Child Development and Arts Education:

A review of Current Research and Best Practices

CollegeBoard

Prepared by the College Board for the National Coalition for Core Arts Standards January, 2012

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Executive Summary

Introduction

In recent years, there has been great interest among educators in the links between arts-based learning and human development. Research initiatives of the past decade have linked arts participation to cognitive growth and academic skills, including the strengthening of long-term memory and reading ability (Gazzaniga et al., 2008), creative thinking skills, and writing fluency (Deasy et al., 2002). Arts participation has additionally been linked to positive social outcomes, including overall engagement in school (Deasy et al., 2002), increased graduation rates (Israel, 2009), and increased community engagement and pro-social activities (Catterall, 2009). In an effort to strengthen research efforts linking arts to overall health and well-being across the lifespan, the National Endowment for the Arts established an interagency task force on the arts and human development in the fall of 2011 (Hanna et al., 2011), ensuring that such research continues to inform and strengthen arts educational practice nationwide.

Although the body of research is growing that links arts participation to ever-widening developmental gains, there appear to be fewer resources available that explain the ways in which the latest research in cognitive, social, and emotional development in children and young adults may inform the instructional practices of arts educators. The following series of literature reviews aims to address the need for this particular type of information, linking current developmental research with recommended best practices for educators of dance, music, theatre, and visual arts students from grades PreK-14.

More specifically, this report is additionally intended as a resource document in the revision of the National Standards for Arts Education, ensuring that these forthcoming goals and benchmarks for learning in the arts will be developmentally appropriate and aligned with current knowledge in the field.

Structure

This report is divided into a series of four literature reviews, addressing the disciplines of dance, music, theatre, and visual art. The reviews are further divided by grade band. Within each grade band, information on both general and discipline-specific developmental characteristics of students are offered, as well as a series of recommendations of specific pedagogical practices that address social, emotional, and/or cognitive needs and abilities of students of that particular discipline and grade band.

Summary of Research and Recommendations

Naturally, researchers in each discipline did not have an equal pool of resources to draw upon; the amounts of information available on child development and the arts varies greatly by discipline, as well as by grade band. Nevertheless, the following reviews aim to present the most complete picture possible as to the currently accepted best practices in arts education as they relate to research on child development.

The following summary highlights the key findings associated with the research in each grade band; more comprehensive information can be found in the individual reviews.

Early Childhood

There is a wealth of information available on all aspects of development related to this age level. It is widely accepted that arts experiences bolster development in multiple areas, and arts-based explorations are often seamlessly integrated into educational experiences for preschool and early elementary learners. In early

childhood, arts experiences present students with a primary means of communicating their understandings of themselves and their world.

Physical

Early childhood learners are mastering gross motor skills, but fine motor coordination (including skills like writing) are still a bit beyond their grasp. Students of this age level are whole-body learners who need to learn through active exploration, involving lots of physical activity. The recommendations for instruction at this level focused on this fact of limited motor ability as a primary concern. Dance instruction at this level typically involves high energy movement, an introduction to basic dance skills, focuses on gross motor skills including balance and coordination. At later stages, students can begin to invent their own movements. Drawing, painting, and other art-making at this age should be viewed as a record of what is primarily a kinesthetic experience, as students explore the marks they can make with art materials. Arts educators are advised to focus on using tools that students can easily operate with limited motor ability, including large paintbrushes and crayons that are easy to grip, and basic musical instruments that students can manipulate themselves.

Cognitive

The research in all disciplines indicates that early childhood learners have very short attention spans and need routines involving a variety of activities to sustain their interest. They are striving to understand the world around them and need experiences that allow for learning through exploration and discovery. This balance of a structured classroom environment that also allows for open-ended, exploratory work was emphasized in the literature related to instruction in all four arts disciplines. Dance instruction for this age should include repetition of basic concepts, but still allow freedom for students to invent their own movements; similarly, music instruction may allow for guided as well as unguided "improvisational" work, as spontaneous music making (inventing songs, etc.) is typical of students at this age. Theatre instruction may involve structured call-and-response activities as well as time for less-structured fantasy play, and art experiences should emphasize exploration and creative manipulation of materials, as opposed to more structured assignments with a goal or subject dictated to students by the teacher.

