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MOBILISER L'INTELLIGENCE DANS LA CLASSE TECHNIQUE : LA CLASSE DE BALLET SOUS LA LENTILLE DE LA THÉORIE DES INTELLIGENCES MULTIPLES DE HOWARD GARDNER

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MOBILIZING THE INTELLIGENCE THROUGH DANCE TECHNIQUE: THE BALLET CLASS THROUGH THE LENS OF HOWARD GARDNER'S THEORY OF MULTIPLE INTELLIGENCES

THESIS
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RÉSUMÉ

Ce mémoire porte sur la transposition et l'application de la Théorie des Intelligences Multiples (IM) de Howard Gardner, à la classe technique de Ballet. Plus particulièrement, l'étude avait pour buts de concevoir, décrire et illustrer des stratégies visant à stimuler et développer, chacune des intelligences décrites par Gardner (1983), dans la classe technique de ballet. Ce travail découle d'un désir de renouveler la pratique pédagogique de la classe traditionnelle de ballet.

La méthodologie a suivi les étapes suivantes : 1) Un examen de la littérature portant sur chaque intelligence selon les angles de leurs identité et caractéristiques : 2) De cet examen a découlé une grille d'analyse appliquée à quatre sources d'informations : a) observation de classes technique de ballet, b) littérature portant sur l'enseignement de la danse et de l'éducation physique, c) mes expériences professionnelles en tant qu'élève, professeur et interprète et d) littérature portant sur les stratégies susceptibles de stimuler les intelligences en contexte académique : 3) L'ensemble de ces informations a été synthétisé dans une discussion théorique du quand et comment chacune des intelligences sont sollicitées en classe technique de ballet : 4) Soixante-cinq stratégies d'enseignement ont été décrites et illustrées, sur la base de la discussion théorique.

Ce mémoire conclut qu'en examinant la classe de ballet à travers la lentille de la théorie des IM, un éventail de possibilités d'innovation pédagogique émerge. En diversifiant leurs stratégies pédagogiques, les enseignants peuvent offrir à leurs élèves un enseignement personnalisé. Les élèves sont susceptibles de découvrir et développer leur plein potentiel dans la classe de ballet. Cette façon d'enseigner peut créer un apprentissage approfondi et de longue durée, développer les compétences intellectuelles autant que transversales, tout en créant des liens entre la classe de ballet avec d'autres domaines. Ces retombées sont aussi celles des modèles d'apprentissage constructiviste et de la "critical pedagogical theory", qui mettent l'accent sur des perspectives variées, des activités authentiques et un environnement d'apprentissage reflétant la vie réelle (Fosnot 1996; Ottey, 1996).

Mots-clés :

Intelligences Multiples
Stratégies d'Enseignement
Classe Technique de Ballet

ABSTRACT

This study aims at translating and applying Howard Gardner's theory of Multiple Intelligences (MI), to the ballet technique class. Its purpose was to conceive, describe and illustrate teaching strategies aiming at the stimulation and development, within the ballet technique class, of each of the intelligences as defined by Howard Gardner (1983). This thesis resulted from a desire to enrich traditional dance pedagogy within the ballet technique class.

To achieve these goals, the following methodological steps were respected: 1) Pertinent literature was reviewed to investigate each intelligence's proper identity and characteristics; 2) From this emerged an analytical framework which was applied to four sources of information: (a) observations gathered from viewing ballet technique classes, (b) literature pertaining to teaching and learning within dance and physical education (c) reflections on my personal experience as a dance teacher, student, and performer and (d) literature pertaining to teaching strategies used to stimulate the intelligences within academic subjects ; 3)This information was summarized into a theoretical discussion, which examined when and how each intelligence is solicited within the ballet technique class. 4) Based on this discussion, 65 possible teaching strategies to stimulate each intelligence, were conceived and described, along with some examples of coherent and concrete learning activities.

This thesis concludes that by examining the ballet technique class through the lens of Gardner's theory, there arises an immense scope of possibilities for pedagogical innovation within the ballet technique class. By diversifying their pedagogical strategies, teachers can offer their students more individualised instruction. This can contribute to feasible and long-lasting learning, the gain of higher intellectual competency, learning that can be transferred to real and significant situations and an awareness of the interconnectedness of subjects. These goals are also shared by the constructivist learning model and critical pedagogical theory, with their emphasis on multiple perspectives, authentic activities, and real-world learning environments (Fosnot, 1996; Ottey, 1996).

Key words:

Multiple Intelligences
Teaching Strategies
Ballet Technique Class

INTRODUCTION

When Howard Gardner's Frames of Mind was published in 1983, his theory of Multiple Intelligences (MI) received a warm welcome from the educational community at large. Gardner (1983) broadened the scope of intelligence beyond mathematical and verbal skills by including musical, visual, kinesthetic, interpersonal, intrapersonal, and naturalist skills within the realm of intelligence. MI Theory has drawn much attention from educational circles, which perceives it as a powerful educational tool; with it educators can better understand how different students learn, and individualise instruction for all students (Warburton, 2003). Educators believe that the theory allows concepts to be presented and assessed in a variety of ways. By suggesting a wider variety of pedagogical approaches, educators feel the theory offers a greater chance of assisting students who are not succeeding within traditional definitions of intelligence and further stimulate those who are. Furthermore, they think that the theory challenges traditional methods of assessing intelligence by holding that intelligence is not numerically quantifiable, but rather is measured in context, in real-life situations. In short, the theory opens new ways to develop an individual's potential and to enhance his or her achievement.

Gardner is not the first to recognize that people differ in their ability to solve problems in diverse areas and make varying contributions to cultures. Even before his book was published, "Vernon (1950, 1969), Eysenck (1979) and Jensen (1980) ...proposed a hierarchy of intelligences that range from the very specific (e.g. mechanical and visual spatial) to very general ("g")" (Scarr, 1985, p.99). However, Gardner has been the individual most responsible for heightening public and professional awareness of this theory.

Present-day educational approaches, situated within the post-modern paradigm are aiming to educate youth in the face of changing world trends. Internationalization, globalization, explosion of information, accelerated technological development, and complexification of social structures are recognized as major trends of contemporary life (Doll, 1989). The main

facets of post-modern thought that form the basis of present-day educational changes are: the nature of open (as opposed to closed) systems, the structure of complexity (as opposed to simplicity), and transformatory (as opposed to accumulative) change (Doll, 1989).

Quebec's most recent educational reforms, which include the elementary and high school levels, are influenced by these same facets of post-modern thought, and seem to be aiming for the same goals as Gardner does, through his theory. The new curriculum is designed to develop a range of individual skills, which were not recognized in the former curriculum. Indeed, the new competency-based curriculum aims to achieve: feasible and long-lasting learning, the gain of higher intellectual competency, learning that can be transferred to real and significant situations, reduced compartmentalization of subjects and a greater number of pedagogical approaches (Gouvernement du Québec, Ministère de l'Éducation, 2001). The sciences, humanities, and arts are not closed systems of learning anymore, but rather form an integrated way by which to view the world through several facets. Like MI Theory, school reform is concerned with children's performance in both their personal and academic life. Gardner (1983) stresses that intelligence is not only linked to academic achievement, but is intricately woven into professional, social, and emotional life.

Gardner's work has been influential for many follow-through publications and research within the domain of education. By 1999, 145 books and monographs, 196 articles/ reviews and 22 theses/dissertations/papers had been written about multiple intelligences. There have also been 9 videos made, 4 newsletters published, and 48 instructional or miscellaneous materials created. These numbers do not even include the books and articles that have been authored (63) and co-authored (40) by Gardner (Gardner, 1999, app. a, b, and c). The numbers have grown since 1999. Within this vast body of work, there exist a large number of applications of MI Theory to the teaching of various academic subjects. However, the translation of the theory for the teaching of dance is not as prominent.

The body of literature relating MI Theory to dance has focused primarily on the justification of dance as a discipline, and the theory's possible implications, rather than its practical applications. For example, essays have been written about how arts and dance education can

contribute to the development of the multiple intelligences (Beauchemin 1995, Schwartz 1993, Green Gilbert 1992a). Indeed, through the lens of Gardner's theory, the discipline of dance is a viable way of developing the intelligences (Koff, 2003). Schwartz (1993) affirms that by teaching dance actively, to all of the intelligences, creativity is nurtured. Warburton (2003) agrees that MI Theory validates dance as a sphere of knowledge through which all of the intelligences can be actualized.

If the development of the intelligences is to become an aim for the teaching of dance, it is paramount to thoroughly examine how the intelligences can be developed through it. Indeed, dance can become a vehicle to develop the Multiple Intelligences, only to the extent to which the teaching process concretely accounts for that goal. Furthermore, if the teaching of dance is to offer students opportunities to actualize their intelligence or intelligences, dance educators must reconsider conventional approaches to dance education and training. A better knowledge of how and when the intelligences are solicited, can become a powerful tool towards that goal. So how exactly must we teach in order to develop all of the intelligences within the discipline of dance?

As a ballet teacher involved in recreational training outside the public education system, my focus is on the technique class. It seems worthwhile to seek pedagogical ways of stimulating and developing the Multiple Intelligences, in the studio. I believe this could help students get involved in their own dance education and help them develop abilities that could be used outside the technique class as well. The aim of this study was to conceive, describe, and illustrate teaching strategies aiming at the stimulation and development, in the ballet technique class, of each of the intelligences as defined by Howard Gardner (1983). The study was led by the following questions:

- What are the distinctive identities and characteristics of each intelligence?
- Which fundamental capacities are mobilized by the use of each intelligence?
- How and when are these capacities mobilized in the ballet technique class?
- Which types of teaching strategies are capable of stimulating and developing each of the intelligences within the ballet technique class?

To answer the first two questions, pertinent literature was reviewed to investigate each intelligence's proper identity and characteristics. The results of this examination provided an analytical framework, to be applied to the examination of information pertaining to the teaching of technique class and the applications of MI theory to academic subjects (question 3).

To answer the third question, four sources of information were examined through the analytical framework: (a) observations gathered from viewing ballet technique classes, (b) literature pertaining to teaching and learning within dance and physical education (c) reflections on my personal experience as a dance teacher, student, and performer and (d) literature pertaining to teaching strategies used to stimulate the intelligences within academic subjects. This resulted in a description of ways to stimulate individual capacities involved with each intelligence within the ballet technique class.

The fourth question was answered by using the results of the third question in order to conceive and describe teaching strategies. A total of 65 possible teaching strategies emerged as a result, along with some examples to illustrate them.

This study intended to apply MI Theory to the teaching of the ballet technique class where emphasis is placed on skill acquisition and accurate reproduction (Hankin, 1997). The wider array of teaching strategies expected to stem from it should, in turn enrich the teaching practice and possibly inspire teachers to examine their own practices.

This thesis is addressed to both male and female teachers and students. Feminine gender pronouns are often used to avoid repeating two pronouns and are intended to encompass both genders. Also, technical ballet terminology is not defined within the thesis, as it is aimed for teachers of technique. However if a reader needs clarification of ballet terminology I would refer her to the following website: www.abt.org/education/dictionary/index.html.

CHAPTER I

THEORETICAL FRAMEWORK

This chapter contains a brief history of intelligence research, which will help clarify the intent of MI Theory. It then covers the basics of MI Theory, including its origins, the criteria by which an intelligence is measured, and an overview of each intelligence. The description of MI Theory will be followed by a literature review covering critiques, alternative viewpoints, how MI Theory has resounded within general education and then more specifically dance education.

2.1 A Brief History of Intelligence

Understanding the historical source of intelligence research will help to clarify the aim of contemporary intelligence research. The source of modern intelligence research, as agreed upon by most psychometricians, stems from Alfred Binet's work on predicting school performance (Jensen, 1998). In 1905, Binet and his colleague Theodore Simon developed a test of intelligence to predict how well students would perform in school. Binet's purpose was to distinguish between intellectually competent students with behavioural problems and genuinely mentally retarded students (Warburton, 2003). Soon afterwards this concept of intelligence testing reached North America. In 1916 at Stanford University, Lewis Terman elaborated and amended the Binet-Simon Scale to make the test more relevant to American society (Terman, 1916). Terman introduced the term "intelligence quotient". From then on the Stanford-Binet Scale became widely used in the scholastic system, predicting students' future educational success.

I.Q. tests are generally short answer and multiple choice tests used to evaluate mathematical deduction and computation, verbal fluency, memory, and spatial visualization. Every test that evaluates mental ability ranks individuals in a similar way, suggesting that all such tests measure one's "general intelligence" (abbreviated as "g"). These classical approaches to

intelligence testing have more recently undergone scrutiny by evolving philosophical traditions and breakthroughs in cognitive sciences (Gardner, 1982). "Criticism of the notion of general intelligence in particular comes from diverse quarters, but especially from contemporary psychologists and educators who argue that tests for general intelligence focus on a narrow slice of the full range of human cognitive abilities" (Warburton, 2003, p.9). As alternatives to the traditional models of intelligence, these contemporary psychologists and educators point to new models of human cognitive abilities that began to appear in the mid-1900s. These models are often described as pluralistic, because they attribute intelligence to a number of separate cognitive abilities. "Arguably the most celebrated of the pluralistic models is Howard Gardner's Theory of Multiple Intelligences"(Warburton, 2003, p.9).

2.2 The Theory of Multiple Intelligences

As denoted above, intelligence has been and is viewed as a capacity, which remains practically unchanged from the birth to the death of a human being. Intelligence is seen as unitary, measured in isolation by a number; it classifies students and predicts their scholastic success. This traditional view of intelligence is based primarily on linguistic and logical-mathematical skills. In 1983, with his book Frames of Mind, the cognitive psychologist Howard Gardner presented his pluralistic view of intelligence. In it, he states:

> "I do not deny that "g" exists; instead, I question its explanatory importance outside the relatively narrow environment of formal schooling. For example, evidence for "g" is provided almost entirely by tests of linguistic or logical intelligence. Since these tests measure the skills that are valuable in the performance of school-related tasks, they provide reliable prediction of success or failure in school. So, for that matter, do last year's grades. The tests are not nearly as reliable in predicting success outside of school tasks."(Gardner, 1983, p.39)

Gardner defines intelligence as "a biopsychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture"(Gardner, 1999, p.4). According to him, human intelligence is composed of three elements:

1) a set of capacities that enable us to solve everyday problems

2) the capacity to create an effective product or to offer a valued service to one's own cultural setting

3) the capacity to recognize current problems and to raise new challenges, which in turn permits us to acquire new knowledge (Gardner, 1983)

2.3 Criteria of an intelligence

To advance his definition of intelligence into a set of intelligences, Gardner (1983) developed eight criteria by which to assess an intelligence. He calls them "signs" and states that given this very name, the criteria are provisional. He does not include an intelligence exhibiting only one or two "signs", but neither does he exclude an intelligence because it fails to qualify on each and every account. The following are the criteria established by Gardner (1983) drawn upon psychology, anthropology, and biological sciences:

1. Potential isolation by brain damage is the strongest criteria. A faculty can be spared or destroyed as a result of a brain lesion and thus displays its relative autonomy from other human faculties. Gardner concluded this as he worked with individuals who had suffered accidents or illnesses that affected specific areas of the brain, at the Boston Veterans Administration. For example, victims of strokes sometimes have their linguistic abilities compromised or spared, yet all other intelligences stay intact.

2. The capacity must be displayed by "idiots savants", "prodigies", and other exceptional individuals, all of whom display a highly uneven profile of capacities and deficits. The prodigy will often be exceptionally skilled in one (occasionally, more than one) area of human competence. The idiot savant (and intellectually disabled or exceptional individuals, including autistic children) will often display one strong capacity against a background of highly retarded or at best, mediocre development in other domains. In these populations, we can observe human intelligence in relative isolation. This criteria further reflects the autonomy of each capacity.

3. An intelligence must possess an identifiable core operation or set of operations specific to it. It must contain an information-processing mechanism that can deal with specific types of input. An intelligence could be viewed as a "neural mechanism or computational system which is genetically programmed to be activated or "triggered" by

certain kinds of internally or externally presented information" (Gardner,1983, p.64). For example, musical intelligence encompasses sensitivity to melody, harmony, rhythm, timbre, and musical structure.

4. An intelligence should have a distinctive developmental history through which normal as well as gifted individuals progress. The intelligence should have identifiable milestones related to training or physical maturation throughout its development, as well as a definable set of expert performances.

5. An intelligence must exhibit an evolutionary history and evolutionary plausibility. The roots of human intelligence date back to millions of years in the history of our species. A specific intelligence gains credibility when its evolutionary antecedents can be located, including capacities shared with other organisms (birdsong or primate social organization). Gardner does concede that within this area, speculation is tempting and facts are elusive.

6. The existence of an intelligence must be supported by experimental psychology. For example, by means of cognitive psychology, one can study linguistic or spatial processing in great detail. Especially significant are studies of which tasks interfere or not with one another, which tasks transfer or not across various contexts, as well as the identification of forms of perception, attention, and memory particular to one kind of input. Experimental psychology can also investigate the relative autonomy of an intelligence, as well as the existence of correlations or lack of, between certain capacities.

7. An intelligence must have support from psychometric findings. Although Gardner (1983) is critical of standardized pencil and paper tests, given that the interpretation of psychometric findings is not always straightforward, they can be used to render his theory more credible. Support would come from tasks that assess and highly correlate to one intelligence.

8. The operations of an intelligence must be susceptible to encoding in a symbol system. Language, picturing, and numbers are three examples of symbol systems that are important for human productivity and human survival. Symbol systems contribute to the validity and usefulness of an intelligence.

2.4 The Intelligences

Based on these criteria, Gardner (1983) concluded that there were seven relatively independent intelligences: logical-mathematical, linguistic, musical, visual-spatial, kinesthetic, interpersonal, and intrapersonal. He has since added an eighth one, the naturalist intelligence, and has discussed an existential and spiritualist intelligence in his book Intelligence Reframed (1999). Given that the new intelligences are more recent, they are not as well defined and documented as the first seven. Consequently, I prefer to limit myself to these. In the following paragraphs, each intelligence is given an abridged definition as it will be explained in greater depth in the chapters pertaining to the intelligences. For illustrative purposes, Gardner (1983) associates each intelligence with a popular historical figure who manifested that particular intelligence, as presented below.

- *Logical-mathematical*: The capacity to quantify and calculate, verify hypotheses and calculations, and to solve complex mathematical equations. This intelligence helps us to observe relationships, draw deductions, use abstraction and symbols, to reason, and to engage in inductive and deductive thought process. (Example: Albert Einstein) (p.128-169)
- *Linguistic*: The capacity to think with words and to be able to express and understand complex thoughts through language. This intelligence helps us to process and evaluate the importance of word order and be able to understand the use of language. (Example: T.S. Elliot) (pp.73-98)

- *Musical*: The capacity to recognize and use rhythmic and tonal patterns. This intelligence also entails sensitivity to sounds from the environment, the human voice, and musical instruments, as well as the ability to understand, appreciate, and form opinions about music. (Example: Arthur Rubinstein) (pp.99-127)

- *Visual-spatial*: The capacity to "think" in three dimensions. Also the capacity to perceive, create, and re-create pictures and images. This intelligence entails the use of mental imagery, spatial coordination, the manipulation of images, graphic and artistic capacities, and a vivid imagination. (Example: Michelangelo) (pp.170-204)

- *Kinesthetic*: The capacity to handle objects skillfully and/or to control bodily movements with relative ease, including both gross and fine motor movement. This intelligence entails physical aptitude to express emotion, to play a game, or to solve a problem (functional use). (Example: Marcel Marceau) (pp.205-236)

- *Interpersonal*: The capacity to be aware of variations in people's moods, attitudes and desires, and the ability to gauge, identify with, and react to the temperaments of others. This intelligence entails good verbal and non-verbal communication skills and the ability to work cooperatively with others in a group. (Example: Jesus Christ, Mahatma Gandhi) (pp.237-276)

- *Intrapersonal*: The capacity to understand one's own feelings, range of emotional responses, thinking processes, self-reflection, and sense of or intuition about spiritual realities. This intelligence entails using our self-knowledge to plan and direct our lives. (Example: Socrates, Eleanor Roosevelt) (pp.237-276)

Gardner's theory permits a broader view of intelligence. Intelligence can be developed and is not numerically quantifiable, rather it is exhibited during a performance or problem-solving process, in multiple ways. Intelligence is measured in context, in real-life situations and it is used to understand human capacities and the varied ways students can achieve (Silver, Strong, and Perini, 2000). Gardner (1983) stresses that all of the intelligences are not only linked to academic achievement, but are intricately woven into professional, social, and emotional life.

2.5 MI in Education: alternative viewpoints and critiques.

By putting MI Theory into a larger educational context, it is clear that Gardner's is not the only pluralistic view of intelligence. Elliot Eisner has also been a long-standing advocate of the multiple abilities of the mind. According to him "the mind is conceived of as a collection of relatively independent faculties or aptitudes: the ability to infer, to speculate, to locate, and solve problems, to remember, to visualize, to extrapolate, and so on" (Eisner, 1979, p.51). He concludes as Gardner does, that all of these faculties must function together in an individual in order to adequately deal with any problems that arise. What these pluralistic views of intelligence have in common with progressive educational theories is that they "argue for multiple entry points" (Warburton, 2003, p. 10) This takes individualisation of instruction into account, because it allows for a variety of ways in which people learn.

The same can be said of critical pedagogical theory (CPT), within it the "educator is a facilitator who, through understanding, personalizing, and introducing critical methodologies into the classroom, can offer opportunities for building connections between student, teacher, academic content, school environment, and community" (Ottey, 1996, p.32). Another existing student-centered approach is called student-centered teaching strategies, in which activities "...are geared towards problem-solving and discovery... (and) encourage students to assume a more active role in the teaching/learning process" (Hankin, 1996, p.36). This approach gives students the opportunity to explore, discover and find solutions to problems for themselves. Critical pedagogical theory and student-centered approaches both take into account the individual's experience of the world and therefore rest upon individualisation of instruction.

