably, dance education programs have focused more and more on preparing quality performers, yet less and less on other aspects of dance education. The following five learning styles are foundational to teaching dance technique and to setting a piece of choreography directly onto students:

1. Experiencing: Finding meaning from deep involvement in experience.
2. Reflecting: Connecting experience and ideas through sustained reflection.
3. Initiating: Inciting action to deal with experiences and situations.
4. Imagining: Envisioning possibilities by observing and reflecting on experiences.
5. Deciding: Using theories and models to decide on problem solutions and courses of action.
6. The four learning styles that seem to be explored less frequently are the following:
7. Acting: A strong motivation for goal-directed action that bridges practical with technical, coordinates complex operations and

systems, integrates people and tasks, and improves existing operations.
8. Thinking: Disciplined involvement in abstract reasoning and logical reasoning.
9. Analyzing: Integrating ideas into concise models and systems through reflection.
10. Balancing: Switching equally between all nine learning styles. (Kolb and Kolb Citation2013, 7)

Dancers are likely good at switching among the first five learning styles because those learning styles deal more closely with sensate, experiential, psychomotor, affective, and reflective learning, and those experiences are encouraged in classrooms. Exploring the other four learning styles of integrating ideas into models and systems, abstract and logical reasoning, and gathering and analyzing information would expand on dancers' lifelong learning skills, which could lead to a stronger community, clearer communication skills, and higher levels of fluency and agency.

Dance-based literacy using notation seems to be taught less and less, maybe because departments or students do not see notation as essential. Maybe notation challenges learning styles dancers usually engage in, making it seem anomalous to dancing. Clearly being literate with notation provides dancers with access to hundreds of years of dance history, as well as tools for writing and reading about human, animal, and even insect movement. However, without curricular integration modeling how analytical thinking skills with notation supports a dancer's career and lifelong learning, notation will continue to be seen as an enigma. As Risner (Citation2010) implored, it is time to rethink curricula in relationship to developing the whole dancer. The final four learning styles could broaden teaching and learning approaches, preparing dancers for a wider range of skills. Learning with notation expands pedagogical possibilities. There are many ways educators could incorporate notation into curricula. Because the majority of college and graduate students are at a point in their careers at which they are focusing on performing and choreographing, it is important to teach notation in a way that allows students to learn, create, and perform works of dance—whether famous works or their own.

In this study, four undergraduate dancers used notation during an independent study course to learn and to perform the Parsons Etude by David Parsons (Parsons, Powell, and Corey 2009).

Notation Literacy Through Play in a Community

Rather than staging the dance directly from the Labanotation score, students were provided with a variety of ways to physically explore, intellectually investigate, and affectively engage in the Parsons Etude using playful activities. Psychologists Michael Inzlicht, Brandon Schmeichel, and C. Neil Macrae (Citation2014, 130) stated that if learning is perceived as arduous, and rote learning of any language can be, the ability to stay focused might feel limited and draining. Play with notation is an obvious path toward finding flow with notation, what Mihaly Csikszentmihalyi (Citation1990) would say is the psychological experience of being totally immersed in what you are doing. Psychologists Miriam Potocky and Stephen Mergatroyd (Citation1993, 22) saw play as a state of mind rather than a type of behavior and distinguished playful states of mind (paratelic) from serious goal-directed states of mind (telic).

In the paratelic state, the individual is able to explore, develop, experiment, and test skills in a free and imaginative way that is more extensive than the goal-directed telic state. A paratelic

state of mind is one appreciative of prolonged exploration, whereas the telic mind likes to get things done. In the telic state, the individual learns to select from the options, to anticipate, to use foresight, and to plan. It is the transitions between the two states, what is called the "reversal theory," that Michael Apter (Citation2007, 186) believes allows learning to occur. Play, or paratelic states of mind, is a means for adapting to variables in the environment and provides self-confidence, fresh ideas, relief from stress, flexibility with problem solving, reinforced social relationships, and experiences to support lifelong learning (Shepherd Citation2009, 88–89).

The teaching and learning activities used in the course, inspired by LOD teacher training, are intended to create that flow through intellectual and physical play with notation. Lessons were structured around elements of dance from the Parsons Etude, represented using terms and respective symbols from LMA and LOD systems. Lessons engaged in dance technique, focusing on skills necessary to perform the Parsons technique, and on composition, revealing essential themes of Parsons's movement style. Essential characteristics were written into small motif scores or on the board to focus the technique and composition lessons before directly working on the Parsons Etude. Students viewed the dance on video to gain clarity on its energy. Students often discussed their nascent historical and stylistic perspectives as they discussed how differently they needed to move to be able to do this dance. They explored the movement style while reading and writing short Motif Notation scores to figure out how to embody it. Play was central to the pedagogy, so that the Motif Notation could be brought in as a puzzle-like tool that drove movement exploration and sharing in discussion.