Social/Emotional

In the earliest stages of this age range, parents and teachers are often the most important individuals in a student's life, but by ages 5-7, friendships within students' own peer group gain increasing social importance as well. Learners at this stage are very social and talkative, and arts experiences are often primarily social experiences. In the visual arts, students are often very interested in "re-telling" pictorial accounts to peers and adults, especially as their images become more representational. Students are beginning to explore the relationship between themselves and the world around them, and may begin working in small groups or participating in full-class activities in theatre or dance instruction, fostering their cooperative skills and communication abilities.

Elementary

In the elementary grades, students will begin to rely more on verbal means of communication. Arts-based experiences are becoming somewhat decentralized as primary means of understanding and relating to the world around them, and communicating their ideas.

Physical

The literature reviews indicate that as fine motor coordination increases, elementary-aged students may be increasingly interested in precision and technique in their artistic endeavors. Dance instruction may introduce more sophisticated techniques, involving diagonals, curves, twists, and asymmetry, while music instruction can take advantage of students' improving vocal accuracy. Elementary students may use a

broader range of visual art tools, including finer pencils and paintbrushes, which make use of their fully developing fine motor coordination.

Cognitive

As students' understandings of the world around them become increasingly more complex and their intellectual curiosity widens, the research indicates that arts assignments can become increasingly sophisticated, perhaps overlapping into other subject areas. Students are eager and able to refine skills: recommended music practices include introducing practice strategies involving repetition and mastery of skills, and possibly the inclusion of computer software that allows students to further hone their skills. Theatre-based instruction can enhance students' understanding of story structure, cause and effect, and ability to write creatively and with detail. Recommendations for several disciplines involved the use of reflection and critical thinking activities into arts instruction; for example, visual art teachers are encouraged to conduct guided conversations about selected works of art with students, using strategies meant to increase their observation and critical thinking skills. Interestingly, the research also reinforces the value of open-ended exploration and improvisational play; although student assignments may be increasingly structured, classroom instruction should allow for student improvisation, or exploration with materials and processes.

Social/Emotional

The research indicates that elementary students have a deepening interest in their own role in relation to the world, and have an increasing sense of independence. At this age level, friendships take on an increasingly important role in their lives. The reviews of recommended best practices in arts instruction reflect an understanding of the importance of social bonds to elementary students: it is recommended that dance practices include collaborative activities in duets, trios, and small groups, and group theatre activities can enhance social and emotional skills including conflict resolution and empathy.

At the same time, levels of students' confidence in their creative abilities often begin to decrease at this age level. The literature related to music instruction recommends the introduction of a variety of practice strategies for instrumental music, to strengthen students' technical skills and confidence; and the dance and theatre reviews stress the importance of educators creating a space where students can feel free to express themselves and experiment with new ideas.

Middle School

The research available that relates arts instruction to development of middle school learners places a much greater emphasis on social/emotional development than any other aspect of growth. It is important to note that this is a stage where required arts instruction in K-12 schools often comes to an end, and students will be making decisions as to whether they wish to continue with arts-based learning in the future.

If students have been studying the arts consistently throughout elementary school, they may now be at a point of refining and perfecting basic concepts and being introduced to more specialized techniques. For example, the recommendations in the literature review for dance advise educators to introduce lengthier and more complex movement phrases, as well as practice and master basic techniques in specific modes of dance, including ballet and jazz.

Cognitive

Middle school students are still primarily concrete thinkers. Research in all four arts disciplines indicates that they are capable of learning increasingly more sophisticated artistic techniques, and can also return to more basic concepts in the context of an expanded understanding of a discipline. Students of this age are more interested than ever in precision and accuracy in their work – in realism when drawing, or in precision while singing or playing instruments.

Students of this age are intellectually curious as well, and can be interested in a wide range of topics. In addition to recommending classroom practices that may refine technical skills, the research presented in the literature reviews emphasized the importance of using the arts as a way of investigating ideas of interest to students. Educators may teach theatre concepts that stimulate intellectual curiosity, for example, or organize thematically linked visual art projects that encourage students to explore ideas of personal significance.