And finally, another example is constructivist learning, that "is premised on the belief that learners actively create, interpret, and reorganize knowledge in individual ways" (Windschitl, 1999, p.752). Constructivist learning includes problem-solving, inquiry-based activities, peer and teacher interaction aimed at making sense of subject matter, " exposure to multiple sources of information, and opportunities for students to demonstrate their understanding in diverse ways" (ibid.). In this light, MI Theory is one of a number of valuable educational

approaches that individualise instruction and are influencing progressive teaching and learning strategies. Although all of the above-mentioned approaches focus on personalising instruction, for this thesis I chose MI Theory as the focal point.

Indeed MI theory can be a valuable tool for education, however one existing problem is that Gardner has not since presented any new research designed to test his theory empirically, and so the theory is viewed as speculative (Sternberg, 1994). More specifically, Gardner's theory insists upon intelligence assessment being done in context, which implies real-world tasks within a domain. By definition, a beginner has not yet learned, much less mastered these tasks. The conundrum for assessment specialists is that "...it is impossible to evaluate candidates on what they have not yet learned, yet it is inadvisable to place too much confidence in decontextualized measures" (Warburton, 2003, p.13). This has resulted in a situation where MI Theory has provided a way to perceive human abilities, and yet a way of assessing these abilities has never materialized (Warburton, 2003).

Since its inception, Gardner's theory has generally not been well received by the scientific community, because there is a lack of empirical evidence to support it. His conceptual framework is too broad and not all of Gardner's intelligences fulfill his own criteria to stand as an intelligence (Warburton, 2003). It is important to note that Gardner admits that he did not include an intelligence if it possessed only a few criteria, and on the same note, he did not reject the existence of an intelligence because it did not achieve all eight (Gardner, 1983). Despite these pitfalls, the educational community has generally embraced the theory. MI Theory has struck a chord among educators because it supports educational practices that most adept teachers agree with: firstly, personalizing instruction for all students and secondly, testing students' understanding in contextualized real-world ways (Warburton, 2003). Elliot W. Eisner (1994) claims that:

> Howard Gardner has made a major contribution to discussions of mind and increasingly to the content and aims of education (...). What is most important, in my view, about Gardner's work is that it provides a compelling corrective to the intellectually constipated conception of human ability that has characterized both public schools and, perhaps especially, universities.(p.555 and p.558)

Gardner's work has inspired many subsequent publications in the domain of education. Educators who saw an opportunity to enrich and diversify their teaching skills through Gardner's work have written works on the practical applications of MI Theory. However, some educators are concerned that MI Theory, with its lack of supporting evidence, is merely a band-aid solution for educational reform because "it is a theory without a prescription for its implementation in the educational system" (Koff, 2003, p.5). Sternberg (1994) believes that the educational community has falsely raised expectations that will perhaps be dashed when they realize that they must revert back to the three Rs. But most texts that apply the theory into practice focus on presenting subject matter *through* the various intelligences. This same author states that: "In practice I often teach the very same concept in different ways, and then assess that concept in various ways. The result is that children with different learning and thinking styles are given the opportunity to show what they can learn and how they can use it" (Sternberg, 1994, p.565). This is precisely what teaching through the multiple intelligences proposes. Applying Gardner's theory to education can diversify the ways in which a subject is taught and therefore enable teachers to reach more students.

Perry D. Klein, a critic of Gardner's theory, suggests that MI Theory has inspired diverse pedagogical practices, "including balanced programming, matching instruction to learning styles and student specialization" (Klein, 1997, p.377). But the limitations are that the theory is too broad to be used for planning curriculum and it presents a static view of student competence (Klein, 1997). Klein (1997) believes that what would be more relevant would be research on the strategies that learners use and how they construct their knowledge.

According to Armstrong (1994), "MI Theory is probably more accurately described as a philosophy of education, an attitude toward learning" (p.x). Indeed, it is a set of ideas that contributes to progressive education rather than a method of teaching and learning. Despite criticisms, MI Theory offers educators an opportunity to adapt its principles to a vast array of educational settings, with the possible result being heightened student involvement and satisfaction, success with students with learning difficulties, greater self-esteem, and facilitation of learning. MI Theory is a valuable lens, through which educators can examine their practice, in order to acquire more knowledge and to keep evolving within their

profession. Not only has Gardner provided significant leads for researchers to pursue, but also "important implications for developing a more equitable approach to education" (Eisner, 1994, p.559).

2.6 MI in Dance Education

MI Theory has two main implications for dance education. Firstly, Gardner's work has broadened our concept of dance as a vehicle for thought, with its own developmental progression and symbol system. Warburton (1994) has stated, "MI Theory validates dance as a domain of knowledge and posits the absolute potential or possibility, of actualizing one's multiple intelligences through dance" (p.13). As such, the theory does not justify the arts per se, but emphasizes multiple points of entry for greater student comprehension and hence validates the sensory experiences of the arts (Koff, 2003). What dance educators have leapt at is the notion that through teaching dance, particularly creative dance, they are awakening much more in students than simply dance vocabulary (Schwartz, 1993). This has mainly been intuitive knowledge, but through the lens of Gardner's theory, one can begin to understand and evaluate the impact of dance education on students in a concrete manner. Armed with these concepts, dance educators can justify their field to a greater extent than previously possible. Especially important is the notion that the intelligences are transferable; spatial intelligence developed in dance class, for example, will be the same needed and used in other subject matters. When dance receives the acknowledgement it deserves, adept administrators and policy makers can no longer view dance class as simply exercise or kids playing around. When taught dance conceptually, Green Gilbert (1992a) states that students:

- work with spatial concepts (visual/spatial intelligence);
- work with rhythm and music concepts (musical intelligence);
- analyze movement, learn patterns and create logical movement sequence (logical/mathematical intelligence);
- learn the meaning of the dance vocabulary and verbally discuss and evaluate choreography (verbal/linguistic intelligence);
- work with others in a variety of relationships (interpersonal intelligence);
- gain an understanding of their feelings, and express inner thought through movement (intrapersonal intelligence); and;
- learn to control their bodies (kinesthetic intelligence) (pp.43-44)

Another implication of this theory is that it requires the reconsideration of traditional approaches to dance training and thus can provide inspiration and tools for pedagogical innovation. If educators can develop intelligence through dance, then they must seriously consider how to cultivate thinking in dance (Warburton, 2003). This is a vast responsibility for teachers of technique:

> "Dance technique (...) primarily (...) modern dance, ballet, and jazz dance -- has generally and traditionally been presented as a teacher-directed activity. The teacher decides and demonstrates what material is to be learned, and students, guided by the teacher, learn and perform the given material. Emphasis is placed on skill acquisition and accurate reproduction of the material shown by the teacher" (Hankin, 1997, p.36).

How fantastic it would be to help students develop abilities and capacities that they could use outside of the technique class. How incredible it would be if students were involved in their own dance education, instead of mimicking the teacher and doing what they are told. I believe that these situations could be obtainable if we look at technique class through the lens of Multiple Intelligences; by enumerating the concepts and elements of technique class involved within each intelligence, we can elaborate pedagogical strategies to stimulate each intelligence.

2.7 Theory into Practice

As previously stated, Gardner's work has been influential for many follow-through publications and research within the domain of education. The body of work covering the practical applications of the theory is vast: It is beyond the scope of this thesis to survey all that has been written on this subject. However, an overview is presented as follows, in order to give the reader a general idea of the influence MI Theory has had amongst educators.

Specific subjects such as music (Cullen, 1995; Feierabend, 1995), writing (Kovacs, 2001) and mathematics (Wahl, 1997) have been examined through the lens of MI theory. There are guides for teachers on how to integrate curricula with MI Theory (Fogarty and Stoehr, 1995; Hoerr, 1996). Learning within each intelligence has been covered (Lazear, 1991; Marks-Tarlow, 1996) as well as teaching to each intelligence (Haggerty, 1995; Lazear, 1999; Tobias, 1995). How to become an MI school (Hoerr, 2000; Teele, 1995) is approached with step-by-step suggestions and procedures on achieving this transition. Other topics cover assessing

one's own intelligences (Armstrong, 1993; Miller, 1991), and also assessing students' intelligences (Lazear, 1995; Shearer, 1996). Most of the work written covers elementary and high school levels, but there is some work that covers adult education (Shelton, 1991; Kallenbach and Viens, 2001). These are just a few examples of the inspiration that MI Theory has given educators. The topic has not yet been exhausted, and there will continue to be research and writing pertaining to the theory.

While some books and articles examine specific academic subjects such as music or mathematics through the lens of MI Theory and are useful for teaching those subjects, others are more general, covering the capacities present within each intelligence, and can be more easily used to transpose the theory into diverse subject matter. David Lazear (1991) examines the identity and characteristics of each intelligence and then transposes Gardner's theory into practice for general academic subjects. Lazear's book inspired the development of the methodology of this thesis, and contributed to the understanding of the identity and characteristics of each intelligence. Thomas Armstrong (1994) focuses on teaching strategies that aim at stimulating and developing each intelligence. Armstrong's book contributed to this thesis by supplying effective teaching strategies. Finally, Spencer and Miguel Kagan (1998) along with Lazear (1991) supplied samples of academic activities used to stimulate each intelligence.

MI theory has also been influential within arts education, and even within dance education. The following articles found in the Journal of Physical Education, Recreation and Dance (JOPERD) are being identified because they explore capacities and teaching strategies associated with MI Theory, within the realm of physical education and dance. One example is Learning Strategies in Physical Education: Self-Talk, Imagery, and Goal-Setting (Jan. 1997). In this article Anderson defines the three learning strategies enumerated in his title and describes their connection to self-regulated learning in the physical education classroom. Although this article does not make direct links to MI Theory, the teaching strategies, learning strategies, and skills to be developed are encompassed within the applications of MI theory.

In Performance Contracting and Goal Setting in the Dance Class (Oct. 1992), Kassing describes the two strategies listed in her title and how they contribute to a feeling of ownership amongst students. According to the author, the value of student involvement in their small steps towards progress is that it can lead to fulfilling long-term goals. And finally, in Implementing Cooperative Learning in Elementary Physical Education (Jan., 2003), authors Dyson and Rubin introduce and describe cooperative learning strategies and how they contribute to interpersonal skills and positive interdependence and even individual accountability. These examples of articles served as a basis in examining how individual capacities associated with each intelligence are solicited in movement-based classes. JOPERD was a very useful source of information as were the following periodicals: Kinesiology and Medicine for Dance, Journal of Sport Psychology, Dance Research Journal , Research in Dance Education and Impulse. As already mentioned the articles in these periodicals were used because although they do not make direct links to MI Theory, the teaching strategies, learning strategies, and skills to be developed are encompassed within the applications of MI theory.

Some material has been written that directly relates MI Theory to dance. Susan McGreevy-Nichols (2001) published a two-page article in Dance Teacher Magazine on the multiple intelligences and dance. This article is a very basic overview of MI Theory and briefly discusses each intelligence. Its suggestions of applications are broad: "...have students identify patterns and sequences in choreography seen in videos or in live performances" (p.86). Although this article can pique a teacher's interest for MI Theory, its content does not provide any solid directives for applications of the theory.

Author Ann Green Gilbert is a strong advocate for quality dance education K-12, and has served on the board of regional, state, and national dance associations within the USA. Her writing about multiple intelligences within dance education seems to naturally stem out of her work, teaching creative dance from a conceptual approach. Gardner's theory is compatible with Green Gilbert's own research and teaching experience. Green Gilbert's book Creative Dance for All Ages (1992b), thoroughly examines the conceptual approach to teaching creative dance, and can be used as a theoretical framework to examine creative dance through

the lens of MI Theory. More recently, in an edition of Journal of Dance Education, devoted entirely to the Multiple Intelligences (vol. 3, no.1, 2003), Green Gilbert wrote an article entitled Toward Best Practices in Dance Education Through the Theory of Multiple Intelligences. Its suggestions for integrating MI Theory into creative dance classes can serve as a starting point for dance educators who wish to question and reflect upon how to maximize the effectiveness of their teaching. Green Gilbert (2003) offers statements such as:

> ...shadowing and mirroring, cannot be underestimated. By copying many people's movement, students enlarge their movement vocabulary and gain practice in using their spatial intelligence" (p.31), "Moving in pathways over, under, around, and through other dancers and objects strengthens spatial intelligence" (p.31) and "Students can also gain an understanding of the logic of physics concepts (such as momentum, force, and gravity) when they are explored through dance (p.32) .

One can understand the pertinence of these statements for the creative dance class, but how do they transpose to the technique class? Creative dance does include dance technique, its goals being skill development and self-expression. Thus the work done by Green Gilbert can be enriching for teachers specializing in technique.

Another author who has explored MI Theory and its applications to creative movement is Lori Head (2003). Her doctoral dissertation is a case study entitled Mind-Body Equality that focused on MI Theory and the National Standards for Dance. Within it, she defined the eight intelligences and incorporated them into creative movement lesson plans covering various subjects at the elementary level, with an emphasis on the kinesthetic intelligence. The study provides practical applications of the theory to the teaching of creative movement within academic subject matter. And with the emphasis being on the kinesthetic intelligence, not all intelligences were equally examined. However, the aims of creative dance class and technique class are different, in that technique class emphasizes skill acquisition, and so research specifically aimed at integrating MI Theory into the technique class is necessary.

Most of what has been written about the practical applications of MI Theory to dance, is limited to creative dance. As previously mentioned, this can be a starting point for teachers of dance technique, but it is not specific enough for the technique class.

2.8 My Background

My initial desire to question traditional methods of teaching technique class and to develop new teaching strategies came from my own personal background, which is a case in point for the theory of Multiple Intelligences. As a ballet student, I was taught mostly by authoritarian teachers who wanted me to reproduce what they showed me. I wasn't very successful within this pedagogical approach, and many of my teachers discouraged me from pursuing dance as a profession. It wasn't until I met a teacher who explained mechanical concepts and separated anatomical fact from fiction that I began to comprehend what my body needed to do in order to execute the necessary movements. This was the first time that I began thinking about movement and questioning its origin and sequencing. Once my thought process was initiated, I improved by leaps and bounds. My progress was astonishing, but was it really? I believe that my teacher tapped into the way I could "understand" or "see" dance and guided me within that realm. Once I had the tools necessary, I could consciously navigate through class and eventually teach myself. This was an empowering experience in sharp contrast with my previous classes. I also noticed that I could transfer the knowledge I acquired in my technique classes into my daily life. A most mundane example was when learning the intimidating task of parallel parking; I learned the sequence of movements necessary and estimated the timing of the movements based on the amount of space that was available. I then repeated the task over and over until I mastered it. I was able to transfer the skills of sequencing, timing, estimating space, and repetition from dancing to driving a car.

As a student, I believed my dance training enhanced many other aspects of my life. Now as a teacher and dancer, I believe more than ever that, as stated by Michele and Robert Root-Bernstein (2003), "...dance training prepares the student in imaginative thinking tools that have wide, transferable applications across the arts and sciences" (p.25) and even our personal lives. However, in order for this to hold true, I believe students must be conscious of skill transfer and teachers must teach in a brain-compatible manner. Green Gilbert (2003) states that students learn best:

-through a multi-sensory approach (hear, see, say, and do)
-when the material is authentic and meaningful to them
-when they are emotionally engaged and given opportunities for reflection

-through social interaction and collaboration
-when the material is challenging but achievable
-when the feedback is positive, specific, timely, and learner-controlled
-through novelty and repetition
-when the material is developmentally appropriate and student-centered
-when the material is presented sequentially and holistically rather than randomly and in sub-parts
-through a variety of teaching strategies (pp.28-29)

By examining the elements and concepts of ballet technique that are implicated in the multiple intelligences, we can elaborate on already existing teaching strategies and create new ones that will stimulate all of the intelligences. The purpose of this study was to conceive, describe, and illustrate teaching strategies aiming at the stimulation and development, in the ballet technique class, of each of the Intelligences as defined by Howard Gardner (1983). This could provide the necessary material required to teach ballet technique class in a brain-compatible way and it also could provide students with imaginative and creative thinking tools with transferable applications to many other areas of their lives. This could also provide a framework within which teachers can investigate their own teaching. The Theory of Multiple Intelligences is a valuable tool, which could bring a greater understanding of, and wider applications to, the teaching of ballet technique class.

CHAPTER II

METHODOLOGY

This thesis is an examination of an educational theory and an interpretation of its possible applications within one aspect of the dance discipline: ballet technique class. It is a theory-based thesis, along the same line as Hong-Joe's Discipline-Based Dance Education: A Translation and Interpretation of Discipline-Based Art Education for the Discipline of Dance (1991). In this study, the author examines Discipline-Based Art Education, a model developed for visual arts, translates it for dance education, and proposes a Discipline-Based Dance Education model curriculum framework for K-12 education. Hong Joe's study served as an inspiration for my own thesis.

The following methodology was developed to answer the four leading research questions of the study. It comprises four steps.

1) An examination of the literature pertaining to the theory of Multiple Intelligences and its applications to the teaching of academic subjects was undertaken in order to define the identity and characteristics proper to each of Gardner's seven intelligences. In addition to a deeper understanding of the theory, the results of this examination provided an analytical framework, to later be applied to the examination of information pertaining to the teaching of technique class and the applications of MI theory to academic subjects.

2) In order to expand and enrich my knowledge base of the teaching of technique class, four sources of information were examined on the basis of the previous analytical framework: (a) observations gathered from viewing ballet technique classes, (b) literature pertaining to teaching and learning within dance and physical education (c) reflections on my personal experience as a dance teacher, student, and performer and (d) literature pertaining to teaching strategies used to stimulate the intelligences within academic subjects.

3) A synthesis of the information retrieved from the second step resulted in an in-depth description of ways to stimulate individual capacities involved with each intelligence within the ballet technique class.
4) Based on the results of the third step, teaching strategies were conceived and described.

3.1. Examination of literature pertaining to the theory of Multiple Intelligences and its applications to academic subjects

Pertinent literature to be described in the following paragraphs has been examined in order to gain a thorough understanding of each intelligence's proper identity and characteristics. Two components of results emerged from this step, for each of the intelligences: Identity, and Characteristics.

Identity. The book Frames of Mind (Gardner 1983) was analyzed to acquire an understanding of each intelligence's identity. In his book, Gardner speaks extensively about each of the seven intelligences at the base of his theory, providing many examples and criteria by which the existence of each one is documented. In examining these chapters, special care was given to the fundamental components of each intelligence and to the domain and range of skills it encompasses. What emerged is a thorough definition of each intelligence, which will be provided in the results chapter under the heading of Identity

Characteristics. When defining criteria by which each intelligence can be established, Gardner discusses a distinctive developmental history and a definable set of expert "end-state" performances (Gardner, 1983, p.64). He relates the development of each intelligence to that of a set of skills or aptitudes, which are referred to as capacities. These can be defined as potential processes that are mobilized when an intelligence is being used. Gardner does not actually enumerate a list of capacities, but includes them within his discussion of each intelligence.

The books Eight Ways of Knowing (Lazear, 1991) and Multiple Intelligences in the Classroom, (Armstrong,1994) were examined because they were among the most specifically

focused on the capacities associated with each intelligence. On the basis of this examination, specific capacities associated with each intelligence were defined. This provided the analytical framework described in Table 1, pp. 24-25. As Gardner (1983) explains, there are many ways to be intelligent within each intelligence.

Gardner (1983), Lazear (1991) and Armstrong (1994) agree on the basic capacities mobilized by each intelligence, but each author describes and categorizes them slightly differently. Lazear's (1991) practical guide describes concrete ways to awaken and enhance students' multiple intelligences in an academic setting. This work also describes the unique capacities, neurological processes and developmental pathways of each intelligence. Armstrong's (1994) pedagogical guide, for its part, surveys the foundations of the theory and how it relates to assessment, teaching and curriculum development. Also included is an inventory of capacities at the base of each intelligence. As already mentioned Gardner (1983) includes the capacities involved in his discussion of each intelligence.

A synthesis of the capacities proper to each intelligence, as seen by Gardner (1983), Lazear (1991) and Armstrong (1994) is presented in the results chapter, taking care to keep them general enough so they can be easily understood, and specific enough so as to be clear about their differing characteristics.

3.2 Examination of additional pertinent information

In order to expand my knowledge base on the teaching of technique class and that of the applications of MI theory to academic subjects, four sources of information were considered:

- Literature covering relevant teaching strategies within academic settings
- Observations of ballet technique classes in recreational settings
- Reflective practice based on my personal teaching experience
- Literature covering teaching and learning within physical education and dance

The first source encompassed literature pertaining to teaching strategies designed to stimulate and develop each of the intelligences in an academic setting. The following books were

Verbal-linguistic intelligence	
1. effectively using syntax-the order among words.	2.effectively using semantics- the meaning of words
3. effectively using phonology- the rhythms, sounds, and influences of words	4. effectively using the different functions of language- its ability to excite, stimulate, convince, convey information or please

Logical-mathematical intelligence	
1. recognizing abstract patterns	2. inductive reasoning
3. deductive reasoning	4. discerning relationships and making connections
5. performing complex calculations	

Musical-rhythmic intelligence	
1. sensitivity to pitch, timbre and rhythm	2. perceiving musical forms
3.discriminating between musical forms	4. transforming musical forms
5. expressing musical forms	

Bodily-kinesthetic intelligence	
1. control over voluntary bodily movements	2. using the body to express ideas and feelings
3. handling objects using gross and fine motor movements	4. learning and problem solving through movement

Table 1. Analyical grid applied to the four sources of information

Interpersonal intelligence	
1. effective verbal and nonverbal communication	2. discerning other's feelings, moods, motivations and intentions
3. empathizing with other's perspectives	4. co-operating within a group

Intrapersonal intelligence	
1. accessing one's own thoughts and feelings and differentiating between them	2. modifying one's behavior according to self-knowledge
3. expressing one's inner life	4. thinking and reasoning towards self-actualization

Visual-spatial intelligence		
1. thinking in visual imagery	2. forming mental images and manipulating them	3. orienting space and orienting the body in space
4. representing visual or spatial information through graphs	5. perceiving accurately from different forms	6. recognizing relationships between objects in space

Table 1 continued

surveyed for that purpose: David Lazear's Eight Ways of Knowing (1991), Spencer and Miguel Kagan's The Complete MI Book (1998), and Thomas Armstrong's Multiple Intelligences in the Classroom (1994). Considering the wealth of literature on this topic, I limited myself to works specifically focused on the teaching process. On the basis of this criteria, works focused on MI school management, MI curriculum development, or MI evaluation were not considered.