Instead of teaching the dance directly to the students from the Labanotation score, students were taught comprehensively using composition, technique, and writing and reading from Motif Notation and the Labanotation score. Starting without notation literacy, the students had to decipher much of it with the teacher's guidance and questioning each other. This subconscious acquisition results in the emergence of grammatical structures on a need-to-know basis, rather than through rote memorization. This approach is thought to enable students to naturally gain literacy (Asher Citation1969, Citation1996; Krashen Citation1981, Citation2009; Winitz Citation1981).

Research Question

Not all dance educators, nor all dance students, are fond of notation. This study explored students' learning styles preferences to compare and contrast those to the learning styles demanded by the course curriculum. A possible limitation of these findings could be that the study is small, and the four students in the convenience sample self-selected to do the project. They might have been ideal matches for the teaching and learning based on their preferred learning styles. Three of the four students enrolled for course credit; one audited the course because she had already reached her maximum number of credits. These differing levels of commitment might correlate with outcomes of the study.

Students completed a learning styles survey, and the learning styles encouraged by course activities were assessed. Assuming learning through notation is a valuable skill for all types of learners, I hypothesized that if the learning styles of the curriculum paralleled only those of the contented students, then the curriculum needs revising to be inclusive of those with other learning style preferences, and the contented students need to be stretched as well. However, if the learning styles of the curriculum paralleled that of the less contented students, then learning styles preferences might have little to do with learning engagement when using notation. The research

question was this: How do the students' preferred learning styles and their qualitative data relate to learning styles encouraged by the curriculum?

MATERIALS AND METHODS

Throughout the learning, rich description of the students' experiences was gained by analyzing students' daily journals using analytic memos about themes, metaphors, analogies, and anomalies. Pretests and posttests were used to capture students' ability to write with rich conceptual detail about dances observed on video. On completion of the independent study course, the students' learning styles were analyzed and the outcomes cross-referenced with a chart of the learning styles engaged by course activities (see Table 1). To assess students' learning styles preferences, the online KLSI was administered at a time convenient to each student. Each of the four undergraduate dance majors of a BA dance program had studied LMA prior to the study. Students' technique levels ranged from advanced in jazz to intermediate in modern and ballet. Students enrolled in the course by signing up on a publicly advertised course announcement. Beth, Virginia, and Laura had studied with me in prior courses, but Shannon was a new student. An institutional review board approved this study for use of human subjects, and students gave informed consent to be included in the study. Pseudonyms are used to protect students' identities.

Learning Styles in Pedagogy

Course activities were analyzed for whether or not each activity seemed to encourage each of the nine learning styles. If the activity seemed to employ any one of the nine, it was tallied as affirmative for that style. Because each learning phase consists of three possible learning styles, the number of affirmed attributes assessed (0–3) were totaled for each learning phase. Activities were grouped by themes of Dancing, Reading Notation, Writing Notation, Analyzing Using LMA, and Writing in English. See Table 3 for activities assessed for nine learning styles and learning phase totals. To ensure reliability and validity, a second researcher analyzed the course assignments and activities using the nine Kolb learning styles.

RESULTS

Students' Learning Styles Results

Students' Primary and Secondary Learning Styles

Shannon presented the highest Flexibility score (.86). She also had a primary learning style of Acting (Active Experimentation phase), which no one else experienced as primary or secondary. Her secondary learning styles were Reflecting, Thinking, and Deciding, but none fell into the Concrete Experience phase. A summary of Shannon's primary learning style preferences are "a strong motivation for goal directed action that integrates people and tasks" (Kolb and Kolb Citation2013, 15). Her learning strengths according to the KLSI report might be "combining technical knowledge and personal relationships, [works well] in a technical world that requires their conceptual abilities, focus[ing] on getting things done … [and] … leading work teams." People with Active as the primary learning style are likely to

TABLE 3 Course Activities Assessed for Nine Learning Styles, Tallied to Reveal Learning Phases (on a Scale of 0–3), and Added Together Reveal a Simple Count of Possible Engagement of Multiple Learning Styles (on a Scale of 1–12) for Each Activity