Social/Emotional

Middle school students are increasingly self-focused, and the arts can provide an outlet for them to explore ideas and themes of personal significance. The recommendations of arts-based best practices addressing this need are especially rich, and emphasize the range of ways that arts experiences can speak directly to students' social and emotional needs during these years. For example, dance educators are encouraged to have students create their own dances with peers, while the music literature review recommends that middle school students may be ready to compose their own original music. Theatre-centered activities can allow students to evaluate their own ideas, needs, and beliefs in relation to others. In visual arts courses, the opportunity for individual choice-making is emphasized in the recommendations; students must feel that their work represents their own original point of view.

The importance of a students' personal investment in arts experiences is examined from another angle as well: the music research indicates that by middle school, many students' preferences in music narrow, and they increasingly see a disconnect between the "real music" that they are interested in and "school music" that they perform in their music classes. This disconnect may point to a need for a widening of options for types of music that students may study in school.

High School and College

Research on child development at the high school and college level is less abundant than it is for the earlier grades; additionally, the recommendations of arts-based practices assume a certain level of experience on the part of students.

Cognitive

The research on cognitive development at this level focuses to a large extent on students' abilities to think critically about their own work and the work of others, make informed and deliberate decisions in their work, and to draw connections between disparate ideas or areas of study.

From an artistic standpoint, cognitive development plays a significant role in students' ability to articulate their own unique point of view in their creative pursuits. The recommendations for dance educators point to the importance of viewing and analyzing dance performances regularly, and making connections between dance and other disciplines. The music literature review recommends encouraging students to compare their work to an ideal, or professional model, and to compose their own original works whenever possible. Theatre students should be given understanding of, and the opportunity to participate in, decision-making processes at every level of theatre production. Visual arts researchers identified eight "studio habits of

mind" that high school art students engage in while creating and responding to artwork. These skills include *envisioning*, *engaging and persisting*, and *developing craft*, among others, and similar language was echoed in the literature reviews of other disciplines.

On the whole, the cognitive skills addressed at the high school and college levels are connected to students' abilities to "put it all together" – to refine their technical skill, create work with an original point of view, and understand their work and the work of others within broader contexts.

Social/Emotional

The research on social and emotional development related to secondary and postsecondary arts learning is unified in expressing the importance of creating *authentic* arts learning experiences for students. Learners of this level need to be able to choose areas of specialization, develop their own point of view, and feel that they are a part of a community of artists. Specifically, dance recommendations included the need for students to initiate, plan, and produce works independently, while developing their own aesthetic. The music research emphasized the social importance of choirs and other music ensembles, and the importance of this group identity in contributing to one's own self-identity as an artist. Theatre recommendations included the importance of moving productions beyond the classroom when possible, to larger public venues, and the recommendations for both theatre and visual art stress the need for arts experiences to address issues that are personally relevant to students.

A chart detailing the recommendations specific to each arts discipline can be found on the following pages.

Conclusions/Discussion

Throughout all disciplines and grade bands, the research found a continued, pronounced emphasis on the value of the arts in helping students to make sense of their world, make connections between disparate ideas, and make connections between the self and others. This social and emotional value of arts experiences is emphasized in every discipline at every level, whereas concrete links to specific aspects of cognitive development appear to vary somewhat between disciplines and grade bands.

The research also presents an interesting overall balance between the importance of structure and experimentation, and recommendations throughout this report emphasize the importance of learning tools and techniques and aspiring toward ever more sophisticated practice, while simultaneously encouraging experimentation and risk-taking in developing one's own personal voice.

Although certain disciplines had more research to draw on in the creation of these literature reviews, it is interesting to note that this doesn't necessarily correlate with a richer store of recommendations for arts educators. The music literature review, for example, places a much greater emphasis on the acquisition of technical skill, whereas the recommendations for dance, theatre, and visual art offer a wider range of expected outcomes of arts practice and related instructional strategies.

Given the levels of similarity between recommendations associated with different arts disciplines, it would make sense for practitioners in any area to look at the examples of the recommendations in other disciplines for cues that might inform their own practice.