For each of Gardner's seven intelligences, Armstrong (1994) outlines a list of teaching strategies, and highlights and describes in greater detail those that he recognizes to be adaptable to diverse subject matter and grade levels. It is the only MI-related work, to my knowledge, that tackles teaching strategies in such detail, by supplying extensive descriptions of the strategies themselves as opposed to simply giving examples of pedagogical activities. As Armstrong (1994) mentions, "The strategies are designed to be general enough so you can apply them at any grade level, yet specific enough so that little guesswork is required to implement them" (pp.65-66). He goes on to encourage readers to find additional strategies and to adapt the given strategies.

Kagan and Kagan's (1998) book is a teacher's practical guide that includes a number of detailed pedagogical activities and lessons. These examples provide a better understanding of each intelligence's means of stimulation. What emerged from the analysis of this literature is a better knowledge of teaching strategies that can be adapted to a vast range of subject matter, along with concrete examples of pedagogical activities.

The second source of information encompassed observation of ballet technique classes taught in recreational settings by two expert teachers recognized to produce good results with their students. The first teacher I observed taught two classes, one to students aged 9-11 and the other to adults. The second teacher I observed taught two classes, one to students aged 13-15 and the other to students aged 16-19. With the analytical framework in mind, I took notes during the classes regarding pedagogical elements and teaching strategies found pertinent to stimulate capacities belonging to each intelligence, based on the information derived from examining MI theory. I also recorded the classes on video to use as a reference, in case I missed something while writing down the notes. The observations were hoped to be

representative of what happens in the recreational dance studio, and allowed me to go beyond my personal experience.

The third source of information encompassed a reflection upon my personal experience as a dance teacher, student, and performer. With the analytical grid in mind, I brainstormed as to how each capacity is solicited and stimulated within the ballet technique class. The information was recorded under the pertinent capacities involved, as illustrated in table 1 (p.21-22).

The fourth source of information encompassed literature related to teaching and learning within dance and physical education classes. Works that were analysed included articles published in journals such as JOPERD, Kinesiology and Medicine for Dance, Journal of Sport Psychology, Dance Research Journal, Research in Dance Education and Impulse. Schlaich and Dupont's (1993) monograph entitled The Art of Teaching Dance Technique, was also included. With the help of the analytical grid, information was recorded under the pertinent capacity.

3.3 Synthesis of information

Data gathered from the previous methodological step was synthesized for each of the capacities at the base of each intelligence. The results, grouped under the "examination" section, describe how each of the capacities manifest themselves, along with how and when they are solicited within the ballet technique class.

I have chosen to examine each intelligence via its proper capacities, because it was coherent with the specialized literature reviewed on this topic and because a global overview of each intelligence did not seem appropriate to understanding the multitude of entry points within the specific subject matter. I also think that this is what permitted the examination to gain more depth than previous work written on this topic, which mainly reviewed each intelligence globally within dance class.

3.4 Description of teaching strategies.

Based on the "examination" section, teaching strategies considered apt to strengthen and develop each capacity within the ballet technique class were conceived and described. Some strategies were directly derived from the examination, such as when they came from sources of literature or from observations. Other strategies came from the modification of existing teaching strategies or were conceived based upon the information derived from the examination. Elements that influenced the conception of strategies were constraints or characteristics of the ballet technique class such as duration, the need to have students moving, resources available, etc.

The strategies were conceived for a recreational setting, however not for any particular age group. I wanted the strategies to remain general enough so that they can remain adaptable. It is important to note that the number of strategies enumerated under each capacity varies directly as a result of the reflection carried out on my observations, my knowledge base, the available literature and the academic teaching strategies. I enumerated as many as I could find, based on these constraints.

3.5. Illustration of some strategies

Examples of activities were created and elaborated on the basis of the teaching strategies that were conceived and described. In carrying out this process, an attempt has been made to be as precise and concrete as possible.

3.6 Limitations of the study

The goal of this study was to increase awareness of pedagogical possibilities in order to help teachers diversify their teaching strategies to reach a wider scope of students and to bring to light the many forms of intelligence that can be covered in the technique class. However, when examining specific subject matter through the lens of a pluralistic cognitive model of intelligence, perhaps not all capacities are encompassed within the subject matter and perhaps already existing academic, dance or physical education teaching strategies are not compatible

with the ballet technique class. The above-mentioned limitations have also determined the scope of possible strategies under each given capacity.

Another limitation to consider is that there are many ways of approaching the development of practical applications of an intelligence theory to a studio setting. Accordingly, the scope of teaching strategies presented in this thesis relate to the author's reflection on observations of technique classes, personal experience and available literature. The sources of information were examined from the author's point of view, and anyone else attempting the aforementioned methodology would not necessarily generate the same results because they are largely influenced by point of view. The author's claim is not exhaustive on the matter and, this study is limited by her own student, teaching, and performing experiences. One final limitation to consider is that all of the information provided in this thesis will not suit all levels of students, as the information is not conceived in relationship to a specific age group. As stated earlier, the results of this examination remain open to further study and adaptation. This investigation provides a tentative framework, within which teachers are welcome to make their own adaptations.

CHAPTER III

RESULTS

This chapter describes the strategies that stemmed from the methodology. It will be done for each intelligence, as follows:

Identity. Resulting from an analysis of Gardner's (1983) work, this section describes the fundamental components, the domain and the range of skills proper to the intelligence.

Characteristics. Resulting from an analysis of Gardner's (1983), Lazear's (1991) and Armstrong's (1994) work, this section enumerates and defines the specific capacities associated to the intelligence.

The applications to the ballet technique class section is included under each capacity associated with each intelligence, and is subdivided into three parts:

Examination. For each of the capacities at the base of the intelligence, this section provides a synthesis of the examination of the four previously mentioned sources of information, according to the analytical grid. It describes how each capacity manifests itself, along with how and when it is solicited within the ballet technique class.

Possible teaching strategies. A description of teaching strategies is provided, which were conceived based on the examination section and which were considered apt to strengthen and develop each capacity within the ballet technique class.

Illustration of some strategies. Concrete examples of activities coherent with the teaching strategies previously described are provided.

4.1.VERBAL-LINGUISTIC INTELLIGENCE

Identity Linguistic intelligence refers to an individual's capacity to use words effectively either orally, as depicted by a politician, storyteller, and orator, or in writing, as depicted by a journalist, writer, poet, or playwright. Within this intelligence, we find the ability to effectively use the syntax or structure of language, the phonology or sounds of language, the semantics or meanings of language, and the pragmatic dimensions or practical uses of language. Linguistic intelligence seems to be the most widespread and democratically shared intelligence within the human species (Gardner, 1983). Gardner (1983) enumerates four dimensions of linguistic knowledge that are widely used in the general population: rhetoric, which refers to using language to convince others, mnemonics, which refers to using language to retain information, explanation, which refers to using language to teach and learn, and metalanguage, which refers to using language to talk about itself. Linguistic intelligence is accountable for the arrangement of language in all its complex possibilities (Gardner, 1983).

Characteristics. The following is a synthesis of the capacities that have been associated with this intelligence by three authors (Gardner, 1983; Lazear, 1991; Armstrong, 1994). The first capacity is effectively using syntax, or the order among words, which is to skillfully put together linguistic elements upon which a language is constructed. The second capacity is effectively using semantics or the meaning of words, which is to be proficient in the definitions conveyed by words. The third capacity is effectively using phonology, which is to skillfully employ the rhythms, sounds, and influences of words. The fourth capacity is effectively using the different functions of language, which is adeptly using language to excite, stimulate, convince, convey information, or please.

4.1.1. Applications to the ballet technique class

4.1.1.1 Capacity 1: Effectively using syntax - the order among words

Examination This capacity is solicited when the students listen to the teacher's instructions and corrections, in this instance the quality of syntax will be directly related to the teachers quality of vocal instruction. It is also used when students interact with each other, giving

commentary about each other's performances or sharing thoughts and ideas. It would also be solicited if students kept a journal that they brought to class. It could be a diary, in which students record their activities on a daily or weekly basis, or a reflective journal, which "places more emphasis on the author's feelings about the activities and allows the author to select one or more activities to reflect on" (Behrman, 2004,p.24).

Typically, students are not encouraged to talk or write during a technique class, but some interactive activities can be integrated to class and activities such as journal writing and publishing can be encouraged outside of class. When writing is integrated into subjects that are not classified as language arts, it can help students increase their conceptual understanding, awareness and knowledge reformulation of that subject matter (Behrman, 2004).

Possible teaching strategies

Clear teaching instructions: Reflecting on my own teaching experience and while observing classes, I noticed that teaching by appropriate example can be effective. When my teaching instructions are clear, students retain the information better. If teachers want students to improve their verbal-linguistic capacities, they need to pay attention to their own use of this capacity. "Clarity is one of the most critical attributes of a talented technique teacher. Instructions to students must be absolutely clear, as must corrections" (Schlaich and Dupont, 1993, p.3). When giving instructions to students, they should be well formulated and as concise as possible. The teacher should be very clear about what she wants to convey. This not only highlights the importance of verbal communication, but also facilitates student learning by listening. This perhaps is not classified as a strategy per say, but it is of utmost importance within this intelligence.

Peer interaction: Reflecting on my teaching experience, this strategy entails creating situations where students can interact verbally with each other. Examples include students giving feedback, giving each other explanations or any other situation where students are given an opportunity to verbalize their thoughts to each other. This strategy can also include having students present exercises that they have made up, in front of the class. This strategy also solicits interpersonal intelligence and when observations are included it can solicit

visual-spatial intelligence. However, this strategy is mentioned here because the language use for interacting is the focus of this situation.

Journal writing: Students could be encouraged to keep a journal for their technique class. They can bring it to class and jot things down in between exercises. Sometimes there can be a specific question to answer. They should be encouraged to read what they have written during previous classes before class, and also to write down thoughts in between classes on their own time. The focus of note taking can be related to other intelligences, however the actual writing is the focus of this situation.

Publishing: Of course this is a bigger task for a studio owner, but having a monthly studio newsletter would encourage the students to write, and perhaps even interest some students in becoming editors of the newsletter.

Illustration of some strategies

- ***Peer feedback***. The students pair off and then observe each other during an exercise. The observation instructions can be general such as observing the quality of movement throughout the exercise, or more specific, such as observing how the students end their pirouettes. Afterwards, students give each other feedback in their pairs. During the feedback, the teacher should encourage students to also give each other feedback about their use of language
- ***Journal writing in class***. Throughout an entire class, ask students to write down any difficulties that arise. During the last five minutes of class, ask students to share their difficulties. Encourage students to look over their journals during the week and try to find possible solutions for their difficulties
- ***Tape recording or videotaping the class to observe instructions***. This activity can be used by the teacher, to observe herself during class giving instructions. Are the instructions clear? What improvements can be made?

4.1.1.2 Capacity 2: Effectively using semantics - the meaning of words

Examination This capacity is solicited when students reflect upon, and learn the meaning of dance terminology. Students can learn dance terminology when the teacher's task presentation contains an effective description of the movement and technical terms. "The description of the basic movement or parts of the task is, in a way, a definition of terms" (Lord et al., 1995, p.177). Almost all terms used in classical ballet technique are descriptive of the action they define. "Once students know the meaning of a term, its definition need no longer be included in the technique task presentation for that particular group...However, it may be a more frequent component of the task presentation when beginners are involved." (Lord et al.,1995, p. 177). It is also solicited when the teacher uses a rich vocabulary to introduce new words to the class.

Armstrong's (1994) Brainstorming strategy entails collecting an outpouring of verbal thoughts from students and writing them on the board or a transparency. Brainstorming can be done about anything: a concept, an activity, a project etc. The rules for brainstorming are: sharing anything relevant that comes to mind, all ideas count, and there are no bad ideas. In technique class this strategy could be used to explore new dance terminology.

Another strategy proposed by Armstrong (1994) is Storytelling, which can be especially useful with younger students. Used in the classroom, it enables teachers to weave essential concepts, ideas, and instructional goals into a story. Preparing for storytelling requires a list of essential concepts that need to be conveyed, followed by an imaginative brainstorming to create a situation, characters, and plot to carry the message.

Possible teaching strategies

Brainstorming: As described by Armstrong (1994), this strategy can be used to reflect upon dance terminology. When a new step is being introduced, it can be written on the board and students can be asked what it means. From there, students can brainstorm to find other associations with the meaning, or what it makes them think of. This strategy can also be given to students to do individually in their journals, in class or at home.

Storytelling: As described by Armstrong (1994), this strategy can be an effective way to introduce new terminology, especially with younger students. The term, its meaning, and some descriptions can be weaved together creatively into a story.

Illustration of some strategies

- ***Individual brainstorming.*** Give students a new term such as "*battement*". Give them an assignment to do at home: to find its meaning, to include it in a sentence and to find other associations through brainstorming (this can also be done collectively).
- ***Storytelling.*** The teacher can introduce a movement by telling a story. "One day a new student came to class and she introduced herself as Plié. The class snickered at such an unusual name! "What does it mean?" asked one student. "To bend." answered Plié. "Like this?" asked the same student, as she bent her arm at the elbow, letting her arm flop. "I guess that could be bending" said Plié. "But to really see the bending it has to be done more slowly, like you're pushing against something."

4.1.1.3 Capacity 3: Effectively using phonology - the rhythms, sounds, and influences of words

Examination This capacity is solicited when appropriate words are used by the teacher to describe a movement, its quality, and its rhythm. Much of the classical ballet terminology contains a description of the quality and dynamic of a movement. For example, *fondu* is a conjugated form of the verb "fondre", which means to melt. The dynamic of this movement would be slow and its quality sustained and using some muscular resistance to enable the slowness.

This capacity can be stimulated by the musicality of the teacher's voice. Which syllables are emphasized, sustained, punctuated etc. For it is not only which words are used, it is also how they are said. The entire vocabulary is built upon qualitative words and in exploring their meaning and musicality students could better understand the execution of the movement. This capacity is also solicited when students are encouraged to investigate and find associations between the sounds, rhythms, and influences of words and movement, be they phrases or individual steps.

Possible teaching strategies

Brainstorming to find word-movement associations: Taking Armstrong's (1994) description further, this strategy entails a brainstorming session specifically aimed at finding associations between the sounds, rhythms, and influences of words with a particular movement or sequence of movements, for example an adage. For future reference, the words can be written on a poster and put up on a wall, or kept and brought out when needed.

Executing exercises with words as accompaniment: Reflecting on my teaching experience, this strategy entails taking the results of a brainstorming session (as previously described), and to integrate the associated words into an exercise. The words can reflect a movement's rhythm or quality of execution. The words used are associated with the movement and not necessarily with each other. The students learn the exercise, including the words, and execute it to the sounds, rhythms, and influences of the words.

Brainstorming dance vocabulary: Based on my experience, this strategy entails presenting the students with a translation of a ballet term and exploring it with them by means of questioning them about the definition of this word and what images come to their mind based on these meanings. For example exploring the definition of *fondu* (to melt) and images that come to the students minds' when they think of that word.

Illustration of some strategies

- ***Brainstorming to find word-movement associations***. Present students with a movement, or have a student demonstrate it; for example a *grand battement*. Write it on the board. Ask the students which words would describe the *grand battement* well. The brainstorming session can also include images, but try to have students associate words with the images as well. After the session, try and categorize the words under rhythm, sounds, and influences.
- ***Executing exercises with words as accompaniment***. To take the previous brainstorming session further, highlight a *grand battement* exercise with words resulting from the brainstorming, for example "out-in, in-*to* or swiiing". The words are to be spoken during the exercise.

- ***Brainstorming dance vocabulary.*** Present students with a dance vocabulary term such as *jeté*. Ask if anyone knows what it means (to throw). Based on this information ask students what are the kinds of things that one can throw? What images come to their mind? Can they try to transfer these images in the execution of their *jetés*?

4.1.1.4 Capacity 4: Effectively using the different functions of language - its ability to excite, stimulate, convince, convey information, or please

Examination This capacity is solicited when students consciously use language as a tool to persuade, explain, question, and communicate during the times that they interact with others in class. Students do not speak often in technique class, so these opportunities can be more fruitful when the goal of their interaction is clear. For students, one of the most frequently used functions of language in technique class is that of conveying information: observation exercises, partner work, peer feedback. To encourage students to use other functions of language, for example to stimulate, the teacher could ask guided questions such as "What would you say to someone who isn't motivated to do the *pirouettes*?".

When the goal is clear, the way language is used can become more effective, and this applies as much to the teacher as to the students. The way the teacher uses the functions of language also indirectly stimulates this capacity. In the classes I observed, students responded to the teacher's verbal cues such as "Streeeeeeetch" (stimulate), "Yes, good!" (please) and "That initiation was much more defined" (convince). Videotaping class once in a while, can be a valuable aid for the teacher to examine the uses of language in the class.

Possible teaching strategies

Tape or video recording: This strategy can be used by the teacher to record her own instructions and to permit her to examine and analyze her own uses of the functions of language. Of course this is only one element that can be examined on video, but it is the most pertinent one related to this capacity.

Brainstorming on the functions of language: As described by Armstrong (1994), this strategy can be used collectively to find ways in which language can alter the moods of

students or can convey information about the quality of a movement. For example, when a student is having difficulty learning a new movement, encouragement can go a long way to help the student master the material. A collective brainstorming session can find ways to verbally encourage, excite, and stimulate students. For example, students can be asked "What would you say to a student to encourage her to try jumping higher?".The same can be done when a new movement is introduced, and students can brainstorm on descriptive terminology. The results of the brainstorming session should be written on a poster and hung up, so that students can refer to them when needed.

Verbalizing visual information: Reflecting on my experience, this strategy entails separating the class into groups of two (or more). Student A is in charge of creating a sequence of movements that can include some material from class. Student A stands behind student B (the goal is for student B not to see student A). While student A executes her movement sequence she verbalizes it, and student B tries executing the sequence by simply hearing it. Another option would be for the teacher to verbalize instructions to the class and have all the students execute the sequence.

Illustration of some strategies

- ***Tape recording peer feedback***. During a peer observation and feedback session, have students record their feedback on tape. Give them as an assignment the task of listening to their own feedback and writing down what their goals were and if they achieved them. Are there times when they could have been clearer?
- ***Verbalizing the teacher's visual information.*** The teacher places herself in such a way that the class cannot see her, except for two or three students who can. The teacher executes a sequence of movement that includes material not previously worked on with the students (choreographic, or from another dance form altogether). While the teacher executes, the two or three students who can see her must verbalize the movement so that the rest of the class can execute it.

4.2 LOGICAL-MATHEMATICAL INTELLIGENCE

Identity. The source of mathematical intelligence can be found within the world of physical objects. The observation and manipulation of these objects grows into the ability to appreciate causal relations between them and the ability to classify them and finally develops into the capacity to think formally about these relations without the objects, using symbols that stand for objects, relations, functions, or other operations (Gardner, 1983).

Gardner (1983) states that mathematicians must be able to reason precisely and write their proofs meticulously. Within this intelligence lies the capacity to reason inductively and deductively, to use numbers effectively, to discern logical patterns, relationships, statements and propositions, functions, and other related abstractions. The kinds of processes used in this intelligence include: categorization, classification, inference, generalization, calculation, and hypothesis testing (Armstrong, 1994).

Characteristics. The following is a synthesis of the capacities that have been associated with this intelligence by three authors (Gardner, 1983; Lazear, 1991; Armstrong, 1994). The first capacity is recognition of abstract patterns, which is to perceive designs in abstract models. The second capacity is inductive reasoning, which is to derive conclusions by inference. The third capacity is deductive reasoning, which is to derive a conclusion by deducting items or facts. The fourth capacity is discerning relationships and connections, which is to distinguish how instances or items are related to each other. The fifth capacity is performing complex calculations, which is to find solutions based on interrelated mathematical processes and to resolve multi-layered problems.

4.2.1 Application to the ballet technique class

4.2.1.1. Capacity 1: Recognizing abstract patterns

Examination. I have identified three main categories of patterns within the structure of exercises, however there may exist more. Firstly, there are the number patterns with which technique exercises are composed. For example: four *tendus* to the front, four to the side, four to the back and four to the side. There are the patterns of progression within a single step,

such as *battement tendu*, *battement* 45°, and *grand battement*. And finally there are the progressions upon which the ballet class is constructed, starting with slower, smaller movements, and building up to quicker and bigger movements.

Patterns in an exercise. Often in ballet technique class, exercises are given and the student must simply memorize them and execute them. If the student becomes aware of the patterns upon which exercises are built, then perhaps memorization would become easier. When new exercises are presented, students would seek to recognize a global pattern instead of focusing on each individual step. Once basic patterns are familiar to the student, one can even begin to anticipate them. When presenting a new complex pattern, the teacher should use steps with a low degree of difficulty and perhaps repeat it several times or use the same pattern in several exercises. Steps with a higher degree of difficulty should be presented in a simpler pattern.

Patterns of progression within a step have often remained in the teacher's domain of knowledge. Sharing this knowledge with students would show them the necessity of preparatory work to create steps and inform them as to where they are heading. It also creates an awareness of the learning process, more specifically, the sequence of events necessary to master technical elements. This information could empower students by helping them to find ways to tackle difficult steps. By analyzing the material in order to find progressions, students could think for themselves and teach themselves. This information could help them become more autonomous.

Patterns of progression during the class, or order of the exercises, have also often remained in the domain of the teacher's knowledge. This knowledge could help the student better understand the logic behind the class structure, and the importance of the systematic execution of the exercises.