Theme	Teaching-Learning Activities Used in Course	Initiating (Active & Concrete)	Experiencing (Concrete)	Imagining (Concrete & Reflective)	Reflecting (Reflective)	Analyzing (Reflective & Abstract)	Thinking (Abstract)	Deciding (Abstract & Active)	Acting (Active)	Balancing (Balancing)	Concrete Experience	Reflective Observation	Abstract Conceptualization	Active Experimentation	Frequency and Variety of Learning Styles	Average of scores in category
Dancing	Pretest/Posttest of dance video observation and dancing		✓								1	0	0	1	2	
Dancing	Observe self on video, reflect, revise dancing*	✓	✓	✓	✓	✓	✓	✓		✓	3	3	3	2	11	
Dancing	Student presentations of dance composition	✓							✓		1	0	0	1	2	4.6
Dancing	Observe and dance by copying teacher*	✓	✓						✓		2	0	0	2	4	
Dancing	Teacher gives notes, student fine tunes dance technique*	✓	✓		✓				✓	✓	2	1	0	2	4	
Reading Notation	Reflect on concepts/Motif Notation presented on chalk board			✓	✓	✓	✓				1	3	2	0	6	
Reading Notation	Dance improvisation about concepts/Motif Notation presented on board	✓	✓	✓			✓	✓		✓	3	2	2	1	8	
Reading Notation	Dance improvisation into composition about concepts/Motif Notation presented on board	✓	✓	✓	✓	✓	✓	✓	✓	✓	3	3	3	3	12	9.4
Reading Notation	Dance technique class about concepts/Motif Notation presented on board	✓	✓				✓	✓	✓	✓	2	2	3	2	9	
Writing Notation	Motif Notation reading then dance	✓	✓	✓	✓	✓	✓	✓	✓	✓	3	3	3	3	12	
Writing Notation	Dance, then write Motif Notation	✓	✓	✓	✓	✓	✓	✓	✓	✓	3	3	3	3	12	
Writing Notation	Motif Writings, then dance	✓	✓	✓	✓	✓	✓	✓	✓	✓	3	3	3	3	12	
Writing Notation	Observing dance and writing Motif Notation	✓		✓	✓	✓	✓	✓	✓		1	2	3	3	8	10.8
Writing Notation	Journal homework in Motif Notation	✓		✓	✓	✓	✓	✓	✓		2	3	3	3	11	
Writing Notation	Group work, talk, writing Motif Notation in class or together as homework	✓		✓	✓	✓	✓	✓	✓	✓	2	3	3	3	11	
Analyzing	Analyze dancer on film/video using LMA			✓	✓	✓	✓	✓			1	3	3	1	8	
Analyzing	Theory discussion using Motif Notation/LMA about the dance and technique required to perform it	✓		✓		✓	✓	✓		✓	2	2	3	2	9	8.3
Analyzing	Analyzing, discuss movement concepts in LMA from flopped video	✓		✓	✓	✓	✓	✓			1	2	3	2	8	
Writing in English	Short answer Motif Notation & concepts quiz						✓	✓			0	0	2	1	3	
Writing in English	Journal prompt homework in English*	✓		✓	✓						2	2	0	1	5	3.3
Writing in English	Observing historical dance on video and writing in English			✓			✓				1	1	1	0	3	
Writing in English	Pretest/Posttest of dance video observation and writing in English			✓							1	1	0	0	2	

⬚ Learning Styles challenged by inclusion of Motif Notation in pedagogy.   ▫ Laura's Primary Learning Style.

▪ Shannon's Primary Learning Style.   ■ Pedagogical themes with high scores for engaging Flexibility

▪ Beth and Virginia's Primary Learning Style.

TABLE 4 Students' Primary and Secondary Learning Styles, Preferred Learning Phases, and Flexibility on a scale from 0–1 (0 = Low, .5 = Medium, and 1 = High)

Students	Nine Learning Styles									Learning Phases				
	Initiating (Active & Concrete)	Experiencing (Concrete)	Imagining (Concrete & Reflective)	Reflecting (Reflective)	Analyzing* (Reflective & Abstract)	Thinking* (Abstract)	Deciding (Abstract & Active)	Acting* (Active)	Balancing (Balancing)	Concrete Experience	Reflective Observation	Abstract Conceptualization	Active Experimentation	Flexibility
Shannon				*		*	*	Primary	*	62%	3%	70%	92%	.86
Beth	*		Primary	*	*	*	*		*	81%	83%	8%	38%	.72
Virginia	*	*	Primary		*				*	96%	86%	1%	33%	.58
Laura	*	Primary	*	*		*			*	45%	63%	18%	82%	.78

be good at implementing plans or testing ideas by combining their experiences with ideas and concepts for dealing with it [… They are] comfortable functioning in a practical world that can make use of their feelings and actions, as well as in a technical world that requires their conceptual abilities [… they] Learn best on the job through discussions with colleagues. (Kolb and Kolb Citation2013, 8)

The challenges might be with "taking time to reflect, solving the right problem, and gathering and analyzing information." See Table 4 for all students' results.

Laura presented the second highest Flexibility score (.78). Her primary learning style was Experiencing (Concrete Experience phase), and her secondary learning styles were Initiating, Imagining, Reflecting, and Thinking. Laura's primary learning style revealed she finds "meaning from deep involvement in experience." Her learning strengths might include "finding deep personal relationships, [having a] strong intuition focused on reflection and action, [and being] open to new experiences" (Kolb and Kolb Citation2013, 10). People with the primary learning style of Experiencing are likely to learn from their deep involvement in life experiences and contexts, rely on feelings and reactions to people and situations to learn, approach a problem intuitively rather than logically, seek validation through reflection and action, and prefer learning situations that are rich in interactions and ongoing communications. Learning challenges might be with understanding theory, systematic planning, and critical evaluation (Kolb and Kolb Citation2013, 8).