Overview of Recommended Pedagogical Approaches

	Dance	Music	Theatre	Visual Arts
Early Childhood	• Dance classes should include high energy movements, as well as repetitive movement phrases and patterns that include stillness. • Create opportunities for social development by encouraging expression of feelings in movement explorations including imagery, stories, sounds, words, and games that build articulation and confidence by making connections with peers. • Introduce and repeat basic dance skills including gross and fine motor skills. • While most activities at this level are full-class, students can begin partner dances. • Very short solo explorations may begin.	• Play music of various styles with students. • Use instruments they can manipulate themselves, in guided and unguided "improvisational" ways. • Teach songs that fall comfortably within students' vocal range. • Body movements are effective in teaching songs, especially hand gestures indicating pitch and other characteristics of the music. • The strongest foundation for music literacy is a music education that includes singing, dancing, playing by ear, and inventing ways to represent familiar and original songs. • Potential for technology-based music instruction, including a computer-based program called the *Continuator*.	*The following recommendations apply to Pre-K through elementary:* • Leverage theatre tools to help children explore and understand the world around them. • Expand students' literacy capacities through active participation in representational play. • Foster activities that engage students in imaginative play and increase their understanding of self in relation to others and their surroundings. • Provide authentic theatre activities and experiences that help young people value artistic processes. • Early childhood learners: Even when they volunteer, children at this age should not be asked to perform spontaneously in front of the class or an audience. Performances at this age should be in intimate, safe spaces, for small audiences only. • In upper elementary grades, students need to practice and rehearse, to focus and stay in character in improvisational performances. • By the end of elementary school, students are developing inhibitions; may be self-conscious and uncomfortable on stage.	• Provide a range of materials; expose students to new materials routinely. • Offer a visually and spatially rich environment in which students can interact with materials. • Look at art with students in addition to making art. • Adults should not insist on "decoding" images in terms of the presence of things and objects. At early stages, drawings are often not meant to be representational, but rather are records of movement. • Young students can use sketchbooks. "[V]oluntary drawings offer children a form of engagement in art-making which is different from that which they experience in lessons initiated by the teacher." • Offer multiple activities simultaneously, so students can move from one to another if their attention for the first exploration begins to wane. • Design experiences for children that are focused on the exploration and creative manipulation of materials. These explorations do not always need to be geared toward the creation of a finished product.

	Dance	Music	Theatre	Visual Arts
Elementary	• Expand upon the concepts and elements learned in early childhood and deepen movement awareness through explorations that include diagonals, curves and twists, moving into asymmetry. • Students of this age should be able to execute isolated as well as coordinated dance movements, maintaining alignment and balance, as well as more complex and contrasting body movement patterns. • Teach through repetitions to increase strength and coordination. • Facilitate kinesthetic explorations that require improvisation of movement phases. • Both genders should be given the same range of activities at this level to avoid stereotyping. • Performance considerations that are appropriate for this level are collaborative activities in duets, trios, and small groups that strengthen emotional and social awareness and foster confidence.	• Select singing material of a comfortable range for students, and of subject matter that appeals to them. • Include student participation in accompaniment with instruments and add kinesthetic movements. • Bridge the gap between what children perceive as "real music" and "school music." • For instrumental study: begin to develop practice strategies that work to build skills and confidence. • Use aural models: YouTube is a good source for finding music performances for music students of all ages. • Use computer programs that allow students to hone their musical skills, including interval recognition, study of scales and chords, rhythm practice, knowledge of terms, recognition of styles, etc. • Allow for spontaneous play with instruments, which develop into exploration and risk-taking.	*See recommendations above, which apply to early childhood through elementary-age instruction.*	• Broaden use of materials to include those that require more fine-motor coordination. • Involve art history, aesthetics and criticism into art classes. Strategies might include the creation of personal "art collections " of postcards, visiting museums and holding guided conversations about works of art with students. • Integrate art into the regular classroom so students can learn in context. Encourage real world and cross-disciplinary connections. • Students of this age are interested in and are able to do drawing from observation. • Promote imagination and critical reflection. Do not assume that exposure to materials is enough.