Armstrong (1994) mentions two strategies that could be used to present patterns. The first Calculations and Quantifications entails finding opportunities to talk about numbers and to stay alert for intriguing math problems in all subject matter. For example, focusing on statistics in subjects such as history and geography and highlighting passages in literary works that make reference to numbers provide a basis for some mathematical thinking. In

dance technique class this could mean focusing on different types of patterns. This can engage more logically inclined students, and can show other students that math is present outside of math class.

The second strategy Classification and Categorizations entails putting any kind of information (linguistic, spatial, logical-mathematical etc.) into a rational framework, which can stimulate the logical mind (Armstrong, 1994). For example, in order to learn about the effects of climate on culture, students might brainstorm a random list of geographic locations and then classify them by type of climate. Some other logical frameworks (also spatial in nature) include: time lines, attribute webs (listing attributes as spokes around the subject), 5W organizers (diagrams that answer who, what, when, where and why?), and mind maps. The importance of these approaches is that information can be organized around central ideas or themes and is then easier to remember, think about, and discuss. This strategy could also be useful in presenting patterns.

Possible teaching strategies

Calculations and quantifications: As described by Armstrong (1994), this strategy brings the calculations present within the ballet class to the students' attention. It can be used to present the numerical patterns within exercises. The patterns can be presented to the students or, if students are more advanced they could find the patterns themselves.

Classification and categorization: As described by Armstrong (1994), this strategy can be used to classify and categorize all three forms of patterns presented in class. The information presented to students can be written down on posters and put up in the studio. Every time a new numerical pattern, pattern of progression, or step is presented, it would be classified and categorized and the information added to the posters.

Illustration of some strategies

- ***Presenting a written numerical pattern***. When introducing a new pattern, the teacher can write it down on the board, or put up a poster. For example: four front, four side, four back and four front, or three front-one back, three side-one side, three back-one front and three side-one side.

- ***Transferring a written numerical pattern.*** An assigned task could be to transfer the written pattern into a physical one, alone or in groups of two, depending on the difficulty of the task and the level of the students.
- ***Deciphering a new numerical pattern.*** The teacher can present an exercise involving a new pattern and ask the students to find the pattern and explain it. Again this can be done alone or in groups.
- ***Inventing new numerical patterns.*** Students can be asked to invent their own exercise pattern, ideally one that they have never seen before. The teacher can also benefit from this exercise by being exposed to an assortment of new ideas.
- ***Identifying the progressions of a movement.*** To introduce the concept, the teacher can identify a step that will be built up during the class, such as an *assemblé*. The students' task will be to identify exercises that belong within the progression.

  Example: *assemblé*
  1)tendus with one arm at the *barre*
  plié and *tendu* on "one",
  close and stretch the supporting knee on "and",
  plié on "two"
  stretch "three"
  hold "four"
  same with other leg
  2)same exercise as 1 facing the *barre* and finishing on *demi-pointe* (when closing)
  3)same exercise as 1 but in the center
  4)facing the *barre*, including the jump
  plié on "one"
  assemblé on "and"
  land on "two"
  stretch knees on "three"
  hold "four"
  5)*assemblés* in the center

- ***Preparing the buildup of a step.*** Occasionally, the teacher can assign movement-based exercises. For example, the students must prepare a build up for *grand battements*. This can be done as a homework assignment, or students can separate into groups and have an allotted time for problem-solving.
- ***Introducing class structure.*** A general activity that can be used is to introduce class structure, or the order of exercises as a theme for a class. The assigned task for students is to identify which part(s) of the body is (are) being warmed up with each

exercise. All of the exercises do not need to be examined during one class. One can analyze only the barre, and analyze the center work during the next class. Or the material can be separated into four classes.

4.2.1.2 Capacity 2: Inductive reasoning

Examination This capacity is solicited when the student initiates the reasoning process. Generally speaking, when the student has a question in class, the teacher should try to encourage her to find her own answer. When a student finds her own answer, it is more meaningful to her and can be better remembered. The motivations should be made clear to the student because we do not want to discourage questions, rather we want to encourage students to reason and to think for themselves.

Armstrong (1994) mentions two strategies that can be useful for inductive reasoning. The first, Socratic Questioning can be helpful as it entails the teacher (or classmates) questioning the student's point of view in order to sharpen the student's critical thinking skills. The goal is to help students form opinions based on facts and not simply out of strong emotions or passions. This strategy is modeled after the Greek sage Socrates, who dialogued with students in order to uncover the grounds upon which their opinions were founded, instead of delivering a monologue to the students.

The second is Heuristics. The actual field of heuristics encompasses a set of exploratory problem-solving techniques. Armstrong (1994) regards it as a major teaching and learning strategy. Some examples of its principles are creating analogies for problems to be solved, separating a problem into components, suggesting a solution to a problem and then working backwards towards it, and finding a related problem and solving it. This strategy enables students to find their way around unfamiliar terrains by providing them with a means to make a logical map.

Possible teaching strategies

Socratic questionning: As described by Armstrong (1994), this strategy can be used when students have questions during class. By using appropriate questions, the teacher can guide students through their thinking and reasoning process to help them find answers to their own questions.

Heuristics: As described by Armstrong (1994), this strategy encompasses several ways to solve problems. To stimulate the inductive reasoning process, students must be stimulated to ask themselves questions about their own learning experiences, and pathways to solving these problems must be provided by the teacher.

Illustration of some strategies

- ***Identifying a difficulty and resolving it.*** Before the students perform their *adage* exercise, the teacher instructs the students to identify for themselves a step or movement they are having difficulty with or would like to improve. The entire class performs the *adage* and students identify their difficulty. The class separates into two groups. Each group watches the other, all the while trying to find solutions for the step or movement they are focusing on. The entire class performs the *adage* again, this time trying to apply the knowledge they have gained from observing the other group.
- ***Observing and analyzing peers to find solutions for execution difficulties.*** Reflecting on my experience as a student, I remember one of my teachers explaining to us: "when someone executes a movement with greater ease than you, this is an opportunity to watch and try to analyze how that student executes the movement to achieve that result. You can also ask your fellow students for an explanation or a demonstration". The teacher can allot time for this student interaction. The goal is to encourage the students to learn from each other by observing each other.
- ***Socratic questioning.*** A student states " I'm always falling over to the left when I'm balancing on my left leg." The teacher can tell the student "Let's explore what is happening, why do you think you're falling over to the left?", "do you think it's alignment or weight distribution?", and so on.

4.2.1.3 Capacity 3: Deductive reasoning

Examination This capacity is solicited when a student is given movement based information and must reason through it to find some answers by deduction. This reasoning process can be stimulated by giving problem-solving tasks, involving a set of movement-based facts. As with any strategy, in order to benefit the most from a task students must clearly understand its

purpose. "By helping students understand the purpose of the task they are about to execute, teachers not only may offer further opportunity for cognitive learning but may also motivate students for the task execution" (Lord et al, 1995, p.175). Armstrong's (1994) Heuristics strategy could also be used for this capacity.

Possible teaching strategies

Heuristics: As described by Armstrong (1994), this strategy can be used by asking students questions that lead them to find the solutions by sorting through knowledge that they already possess. For example, by breaking down a movement into all of its components, it can become easier to analyze the execution of a movement.

Illustration of some strategies

- ***Giving students problem-solving tasks***. For example, "starting in fifth position with the right foot front, execute five *tendus* to the side on either side, to finish with the left foot front. How many possible combinations can you come up with?" Students work in pairs or groups.
- ***Breaking down a movement into components***. The teacher gives students a step or movement and the students' task is to break it down into separate components. For example, a *pirouette* is made up of: a quarter turn, a *retiré*, the closing of the arms, the spotting of the head.

4.2.1.4 Capacity 4: Discerning relationships and making connections

Examination This capacity is solicited when a student is encouraged to find similarities and differences between different steps and movements, or how exercises or movements performed at the *barre* are associated with those in centre work. It is solicited when a teacher gives feedback such as " If you bend over the *barre* when in *retiré*, you will be off your balance during the pirouette." This statement brings to light the relationship between the alignment of the body in *retiré* and during a *pirouette*.

This capacity can also be used to discern relationships and to make connections between dance class and other subjects or areas of life. "Correlations allow students and teachers to recognize that the content they study relates to other bodies of knowledge. This process helps

to place learning into a context and will often create connections between historically isolated subject areas" (Ottey, 1996, p.32). Two of Armstrong's (1994) strategies could be helpful: Classification and Categorization and Heuristics.

Possible teaching strategies

Classification and categorization: Using Armstrong's (1994) strategy to classify and categorize steps, we need first of all to find similarities and differences between them. This part of the capacity has already been covered under the capacity of recognizing abstract patterns.

Heuristics: Using Armstrong's (1994) strategy, we can use analogies to make connections between movements and other areas of life, and we can find related problems or situations and apply their solutions in class.

Illustration of some strategies

- ***Exploring relationships between different movements.*** When presenting a new step, for example a *pirouette*, the teacher can demonstrate the step and then explore with her students all the movements involved in order to execute the *pirouette*. Possible answers are; *retiré*, going on *demi-pointe,* quarter turn, spotting of the head, and closing of the arms.
- ***Identifying relationships between movements.*** An exercise at the *barre* can be selected in order for students to find its connection with center work. What steps or movements does this *barre* exercise prepare for? For example, *pliés* are related to the beginning and end of jumps, *fondus* are related to all jumps landing on one leg, and *grand battements* are related to the *grand jeté*. While observing a class, a teacher made the connection between balancing *retirés* at the *barre* and being on balance for pirouettes in the center.
- ***Making analogies between dance class and other subjects.*** The teacher can invite the students to reflect upon the connections between learning in technique class and learning to read. For example, in order to read one first learns the alphabet, followed by words and finally sentences. An analogy could be made that in order to execute an

entire phrase of movement, one must first learn postural alignment, followed by dance movements and finally series of movements.

4.2.1.5 Capacity 5: Performing complex calculations

Examination This capacity is solicited when a student is able to reason precisely, to order things according to logic, and to meticulously perform the tasks at hand. I believe that in dance class these complex calculations are made kinesthetically, that is, executed by the body. How much weight is shifted over the toes of the supporting leg in order to be able to *developpé seconde*? In just a single *pirouette*, there are many calculations to be made: timing of the *retiré*, the weight shift from fourth position, the timing of *relevé* onto *demi-pointe*, the timing of the closing of the arms, and the timing of the spotting of the head. All of these calculations also need to be synchronized in order to execute one *pirouette*, and this does not even include the finishing of the *pirouette*. These are the mechanics of movement. Into the calculation we need to add breath, speed, and the degree of muscular tension. All of these complex calculations are taking place and yet most of the time students are not even aware of it. Should this knowledge be reserved only to teachers, movement analysts, and physicians? Perhaps the actual mathematical calculations executed would not help a student to master a *pirouette*, but perhaps awareness of the kinds of calculations that are being executed would empower and enlighten students. If a teacher is not sure where to start I would recommend a book called The Physics of Dance by Kenneth Laws (1984). The author illustrates physics concepts as they relate to ballet technique, such as the centrifugal force involved in a *pirouette* and the lever action of the leg in a *développé*

Two of Armstrong's (1994) strategies can also be useful for this capacity. Calculations and Quantifications and Science Thinking, which involves finding scientific ideas in subjects other than science in order to discover the impact that science has on our lives. In order to learn about global issues - such as the greenhouse effect, the AIDS epidemic, alternative energy sources, etc, - students must have a basic understanding of scientific concepts. Looking at things from a scientific point of view can enrich a student's perspective.

Possible teaching strategies

Calculations and quantifications: By adapting Armstrong's (1994) strategy, we can present the students with the notions of all calculations required to execute movement, and explore these ideas with them. This way, they will be better able to break down movements into components and to analyze them. Examples of calculations that can be covered are: synchronization, weight shift, timing, and degree of effort. Some individuals depend heavily on their ability "to understand movement through physical analysis to solve problems in partnering and other dance movements" (Berardi, 1991, p.32).

Science thinking: As described by Armstrong (1994), bringing scientific concepts into the classroom that cover the mechanics of movement, such as mathematics and physics, will help students better appreciate all the elements involved in a movement class and the intelligence of the human body.

Illustration of some strategies

- ***Introducing weight transfer***. The teacher can introduce the concept of weight transfer by having the students stand in 1st position and simply transfer their weight from one ball of the foot to the other.
- ***Exploring degrees of weight transfer***. This exercise is to promote awareness of how far the weight is transferred on the supporting leg in relation to how high the working leg is held. Ask students to *développé* their working leg *à la seconde* to 45 degrees and to feel where the majority of their weight is on the supporting leg. Compare it to when the leg is at 90 degrees.
- ***Presenting scientific concepts***. Present students with a structural concept such as a lever and relate it to the *développé à la seconde*.

4.3. MUSICAL-RHYTHMIC INTELLIGENCE

Identity This intelligence includes a sensitivity to pitch, which is a property of sound: its highness or lowness, a sensitivity to timbre, which are the characteristic qualities of a tone emitted by a particular singing voice or musical instrument, and a sensitivity to rhythm, which is "the sounds emitted at certain auditory frequencies and grouped according to a prescribed system" (Gardner, 1983, p.104). It includes an awareness of the sounds of musical instruments but also of human, animal, and environmental sounds (Lazear, 1991). Other capacities include perceiving, discriminating, transforming and expressing musical forms (Armstrong, 1994). An individual may have a global and intuitive understanding of music or an analytic and technical understanding of music, or both (Armstrong, 1994). Musical intelligence is not only exhibited by those who can play, but also by music lovers and collectors and many other individuals working within the music industry.

There seems to be an association between musical and mathematical intelligence (Gardner, 1983). In order to appreciate the operations of rhythms in musical work, an individual must have some basic numerical competence: sensitivity to regularity, proportions, patterns, and ratios that can sometimes be complex. This involves a basic level of mathematical thinking (Gardner, 1983).

Most accounts of the evolution of music link it with primitive dance and many effective ways of teaching music attempt to integrate voice, hand, and body, for example Dalcroze eurythmics (Gardner, 1983). Music has the ability to affect us, intensify and manifest our emotions; it is used to express victories and helps us to support great tragedies. Of all forms of intelligence, the consciousness altering effect of music and rhythm on the brain is the greatest (Lazear, 1991).

Characteristics The following is a synthesis of the capacities that have been associated with this intelligence by three authors (Gardner, 1983; Lazear, 1991; Armstrong, 1994). The first one corresponds to a sensitivity to pitch, timbre, and rhythm. These three elements have been defined in the paragraphs above; however a sensitivity to them would be defined as a receptivity or general awareness. The second capacity is perceiving musical forms, which is

identifying pitch, timbre, and rhythm. The third capacity is discriminating between musical forms, which is to compare and contrast pitch, timbre, and rhythm. The fourth capacity is transforming musical forms, which is modifying musical elements within a given piece of music. The fifth capacity is expressing musical forms, which is interpreting and inventing music and musical elements.

4.3.1. Applications to the ballet technique class

4.3.1.1 Capacity 1: Sensitivity to pitch, timbre, and rhythm

Examination A sensitivity to something means being able to sense it, or to be aware of it. This capacity is stimulated when students develop a general awareness of pitch, timbre, and rhythm and are able to respond to it. This capacity is solicited when we are exposed to a wide variety of styles, meters, and instruments. Generally, ballet classes are taught to the musical accompaniment of a pianist, be it live or with a CD recording, and, according to Thompson (1995), "the most common time signatures used...are: 2/4,3/4, 4/4 and 6/8" (p.6). The accompaniment of a live accompanist definitely surpasses that of a CD recording, because the execution of the music can be altered on the spot depending on what is being stressed in the exercise.

Teachers can also sensitize students to rhythm, by having them clap it out before dancing to it. When teachers demonstrate a movement while specifying the number of counts required this allows " ...students to organize their motor plan and give inner motivation to their movement... (and) might help students to give a "felt" or dance-like quality to otherwise mechanical movements" (Lord et al, 1995, p.177). Giving an intention for the step to be executed, in this case counts or rhythm may be "...a very simple and common way to develop artistry in tandem with technical dance skills" (Lord et al, 1995, p.177).

Armstrong's (1994) Discographies strategy entails supplementing curriculum subjects with lists of musical selections pertaining to the subjects. For example, when developing curriculum covering the Great Depression, music from that time span can be listened to, in order to understand the mood of that time. In the technique class this would entail using a wide range of musical styles and meters.

Possible teaching strategies

Discographies: Armstrong's (1994) strategy, when adapted, entails building a varied musical collection covering a wide range of tempos, time signatures, instruments, and moods. To strengthen this capacity, we need to use a large variety of accompaniment: percussions, instruments other than the piano, pop songs, music from other cultures, the voice as an instrument, contemporary music, and experimental music.

Varied Piano Music: Reflecting on both my teaching and student experience, when working with a pianist, teachers should encourage as much variety as possible in styles and meters. This can introduce students to a variety of musical styles and help to develop their awareness between movement and time signatures (meters). While observing one class, a teacher asked her students several times to give the time signature of the music that was being played. Most of the students were able to identify the time signatures.

Illustration of some strategies

- ***Incorporating ethnic music***. Use a tango for a *pirouette* exercise, African drums for jumps or a samba for an *adage*.
- ***Incorporating pop music***. Ask students to bring in recordings of their favorite songs After listening to and selecting the songs, incorporate them into the class throughout the term. This strategy permits students to contribute to classroom content and thus personalizes instruction.
- ***Using unusual time signatures***. Traditionally, ballet exercises are created in phrases of eight measures. By using unusual time signatures, it becomes possible to create exercises in phrases of five or seven.

4.3.1.2 Capacity 2: Perceiving musical forms

Examination This capacity is used when students develop the ability to hear and identify timbre, pitch, and rhythm. It is solicited when identifying the sound of an instrument, when performing a movement on a particular accent, when moving to the rhythm of a piece of music, and when adjusting the execution of movement to reflect its pitch.

Of course, in order to perceive elements of music, students must be introduced to them, this is covered in the previous capacity. This capacity is solicited when teachers ask students questions such as " What is the time signature of this music?" or "Can you demonstrate the exercise with the counts?"

A useful strategy described by Armstrong (1994) is Rhythms, Songs, Raps and Chants. This strategy entails singing, rapping, or chanting information that is to be learned, for example spelling words to the rhythm of a metronome or singing facts to a popular song. Main ideas and concepts or central themes should be identified and then put into a rhythmic format. Students can also be encouraged to create their own raps or chants; summarizing and applying information into chants or raps will help them synthesize it.

Possible teaching strategies

Varying Instruments: Reflecting on my experience, timbre can be introduced by using the music of at least two different instruments during a class, for example, a violin and a flute, or two different percussive instruments. The availability of a percussionist, as often seen in contemporary dance classes, can facilitate the use of several instruments during class. When one group performs the exercise, the other group listens and vice-versa. After the exercise, the teacher could ask the students what qualities the sound had and if they can associate it with anything. During their course of study, students could be introduced to a variety of instruments including traditional ones and non-traditional ones.

Contrasting Pitch: Based on my experience, pitch can be introduced by using music that features a wide range of pitches, or by playing the same music in two different pitches. When teaching I sometimes ask the pianist to play the piece of music an octave higher or lower when students execute an exercise the second time around. I then ask the students if and how their performance was affected.

Rhythms, Songs, Raps and Chants: As described by Armstrong (1994), rhythm can be introduced by taking a basic time signature and having students clap their hands in time. Not only should they clap or sing out the rhythm, but they should also take turns accentuating

different beats. Rhythm is a very powerful tool in enhancing memory (Sprenger, 1999). According to Green Gilbert (1992a), "If teachers and students sing or chant simple rhymes to accompany exercises and movement patterns, rather than counts, these patterns will be much better remembered and enjoyed" (p.31). Here, it is important to mention that when the teacher is demonstrating an exercise, the intonation and musicality of the voice are powerful indicators of the quality of movement the exercise requires.

When introducing music from a different culture, its rhythm can be clapped out to sensitize the students to it before showing them the exercise. If the rhythm is complex, the exercise should be composed of simple steps, so the students can concentrate with more ease on the rhythm.

Illustration of some strategies

- ***Varying musical instruments***. When presenting a new musical instrument, show a picture of it to the students, tell them about its origin, and what material it is made of. After the exercise, ask students for a few words to qualify the instrument's timbre.
- ***Contrasting Pitch***. During an *adage* exercise, have students perform it once to the normal pitch of the music with piano accompaniment, and then a second time at an octave higher or lower. Take a few minutes to ask the students how it affected their execution of the exercise, and if they preferred one over the other and why.
- ***Varying rhythms***. At the *barre*, give a simple *tendu* exercise such as four *tendus en croix*, using a _ time signature. Have the students clap it out twice in a row, but have them accentuate the out and the in at a different time. For example, out on one, hold two, in on three followed by out on one, in on two and hold on three. Once the students can clap it out with ease, have them perform the exercise while chanting the rhythm.
- ***Chanting***. Have the students chant out an exercise while performing it, with or without musical accompaniment. For example, in a *temps lié*, the chant can be "out, transfer, and rise, together", chanted in a fluid manner to mirror the quality of this transitional step.

4.3.1.3 Capacity 3: Discriminating between musical forms

Examination This capacity takes the previous one further. Not only does it entail hearing and identifying the different elements of music, but also comparing and contrasting them. It is solicited when comparing the timbre of two instruments, when differentiating between pitches, when recognizing the differences between two rhythms, and also when identifying the provenance of a certain piece of music or its influences. As students are exposed to and become more familiar with different styles, meters, and instruments, they will be more apt to discriminate between them.

Possible teaching strategies

Comparing and Contrasting Music: Based on my experience, this strategy entails giving students opportunities to compare and contrast different music. For example in a dance teacher's course I was asked to compare and contrast a 3/4 and a 6/8 while executing a jumping sequence. It helped me to "sense" the effectiveness of a 6/8 for highlighting the rebound in a jump, as compared to a _, which did not have the same effect.

Anticipating Musical Elements: Based on my observations, having students anticipate what time signature or style of music could be used to accompany an exercise would strengthen this capacity. In one class, the teacher would sometimes demonstrate the exercise and then ask her students to what time signature it should be executed. Students could also identify musical elements and suggest alternatives.