Beth presented with the third highest Flexibility score (.72). Her primary learning style was Imagining (Concrete Experience + Reflective Observation phases), and her secondary learning styles were Initiating, Reflecting, Analyzing, Thinking, and Deciding. Beth had all but two of the possible secondary learning styles, so only her primary learning style is discussed. The learning style Imagining relates to people's consciousness of "envisioning possibilities by observing and reflecting on experiences." People with this primary learning style are likely to experience "awareness of other people's feelings and values, listen with an open mind, and imagine the implications of ambiguous situations" (Kolb and Kolb Citation2013, 8). Her learning strengths according to the KLSI report might be to

learn by stepping back to observe and reflect on [her] experiences and feelings, … approach situations by observing rather than taking action, … be good at imagining the implications and possibilities of a particular course of action and at creating alternative paths and approaches, … learn by working in groups where there is open and free flowing conversation through which [she] can gather information, listen with an open mind, and receive personal feedback … [She] enjoys situations that call for generating a wide range of ideas, such as brainstorming sessions, and appreciate[s] teachers who take a facilitating role and are sensitive and creative. (Kolb and Kolb Citation2013, 8)

Her learning challenges might be with "decision making, taking leadership, and timely action."

Virginia presented the lowest Flexibility score (.58). Her primary learning style was Imagining, the same as Beth's, but she scored high on only three of the secondary learning styles: Initiating,

Experiencing, and Analyzing. A summary of Virginia's learning style preferences and benefits are similar to Beth's but with a far lower Flexibility score. Because of this, her learning challenges could be with "decision making, taking leadership, and timely action" (Kolb and Kolb Citation2013, 8).

Students' Flexibility Scores

All four students had Balancing as one of their secondary learning styles. This learning style reveals each finds ease with moving around the learning cycle, working with diverse groups of people, and having creative insights. The Flexibility score reveals three students scored high or medium-high, and only one student, Virginia, scored at a medium level. Her report states, this score "indicates that you show some Flexibility; adapting your Learning Style to different situations but perhaps not using all four learning phases" (Kolb and Kolb Citation2013, 17).

This KLSI and qualitative data were compared and contrasted to the learning styles found in the curriculum to reveal correlations and subsequent meaningful outcomes.

Learning Styles in Course Activities

This independent study course was designed to bring all the learning styles into play in one setting with the main entry point being notation. The activities provided 42 opportunities to have Concrete Experiences, 42 for Reflective Observation, 43 for Abstract Conceptualization, and 41 for Active Experimentation. These numbers do not reflect the amount of time spent engaging in these activities, just the requirements of the learning style in the activity. Typically, many learning styles would be encouraged in any one activity.

Less Complex Learning Styles Combinations

The minimum number of learning styles for any single activity is 1, and the maximum is 12. Examining activities with the lowest complexity (scores of 2–4) indicates that the activities do not likely challenge multiple approaches to learning. In the theme of Dancing, activities scoring lowest for multiple learning styles were "Pretest/Post-test of dance video observation and dancing" and "Student presentations of dance composition," both requiring one type of Concrete Exploration and Active Experimentation for a score of 2 learning styles for each. Scoring 4 in Dancing were "Observe and dance by copying a teacher" and "Teacher gives notes, student fine tunes dance technique." The asterisks on the chart point out these last two activities are also familiar to students in every technique class. The only other teaching and learning activities that scored 4 or lower were those in the category of Writing in English. Scoring 2 was "Pretest/Post-test of dance video observation and writing in English." Scoring 3 were "Short answer Motif Notation and concepts quiz" and "Observing historical dance on video and writing in English."

More Complex Learning Styles Combinations

Activities that scored high (9–12) for complex combinations of learning styles were found in 20 percent of Dancing activities, 75 percent of Analyzing activities, 80 percent of Reading Notation activities, and 100 percent of Writing Notation activities. The four activities that scored high (12) involved writing or reading notation in combination with dancing. These four activities represent

those that challenged students' Flexibility to shift back and forth between the learning styles. Activities scoring 11 involved writing Motif Notation, either alone or in discussion with peers, and a Dancing activity in which students "Observe self on video, reflect, revise dancing." The two activities scoring 9 required using Motif Notation and LMA for exploring movement in a technique class activity.

When averaging the Flexibility scores for each theme, one sees the degree of breadth of learning style presented by each theme of pedagogical activity. The averages of Flexibility scores for each theme are: Writing in English (3.3), Dancing (4.0), Analyzing using LMA (8.3), Reading Notation (9.4), and Writing Notation (10.8).

This analysis showed that Analyzing, Thinking, and Acting were explored more by this course by the inclusion of reading, writing, and analyzing using LMA, notation, and video. Themes shown in black boxes (see Table 3) represent activities that engaged a high degree of Flexibility or drew on multiple learning styles within the same activity. Activities that required multiple learning styles are listed in the column titled "Frequency and Variety of Learning Styles."

Students' Learning Styles Engaged by Course

Activities requiring more Flexibility are more challenging for students with a lower Flexibility score and for students whose learning styles do not match those engaged by the activities.