	Dance	Music	Theatre	Visual Arts
Middle School	• Middle school students are able to return to many concepts of elements learned in early childhood and elementary dance classes, yet approach them with an expanded perception of dance. • Importance of creating a supporting, challenging, yet nonjudgmental environment for this stage. • Introduce, practice, and master basic techniques in ballet, modern, jazz, etc. • Challenge students to create their own dances with peers. • Address more lengthy and complex movement phrases that include rhythmic and muscular understanding. • Include time for composition and choreography to incorporate social and emotional challenges. • Channel students' risk-taking proclivity into aesthetic exercises that provide students experiences in balancing, jumping, turning, and stillness.	• Prioritize healthy, accurate singing. • Promote skills that students use also in instrumental studies. • Students (especially boys) may have negative attitudes toward choral singing at this age, so broaden the range of opportunities offered to them, including smaller groups or musical theater. • Structure instrumental practice in ways other than simple repetition. • Allow students to choose some of their own repertoire in order to increase motivation. • Add vernacular music to programs for middle school students. • Students thrive musically and emotionally when given the opportunity to write original music. Technology may be useful in this effort. • Technology may also assist in teaching music theory at this level, such as rhythm reading skills.	*The following recommendations apply to middle school, high school, and college:* • Provide students with access to knowledge through theatre tools and texts. • Offer students theatre-centered opportunities to analyze and evaluate their own needs and beliefs in relation to others – including worldviews, as well as the views and beliefs of family, peers, and community members who surround them. • Teach theatre concepts and skills that stimulate intellectual curiosity and encourage active engagement and creative play. • Design opportunities for creative collaboration that mirror authentic processes that occur in theatre practice.	*The following recommendations apply to middle school, high school and college:* • Provide students choices: ○ The opportunity to make choices encourages risk-taking, persistence and time management. • Know the students: ○ Contextualize new information to make it relevant to students' lives. • Make learning relevant and meaningful: ○ Make connections to the world beyond the classroom; ○ Use figurative language; ○ Encourage students to develop visual metaphors; ○ Work thematically; and ○ Use authentic assessment processes such as portfolios and process journals. • Create opportunities for artistic play and exploration: ○ Employ an inquiry-based approach; ○ Frame tasks that allow students to think in new ways. • Teach skill (but not as an end in itself): ○ Teach skill in a way that is guided by conceptual considerations. • Create a safe learning community: ○ Facilitate an environment where students know one another, support one another, and have a sense of shared goals and values; ○ Examples: peer/group dialogue; collaborative assignments.

	Dance	Music	Theatre	Visual Arts
High School	• Students who have been taking dance since childhood are able to train as professionals from a technical perspective. • Those who have not had such training still bring a level of maturity that allows them to grasp the discipline of the process of training the body. • Warm-up exercises that prepare the body in strength, agility, and safety are now able to be understood cognitively, and performed with aesthetic awareness. • Dance projects that support social and emotional development include opportunities to initiate, plan, and produce independently, but in coordination with others. • Using critical analysis and comparison, students are able to articulate their impressions and critiques of dances they observe as active, informed audiences. • Students at this level are able to understand the linkages between dance and other disciplines, literacy, other cultures, and its performance and social aspects.	• In addition to traditional, large school choirs, introduce smaller and more various ensembles. In small ensembles, students learn from one another, play more by ear, and give one another feedback. • Include popular music and music from other cultures. (This is a recurring theme.) • Use technology to enhance instruction of band students. Exchange audio files with email commentary, record home practice, and use recordings to evaluate practice. • Composition is not widely taught at this level because it is difficult, but there is strong evidence that students enjoy composing in and out of school.	*See recommendations above, which apply to middle school, high school, and postsecondary instruction.*	*See recommendations above, which apply to middle school, high school, and postsecondary instruction.*
College	• Make rigorous, professional-level dance classes available and accessible to students who are advanced in the arts, yet committed to pursuing a liberal arts education. • Include an exploratory and improvisational component to courses at all levels. • Incorporate reflection as a part of the process of dance; encourage students to be reflective of their lives, goals, strengths, and weaknesses. • Include critical evaluations of dance pieces with peers in composition classes.	• Improve students' self-evaluation abilities by developing criteria for them to compare their performances with others in specific areas. • Use a wide spectrum of listening examples • Use technology to teach aural skills and music theory. • Integrate web-based material into teaching		

Dance

Introduction

This review of current scholarly research in dance for youth in education will provide an overview of the social, emotional and cognitive development, relating to motor and aesthetic development, of youth from Pre-Kindergarten through the first two years of postsecondary learning, covering approximately 5 – 20 years of age. This overview is separated into five bands based upon age: Early Childhood – 1st grade, Elementary Grades (Grades 2 - 5), Middle School (Grades 6 - 8), High School (Grades 9 - 12) and Early College (Grades 13 – 14/Freshman-Sophomore) and present each levels' developmental characteristics.