Illustration of some strategies

- ***Music listening exercise.*** Have students listen to a piece of music before performing an exercise to it and ask them to identify the rhythm, using their voices or counting it out.
- ***Comparing time signatures.*** Have students perform a *grand battement* exercise to two different time signatures, which they have already been introduced to (i.e., 2/4 and 3/4, or tango and merengue). Guide them through a comparison with some prompts, such as: "Which part of the *battement* is highlighted within each piece of music? How does the music influence the dynamics of the *battements*?"

- ***Comparing musical accents***. Present students with a jumping exercise and play two different kinds of music while they perform it: one accenting the elevation of the jump, the other accenting its landing. Ask them which is best suited for the exercise and why. Answers will most likely encompass both for different reasons.
- ***Anticipating a time signature***. Demonstrate a *grand battement* exercise with the accent on the closing of the leg. Ask students what kind of time signature would suit this movement. The students can also sing or clap out a rhythm to answer.

4.3.1.4 Capacity 4: Transforming musical forms

Examination This capacity, at a basic level, entails modifying musical elements within a given piece of music. It is solicited when we can physically contrast elements of music within an exercise, such as by performing twice as fast as the music, and when we can suggest modifications to a piece of music to better assist the execution of an exercise. Students could also improvise to a piece of music that contains two contrasting elements. For example linked (or legato) notes and sharp separate (or staccato) notes. The improvisation could contain curved shapes versus angular shapes to show the differences in the quality of the music.

Possible teaching strategies

Physically Contrasting Music: Reflecting on my teaching experience, contrasting elements of music with the execution would include the rhythm, tempo, quality, pitch, and timbre to name a few. For example, during an *adage* exercise, students could be given a quick rag (early type of jazz), and the students would contrast the complex syncopations with the slow sustained *adage* movements. During *petit allegro,* students could be given a heavy and slow music and asked to find a way to contrast it with their execution. This would most likely result in them performing the exercise twice as fast, with a light quality of movement. Contrasting can be an effective way of learning about musical elements as well as quality of movement because the contrast actually emphasizes and highlights them.

Suggesting Modifications to Music: Based on my teaching experience, I have encouraged students to suggest modifications to a piece of music by using a piece of music that is not quite suitable for an exercise. For example, a Viennese waltz could be played for *piqué turns*,

and then the teacher can ask students what modifications would be required to render the piece suitable for the movement. This could be done with a recording, but it would definitely be a more engaging exercise to do with a pianist who would be able to transform musical elements on the spot.

Illustration of some strategies

- ***Syncopating movement to music***. Compose an exercise with a built in syncopation either during one side (i.e., if the music contains four bars of eight, the exercise can contain movements that cover counts of 8, then 4 and 4, then 3 and 3 and 2, then 8) or the exercise can be syncopated as a result of it not finishing with the melody on one side before moving onto the next side (for example, the melody in an *adage* takes four measures of eight, but one side of the exercise takes only three measures of eight).
- ***Transforming movement***. Have the students perform a *balancé* waltz step to a march. Ask them how they had to transform the step, in order for it to fit to the music.
- ***Contrasting movement***. Use a gallop (quick 2/4) during an *adage* exercise.

4.3.1.5 Capacity 5: Expressing musical forms

Examination. This capacity entails communicating or interpreting music and musical elements. It is solicited when we create, interpret or reproduce musical elements. In ballet technique class we use our bodies to express or interpret music and its elements, but one often neglected and yet highly effective tool we have is our voice. As previously stated, using our voice to chant rhythms while we are moving helps us to better incorporate and retain information.

Armstrong (1994) has two useful strategies for this capacity. The first already described Rhythms, Songs, Raps and Chants, and Mood Music, which entails setting the appropriate mood or atmosphere of a lesson by using music. For example, when students are learning about the Brazilian rainforest, they can listen to a recording of its sounds, or before reading a story that takes place by the sea, students can listen to a recording of sea sounds. In technique class this strategy can be used to set a mood for an exercise.

Possible teaching strategies

Rhythm, Songs, Raps and Chants: As described by Armstrong (1994), this strategy entails singing, humming, or chanting the desired musical form while marking or performing an exercise. An element of music can be highlighted during an exercise and students reproduce or express it with their voices as well as their bodies. Students can also clap or stomp out rhythms before an exercise and then transpose the music into their bodies during the exercise. Students can also be asked to clap out a rhythm during an exercise while one group is performing it.

Mood Music: Using Armstrong's (1994) strategy, two separate pieces of music that express a different emotion or mood can be used while performing the same exercise. This would strengthen this capacity. However, there needs to be accurate instruction as to how to interpret the feeling or mood of the music, since it is paramount that the students understand the goal of the exercise. Taking this strategy further, the students can improvise to two different kinds of music interwoven together. While observing a class, a teacher asked her students to improvise to an "angular, linear and sharp" music and a "smooth and curvy" music. The music was interwoven together and the students expressed both concepts with their bodies quite clearly.

Illustration of some strategies

- ***Chanting the rhythm***. During an *assemblé* exercise, have the *assemblé* occur on the first count of a 6/8 measure. Have the students chant out "ya-ta-ta, ya-ta-ta" before the exercise and then again during the exercise (their voices become the musical accompaniment). During the same class or on another occasion, have the pianist play this chant during the exercise.
- ***Finding and Expressing Rhythm***. Demonstrate an exercise in a neutral fashion and then ask what kind of rhythm the students would use to execute it. After students make suggestions, ask a few to beat out the rhythm (on a tambourine) and have the other students "interpret" this rhythm at the same time.
- ***Mood Music***. Have the students execute a *port de bras* exercise to two different pieces of music (i.e., jazzy and lullaby), with the goal of expressing their differences.

4.4.VISUAL-SPATIAL INTELLIGENCE

Identity. This intelligence involves the accurate perception of the visual-spatial world, as depicted by a hunter or a guide, and the ability to modify and transform one's initial perceptions, as depicted by an architect or interior decorator. It also involves the ability to reproduce aspects of one's visual experience even without relevant physical stimuli, for example, visually perceiving a three dimensional cube and manipulating it to apprehend it from another viewing angle.

Gardner (1983) mentions two other more abstract uses of spatial intelligence. The first being "a sensitivity to the various lines of force that enter into a visual or spatial display:...the feelings of tension, balance and composition that characterize a painting, a sculpture and many natural elements". These elements preoccupy visual artists because they are essential to the composition of a display. The second use, is that of identifying similarities that may exist between two seemingly divergent forms, or two seemingly remote domains of experience (resemblances that occur initially in spatial form) (p.176).

Gardner (1983) also enumerates a number of loosely-related capacities; the ability to identify samplings of the same element, for example being able to identify an object when it is seen from different angles. The ability to alter one element into another or to identify an alteration of one element into another, for example visually displacing furniture within a room. The capacity to think about problems that entail observing one's body orientation within spatial relations and finally, the capacity to transfer spatial information into graphic information (p.176).

Characteristics. The following is a synthesis of the capacities that have been associated with this intelligence by three authors: Gardner (1983), Lazear (1991) and Armstrong (1994). The first capacity is thinking in visual imagery, which is to initiate a thought process based on images. The second capacity is forming mental images and manipulating them, which is to be able to make changes to the images that we perceive. The third capacity is orienting space and orienting the body in space, which is to understand the directions of a given space and our bodies' relation to them. The fourth capacity is representing visual or spatial information

through graphs, which is to take images and to transpose them into written visual information. The fifth capacity is perceiving accurately from different angles, which is to recognize visual forms even when they are apprehended from different viewing angles. Finally, the sixth capacity is recognizing relationships between objects in space, which is to determine how objects or images relate to each other in space.

4.4.1. Applications to the ballet technique class

4.4.1.1. Capacity 1: Thinking in visual imagery

Examination. Any time that we imagine visually, things that are not actually physically present at that moment, we are using this capacity. We can visualize something that we have already seen just as we can visualize something fantastic (created in our own mind). We can visualize something usual, like an item on the floor that we want to reach with our toes during a *tendu* (in order to lengthen the leg), or we can visualize that which is more unusual, like spreading peanut butter on the floor with our foot during a *tendu*. Both solicit the same capacity.

Teachers of technique frequently use images to convey information to their students. The images can be direct, as in an actual movement, or indirect, as in a metaphor for movement. The objective in using metaphors, is to establish a connection between something a student already knows with new material presented. The teacher must find a visual image that links with a concept or key point to be learned by the students and then construct a metaphor with it. (For example comparing the arms to seaweed oscillating in the ocean). When giving images to students, the teacher must keep in mind, the student's life experience. The best examples are simple and therefore, usually effective. Visualization is by no means a new concept, there exist many written works on the topic: from general works to specific techniques such as Ideokinesis. As it already exists in the teaching of technique class, the idea is to see how it can be made more concise and effective.

Possible teaching strategies

Visualization: This strategy can be used to examine skeletal and muscular structure and activity, within the body. Hankin (1986) states : "I have found that the opportunity to look at a skeleton not only acquaints students with their own structures, but helps them think more

accurately and more constructively about movement" (p.37).We can also visualize the planes our bodies occupy according to Laban: vertical, horizontal and saggital (Maletic, 1987). It can also be present when imagining the outside forces that act upon the body, such as gravity. We use visualization when we imagine the trajectory lines that are written in space by our bodies, whether in our personal space during a *rond de jambe* or in general space during a *diagonale*. One way to assist in the development of visualization skills is to present students actual pictures and images or have them use accessories to exemplify what is being taught. This could give them clearer notions and give them tools for future visualizations.

Dance researcher Christine Hanrahan (1995) has conducted extensive research on dance imagery. Based on her own and others' research she has created guidelines for dance teachers in creating precise images for specific dance movements. The teacher should: analyze which parts of the body should be moving and in which direction, identify a positive and specific goal, identify the desired movement qualities and dynamics, and find an existing form of energy appropriate to the desired movement dynamics. The teacher should then determine whether the image should be located in or outside the body, determine the desired direction of the flow of energy in the image, choose and adapt the image and finally, verify if the chosen image has any negative connotations or possible undesirable effects (Hanrahan, 1995).

When using imagery to improve or change students' alignment, it may be useful to verbalize the information while they are moving, as static and dynamic alignment can vary significantly in individuals (Krasnow, Chatfield, 1996). " (Sweigard) asserted that if the idea or image of the movement was correct, then the brain was capable of best determining the appropriate muscle groups to use and to what degree" (ibid., p. 168).

Picturing metaphors: Reflecting on my teaching experience and based on my observations, when using this strategy, the teacher uses picture metaphors to explain a movement or concept. Students have an opportunity to think in images, every time the teacher presents an image as an explanation or example. For example in one class, I observed the teacher giving a metaphor: "Imagine the room is dark and you are glowing". This metaphor was given to the students to raise their awareness of stance and stage presence. Of course, the students do not automatically visualize the image proposed, especially if the concept of visualization is

foreign to them. It is necessary for the students to understand or be introduced to the process of visualization, so they can become consciously aware of this activity. It is also necessary to give students a lapse of time congruent to the visualization at hand.

Illustration of some strategies

- ***Illustrating, for the students, movement of segments, body parts, or their trajectories***. For example, when presenting a port de bras exercise going from *5th en bas*, to *5th en haut* and finally opening to *seconde*, the teacher can present a photograph or drawing of a dancer in profile and draw an arc to show the trajectory of the arms from *5th en bas* to *5th en haut*. The same for 5th en haut to *seconde*, with a photo or drawing of a dancer seen from the front. Once they have seen the image, it will be easier for them to visualize it either while looking in the mirror, or looking at another student or even performing the port de bras with their eyes closed. Using colour cues on the photographs or diagrams could enrich the material.
- ***Using imagery during movement***. Using Hanrahan's principle (1995), the teacher can create an image to demonstrate a movement. For example, to demonstrate the lengthening of the leg out of the hip socket during a *grand battement*, the teacher gives the image of a beam of light that comes out of the toes and reaches out to touch the floor and wall during the *grand battement*. The teacher then has the students close their eyes and imagine the trajectory of that beam of light, and finally, asks the students to perform the *battement* several times while visualizing the beam of light.
- ***Visualizing muscular movement***. When explaining the role of the thigh rotator muscles in turnout, the teacher can show their location on her own body or a student's body and/or identify the muscles on an anatomical chart. This makes the muscles more real for the students and will help them to visualize them in the future. (Of course when it comes to visualizing the skeleton or muscles within the body, it is priceless to have a model skeleton and anatomy charts in the studio to show the students directly what bones and muscles are being solicited. Using colour cues to highlight specific muscles can be helpful.)

- ***Independent visualization***. Once students are familiar with the notion of visualizing, an exercise can be devoted for them to find their own images to assist them in the execution of a movement and to share them.

4.4.1.2 Capacity 2: Forming mental images and manipulating them

Examination This capacity is solicited when one visualizes an image and then transposes or transforms the image, to see it for example from a different angle, move it around in space or change something within the image The image can apply to the body, a movement or an image used to describe a movement. When we direct a student to put their hands on their hips and then keep their hips level, they are manipulating the image of their hips. When introducing younger children to this concept they can be taught to image a red apple, to change its color and then rotate it (Short, Afremov, James and Overby, 2001). It is also used in the technique class when students are asked to reverse an exercise or transfer it from one side to the other, by visualization.

Possible teaching strategies

Visualization: Taking Hanrahan's (1995) strategy further, we can visualize the image of our body and then manipulate it. More specifically, when we perform an exercise to the right side and then transpose it to the left side, *without* using our bodies to assist us, we are using the *image* of our bodies to transpose the exercise. This capacity is also solicited when we perform an exercise and then reverse its sequence, equally *without* the use of our bodies. We can also visualize the forces that act upon our body or within our body while we are in movement. As our body is moving so are these forces and so, their image is being manipulated.

Picturing metaphors: Based on my teaching experience, when I ask my students to visualize the 'beams of light' extending and reaching beyond their legs during an exercise, they are using visualization and picture metaphors. The image or idea of a beam of light is used to help students understand the lengthening of the legs, and these images are being manipulated during the exercise.

Illustration of some strategies

- ***Transposing an exercise from one side to the other by visualization***. During centre work, take any exercise performed to the right side and ask students to close their eyes and visually transfer it to the left side. Perform the exercise to the left. (Or vice versa). Centre exercises are more challenging because for the most part at the *barre*, the exercises do not travel.
- ***Reversing the sequence of an exercise by visualization***. During *barre* or centre work, take any exercise that has been performed and ask students to close their eyes and visually reverse the sequence of the exercise. Perform the exercise reversed.
- ***Manipulating a visual image***. During a port de bras exercise, have students visualize that their arms are at the centre of thick and long beams of light. Have the students 'manipulate' the beams of light, making sure that they project all the way to the walls, floor and ceiling.
- ***Transforming a picture metaphor***. During the course of the same exercise, have students alternate between filling up a small kinesphere and a larger one. One picture metaphor that can be used is that each student is the central pole of a tent, and they must fill up the entire tent. At times it is a small tent and at times it is a large tent.

4.4.1.3 Capacity 3: Orienting space and orientating the body in space

Examination In dance class we are continually using our bodies in space, and so these two capacities are often simultaneously solicited. Orienting space is related to knowing where the front, back and sides of a given space are, and being able to estimate its dimensions. In the generally rectangular studio, when standing in the centre, we have walls to the front, back, right and left, and corners in the front right, back right, front left and back left. These are the tools used for orienting space in the studio. Orienting space is also solicited when we are required to know in which direction we need to travel and where those directions are in space. Strengthening this capacity would require new space configurations.

Laban's movement analysis framework includes personal and general space, within the area of spatial awareness. Personal space is defined as the space within which the body or its parts can reach without traveling and general space is the one available in a room or location for

action (Maletic, 1987). In order to orient the body in space, one needs to know or have a sense of where one's personal space is in relation to the general space, and be able to change that relationship. To orient the body in space we have, in technique class, the directions of the body: facing front, *croisé*, *effacé* and *écarté* front and back. To strengthen this capacity, there needs to be a variety of directions for the body to use when traveling and when not traveling.

When we estimate how much space to cross during a travelling step so as not to end up bumping into a wall and when we adjust the amplitude of our movement in order to keep the spacing between ourselves and the other students when performing in groups, we are soliciting the orientation of space and the orientation of the body in space. Both of these require a distance estimate (orienting space) and how our body relates to that distance (orienting the body in space).

Possible teaching strategies

Reconfiguration of space: As it is impossible to change studios, teachers could find ways of using the space differently. Reflecting on my teaching experience, the simplest way would be to regularly change where the front of the studio is, keeping in mind that the front needn't be a wall, it could also be a corner! When I ask students to repeat the same exercise while facing another direction, they are initially somewhat disoriented, and eventually regain the orientation of their body in space. Other ways would be to alter the studio space by marking new space configurations with tape on the floor, portable *barres* or even a human wall. This would develop the capacity of orienting space.

Varying travel directions: Based on my teaching experience and observations, I notice that teachers mostly have students travel forward, backward, diagonally or sideways. But we can also travel in unusual pathways such as arcs, zigzags and triangles. By varying the direction, and pathways students travel in, the capacity of orienting space can be strengthened.

Varying group formations Reflecting on my teaching and student experience both capacities (orienting space and orienting the body in space) can be strengthened by using group formations other than the traditional staggered lines. Using an unusual formation could

increase students' awareness of their body in space, because of the new spatial relationship between their personal space with their peers' personal space. When performing exercises in groups, students could form a circle, a diagonal line, a heart shape etc. The goal is to establish and maintain the spatial relationship throughout the exercise. Another way of strengthening both capacities would be to begin an exercise in one formation and finish it in another, each student must estimate the distance they must travel and stay conscious of their body orientation in space so as not to be in anyone's way.

Illustration of some strategies

- ***Varying body orientation in relation to the studio space.*** Space permitting, have students execute their *barre* work facing each other, this changes their space configuration and solicits body orientation.
- ***Varying group formations in travelling exercises*** Give students a moderately travelling exercise to be executed in a circle (or triangular or arc) formation.
- ***Varying direction or pathway of travelling exercises.*** Give the students an exercise that travels and have them perform it forward, backward or sideways.
- ***Changing space configurations***. Make the front of the studio one of its corners during centre work.

4.4.1.4 Capacity 4: Representing visual or spatial information through graphs

Examination This capacity entails taking visual or spatial information and drawing it or graphing it. Visual information would be anything one sees or visualizes and spatial information would pertain to elements derived from the space around us, like directions in space or the forces that act upon the body. Generally, these skills are developed in movement analysis class, but there are ways of integrating them to the technique class.

Two of Armstrong's (1994) strategies could be of use. Graphic Symbols entails drawing pictures or graphs representing subject matter on the blackboard. By using words as well as drawings and graphs, a wider range of students can be reached. This strategy requires that part of the material being learned be drawn. For example, drawing roots under root words or a symbol for water beside the name of a lake. The drawings need not be perfect, and this will

serve as an example for students who are shy about their own drawing skills. Idea Sketching entails the use of drawings to help the development of ideas as well as help students visually express their understanding of subject matter. This strategy involves asking students to draw main ideas and core concepts that are being taught. The emphasis is on using sketches to articulate an idea and therefore neatness and realism should be put aside. This strategy can be used to gauge students' understanding, to emphasize a concept or to thoroughly explore an idea. It is important to have follow-up discussions about the relationship between the drawings and the subject matter.

In technique class, we could solicit this capacity by having a blackboard in the dance studio and occasionally draw or have students draw movements or positions that are being learned. This would give the students new learning tools to analyze movement. Once they are introduced to the concept, they can take turns drawing. A teacher can also have some graphic symbols made beforehand, to show to the students while explaining a movement or concept.

Possible teaching strategies

Graphic symbols: As described by Armstrong (1994), the teacher could draw or ask a student to draw the body (in stick form) and illustrate the forces exerted by the body and/or acting upon the body (for example in preparation for pirouette). Also, a new movement could be illustrated in a step-by-step sequence during class or the teacher could have some drawings already prepared. For example, when learning to jump one can draw a stick figure bending at the knees with the direction of force exerted going down into the floor, draw a second stick figure with knees less bent with the direction of force exerted going upwards and downwards. Finally draw a third stick figure in mid-air, legs straight with the direction of force exerted going up.

Another way of going about it would be to invest in a see-through panel, which stands vertically. A student can stand behind it as a model, and the teacher or a student can draw (with eraseable marker) either the spatial directions being learned, or the forces exerted by the body, or the inner alignment of the bones (or muscles etc.). It could also be used to present 'correct' concepts vs. 'incorrect' concepts. It would be a powerful visual aid and an

effective way to strengthen this capacity. Finally, it is imperative to mention movement notation, and motif writings, which are graphic representation of movement. If a teacher is familiar with movement notation systems, some examples could be included for the students' general knowledge.

Idea sketching: As described by Armstrong (1994), this strategy could be used to solicit this capacity but it would need to include graphic representation. So there could be words used but also graphic symbols. An effective way to use this strategy would be to have a collective idea sketching session, where a concept would be discussed and key points drawn on the blackboard. The emerging information can be looked at and analyzed to find relationships.

Illustration of some strategies

- ***Graphically representing anatomical positioning, of body positions or steps.*** When studying weight transfer in first position from one foot to the other, draw a diagram on the blackboard to show the shift of bones necessary to achieve it and in which direction the shift takes place.
- ***Graphically representing forces exerted by the body or external forces exerted upon the body.*** When learning the *retiré*, ask a student to draw a stick figure in *retiré*, and to show where the centre of gravity is located.
- ***Collective idea sketching.*** Pick a relatively new movement concept for the class, for example *petits battements*, and collectively sketch out any thoughts and ideas that emerge onto the blackboard. Explore the information together looking at relationships between sketches and words, the goal being to give students an opportunity to explore this concept in depth.