Shannon's learning styles are most similar to those presented by course activities. Her primary learning style (Acting—bridging practical with technical, improving existing operations, coordinating complex operations and systems), and one of her secondary learning styles (Thinking—abstract ideas, theories, concepts, ideas, models) are two of the three primary learning styles that are challenged by use of Motif Notation and LMA. Although none of the other students' primary learning styles matched the curriculum, they each had at least one secondary learning style that matched. Analyzing (abstract ideas and logical reasoning) and Thinking (abstract ideas, theories, concepts, ideas, models) learning styles were challenged by the pedagogy (Beth had two). Virginia and Laura's learning style preferences did not match the notation approaches to learning dance.

Qualitative Data from Students' Journals

Some students favored learning notation in conjunction with dance activities, whereas others felt the need to drill and memorize symbols. Learning preferences correlated with students' social needs. Beth noticed she was synthesizing alone, whereas Shannon noted she learned Motif Notation more easily when we took time to work with each other in a group reflecting, discussing, and asking questions. Shannon and Beth preferred simultaneous notation and movement study integrated with high levels of social interactivity and repetition (Shannon 90% together, 10% alone; Beth 80% together, 20% alone). Virginia felt learning notation should happen along with movement, similar to how "other languages get to be spoken and written." She also focused on needing more repetition to learn physical skills because she was less advanced in her dance skills and preferred learning to happen alone 80 percent of the time. Virginia and Laura focused on the order of psychomotor and cognitive events, with a preference for dancing first followed by immediate writing. Virginia said, "I like when we work a smaller section of movement and then deal with Motif Notation immediately after, so I can process it and ask questions while it is

emerging for all of us." Laura noted that any study attempted on her own outside of class was frustrating. All four preferred working together to make sense of the literacy component of the dance. Writing the dance at home was frustrating for everyone except Shannon, who wrote, "Having the DVD to watch at home helped me to remember the dance so I could write the score." Shannon also voiced the benefit of rote memorization outside of class, and Laura complained of needing to meet twice a week rather than having to do anything outside of class.

Affective commentary in student journal entries was rated using a Likert-type scale from –3 (least engaged/content) to +3 (very engaged/content). Shannon was most content with a mean of 2.75, Beth 2.33, Virginia 1.42, and Laura 0.58, whose affective meter started low, varied, and ended at a moderate level. Shannon experienced the course and Motif Notation with eagerness and contentedness. Beth was challenged and enjoyed notation as a "puzzle." Virginia was engaged but nervous about dancing, and Laura was sometimes disengaged socially but danced with improved clarity.

The following themes were gained from qualitative analysis of students' journals:

- Notation literacy comes with purposeful play: Literacy is achieved most easily when we play and have a purpose with the play (Beth and Shannon). "The pairing of symbols with movement and play simultaneously help me learn" (Laura). "Literacy is achieved when we personally make meaning, not before" (Virginia).
- Notation practices challenge the body–mind connection: "This way of learning works both sides of my brain, and I find that difficult" (Laura).
- Notation helps me dance with intent: "With literacy, my intentions in my movement are clearer" (Shannon). "Literacy changes the way I qualitatively execute movement … Connecting literacy and vocabulary to movement helps my dancing" (Laura). "If you play with the symbols, you truly know them, then you can understand the timing, energy, and style of a dance much deeper by notating or reading the notation" (Beth).
- Notation literacy requires and incites process-oriented practices: "It's different from a regular class in that it's a learning process for everyone involved" (Virginia).
- Notation literacy practices help students learn to learn: "With literacy, we have access to history. We are restoring history, and we have opportunity to learn and perform more styles of dance" (Virginia). "This experience reminded me of the many faces of modern dance and how much I still have to learn in the dance world" (Shannon).
- Notation inspires appreciation: "This type of course connecting intensive dancing with literacy would help students gain a sense of appreciation for notating dance" (Beth).
- Notation requires a cultural shift in dance education: This way of learning requires a cultural shift because dancers are used to relying on being kinetic, not literate and kinetic (Beth and Laura). "A new perspective on literacy practices will be necessary if we are to provide students with access to a body–mind inquiry into their dance history" (Laura).

Fluency with Writing in English About Dances

Students' fluency was measured by pretests and posttests during which they watched short dance videos and completed five-minute timed writings of the elements of dance they saw in each dance. Pretest scores revealed dancers started out at about the same level with writing fluency, with Shannon showing the highest fluency and Laura the lowest. Posttests revealed

Laura and Virginia, the less content and engaged students, gained more fluency with writing than the others. Laura gained 75.6 percent and Virginia 56.7 percent. The literacy approach to learning dance seemed to improve fluency, despite Laura and Virginia's occasional discontentment. Laura and Virginia started out with lower numbers of concepts (34 and 30, respectively), but each increased to 60 and 47, an increase of 119.28 percent and 99.27 percent. These figures represent a strong increase in agency with observation, analysis, and description. With her increase to 60 concepts, Laura was only two concepts shy of the highest score by Beth, who was the most fluent writer. The data indicate students were not just rehashing already stated concepts in new ways but were able to discuss dances with more variety during the posttest.