In the National Dance Educators Organization's *Standards for Learning and Teaching Dance in the Arts* there are four processes involved in the inner core of dance – Performing, Creating, Responding, and Interconnecting (Faber, 2005). These bands of learning are deconstructed into the detailed standards for teaching and learning dance for early childhood through 18 years old. These standards encompass the actual dancing, making dances, expressing ones' feelings and thoughts about dances, and applying the skills and knowledge of dancing, and dances, to other disciplines and areas of life. Thus, for each age band listed, developmentally appropriate best pedagogical practices in reference to these standards will be featured, as well as areas where revision or additions are indicated.

Of note: The elements included in the NDEO Standards (2005), are closely aligned with the New York City Department of Education's *Blueprint for Teaching and Learning in Dance*, also developed in 2005, which identifies Five Strands of Learning in Dance: Dance Making, Developing Dance Literacy, Making Connections, Working with Community and Cultural Resources, and Exploring Careers and Lifelong Learning. Despite the differences in the categorization of the elements of a developmentally and pedagogically sound dance curriculum, they both encompass essentially the same concepts.

Model Criteria Overview

The NDEO has indicated minimum criteria for dance arts model programs in K – 12th grade education. As applied to all levels, a model program of dance curriculum would place dance firmly in the daily schedule as a core curricular subject, not as an extra or elective class. For early childhood and elementary learners, classes should be no more than 30 minutes long, three to five days per week. Middle school students should have classes 40 – 60 minutes long, three to five days per week. In high school and early college level, 50 - 90 minutes classes, five days per week are recommended. All classes need to take place in a large open space (gym, stage, or classroom) with a safe floor (ideally sprung and seamless). Access to music and video equipment would also be provided for movement explorations, performance, and viewing of dance. Dance would be provided at all grade levels, beginning with Pre-Kindergarten so that sequencing and growth through consistency is afforded throughout the entire educational system. Essential to best pedagogical practice is a full-time dance educator who has received a degree in dance education – not only as a performer or choreographer, but as an educator with knowledge of developmental ages and stages, as well as psychology. This qualified dance educator should be able to implement the curriculum that meets national, state, and local school district dance standards adopted in arts education in dance for the early childhood student.

Literature Review

In our educational system, from early childhood through postsecondary institutions, current research supports the inclusion of dance as an essential core component of curriculum at every level. Dance, from creative movement in early childhood through advanced techniques in all genres (Ballet, Modern, Jazz, Social, Ethnic, etc.) is intrinsically aesthetic (Detels, 1999; Spitz, 2006) and addresses the physical development of the individual (Eliot, 1999; Kail, 2004), as well as social (Deasy, 2002; Katz, 2006), cognitive (Bresler, 2004; Damasio, 2003), and emotional development (Merriam, 2008; Pettit & Frederiksen, 1998), which makes it unique among the arts. Along with motor development afforded through the movement arts, dance is uniquely capable of providing rich opportunities in exploring creativity (Smith-Autard, 2002; Spitz, 2006; Gardner, 1999; Csikszentmihalyi, 1997), creating connections with peers (Whitlock, 2009), supporting critical thinking (Warburton, 2008; Snyder, 1999) in youth at all stages of development (Gilbert, 2008; Kail, 2004) and encouraging positive self-image through embodied learning (Shusterman, 2008; Katz, 2006).

Observed progressions and theories of motor and cognitive development indicate parallels with artistic development in the visual arts and kinesthetic modes in children. Earliest aesthetic movement occurs when all aspects of physical, cognitive, psychological, and socioenvironmental development support the young child's ability to create dance (Lao 2008; Debnam, 1997). Indeed, movement leads to the optimization of the life of the organism in all aspects of humans' growth (Damasio, 2003) and its inclusion as an integral component of a quality educational curriculum to develop the confident and competent child, is overwhelmingly supported by established and recent research in artistic growth (Burton, 1999; Lord, 1999), motor (Sansom, 2009) and neurological science (Fauconnier, Gilles & Turner, Mark, 2002), in somaesthetic (Shusterman, 2008; Lakoff & Johnson, 1999), psychological (Damon, Lerner, Sigel, & Renninger, 2006) and sociological studies (Catterall, 2002).