4.4.1.5 Capacity 5: Perceiving accurately from different angles

Examination This capacity enables one to derive the same information from an element that is seen under different angles. That is, to be able to tell what movement a dancer is executing and in what manner, no matter at what angle the dancer is seen from. In technique class, teachers generally position themselves to give students maximum visibility of the demonstration (Lord, et al., 1995). This means that they are either facing the students while

demonstrating, so as to give a frontal view, or they face the mirror to demonstrate, while students watch the demonstration through the mirror, again getting a frontal view. Although this is probably practical for beginning students, it would be a challenge for more acquainted students to observe from a wider variety of angles. This could give students more accurate three-dimensional information.

Possible teaching strategies

Demonstrating from various angles: Based on my teaching experience, this capacity is solicited when we observe our classmates, our teacher or ourselves from different angles, especially with the goal of correcting something (placement, execution...etc.). When I consistently demonstrate from one angle when teaching and then change to another one, some students find it more challenging to transfer the visual information they receive in the new angle to their own bodies. So a simple way of strengthening this capacity would be to demonstrate exercises for the students from a variety of different angles.

Observing from various angles: Reflecting on my teaching and student experience, I notice that dancers generally observe each other and the teacher either from the front or the back because of the studio space and the way dance technique is normally taught. The teacher should encourage students to stand and observe from different parts of the room when not executing the exercises. It is important to note that if this strategy is used with beginner students, it is essential to give them one or two elements to focus on, as their observation skills are usually not yet developed (Lord, et al., 1995).

Illustration of some strategies

- ***Watching peers from different parts of the studio.*** When one group is executing an exercise, have the other group watch from a side angle, from a diagonal angle or scattered around the studio.
- ***Demonstrating exercises from various angles.*** When demonstrating an exercise, do it sideways or have the students stand around you in a circle.

- ***Finding an execution error from an unusual angle***. Demonstrate a faulty hip placement in a *grand battement* with your back facing the students. Ask the students to 'find' the error.

4.4.1.6 Capacity 6: Recognizing relationships between objects in space

Examination This capacity entails observing two different elements in space and being able to identify the relationships between them (similarities, differences and rapport with one another). In technique class it would be the relationship between two dancers. It also entails being able to identify relationships between two seemingly disparate forms. In this case it could be the relationship between dancer and space, an object or image that a student has already seen.

Possible teaching strategies

Observing two students: This capacity can be strengthened by having students observe two other students in order to find common elements and divergent ones in relation to each other or an object or image that a student has already seen. This strategy seemed effective in one class I observed. The teacher asked the students to watch two pupils demonstrate a sideways bend and to state the differences between them. Quite a few students gave feedback and so were actively involved in the process of observation.

Picturing metaphors: Giving students picture metaphors that compare and contrast a body position or movement, or asking them to find their own picture metaphors, can strengthen this capacity. It can be done by careful observation of students' movement in dance class and of general surroundings outside of dance class, while keeping in mind the goal of finding similarities and disparities.

Illustration of some strategies

- ***Peer observation.*** Have students observe two other students during exercises with the goal of finding similarities and differences. The elements observed can be general (placement) or very specific (the work of the foot during the landing of jumps).

- ***Observation of movement to find a picture metaphor***. When presenting a new step, demonstrate it several times. Have the students observe, with the goal of seeing if it reminds them of anything else they have ever seen. Don't forget to tell them that there are no wrong answers! This kind of activity could also enable students to better appreciate dance from a spectator's perspective.

4.5 BODILY-KINESTHETIC INTELLIGENCE

Identity At the core of this intelligence lies the control of one's bodily motions along with the ability to use the body to express ideas and feelings. This intelligence is also manifested by the skillful handling of objects and the ability to use one's hands to produce, handle, or transform things using fine and gross motor movements (Gardner, 1983). Another adjacent ability within this intelligence is being able to solve problems, to learn and comprehend concepts with the aid of movement. This intelligence includes specific physical skills such as coordination, balance, dexterity, strength, flexibility, and speed, as well as proprioceptive, tactile, and haptic capacities (Armstrong, 1994). Gardner (1983) states that "skill in the use of the body for functional or expressive purposes tends to go hand in hand with skill in the manipulation of objects" (p.207).

Voluntary muscular movements require continuous adjustments between intended actions and the effects actually achieved. When movements are executed, there is a constant feedback of signals and these are compared with the visual or linguistic image that directs the activity. In other words, voluntary motor activity involves subtle interactions between perceptual and motor activity (Gardner, 1983). However, in some activities, there is not enough time for perceptual or kinesthetic feedback to occur, as in the execution of preprogrammed movements. Preprogrammed movements are movements that have been worked on for so long and repeated so many times that they unfold seamlessly with only small modifications possible (Gardner, 1983). These movements are essential, for example, to the activities of athletes, musicians, typists, and dancers.

According to Gardner in dance, this intelligence is exemplified by a combination of qualities within the dance vocabulary that vary in "speed, direction, distance, intensity, spatial relations, and force", (1983, p.224). Also essential is the ability to watch, observe keenly, imitate, and re-create movement, which is central in all performing arts (Gardner, 1983).

In our society there has been a long-standing divorce between mental and physical capacities, from which has sprung the notion that reasoning is more privileged than the other. Perhaps

this low priority for physical capacities may help to explain the fact that many promising young performers and dancers become alienated from school early on (Gardner, 1983).

Characteristics The following is a synthesis of the capacities that have been associated with this intelligence by three authors (Gardner, 1983; Lazear, 1991; Armstrong, 1994). The first one is control over voluntary bodily movements, which is to voluntarily have one's body move the way we direct it to. The second capacity is using the body to express ideas and feelings, which is to use the body as a vehicle of intellectual and emotional expression. The third capacity is handling objects, which is to manipulate a material object using gross and fine motor movements. The fourth capacity is executing learning and problem-solving through movement, which is using bodily movement to learn concepts and to solve problems.

I believe that as dance educators, we might not give this intelligence too much thought because it seems that the sole purpose of technique class is to strengthen this intelligence, and perhaps we take that for granted. However, there is more to strengthening this intelligence than teaching technique. It is about students "understanding and embodying the concepts of movement and dance: space, time, force and body", according to Green Gilbert (2003, p.29). It is with understanding that students can become self-reliant and responsible for their own learning, and that is precisely why we need to give students as many tools as possible to achieve this.

4.5.1. Applications to the ballet technique class

4.5.1.1. Capacity 1: Control over voluntary bodily movements

Examination This capacity is solicited when we work on goal-oriented kinesthetic tasks. In order to be goal-oriented, a skill needs to be clearly defined by the teacher and understood by its executioner. This understanding provides awareness of the goal and with this awareness can we begin to control our voluntary bodily movements. Somatic education is based on the principle that awareness of kinesthetic sensation is what leads an individual toward bodily control. (Hanna, 1986). Hanna (1986) defined somatics as "...the field which studies the *soma*: namely the body as perceived from within by first-person perception" (p.4). The development of the body's sensorial perception creates an internal awareness that can lead

students towards voluntary movements. Hanna also stated, "Awareness is the function of isolating "new" sensory-motor phenomena in order to learn to recognize and control them" (Hanna, 1986, p.8). Because somatics educates or if needed, reeducates "underlying motor patterns and connections that pertain to all movement" (Fortin, 1995, p.254), it can help students improve their technical skills and prevent and rehabilitate injuries (Fortin, 1995). Somatics can also assist in developing the body's expressive abilities because it is about experiencing and feeling movement from a first person viewpoint (Fortin, 1995).

This capacity can be solicited when the focus of a task is to experience the kinesthetic sensation of the movement to be executed. As stated in the identity section, controlled muscular movement is an interaction between perceptual feedback and commands given to the body and so the goal of sensing movement can increase perceptual feedback and help the student to know what commands to give to their body. Long (Fortin, Long and Lord, 2002, p.170), states that "our ability to carry out intention depends on our awareness and knowledge of different ways we can achieve our goals...one of my strategies to facilitate awareness was to direct students' attention to their sensation of movement".

Another way to convey clear movement goals is to use tactile feedback that when "...skillfully and sensitively used can be a valuable aid. Gentle manipulations can sensitize students to new possibilities for self-use. Helping them to experience a more effective movement pattern can provide a clearer goal for them" (Hankin, 1986, p.37). Teachers can give tactile feedback directly by using the hands or indirectly by using props such as elastics and scarves. Another way to convey clear movement goals is by naming or showing the area of the body from which the movement is initiated. Derived from the central organizing principle of whole body connectedness, Fortin (1993 p. 96) considered body initiation as "the first step of a long chain of choices that determine the resulting overall movement ".

Another strategy employed that can potentially assist this capacity is to invite students to simultaneously copy the teacher's movements while the exercise to be executed is being shown. "This strategy might be a way of initiating a basic habit in dancers that could help them get in touch with the inner sensation of movement, or to "get a feel" for the movement

they are about to execute" (Lord, Chayer and Girard, 1993, p.176). Finally, vocalizing information during students' movement execution that relates back to a prior explanation or description of that movement can augment "...the learner's translation of that verbal comprehension into a kinesthetic understanding of movement"(Davenport, 1993,p.66)

An important factor when considering kinesthesia is the execution of movement on both sides, right and left. Often students have a stronger side, and more often than not it is the right side. This is compounded by the fact that traditionally most classes begin with the execution of movement on the right side and then the left. This actually continually strengthens the right side because they execute exercises to the right first and they also mark or learn the exercise on the right side. Puretz (1988) says that there needs to be an equal initiation and learning by both sides. A study on how dancers learn combinations of steps revealed that most students transfer movement sequences more easily from one side to the other when it is learned on the student's unpreferred side (usually left) (Puretz, 1988). Hence the kinesthetic sense of the weaker side can be strengthened by working with the "weaker" side first because more time is taken to assimilate the exercise on this side.

Repetition is an additional element that needs to be considered in relation to the control of bodily movement. In any physical discipline, repetition is essential to facilitate movements, to master them, and to preprogram them. However, as within any repetitious tasks, there is a risk of becoming "mindless". Therefore it is essential to transpierce repetition with novelty either by modifying for example the movement's quality, tempo, energy or spatial orientation, or the sequence of movement within which it is included.

One final element to keep in mind when strengthening this capacity is the use of appropriate buildups. Just as a child learns to walk before it can run, there are certain movements that need to be mastered before others, for example jumping on two feet before jumping on one foot. This can avoid needless frustration for both student and teacher and minimize the possibility of developing bad habits or "parasite" movements.

Possible teaching strategies

Hands-on Sensorial Information: Hankin (1986) mentions that sensorial information can be transferred by giving hands-on corrections to students using gentle tactile stimulation. This can also be done during partner work (Fortin, Long and Lord 2002), this assures that all students receive tactile feedback. "There is value for both partners in this exercise. The receiver has the benefit of hands-on individual attention, and the giver, while helping another to achieve a desired goal, clarifies and enriches his or her own understanding of the same goal"(Hankin, 1986, p.)

Based on my experience, we can also give students sensorial information through the use and manipulation of "sensorial props": balls, elastics, scarves, weights, belts, Popsicle sticks, glasses, earrings, feathers, loose fitting clothes, etc. These props become a concrete way of transferring sensorial information and are less invasive for students who do not take to "hands-on" corrections. Even so, a hands-on correction has the disadvantage of being short-lived. The use of sensorial props can be effective because these props provide a physical sensation over an extended period of time, which can transfer into kinesthesia and remain active even after the removal of the prop.

Sensation of Movement: Using Long's (Fortin, Long and Lord, 2002) strategy, direct students' attention to their sensation of movement by "verbally stating the learning goals in terms of a sensation to be felt during the execution of the dance sequences" (p.163).

Equal initiation of both sides: Based on my student experience and my observations, this is a simple and effective strategy. When as a student, I began initiating my training to the left side, over a few weeks I noticed an improvement in the strength and coordination of that side, which is congruent to Puretz's (1988) conclusions, as stated earlier. This strategy simply entails alternating sides by starting the entire class to the right one day and the left the following day. When keeping the same class for a few days, alternate the side on which the new class is learned.

Repetition vs. Novelty: This strategy simply entails integrating enough novelty in a series of classes to keep execution of the steps mindful. For the beginner's level, much repetition is necessary, but as the student progresses, more novelty is necessary.

Using appropriate buildups: Based on my teaching experience, this strategy entails the teacher always building up the steps in the class and not skipping over essential building blocks. Common sense tells us that it is essential to learn how to walk before learning how to run. In the same way learning technique needs to be systematic and taken one step at a time. There exist entire books describing the buildup of technique (such as Gretchen Ward Warren's (1989) Classical Ballet Technique)

Illustration of some strategies

- ***Hands-on sensorial information***. In order for students to feel the connection of both legs at the upper insertion point of the hamstrings, have them wear a dance belt around the top of the thighs and right under the seat muscles during as many exercises as possible during one class or a series of classes.
- ***Hands-on sensorial information***. When working on *retirés* each student finds a partner. One student lies on their back while the other slowly and gently bends the other's leg at the knee and brings it into *retiré* position. The receiver experiences the opening of the leg in the hip socket and a *retiré* without their own muscular effort and the giver will perhaps understand something or gain clarity about the execution of the their own *retiré.*(Some resistance might also be applied by the giver to enhance the movement sensation)
- ***Novelty vs. repetition***. When repeating *fondus,* the same exercise can be executed at different tempos, at different ratios of counts in and out, within the context of an *adage*, or combined with another movement such as *demi rond de jambe en l'air.* When asked if he repeated movements in ongoing classes Clay Taliaferro, a Limon dancer and teacher said "Yes, but I try to repeat using different space, using different focuses, and using different rhythms very often" (Schlaich and Dupont, 1993, p.17). This also applies to a set *barre* versus a changing *barre*. There has to be enough

repetition in order to master movements and enough novelty to keep mindfulness and the possibility of making modifications during the execution.

4.5.1.2 Capacity 2: Using the body to express ideas and feelings

Examination In its most basic form, this capacity is used when students execute a movement in response to the enunciation of the technical term associated with it. This capacity is solicited when we work on communicating an idea or feeling with our bodies. It encompasses emotions, physical sensations, concepts, ideas, and actual steps. It is greatly solicited within improvisation and composition classes, yet also exists within the technique class. It can be as precise as "caressing" the floor with the foot or as general as "singing" a song with the body. It is often solicited by teacher vocalizations such as "lengthen your spine" (in order to solicit postural muscles of the torso), "hold your body still, quiet" (in order to reduce muscular effort or tension) and "pretend there are no lights in the classroom, and you must make yourselves glow to be seen" (in order to encourage expressive abilities and movement intention).

Body Answers is an academic teaching strategy (Armstrong 1994) that entails asking students to use their bodies to respond to instruction. The classical example is to lift an arm when one has a question. The way students use their bodies to respond to instruction can vary: they can smile, frown, blink, and hold up fingers, a few to symbolize a little understanding and all five for full understanding. It is present in technique class when students respond to various terms, concepts and ideas verbalized by the teacher with their bodies. In order to strengthen this intelligence, students mmight be supplied with and encouraged to come up with concepts, images, and thoughts to embody, and of course, the opportunities to practice them. This is another way that a conceptual approach to teaching is effective, as it supplies students with such essential information.

One of the biggest challenges facing students within this capacity is to embody two very different sensations or feelings simultaneously. A basic example is during *petit allegro*, the lower body must be quick, compact, and quite excited, whereas the upper body must remain

sustained, relaxed, and fluid. Preparatory exercises could be effective in helping students to assimilate these sensations with greater ease.

Possible teaching strategies

Body Answers: This is a very basic adaptation of Armstrong's (1994) strategy. The teacher simply gives the term of a step and the students execute it. A more complex form of this strategy would be students responding to the teacher's vocalizations such as "reach out with your toes to the person in front of you" during a *tendu* front at the *barre*.

Illustration of Movement Concepts: Based on my teaching experience, this strategy would entail introducing any movement concept as defined by Laban, for example a quality of movement or any technical term such as *fondu*. The teacher then asks students to physically illustrate it with their entire bodies, before incorporating it into a movement or before presenting the new step. When I ask students to define what *fondu* means they tell me "to melt". I then proceed to ask them, "give me an example of something that melts". Often they mention snow. And simply with this image their execution of a *fondu* becomes slower and offers more resistance.

Using objects or props to represent concepts or ideas: Based on my teaching experience, the teacher can use a variety of objects or props to illustrate a concept or idea. For example, in order to illustrate the dynamic of a jump, I bounce a ball at a quick tempo (one needs to stop the ball mid-rebound and push it back down). I then bounce the ball at a slower tempo (one needs to wait for the ball to finish its rebound and accompany it back down in order to push it again).

Executing two sensations simultaneously: Reflecting on my teaching and student experience, this strategy entails simplifying an exercise for students to be able to more easily embody two different sensations simultaneously. For example, to work on the *port de bras* quality while jumping, I give the students a series of sixteen jumps in parallel, while executing a *port de bras*.

Illustration of some strategies

- ***Body answers***. During *petit allegro* the teacher says the name of a step and as quickly as they can the students execute it. Or the teacher says a sequence of movements, gives the students a few moments to assimilate the information and then they execute the sequence.
- ***Introducing Concepts***. Bring in a piece of textured material to class such as velvet. Ask students to illustrate the texture physically. Then ask the students to embody this action with their feet during a *tendu* exercise.
- ***Using objects or props to represent concepts or ideas.*** When trying to convey the dynamic of an active *plié*, the teacher can demonstrate by using an elastic and stretching it out and in while it never reaches extreme tension or extreme looseness.
- ***Executing two sensations simultaneously***. To help assimilate opposing feelings in the body during *petit allegro* students could begin by running across the floor with quick small steps while executing a sustained and fluid *port de bras* with the upper body, or simply jumping in *1st position* while executing a sustained *port de bras*.

4.5.1.3 Capacity 3: Handling objects using gross and fine motor movements

Examination This capacity is generally not solicited in ballet technique class, but it could prove useful especially since it would help strengthen the previous two capacities (Gardner, 1983). Outside of technique class this capacity is solicited by the manipulation of objects for general purposes such as shoveling, and more precise purposes such as passing a thread through the hole of a needle. In the technique class it would be solicited when handling props such as holding ribbons in the hands during the execution of a *port de bras* in order to work on the fluidity or amplitude of the movement. It would also be solicited if a student were asked to wear long earrings and having to keep them vertical during a head movement.

Armstrong's (1994) Hands on Thinking strategy entails manipulating objects or making things by hand in order to learn. For example in mathematics, students use manipulatives to assist in calculations, and in science, students participate in lab work. In the technique class this strategy would be adapted so as students do not necessarily use hands to manipulate objects. As previously suggested it could be the head, or any part of the body that is required

for the use of a learning prop in order to reproduce a dynamic, a concept to be embodied or to understand basic alignment.

Possible teaching strategies

Hands-on thinking. Adapting Armstrong (1994), this strategy can be used by having students handle objects in class for them to feel concepts and ideas differently. This strategy includes the examples related to the manipulation of props directly related to movement execution mentioned in the examination. Also although not directly linked to movement execution, activities such as passing thread through the hole of a needle could help students understand that greater precision does not require more physical effort. Realistically this strategy requires good organization to quickly hand out objects, or ask students to bring some in, and also resourcefulness in order to use inexpensive and readily available props.

Illustration of some strategies

- ***Hands-on thinking.*** Bring in a few books to class. Ask the students to balance them on their heads. The goal is not for them to master the balancing of a book, it is for them to draw parallels between this activity and the action of balancing their bodies: to balance is to constantly move and make adjustments. After this activity, have the students execute some balances.
- ***Hands-on thinking***. Ask students to throw a baseball into the air and then to catch it, making a parallel with a *grand battement*. To begin, there is a downwards initiation, followed by an upward swing that accelerates; finally, one lets go of the ball to let it move upwards. As the ball comes downwards, its weight is absorbed by the hand which catches it on the its descent and controls it to a stop. After this activity, have the students execute some *grands battements*.

4.5.1.4 Capacity 4: Learning and problem-solving through movement

Examination This capacity is solicited when movement is used to explain and/or understand an idea or concept. In ballet technique class, it is solicited by asking students guided questions about a particular movement and having them experiment with their own bodies to answer it. It is solicited when executing one movement in order to comprehend another one,

this includes the previous capacity, the handling of objects. It is also solicited when modifying elements surrounding a movement in order to feel it differently, as when experiencing a movement under different gravitational pulls.

Armstrong's (1994) Body Maps strategy entails transforming the body into a map or reference point for specific domains of knowledge. The most common example of this strategy is using the fingers for counting. Another example would be in geography, the body could represent a map of a country, with different parts of the body symbolizing provinces or climactic areas. In technique class this same strategy would entail using movement in one part of the body to understand movement in another body part. For example caressing the floor with the hand and then transferring that sensation to the foot.

In technique classes, opportunities for problem solving can be offered via teacher's requests like for example the following one: "Find a way to make the whole exercise flow" (Fortin, Long and Lord, p.164, 2002. Long (ibid, p.164) believed that giving students such sensorial or perceptual problems to solve might deepen their "integration of sensori-motor learning...and a new sensorial meaning could be developed"

Possible teaching strategies

Body maps: A simple adaptation of Armstrong's (1994) strategy entails using movement in the arm to understand and feel movement in the leg. For example, executing a *développé* with the arm using some resistance either imaginary or from a prop and then trying to recreate a similar sensation with the leg.

Hands-on Thinking: The same as described in the previous capacity.

Modifying the gravitational pull of a movement: Based on my experience, this strategy entails having students execute a movement with a change of gravitational pull. For example, I have my students do *grand battements* lying on the floor to strengthen their abdominals and to stabilize their pelvises during the movement. Change of gravitational pull can be achieved by: doing the movement while lying down, doing a handstand, using weights, or doing the

exercises in water. This strategy is used during floor *barre*, when an entire series of ballet *barre* exercises are executed while lying on the floor.

Guided questions for movement problem-solving: Reflecting on my experience and observations, this strategy entails asking students guided questions about a movement they are executing or will be executing in order for them to find the answer (problem-solve). For example, "when you do an *assemblé*, on which leg do you first land"? In one class I observed, the teacher asked the students "On which count do you have to *plié* in order to jump up on 1"?