Qualitative and KOLB LSI Research Outcomes

Shannon's primary learning style (Active) was affined with 12 learning experiences in this pedagogy through Reading Notation and Writing Notation activities and all Dancing activities. Her secondary learning styles (Reflecting, Thinking, Deciding) were also required to complete Reading Notation and Writing Notation, so learning those activities was reinforced threefold. Most physical Dancing activities did not require Shannon's secondary learning styles; however, Reflecting and Balancing are helpful when receiving technical and performance comments applied to dancing. Shannon's primary and secondary learning styles might not be essential to her learning when writing about dance in English; however, her learning style preference of Active supported writing with dance notation.

Beth's primary learning style (Imagining, which is both Concrete and Reflective) was affined with six learning experiences in this course when she was Reading and Writing Notation, Analyzing using theory, and Writing in English. Interestingly, Beth's secondary learning style of Initiating related well to her engagement with dancing. Her preference for hands-on experience, commitment to objectives, and influencing others drove her need to stick with notation to learn the dance. Her continuous investigation with reflecting aloud and revising her dancing were more akin to her primary learning style of Imagining, which affined with 11 learning experiences.

Virginia's primary learning style, Imagining, is the same as Beth's, but Beth uses six secondary learning styles readily, whereas Virginia shifts readily to only three. Virginia has a considerably lower Flexibility score of .58 (Kolb and Kolb Citation2013, 17). Information from the KLSI points toward the likelihood of Virginia having more of a struggle contending with the vast array of learning activities provided in the course. These primary and secondary styles were called on by the curriculum, but matched Virginia's learning styles most often with Reading Notation, some Theory discussion activities, and Writing in English. Virginia's primary learning style of Imagining does not easily support the speed required to learn this dance, so she has to switch to Experiencing to learn the dance. When using the learning style of Experiencing, dancers rely heavily on Initiating and Acting, which both are related to taking initiative, being a leader, and aiming for self-implementation of tasks. Virginia does not shift into those learning styles readily, so she was less supported in the psychomotor learning. Interestingly, Beth also used her secondary learning style for psychomotor learning, and she picked up quickly, which could be due to her secondary learning style of Initiating.

Laura's primary learning style is Experiencing, which supported 12 course activities, five Dancing activities, four with Reading Notation, and two with Writing Notation. Notation

activities were most successful for her when they related to her dance compositions and dance technique. This outcome correlates with her learning style of Experiencing in which she tends to find "meaning from deep involvement in experience." The KLSI results match Laura's description of her experiences with accuracy. She enjoyed Writing Notation when making her own dances, but writing the Parsons Etude in Motif Notation seemed frustrating and unhelpful. Motif Notation in connection with improvisation, composition, and dance technique matches her learning styles, but analysis and writing with Motif Notation are less engaging.

The activities in this course requiring writing in English were not affined with Laura's primary learning style of Experiencing. Only Imagining, her secondary learning style, served her with writing in English. It is important to note the pretest and posttest showed that Laura began with the lowest rate of fluency (fewest words and fewest concepts) and improved the most in both categories. Although she complained about being uncomfortable throughout the course, due to the pedagogy not matching "my learning styles," Laura gained the most in terms of fluency in English.

DISCUSSION

Summary of Positive Experiences

Playing and exploring with Motif Notation invigorated Shannon and Beth's learning. Shannon's primary learning style of Active and her secondary learning styles of Reflecting, Thinking, Deciding, and Balancing are an easy fit for working with notation-based dance literacy. She said she had fun the entire time. Beth took the attitude of openness and eagerness for exploring all possibilities with her primary learning style of Imagining. With six secondary learning styles, Beth was comfortable learning in many ways.

Virginia was willing and happy to try anything explored. She had the highest score in the Imagining learning style, but with only three secondary learning styles and the lowest Flexibility level, she was willing to work on reading and writing with notation, but not nearly as comfortable as Shannon and Beth. Her slower pace of learning notation was of no real concern to her, however. Her main focus was keeping up with the three other dancers who had more technical experience. For her, the notation felt less difficult than learning the physical dancing.

Summary of Negative Experiences

Laura had the second highest level of Flexibility switching between learning styles, which should result in Laura being flexible and easygoing with learning with notation. This, however, was not the case. Because Laura lacked the predilection for learning styles that more readily support learning with Notation Writing and Writing in English (Analyzing and Acting), educators must provide activities to engage in deeper meaning making. The "playful" curriculum was playful for only three students. This is not to imply that teachers should cater pedagogy to fit each student, but notation is notoriously outside the comfort zone of some dancers. There must be ways to make it more accessible. Clearly play is relative to learning styles.