Early Childhood (PreK-Grade 1)

Developmental Characteristics

Sensorimotor explorations are the key to learning in the urgent formative, early childhood years (Burton, 1999). Physically, children at this age are total-body, perpetual movers and are refining their gross motor skills (walking, running, galloping, skipping, jumping, rolling), while developing fine motor skills (printing, tying, balancing, shifting weight, stillness). They are able to move in spatial directions primarily concerned with contrasts: up-down, side-to-side, front-back) (Sansom, 2009). Socially, 5- to 7-year-olds, develop friendships with either gender, and are developing skills for working together as a group. Aesthetically, children in the early childhood years are moving from purely sensorimotor explorations to creating representational dances that express their feelings, thoughts, and preferences (Hurwitz, 1995; Burton, 1999; Louis, 2000; Spitz, 2006).

Emotionally, early childhood youth are sensitive to criticism and have a concern for fairness and for right and wrong. The development of a sense of humor is emerging, which reinforces their sense of self and growing independence from family (Drewe, 1996). Cognitively, PreK – 1st grade students are learning and recognizing letters – words, sounds, numbers, movements, and pictures symbolize meanings. They listen for meanings in language and are able to integrate movement as a means of learning, as their short-term memory is refining (Damasio, 2004; Johnstone, 1998). An understanding of sequencing assists in creating movement patterns, which may be repeated. The NYCDOE's *Blueprint for the Arts* also addresses the metacognitive development of this age as children begin to reflect on their own dancing, and that of their classmates, verbally and through visual or written artifacts.

Artistic Development

Children in PreK – 1st grade classes should be able to execute original or existing artistic dance movement through knowledge of their bodies – their anatomy – through isolated and coordinated movements with alignment of the body (Gilbert, 2008.) The body skills most urgent at this age pertain to balance, strength, range of motion, and coordination. Movement skills that are attainable at this developmental level are use of breath, non-locomotor or axial movements, and locomotor, or movements that move through space, as well as patterns combining these skills (NDEO, 2005). The cognitive development supported through these kinesthetic repetitions and masteries are memory development, spatial awareness and the concept of relativity and of succession (Sylwester, 2003).

The concepts to be explored at this age include the elements of dance: Space (direction, pathways, levels, shapes, personal body space, relationships to environment); Time (tempo, rhythm, patterns, use of music); and Energy (movement qualities, dance qualities, stillness) (Bucek, 1992). Aspects of performing that are age-appropriate include awareness and focus, repetition, reflection, refinement and revision, and a rudimentary understanding of performance etiquette. Opportunities for making dances that support emotional development allow children to express their feelings, experiences, and ideas in original, aesthetic movement compositions (Drewe, 1996). At ages 5 – 7 years old, children increasingly should be able to make their own movements including axial and locomotor moves, and combinations of movements after exploring several ideas, and choosing and repeating their choices. These short movement vignettes should have a beginning, a developed middle section, and an end and assist in cognitively grasping order and basic development of an idea (Gilbert, 2008). As children create their movements, they cognitively learn to pattern and increasingly are able to represent their ideas and feelings to create meaning through movement (Burnham, 1994). Further, by engaging in discussion with peers, students are able to share their intent, building confidence and social skills (Stinson, 2007). This creation of meaning through art-making is at the core of the aesthetic development process, and aids in the emotional development of self-concept and positive self-image (Louis, 2002; Burton, 1998). Further, these creations directly tie into the developmental social needs of children this age to learn to be their own independent selves, which leads to the ability to then build friendships with others who are similar and also dissimilar from themselves (DeBord, 2004). Learning movement vocabulary assists children at this age to respond to their own movements, as well as those of others, and creates linkages with early literacy concepts of words and sentences for cognitive growth (Hanna, 2008). They should be able to watch dance, and describe dance skills, similarities and differences, and even share movements they note.

These first three standards for early childhood dance – Performing, Creating, and Responding – are interwoven in the final standard of Interconnecting. Essential to the dance curriculum for this age are an exposure and experience with dances from different cultures and historical periods, dance's contribution to a healthful lifestyle, and the integration of dance with other disciplines and literacy (NYCDOE, 2005).