Illustration of some strategies

- ***Body maps***. In order for students to feel how much friction is necessary between the foot and the floor in a *tendu*, have the students execute the movement with their hand and afterwards with their feet.
- ***Changing gravitational pull***. When working on *développés*, have students execute them lying on the floor. The gravitational pull will assist students in their movement and enable them to focus on kinesthetic sensations other than the effort required to get the leg up against the gravitational pull.
- ***Changing gravitational pull***. It could be extremely useful to organize a class outside the studio, in a swimming pool. Working in water lightens the body mass and creates resistance; this in turn permits students to feel the movements differently and the sensorial information gained can be utilized in the studio.
- ***Sensorial or perceptual problem-solving.*** "Find a way to integrate a sense of flow into the sequence", or "Find a way to broaden your spatial intentions to develop greater clarity."

4.6 INTERPERSONAL INTELLIGENCE

Identity Within this intelligence lies the ability to notice and make distinctions among other individuals, particularly among their moods, temperaments, motivations, and intentions (Gardner, 1983). This intelligence includes a sensitivity to facial expressions, to the voice and to corporal gestures, an ability to differentiate between various interpersonal cues, and being able to respond effectively according to those cues in a practical way (i.e., to influence a group of people in a certain line of action) (Armstrong, 1994).

To exemplify its basic form, we have a child who can differentiate between individuals around him and who can detect their various moods. To exemplify an advanced form, we have a skilled adult able to read other individuals` motivations and desires - even hidden ones - and possibly acting upon this knowledge (Gardner, 1983).

Characteristics The following is a synthesis of the capacities that have been associated with this intelligence by three authors (Gardner, 1983; Lazear, 1991; Armstrong, 1994). The first one is effective verbal and nonverbal communication, which is communicating desired intentions verbally, with facial expressions or with the body. The second capacity is discerning others' feelings, moods, motivations, and intentions, in order to estimate the emotional and intellectual states that fuel others' behavior and actions. The third capacity is empathizing with others' perspectives, which is to put oneself in another's situation in order to better comprehend and accept it. The fourth capacity is cooperating within a group, which is to be able to work with others for the group's mutual benefit.

It is important to note that in ballet technique class, this intelligence has mainly been used by the teacher, because student interaction has not traditionally been encouraged in the majority of classes. As Green Gilbert (2003) states: "This intelligence will not be nurtured in dance classes where students stand in self-space at the *barre* and move in isolation in lines across the floor" (p.32). Working with others increases our learning potential, social interaction is an educational tool (Brandt, 1999). "Interpersonal and small-group skills- listening, shared decision-making, taking responsibility, giving and receiving feedback, and mutual

encouragement- are developed through tasks in which students work together." (Dyson, Rubin, 2003, p.48)

4.6.1. Applications to the ballet technique class

4.6.1.1 Capacity 1: Effective verbal and nonverbal communication

Examination This capacity is solicited when an individual communicates with others using words and other nonverbal cues, such as corporal gestures and facial expressions. Verbal communication occurs when students give feedback to each other about their performances and when they participate in peer teaching. Nonverbal communication is used during verbal communication: our bodies and facial expressions complement what our words are saying. Nonverbal communication is the essence of dance. Of course it is prevalent in choreographies and not as much in a technique class, but there is no reason why it cannot be integrated. After all, as teachers, our goal is to enable dancers to use their bodies as expressive instruments.

Armstrong's (1994) Peer Sharing strategy is useful to stimulate this capacity. This is perhaps the easiest of all the strategies; the teacher must simply ask students to turn to someone and share on just about any topic. It might be information just covered in class, questions about it, or what students have understood about it. Students can have a "buddy system" where they always share with the same student, or they can change partners every time. Peer sharing can evolve into peer tutoring and cross-age tutoring.

Possible teaching strategies

Peer Teaching and Sharing: Adapting Armstrong's (1994) strategy, students would separate in groups to teach each other and to give feedback to each other. Ideally students should work in the same pairs at least a few times so that they can get to know how the other communicates. Afterwards, students should be paired with students that they haven't worked with yet, to work with as many peers as possible throughout a session.

Expressing Embodied Feelings and Words: Based on my experience, nonverbal communication can be developed by presenting students with opportunities to embody their feelings in their movements and facial expressions, as described in musical and kinesthetic intelligence. But we could take this strategy further, and have students transpose words into

movement, by incorporating words into movement sequences and then saying them as they are executing the sequence. "When they realize they know the skill both in word and in deed, students feel a greater sense of ownership for the results." (Anderson, 1997, p.31)

Illustration of some strategies

- ***Peer Sharing***. Students form pairs and each is in the opposite group. Each group watches the other execute an exercise and then the pairs get together to give each other feedback.
- ***Cross-age Tutoring and Sharing***. Occasionally have two levels of students together in a class. Students pair off and during the class, they give each other feedback about each other's work.
- ***Verbally expressing a movement sequence***. Have the students work in pairs or small groups. Each student takes a turn at executing the given exercise, while verbally communicating to the others what they are doing, being as descriptive and creative as possible without using the technical terms. This will hopefully encourage them to go beyond what they already know. For example, during a *grand rond de jambe en l'air,* "reach out, circle away, stretch back".

4.6.1.2 Capacity 2: Discerning other's feelings, moods, motivations, and intentions

Examination This capacity is solicited when we carefully observe and listen to others in order to find cues about their behavior. This capacity is essential in order to communicate effectively; understanding others helps us to choose how we will communicate with them. It can be strengthened, by giving students opportunities to observe each other and to listen to each other. This capacity is solicited in technique class when students listen to each other's feedback and the teacher's feedback.

Armstrong's (1994) Simulations strategy involves students creating a simulated environment. For example, when studying a historical period, students can wear costumes from that time, turn the classroom into that setting, and act as if they lived in that time period. Simulations can consist of improvisations or be ongoing, requiring much preparation. This strategy also involves the kinesthetic, linguistic, and spatial intelligences, but is categorized under the interpersonal intelligence because it involves human interaction that provides students with a

new level of understanding. Through conversation and interaction, students can get an insider's notion of a topic. This strategy can be used in technique class for simulating moods and motivations.

Possible teaching strategies

Simulations: Adapting Armstrong's (1994) strategy would entail having students simulate moods, feelings, motivations, and intentions during peer feedback and during observation exercises. This gives students an opportunity to try and decipher others' behavior while observing them, and encourages students to enact difficult situations so that they can learn to deal with them in a safe learning environment.

Peer Observation: Reflecting on my teaching experience, when students are introduced to observation exercises, they must have specific things to look for. For example when observing jumps, I may ask the students to focus on the action of the foot upon landing. " By specifying the point on which to focus attention for each task, teachers give focus to the learning process." (Lord, Chayer and Girard, 1993, p.178). Students can be given observation exercises in which they look for the feeling or mood that motivates a student's interpretation of a movement sequence, or the student's spatial intentions. Students can also be given situations where they observe each other without necessarily requiring any feedback.
In order to observe a wider range of colleagues, students should change places at the *barre* for each class and not always be in the same group and in the same space for center work. Another simple observation exercise is to have the students execute a number of exercises at the *barre* facing each other, and during center work to have them mirror each other during some exercises.

Peer Feedback: Taking Armstrong's (1994) peer sharing further, the teacher explains that when students are giving feedback to each other, they are faced with that person's reactions, feelings, and mood, and so inevitably they try and adapt their comments to be effective. Pointing this out might bring students a greater awareness of how they interact with each other. This capacity is also strengthened when students are interacting with each other, as described in the activities under the previous capacity.

Illustration of some strategies

- ***Observing and interacting during the barre***. During a few *barre* exercises, have students work while facing each other, and encourage interaction between them, it can simply be spontaneous reactions to each other.
- ***Observing feelings, moods and intentions in others***. During a center exercise, students can interpret an exercise with a feeling, mood, or spatial intention of their choice. One group observes the other and tries to discern the other's interpretation.
- ***Simulation during peer feedback***. During a peer feedback session, ask students to simulate an emotional state (one student in each group). The students can choose their emotion. The goal of the exercise is for the person not simulating to find ways to understand and deal with her peer.

4.6.1.3 Capacity 3: Empathizing with other's perspectives

Examination This capacity is solicited when one tries to understand or to comprehend another's perspective. It can include feelings, motivations, learning process, intentions, etc. This capacity is strengthened when we try to put ourselves in the position of the other person. It can be cerebral, as in listening to someone's feedback about their experience, or more specific to technique class, it can be physical, as in trying to emulate someone else's physical actions.

Armstrong's Cooperative Groups strategy entails having students work together in small groups towards a common instructional goal. The group may work collectively on the task or divide its responsibilities. Cooperative groups are particularly useful in MI instruction because students can complement each other with their strengths. As stated by Armstrong (1994), "Cooperative groups provide students with a chance to operate as a social unit - an important prerequisite for successful functioning in real-life work environments" (p.80).

Possible teaching strategies

Cooperative Groups: As described by Armstrong (1994), students can develop this capacity by engaging in group and pair work, because this encourages students to have discussions and to try to understand each other. For the purposes of technique class, group work needs to

be relatively short and thus requires precise instruction. In order for this strategy to develop empathy in students, a goal of empathizing with their peers' perspectives should be given.

Shadowing exercises: Reflecting on my teaching experience, one way of strengthening empathy by physical means could be to have students work on shadowing each other during exercises. For example, students could pair off and one student executes a movement while the other tries to shadow it with the same intentions and/or feelings.

Illustration of some strategies

- ***Shadowing exercises***. During a set *adage* exercise, have students work in groups of two. Each student takes turns to shadow the other's movement feelings and intentions.
- ***Peer Teaching***. During pair work, while executing an exercise with a higher degree of difficulty, ask students to tell each other what difficulties they have and to suggest what they would do themselves if they were experiencing that difficulty.

4.6.1. 4 Capacity 4: Co-operating within a group

Examination This capacity is stimulated when students participate in a group activity that requires them to work together towards a common goal, such as creating an exercise. Armstrong's (1994) Cooperative Groups strategy would solicit this capacity. for example

In ballet technique class, there is a limited time factor, and thus as stated above, the activity should be concise and well directed.

Two more of Armstrong's (1994) strategies could also be useful. People Sculptures strategy entails bringing students together in order to collectively represent an idea or concept in physical form. For example, when studying bone structure, students can make a sculpture of the human skeleton, each student representing a bone. The activity can be directed by a student or the components of the sculpture can direct themselves. According to Armstrong (1994), "People sculptures raise learning out of its remote theoretical context and put it into an immediately accessible social setting" (p.80), so the material learned can become tangible and students can learn from each other.

The second, Board Games entails having students learn in an informal social setting. The students chat and socialize while learning skills and subjects. Board games can easily be made to suit whatever topic is being learned. Questions can be written down that students have to answer in order to move forward on the board. Board games can also contain activity-oriented tasks; the directions or tasks need to simply be written out on each square or card.

Possible teaching strategies

Cooperative Group: As described by Armstrong (1994), this strategy would entail separating students into small groups and giving them a problem-solving task to solve together. The tasks could be to create a movement sequence, to find solutions to an execution error, to break down a movement into smaller components, etc. This is linked with the kinesthetic problem-solving through movement strategy, but the focus here is on solving the problems together.

People Sculptures: Adapting Armstrong's (1994) strategy, students would work in groups of two and would be given a movement or idea to sculpt. The partners would take turns sculpting each other into positions or movements.

Board Games: Adapting Armstrong's (1994) strategy, board games would ideally entail movement-based goals. The board game can consist of questions about technique, or how a particular movement can be executed. Questions can be aimed at solving problems such as execution errors or composing specific exercises.

Illustration of some strategies

- ***Cooperative group***. Students separate into groups. Ask them to invent a *petit allegro enchaînement*, based on two or three steps that you give them.
- ***People sculptures.*** Students separate into groups of two. Each student takes turns sculpting the other. Directions can vary: "Sculpt your partner into *1st arabesque*, now into an *écarté* position, how about a *coupé* front?"
- ***Board games***. Take a few minutes at the end of a class to review material in the form of a board game. The students can separate into a few groups, and different questions

can be asked to each group. The game can be put away and brought out, so the entire game does not have to be played in one sitting.

4.7 INTRAPERSONAL INTELLIGENCE

Identity In its most primitive form, this intelligence enables us to distinguish between pain and pleasure, and based on this information, to involve oneself in or step away from a situation (Gardner, 1983). This intelligence refers to the capacity to accurately know oneself and to act according to that knowledge (Armstrong, 1994).

The core capacities of this intelligence involve the ability to access our own feelings and to differentiate between our own emotions, to eventually label them, and refer to them as a means to understand and guide our own behavior. This leads to knowledge of our own strengths and weaknesses. According to Gardner (1983), "At its most advanced level, intrapersonal knowledge allows one to detect and to symbolize complex and highly differentiated sets of feelings" (p.239).

When one does not comprehend one's own feelings, there is a greater chance that one will fall prey to them. And when one does not understand others' emotions, responses, and behavior, there is a greater chance that one will act inappropriately with them and "fail to secure his proper place within the larger community" (Gardner, 1983, p.254). This is where both personal intelligences interact together. Understanding ourselves can help us to understand others and vice-versa.

Characteristics The following is a synthesis of the capacities that have been associated with this intelligence by three authors (Gardner, 1983; Lazear, 1991; Armstrong, 1994). The first capacity is accessing one's own thoughts and feelings and differentiating between them, which is to recognize and identify our intellectual and emotional processes. The second capacity is modifying one's behavior according to self-knowledge, which is to make changes to our intellectual and emotional processes in order to influence how we conduct ourselves. The third capacity is expressing one's inner life, which is to make known our intellectual and emotional processes to others. The fourth capacity is thinking and reasoning towards self-actualization, which is to consciously navigate our intellectual and emotional processes in order to realize our full potential.

The degree of emotional engagement is a factor that determines our memory (Sprenger, 1999). Therefore it is favorable to include opportunities for self-reflection during each class. By including activities that strengthen the intrapersonal intelligence, we ensure students' emotional engagement (Green Gilbert, 2003). We also empower students by showing them that what they think and feel is important, and that it matters.

4.7.1 Applications to the ballet technique class

4.7.1.1 Capacity 1: Accessing one's own thoughts and feelings and differentiating between them

Examination This capacity is solicited when students have an opportunity to reflect upon and if capable, express their experience either during class or in a journal. It can consist of reflecting upon their thoughts and feelings about their learning process or that cross their minds during movement execution, their wants and needs related to technique class, and assessing their likes and dislikes about certain movements and investigating the reasons behind that.

Armstrong (1994) presents three pertinent strategies: Feeling-Toned Moments entails teachers creating moments within which students can feel a wide range of emotions. Teachers can do this by modeling emotions as they teach, by making the classroom a safe place to have feelings, and by providing experiences that evoke feelings. Personal Connections entails the teacher incorporating students' personal associations, feelings, and experiences into their instruction. This can be done by asking questions, and through statements or requests, which lead the students to make personal connections between themselves and the subject matter at hand. And finally, One-Minute Reflection Periods entails giving students "time-outs" for introspection or reflection. It gives students an opportunity to process information and to connect to it. This strategy can be used anytime during the class, but it can be particularly effective after presenting new and challenging information. Students do not need to share their thoughts, but can be invited to do so if they want.

This capacity is also solicited when students access or become aware of their kinesthetic feelings. This can happen when the teacher asks questions such as "What is your foot doing?"

"How does your leg feel?" As mentioned in the kinesthetic intelligence, somatics is about experiencing and feeling movement from a first person viewpoint (Fortin, 1995) and so can assist in developing this capacity as well.

Possible teaching strategies

Feeling-Toned Moments: As described by Armstrong (1994), it is essential for students to know that they can feel and that it is safe for them to have feelings. The teacher can create this atmosphere by allowing herself to be expressive of her feelings and giving students opportunities to have feelings and emotions and to explore them in class. When students have an opportunity to think and feel, they can then become aware of these thoughts and feelings. The teacher can mention "You are allowed to feel this way." Or " How do you feel about it?"

Personal Connections Using Armstrong's (1994) strategy, there are many items in a class that can be used as a basis for self-reflection and connecting, such as how students learn or how they feel about a movement. It is essential to prompt students to make personal connections to their work, as this gives them an opportunity to understand it and value it. "Why are we here in class today? What does dance class mean to us? How do you best learn?"

Taking the strategy further would entail students exploring what they say to themselves during movement execution. When presenting the concept for the first time, the teacher should explain that usually we have an inner dialogue that exists and that this dialogue or what we say to ourselves affects our actions. For example if a student says to herself " I am so bad at this" chances are she will feel discouraged and be less motivated to execute the exercise and so will not give it her best. The teacher can make the focus of one exercise or a series of exercises, an exploration of the thoughts that come into the minds of the students during their movement execution.

One Minute Reflection Periods: Using Armstrong's (1994) strategy, class time can be used to initiate self-reflection and general reflection, and the use of a journal can help deepen this reflection. I strongly recommend that students have their journals present in class, so they can

jot down key words to mark their personal discoveries and their responses to the teacher's prompts. Later on, they can write and reflect more fully. Over time, these journals will enable students to look back and be retrospective, which leads them to metacognition: thinking about thinking.

Illustration of some strategies

- ***Reflecting upon difficulties*** During a class, ask students to jot down what difficulties arise for them during the class. Towards the end of class, take a few minutes to assess their answers, by a show of hands and verbal discussion. Ask students to choose a minimum of one item and investigate it further by writing in their journals, the goal being to discover something about themselves.
- ***Personal Connections*** Every session or term, take the time to ask students what their expectations, wants, and needs are in relation to class. If the students know in advance that there will be such a discussion, they can have more time for reflection and be better prepared.
- ***Personal Connections*** The teacher chooses an exercise that the students are having difficulty with. Before the students execute the movements, the teacher states that the focus during the execution is to explore what they are thinking about. This could be followed by a group or pair discussion, or students can simply be invited to jot down a few words in their class journals.

4.7.1.2 Capacity 2: Modifying one's behavior according to self-knowledge

Examination This capacity is solicited when students reflect upon their behavior and have opportunities to decide to change something about it. This behavior can be towards learning, towards themselves, or towards others. In technique class, we can solicit this capacity by creating an awareness of this process and by encouraging students to explore it by setting goals and making choices to work towards those goals. Once students become aware of their thoughts, feelings and inner dialogue, as described in the previous capacity, then they can begin modifying these in order to attain certain goals.

Armstrong's (1994) Choice Time strategy consists of building in opportunities for students to make choices about their learning experiences. Making choices about learning is taking

responsibility for it. Choices can be limited or they may be open-ended. They can be informal and general such as asking if they want to continue a certain activity or not, or they can be well structured and specific, such as a learning contract with each student.

Possible teaching strategies

Goal-Setting: Anderson's (1997) strategy, goal setting can cover at least three categories in the technique class: learning behavior, behavior towards ourselves, and behavior towards others. The idea of setting goals is to create an awareness of what each student wants to accomplish, so that the students can consciously align their behavior towards their goals. "...Goal setting should be taught directly to enable learners to independently set and monitor their own improvements and achievements." (Anderson, 1997, p,33)

For learning behavior goals, it is essential for the students to know about the learning process itself. For example, if a student observes that she gets easily frustrated when attempting a new skill, perhaps she needs to know the phases one usually goes through (i.e., cognitive, associative, and autonomous (Faulkner, 1995)) before mastering a motor skill, in order for her to change the way she approaches new material. It is essential for students to have access to knowledge about the learning process itself so they can learn about themselves within this process. " The planning process should show students how mature learners methodically plot their progress and work diligently and persistently toward clearly identified goals. Goal-setting exercises should introduce students both to the methods and to the manners associated with expertise." (Anderson, 1997, p.33). It is an empowering tool and will lead students to responsible learning and productive work.

To set behavioral goals, it is important for students to have opportunities to reflect upon their behavior and actions in a constructive manner. Reproaching someone's behavior is ineffective, especially if the person does not know how this behavior is detrimental. When students change their behavior out of fear or because of punishment, this is not empowerment - it is at best temporary behavior modification. When a student makes a decision to change behavior in order to help herself, it is the beginning of personal responsibility and lasting changes.

Choice Time: Adapting Armstrong's (1994) strategy can simply entail the teacher reminding students that they have opportunities to make choices that will align them with their goals. Before an exercise, students can be given an opportunity to reflect upon their goals and then choose the behavioral pathways or strategies that will lead them towards their goals.

Illustration of some strategies

- ***Reflecting on and goal-setting for personal behavior***. During the course of a class, ask students what kind of thoughts they have about themselves, and to jot them down in their journals. The last few minutes of class, ask them to assess (for themselves) whether the majority of them are positive and supportive or negative and derogatory. Would the students say these comments to a friend? Ask the students, as a homework assignment, to reflect on whether these comments help or hinder them in class, and to set a goal for themselves about how they would like to change their inner commentary.
- ***Choice Time*** The teacher or students can choose an exercise or task that they find particularly difficult or challenging. The teacher informs students of the phases usually undertaken within the learning process (cognitive, associative and autonomous). Under the light of this new information, students are encouraged to explore the "difficult" exercise and to see if they can change their perception of the identified difficulty and how this can change their learning behavior.
- ***Goal setting.*** At the beginning of a new term, or session, have students reflect upon and write down the goals that they would like to achieve within the technique class. "Goals may range from concrete or technical to abstract." (Kassing, 1992, p. 59.) If the students share their goals with the teacher, the teacher can better assist the students in achieving them. Refer students back to their goals on a regular basis, and allow them to reassess them. Although it may be time consuming at first, this strategy provides individualized instruction (Kassing, 1992). Goal-setting enhances progress when it is short-term, realistic, performance-oriented, specific and progressive (Anderson, 1997).