To adjust this notation pedagogy to serve a student like Laura, a skilled dancer who is bright and has fairly flexible learning styles preferences, the dance teacher could reach deeper into what makes Laura most comfortable, Experiencing. By layering more ways to assist with deep meaning related to life experiences, inviting feelings and reactions to the work at hand, encouraging intuition over logic, and providing constructive feedback, Laura might be more engaged and content. Her telic state of mind throughout the course, and concerns with taking too much exploration time for the intended outcome, clashed with the paratelic, explorative nature of the notation pedagogy. However, this pedagogy that she regularly regarded in her journals as not well suited to her was, ironically, a perfect fit to expand on her learning needs.

There were positive sides to Laura's experiences. Laura commented that she was most drawn to the symbol of Cross-Lateral Body Connectivity simply because she could readily access that symbol physically. She also wrote with more engagement when she explored how to write skipping in notation. She enjoyed the physical sensations of how her skipping changed when she slightly changed the length and spacing of the action strokes used to write skipping. She also wrote about how she had analyzed the Effort Qualities of the dance and how difficult it was for her to achieve Bound-Flow in her arms while jumping and scampering with Free-Flow in her legs. Her journal focused on how her transmission of ideas and meaning through her technique would allow her to better engage her audience. These are times when Laura was most alive in this work and her moments of Concrete Experience—finding meaning from deep involvement with experience. It was in those moments the notation provided an engaging purpose.

Laura did not enjoy the abstract, theoretical, and analytical learning styles activities. For her, without a deeper purpose, notation felt like games and time-consuming activities that had no meaning. In contrast, for Shannon, the notation games were a joyful inroad to dancing. Providing more emphasis on symbol concepts that provide deep meaning and feeling about the dance being studied would balance the curriculum for dancers with a Concrete learning style preference. The KLSI helps explain why some people are having fun learning with notation, whereas others are discontent and feel strung along, playing someone else's game. Play is not the same for everyone.

For each student, the level of engagement with dance-based dance notation literacy practices was related to different goals. Students wanted to learn and perform a historical dance that was not accessible to them otherwise. Three students stated that if dance notation literacy practices would help them to better understand and perform a dance style, then they were willing to do the literacy work to be able to accurately embody that style. Shannon loved the puzzles that notation presented. Beth and Virginia, with the primary learning style of Imagining, were open-minded about learning in new ways, and they enjoyed the warm community spirit that was created by working with notation literacy practices using a second-language acquisition approach.

I had hypothesized that if the learning styles of the curriculum paralleled only those of the contented students, then the curriculum needs revising to be inclusive of needs with other learning preferences. This hypothesis proved to be true for only one of the four students and somewhat true for two other students. The fourth student's learning style differed most from the pedagogy, and she was the least contented of the group. This indicates that even though the pedagogy was geared toward play and inclusiveness among learning styles, to be made accessible, notation must be delivered using instruction that engages learning styles that engaged students to love dancing in the first place. For Laura, that was personal meaning

making. The curricula stretched the other three students outside their comfort zones, but Laura was less interested in being stretched that far.

The learning outcomes showed considerable learning among all four students. These results encourage the teacher-researcher to continue to work with developing pedagogies that playfully explore notation. When the curriculum engages in learning styles that fall outside students' primary and secondary learning styles for long periods of time, students like Laura might lose a sense of purpose. Many dancers might avoid engaging in notation literacy because notation requires engagement of learning styles that fall outside comfort zones. By experiencing notation activities that extend beyond dancers' primary and secondary learning styles preferences, students can explore an increased breadth and depth of learning possibilities. Hence, the curriculum might do well to include activities that scaffold gradually into learning styles approaches not typically used in their area of study, so students can make comfortable bridges between their preferred learning styles and those that are less preferred.

Suggestions for Future Application and Study

Proponents of reversal theory, such as Apter (Citation2007), state that play, or paratelic states of mind, provide for lifelong learning. A second-language acquisition approach to learning dance using playful notation practices can lead to lifelong learning; it inspires self-confidence with problem solving, communication, social relationships, and adapting to variables. Notation play can be included in a myriad of ways in any course in a college dance curriculum. A well-scaffolded curriculum leading to a capstone experience, such as this one, might be a good approach.

Composition courses are an ideal place to embed literacy concepts on flash cards, with writing basic dance concepts on brief scores, and by playing games with chance procedures. Concepts could be explored in technique courses so that what is implicit in English (e.g., energy) becomes explicit using a dance-based dance language as an Effort Qualities score. Students can circle on their scores which Effort Qualities they need to practice.

In dance history classes, while watching a dance on video, students can jot down themes and ideas using symbols. Instructors can discuss central themes and how those concepts portray signature phrase patterns or aesthetic trends from a genre. In pedagogy courses, teachers can use dance-based dance notation literacy to help focus teaching goals in lessons and provide focus for activities.

By embedding notation literacy activities throughout a dance curriculum, dancers would eventually experience dance notation literacy as normal, an everyday experience that leads them to new understandings of themselves and dance. The possibilities are vast, and using a dance-based dance notation language seems essential if college graduates are to be able to access history and heritage of works of the past. Notation literacy provides dancers with a second language, a dance-based language, to speak, write, and feel like they can investigate and grow as a community with their own dancing and with dances from beyond their neighborhoods and beyond their chronological years.

However, rather than waiting to introduce a second language to college dancers when they are concerned about precious time available to audition and perform, notation might be introduced to children, whose paratelic states of mind are eager to play symbol and concept games. Research shows that if students begin using notation when young, skill building is jump-started (Warburton Citation2000, 209). In reference to the ongoing marginalization of

dance (Risner Citation2010), notation could be a boon to the field because it makes cognitive assessment of learning simple.

It seems the field of dance and dance education is intent on pushing bodies to the limit; however, there are untapped resources that could push the dancer's mind further. Communicating and writing with LMA and notation enriches explorations of dance technique and composition and clarifies discussion and analysis. Speaking and writing in a dance-based dance language, such as LMA and notation, is not outmoded. LMA and notation simply need to be explored to find the right fit for the situation. The learning styles skills engaged by LMA and notation seem ever more important as dancers negotiate through increasingly complex lives.

A further step toward understanding how dance notation engages learning would be to test the KLSI on two large groups of dancers, one group that enjoys notation and one that does not, to see if learning styles preferences are affined with predilections toward notation, as this small study suggests.

Notes

1. Laban Movement Analysis (LMA) is a method and language of words and symbols for describing, visualizing, interpreting, and documenting all varieties of human movement (Hodgson and Preston-Dunlop Citation1990) to explore possible learning outcomes related to intention, meaning making, dancing, performing, and language fluency. Labanotation is a system of symbols representing a detailed description of movement so movement can be reproduced exactly as it was performed or conceived. Motif Notation is a form of dance notation that is a subset and reconception of Labanotation sharing a common lexis, with the main difference being the type of movement information being recorded (Hutchinson-Guest and Curran Citation2007). In the Language of Dance® approach to teaching dance using notation, the main components are represented by basic Motif Notation symbols together with the corresponding movement and dance terminology for pedagogical purposes (Hutchinson-Guest and Curran Citation2007).

References

Apter, M. 2007. Reversal theory: The dynamics of motivation, emotion and personality. Second edition. Oxford, UK: Oneworld.

Asher, J. 1969. The total physical response approach to second language learning. The Modern Language Journal 53(1):3–17.

Asher, J. 1996. Learning another language through actions. Los Gatos, CA: Sky Oaks Productions.

Csikszentmihalyi, M. 1990. Flow: The psychology of optimal experience. New York: Harper.

Curran, T. 2010. The experience of staging Nijinsky's L'Apres-Midi D'un Faune in a higher education dance program. Doctoral dissertation, New York University, New York.

Hodgson, J., and V. Preston-Dunlop. 1990. Rudolf Laban: An introduction to his work and influence. Plymouth, UK: Northcote House.

Hutchinson-Guest, A., and T. Curran. 2007. Your move. Second edition. London: Routledge.

Inzlicht, M., B. J. Schmeichel, and C. N. Macrae. 2014. Why self-control seems (but may not be) limited. Trends in Cognitive Sciences 18(3):127–33.

Kolb, D. A. 1971. Individual learning styles and the learning process. Working paper #535-71, Sloan School of Management, Massachusetts Institute of Technology, Cambridge, MA. http://www.haygroup.com/leadershipandtalentondemand/ourproducts/item_details.aspx?itemid=118andtype=2andt=2

Kolb, D. A., R. E. Boyatzis, and C. Mainemelis. 2000. Experiential learning theory: Previous research and new directions. In Perspectives on cognitive, learning, and thinking styles, eds. R. J. Sternberg and L. F. Zhang, 249–52. Mahwah, NJ: Erlbaum.

Kolb, D. A., and A. Kolb. 2013. Kolb learning style inventory 4.0. Philadelphia, PA: Experience Based Learning Systems, Inc., Hay Group. http://www.haygroup.com/leadershipandtalentondemand/ (last accessed August 15, 2013).

Krashen, S. D. 1981. Second language acquisition and second language learning. Oxford, UK: Pergamon.

Krashen, S. D. 2009. The comprehension hypothesis extended. In Input matters in SLA, ed. T. Piske and M. Young-Sholten, 81–94. Bristol, UK: Multilingual Matters.

Parsons, D., T. Powell, and M. Corey. 1999. Parsons Etude: Choreography, music, notation score. Providence, RI: American Dance Legacy Initiative.

Risner, D. 2010. Dance education matters: Rebuilding postsecondary dance education for twenty-first century relevance and resonance. Journal of Dance Education 10(4):95–110.

Shepherd, P. 2009. Transforming the mind. http://www.trans4mind.com/transformation/transform4.2.htm (last accessed May 15, 2014)

Warburton, E. C. 2000. The dance on paper: Effect of notation-use on learning and development in dance. Research in Dance Education 1(2):177–97.

Winitz, H. 1981. The comprehension approach to foreign language instruction. Rowley, MA: Newbury House.