4.7.1.3 Capacity 3: Expressing one's inner life

Examination This capacity is solicited when students engage in expressing externally the previous two capacities. Exploring and developing inner life does not equate expressing it. Sometimes we can clearly understand something about ourselves but we cannot necessarily express it clearly to someone else. This capacity is definitely linked with the verbal-linguistic capacity of effectively using the different functions of language, when inner life is expressed verbally. It is solicited during class, when students ask questions about their learning process or when they voice their experience or point of view about how they experience the class. Simply creating an atmosphere that allows students to express their opinions and ask questions encourages them to express their inner life. When a student states "when I lift my leg in arabesque it hurts my back", she is expressing her experience. Encouraging this kind of student feedback not only lets the students express themselves but provides valuable feedback to the teacher.

Armstrong's (1994) Feeling Toned Moments strategy can be taken further in that not only can students have emotions and feelings, but they can also work them out during the class. Of course one can also express one's inner life with body movement, images, sculpture, music and other media. In technique class, the mediums of expression tend to be limited to verbalization and body movement. But it need not stop there. When students access and begin exploring their inner life, ultimately they will be able to express it in whatever way they choose.

Possible teaching strategies

Feeling-Toned Moments: As described by Armstrong (1994), to enable students to access and express their inner life with their bodies, they must be in an environment where they feel it is safe to work according to their inner life. Students can be encouraged to "work out" their feelings in class and to use their feelings to their advantage. For example, they must know that it is all right to work sadly when they are sad, and with greater physicality when they are frustrated or angry. They can explore their inner lives through technique and use it as a way to discover something about themselves, and this will enable them to convey emotion

through movement. Another approach is to see whether working in a way opposite to what they are feeling can alter their moods.

Theatrical Intent: Based on my experience, this strategy entails having students execute a set exercise with specific intentions, feelings or moods. For example "You are having a party at your house and you are waiting for your friends" (for younger students) or "You are waiting for someone who is already half an hour late."

Journal Writing: By using the same strategy as in the linguistic intelligence, students can write out their thoughts and feelings in order to have an opportunity to work on this capacity.

Illustration of some strategies

- ***Reflecting on a feeling and expressing it physically*** Ask students to focus on how they are feeling, and to execute a movement sequence according to that feeling.
- ***Optional journal hand-ins*** Every few weeks, ask students to hand in what they feel comfortable with from their personal journals. The goal is for the students to express themselves, for the teacher to better understand her students, and perhaps to give them some feedback based on her personal experience.
- ***Student-teacher meetings*** Have occasional one on one student-teacher meetings to discuss the students' progress, to give students a chance to provide feedback about the teaching strategies used, and to give students an opportunity to express what perhaps they feel uncomfortable expressing in front of their peers. This strategy not only encourages students to express themselves but also gives the teacher feedback as to how their classes are experienced by the students.

4.7.1.4 Capacity 4: Thinking and reasoning towards self-actualization

Examination This capacity is one of the keys in making learning meaningful and enabling students to transfer their learning. It is essential in order to have some direction in life, and in achieving the goals that the students have set for themselves. This capacity is the result of the previous three capacities working together. It is solicited when students are actively engaged in their learning and are aware of their responsibility in the decisions that they make. This

capacity is directly linked with metacognition, which is the active control over the cognitive processes engaged in learning. When we plan how to approach a given learning task, monitor comprehension, and evaluate progress toward the completion of a task, we are involved in metacognition.

One way students can achieve this is by consciously directing their inner dialogue or self-talk. "Self-talk is what learners say to themselves to think about their performances and to direct their actions in response to those reflections." (Anderson, 1997, p.31). At first self-talk should be created together by teacher and students "to ensure that the self-talk accurately depicts the technical aspects of the body action, sequences the movements properly, and reflects a positive attitude" (ibid). This strategy aims at giving students greater control over their actions and as such over the outcome of how or whether they will achieve their goals.

Possible teaching strategies

Assessing and Re-evaluating Set Goals: By taking Anderson's (1997) strategy further, we can see that it is essential to lead students towards self-reflection by having them think about what it is that they want to accomplish by participating in class. Once students are capable of identifying their goals, we must supply them with tools that can help them reach their goals. To lead students on a path of thinking and reasoning towards self-actualization, the teacher must continually encourage students to re-evaluate what their goals are and to find tools to achieve these goals.

Self-Talk: Taken from Anderson's article (1997), this strategy is one such tool that will enable students to consciously move towards the goals they have set for themselves. Once students are aware of their inner dialogue during a task execution, they can begin to consciously create instructional self-talk to enhance their learning and movement execution, at first with their teacher's assistance and eventually by themselves. For example a student that discovers her self-talk is "what am I doing wrong?" can be encouraged to instead ask "what can I say to myself to keep my turnout as I rise to *demi-pointe*?".

Focus During Task Execution: Often in technique class, the teacher will give students a point or points to focus on during task execution. When the teacher feels that the students are ready they can be invited to decide for themselves what they want to focus on. "Such a strategy might be a way (a) to encourage students to take responsibility for their learning and (b) to make them feel that they share some of the power in class decision making" (Lord, Chayer and Girard 1995, p.178)

Journal Writing: As previously stated, developing an inner life requires reflection and contemplation, and an extremely useful tool for doing this is a journal. With a journal, students can record their experiences, and also look back on them to see their evolution and to make associations. (metacognition)

Fostering an Environment of Difference: Based on my experience, the teacher must foster an environment of acceptance and respect for the group and individuals, and permit students to have differing opinions from the teacher's. This can be achieved if the teacher sees each student as an individual with his or her own life experience and background, who can contribute to the class. It is also essential for the teacher to stay authentic and humble, and for the students to feel comfortable just being themselves, and to feel appreciated.

Illustration of some strategies

- ***Re-evaluating goals*** Occasionally, refer students back to the goals they have set for themselves in order to re-evaluate them and to see if they have evolved or changed. If the students have achieved some or all of their goals, it would be time to set some new ones.
- ***Journal Writing*** Continuously encourage students to bring their personal journals to class. Permit them time to jot down key words and ideas that they can elaborate on later. Encourage them to refer to their journals to follow their progress and to reflect upon their personal evolution.
- ***Self-Talk*** This strategy should be used once students have been made aware of their inner dialogue by some previous strategies (such as personal connections). With the teacher's assistance, by means of class discussion, students can find new ways to

formulate their self-talk to accurately reflect the body's technical actions, sequences of movement and a positive attitude (Anderson, 1997).

CONCLUSIONS AND DISCUSSION

This thesis has argued the need to innovate traditional dance pedagogy within the ballet technique class, where emphasis on rote learning and reproduction still prevails (Hankin, 1997). Gardner's pluralistic cognitive model, which emphasizes conceptual learning, as well as student-centered teaching and learning, has been used to suggest a broader range of pedagogical approaches within education. This thesis sought to diversify teaching strategies within the ballet technique class, by applying Gardner's theory to its teaching process.

An examination of the literature pertaining to MI Theory and its applications to academic subjects resulted in a better understanding of each intelligence's proper identity and characteristics. This was followed by an analysis of four sources of information through the framework provided by the previous step. The analysis provided a description of how each of the capacities manifest themselves, along with how and when they could be solicited within the ballet technique class. In turn, this information was used to design applications of MI Theory to the ballet technique class by describing ways of soliciting each capacity within an intelligence, in that context, and by supplying a variety of coherent teaching strategies, later illustrated through the description of learning activities.

There emerged sixty-five different strategies in total. If a strategy was only slightly modified, I did not include it in this total. These strategies include Armstrong's (1994) original and modified ones, ones based on my observations and personal teaching and learning experience, and ones inspired by other movement and dance educators that have published on this topic. When reading these strategies, some ballet teachers may recognize some or many of them because they use them themselves. Others will perhaps find some new ideas to help them modify their teaching practice. The strategies that resulted from this study offer potential ways of mobilizing and developing the capacities inherent to each intelligence. The methodology employed may be a good starting point for teachers of ballet technique who wish to examine their own teaching and who are interested in the vast variety of ways that

students learn. The analytical grid provides a framework within which teachers can examine the intelligences for themselves, and subsequently modify existing strategies or create their own.

The number of strategies presented might be overwhelming for some teachers, because how can one fit in all of the ones mentioned and still keep their students moving? Firstly, all strategies need not be used. After all, no one set of strategies will work for all students, all of the time. According to Armstrong (1994), "All children have different proclivities in the seven intelligences, so any particular strategy is likely to be highly successful with one group of students and less successful with other groups" (p.65). Because of individual differences among students, teachers should use a broad range of teaching strategies to personalize their instruction. Which strategies to use and when are decisions left to the teacher's professional judgement. In this respect, the MI approach also engenders greater teacher responsibility and accountability.

Teachers can integrate new material at whatever pace they feel is adequate for their class. Indeed, the pace and energy of a traditional technique class is definitely in contrast to one that is geared towards student-centered activities. Eventually, however, as stated by Hankin (1997), "...students quickly begin to appreciate the irony that in slowing down they move more quickly towards their technical goals. Ultimately, the well-balanced use of student-centered strategies in tandem with traditional modes enriches our students' dance education" (p.44). This combination can translate into a broader repertory of pedagogical approaches, allowing for the individualisation of instruction, which in turn, can possibly engender feasible and long-lasting learning, the gain of higher intellectual competency, learning that can be transferred to real and significant situations, and an interconnectedness of subjects. These aims are also shared by the constructivist learning model and critical pedagogical theory with their emphasis on multiple perspectives, authentic activities, and real-world learning environments (Fosnot, 1996; Ottey, 1996).

The results of this study highlight the range of possibilities available for teachers to innovate pedagogical approaches within the ballet technique class and therefore personalise their

teaching. By examining the scope of possible strategies, teachers inform and challenge themselves as well as their students. The intention was not to set a method of teaching ballet technique, but rather to make explicit the "intelligence possible" within ballet technique. The strategies described within this study do not cover the immense scope of possibilities that are present for innovation, but merely exemplify the variety of ways that teachers can present information within the ballet technique class, in order to individualise their instruction.

While this study may have a minimal impact within general education, it nevertheless invites educational researchers and practitioners to see that the teaching of dance might be far reaching. Perhaps the type of research presented can help explain in greater depth just how dance technique, and therefore creative dance and dance education, can contribute to the full development of intelligence. This in turn may give more weight to formal and extracurricular dance classes, and dance programs within the general education system.

Within dance education, this study can serve as a model to examine in greater depth how the intelligences are mobilized and developed within other body techniques, including somatics, and perhaps even the entire dance curriculum within a program. But more specifically, this study might provide teachers of ballet technique with an opportunity to see the material they are teaching from a different viewpoint. Teaching through the lens of MI Theory requires a fundamental shift in perspectives to better understand the educational value that ballet technique class can offer. It means stepping away from older authoritarian models, in which learning by rote prevails. Teaching through MI Theory means individualising instruction and encouraging students to develop their own ideas and to find their own solutions to problems. Students who discover things for themselves are involved in meaningful learning. According to Hankin (1997), "This is learning that is characterized by a quality of absorption that facilitates deeper insight into the material being learned. It is learning that is not easily forgotten" (p.36). The range of teaching strategies developed through this study, could enable teachers to offer their students much more than body technique. Instead of reproducing steps from, and trying to mould their bodies to the ballet technique, students may have a chance to discover their bodies *and* their minds through it. This way of teaching could also provide opportunities to interrelate concepts and processes with other aspects of the students' lives. It

could enable teachers to awaken and stimulate inquiry, imaginative thinking, and discovery within their students.

Presenting information through the facets of MI Theory offers a conceptual approach to teaching, and students do learn more meaningfully through a conceptual approach rather than through the rote approach. Brain researcher and Nobel Prize winner Roger Sperry contends that when both hemispheres are actively engaged in a process, learning and retention increase. When dance students are taught conceptually they are analyzing movement while executing it, using both sides of the brain simultaneously (Green Gilbert, 1992a).

As dance educators, within or outside the public education system, our responsibility extends beyond simply training bodies. By stimulating and developing the multiple intelligences, by means of teaching conceptually and through student-centered activities, we are facilitating students' growth. We can encourage them to discover their own physical and emotional relationship to movement - enabling them to comprehend its potential as a language of expression. We can provide them with opportunities to experiment with movement by creating their own vocabulary as well as learning the teacher's. We can help students comprehend dance concepts as they relate to dance "steps". But most importantly, we are actively involving students in their learning. They may learn to take risks and to think independently of the teacher and these qualities will not only serve them as dancers and creators, but as human beings.

Teaching ballet technique class through the lens of MI Theory offers students the possibility of realizing a greater intellectual potential than is possible within traditional approaches. Resistance to pedagogical innovation, and staying "put" in tradition is detrimental to all present and future students. Neglecting the possible development of intelligence through dance might in fact stem from an aversion to demystification. As argued by Warburton (2003), "The myth of two minds, of divine inspiration, of unquestioning disciple, all serve to reserve knowledge and power in the hands of dance authorities" (p.14). This is congruent with authoritarian teaching. In this model of teaching, the teacher is perceived as the all-knowing authority and the student must sponge up and absorb as much of the teacher's

knowledge as possible, without ever questioning anything. While some students may make personal discoveries along the way by imitating the teacher, the traditional technique class has not been designed to maximize the process of self-discovery (Hankin, 1997).

The possibility of personalizing instruction through MI theory could help maximize students' self-discovery by offering a wider array of approaches than the traditional technique class. Warburton (2003) states that "...theories of human behaviour and cognition, such as Gardner's MI Theory, have traditionally predicted, synthesized, and inspired empirical and creative work. Such theories provide direction, enriching the imagination and understanding of human potential" (p.14). What must be found is a balance, a partnership between traditional training methods and innovation. A slavish devotion to tradition is ignorant at best. The ideal is a respect for tradition by its thoughtful use and adaptation to an ever-changing reality (Atwood, 1998).

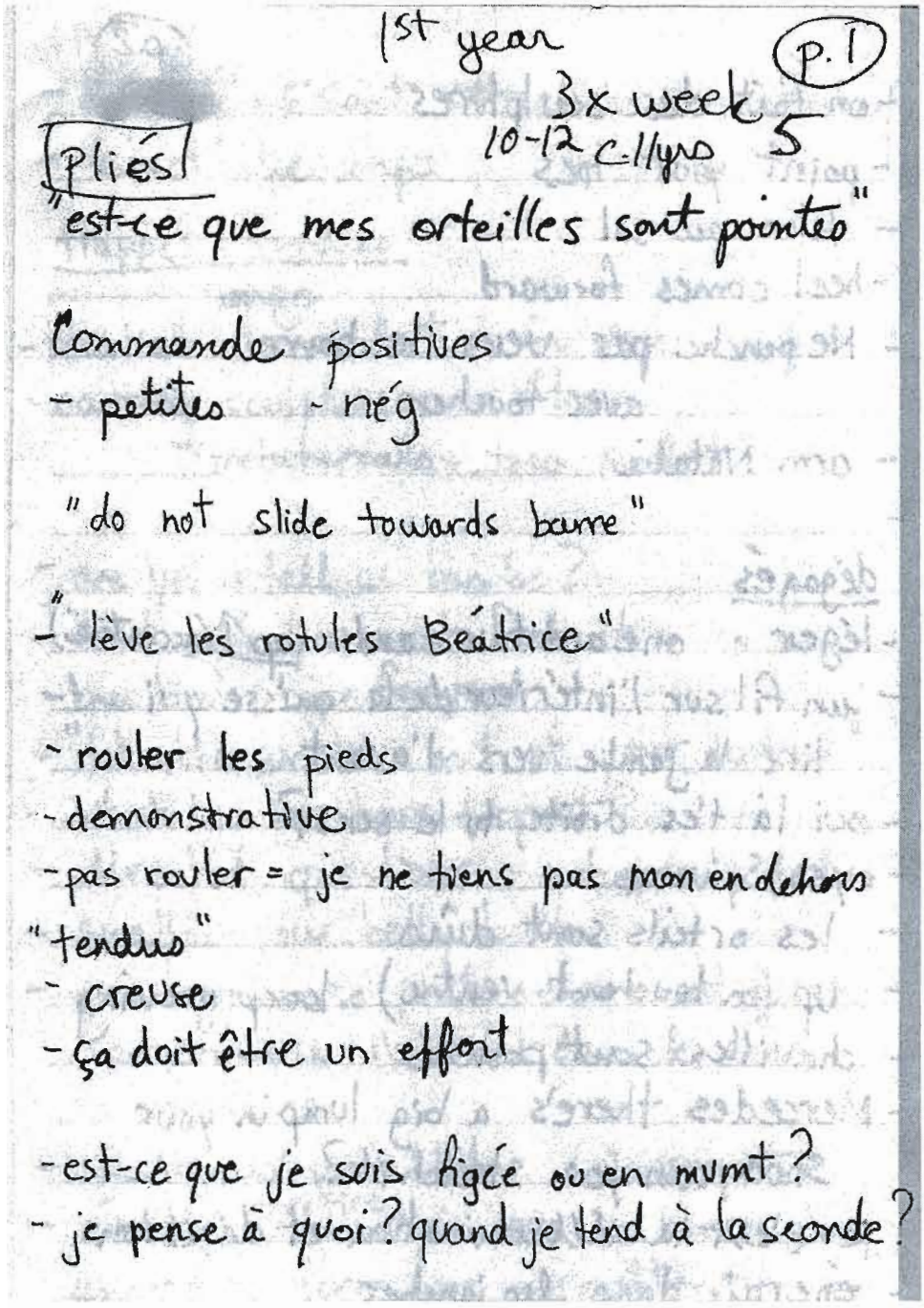
Another point of consideration is that the degree of impact that a MI approach can have within ballet technique class ultimately rests upon the quality of the teacher. The more general knowledge a teacher has in adjacent arts disciplines such as the liberal arts, sciences, and humanities, the more effectively the teacher can relate the ballet technique class to other aspects of students' education and experience, and hence make it more meaningful for them. It is essential for a teacher to thoroughly examine and investigate her practices and to see where improvements can be made and what further adaptations are required. But generally, effective teachers are ones that do question their strategies and continually innovate and adapt them. Many teachers are aware of their great responsibility towards their students and educate them to the best of their abilities.

In retrospect, the methodology used to design the applications of MI Theory to the ballet technique class, was appropriate because it is open-ended, that is, the results are not definitive or exhaustive. This way, teachers might use this thesis to deepen their understanding of MI Theory and how it relates to the ballet technique class, and go on to modify the suggested strategies and to develop their own. The current study could be elaborated further by incorporating some field research. By observing a larger number of ballet teachers in the

classroom, it would be possible to survey teaching strategies that are used, and to examine which ones could possibly stimulate and develop each intelligence. These observations could render the description of teaching strategies and the illustration of activities more complete, as it would include many more teachers' experiences, instead of relying solely on the information gathered in this thesis and the author's experience.

In order to improve upon this type of work, current research in dance education needs to develop a stronger foundation in the areas of pedagogy and methodology based on newer cognitive theories, and the dance-specific teaching and learning styles within them. This research would provide much needed resources for teachers who want to educate and develop themselves within their profession. With Gardner's model, this would entail teachers and researchers initiating informed inquiry about current strategies used within the ballet technique class, and examining the results obtained from the implementation of MI teaching strategies. This thesis could supply a beginning for this kind of undertaking.

ANNEX A
EXAMPLE OF OBSERVATION NOTES
FROM ONE CLASS



1st year (p.1)
3x week
10-12 c.11yrs 5

pliés
"est-ce que mes orteilles sont pointés"

Commande positives
- petites - nég

"do not slide towards barre"

- "lève les rotules Béatrice"

- rouler les pieds
- demonstrative
- pas rouler = je ne tiens pas mon en dehors
"tendus"
- creuse
- ça doit être un effort

- est-ce que je suis figée ou en mvmt?
- je pense à quoi? quand je tend à la seconde?

p.2

- on fait des sculptures
- point your toes
- talon au sol
- heel comes forward
- Ne penche pas vers la barre avec toucher
- arm Natalie
-

dégagés

- léger - one and two and up ↑ (accentué)
- un fil sur l'intérieur de la cuisse qui tire la jambe vers l'avant
- oui là t'es droite, tu le sens?
- eyes Sylvana
- les orteils sont durs
- up (en touchant ventre) keep growing
- chevilles sont pointés
- Mercedes there's a big lump in your shoe, can you stretch it?
- je - c'est la détermination et décision
- énergie dans les jambes
- lance les jambes

(P.3)

+ les côtes sont attachées au nombril
- kinesthetic info

frappés + fondus

tango

- musical demonstration in voice
- carving sculptures in floor
  "metatarsals + tres sculpt"

- are you as tall as can be?
- don't look, you must feel it
- knee back, hips forward
- "take the wrinkles out of your leotard"
- which leg has more turnout?
- directed questions - not open ended.
- swallow your belly button
- pas trop croisé, talon en avant, genou en arrière ils vont dans le sens contraire
- 2 lignes parallèles (placement)
- équilibré en retire penché vers la barre → quand tu feras une pirouette tu seras en désiquilibre conséquence - contruire un mvmt

P.4

- put your fingers on hips, both hips are level

Rondo de jambe

- bourré d'infos kinesthésiques
  - un scan du corps
- passer par tous les coins dans le rond de corps
- élasticité (dans les bras) avant de fermer
- bassins enlignés, nombrils
- talk to your leg - it won't listen to me
- "genoux collés ensemble"
- weight on your toes
- arms / chest
- stretch your supporting legs
- squeeze your bum

(p.5)

Fondus Démo

- Musicality in voice 3e arabesque
- information instructions - images
questions Geron sur une tablette

- did you have a chat w. your knee?

- sternum up
- "stretch one more inch"
- "being present in the moment is the performing"
- there are no lights in the class and you must make it glow
- étirement
- c'est quoi qui dirige la jambe ou le dos?
- backs long
- don't lean back when you plié
- comédie "you look like a wet noodle"
- la tête sur les chevilles, pas sur les genoux
- "touch Beatrice w. your toes"

(p.6)

Gr. Battements

- is your tummy held before you close 5th
- la tension dans le cou et dans le visage

Centre

- questions?
- "hold your arms"
- hold your body still, quiet
-

pirouettes sur Mazurka

je veux voir

- seconde, devant
- croisé, what was the other pst called?

Structure of the exercise

jumps for chant - during an exercise

- épaules sont en bas
- kneecaps belong to your thighs

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