Pedagogical Practices Appropriate to Early Childhood Students of Dance

Early childhood through 1st grade dance classes should include high energy movements that seamlessly flow from one to another, as well as repetitive movement phrases and patterns that include stillness within (Gilbert, 2008). Teaching-artists should create opportunities for social development by providing children ways to express their feelings through movement in explorations using imagery, stories,

sounds, words, and games that help build articulation and confidence by making connections with peers (Stinson, 1999). Basic dance skills need to be introduced and repeated, which include gross and fine motor skills - jumps, hops, foot articulations (point and flex), bends and stretches - that reinforce kinesthetic and neuro-pathways, and strengthen cognitive processing (Fauconnier, Gilles & Turner, Mark, 2002; Finkelstein, 2005). The introduction of movement qualities, linked with imagery (melting, freezing, rough, smooth, heavy, light) stimulates awareness and interest in textural qualities of movement and the environment through their appeal to the interest in fantasy that is noted at this age (Sansom, 2009; Elkind, 1976). Developmentally, children at this point process cognitively in concrete thoughts so their movement exercises need to be concise, and singularly focused (Ruffin, 2009). While most activities at this level are full class - group, with the teacher modeling, students may also begin partner dances, which address social interactions of friendship, and build self-awareness and confidence (Gilbert, 2008). Very short creative explorations that are solo may begin, and need to be structured and brief, to honor their limited focus developmentally at this time (NDEO, 2005). Dancing together with a partner, and following another's movements create bonds and assists in understanding leadership and social order, which is crucial to social growth for Pre-K through 1st grade learners (Bresler, 2004; Eisner, 2002).

Additional Considerations

Dance for early childhood learners encompasses the whole child - movement activates the neural wiring throughout the body, making the whole body the instrument of learning (Farber, 1994). All aspects of development – physical, emotional, and cognitive affect all the others and must be integrated with motor development when young children attempt to communicate creatively through movement expression (Damasio 1999, Lao 2008, Kail 2004). Aesthetic movement development is intertwined with motor and cognitive development in childhood and throughout life (Gilbert, 2008).

Many of the standards' recommendations may be appropriate for 1st graders, yet too advanced for PreK students who have had no exposure to the movement arts. In a number of our prekindergarten classes, students are only beginning to master the developmental benchmarks socially, emotionally, cognitively, aesthetically, and in motor development indicated for their age band (DeBord, 2004). The factors that may influence this delay are at times a result of limited economic stability, poor nutrition, inadequate family support, and genetic learning delays (Kail, 2004). Many children who struggle with these issues, and others, have not yet been evaluated, and the process of identifying and supporting progress in these areas may take time and be laborious. The standards, especially in the early childhood classroom, need to address special-needs students in some way.

Even in a mainstream early childhood classroom, the variance in developmental progress is wide (Debnam, 1997). It must be stressed that children mature at individual rates and a wide variance will be seen within any one group of children. These urgent early times are ones of such growth and potential, and clearly research indicates that the inclusion of dance in the early childhood curriculum can foster development in all areas (Stinson, 1999).

The inclusion of methods for addressing multilingual learners at this early age seems an essential addition for dance educators' preparation. While movement is truly a universal language, many of the more evolved activities presented in the standards would need revision, and interpretation, to reach non-English speaking youth (Sansom, 2009).

While the physical fitness aspect of dance education was briefly addressed in the NDEO's standard focusing upon Interconnections with a healthy life, more attention to this area needs to be included in our standards considering the growing number of overweight, unhealthy, and sedentary youth, even in the early childhood classroom. For young dance students, curriculum that always includes a healthful food and exercise component, should be created (Papalia, 1992).

Elementary (Grades 2 - 5)

Developmental Characteristics

Moving out of sensorimotor explorations, into representational artwork in aesthetic development (Burton, 1999; Louis, 2000; Spitz, 2006), elementary-aged children are becoming skilled in the mastery of gross motor movements and a growing repertoire of fine motor articulations, in addition to increasingly complex patterns of both, to help them create their own dances (Cullen, 2003). This time of "middle childhood" brings a steady rate of physical growth that brings youth to adult coordination levels (DeBord, 2004). Cognitive development in the upper brain at this time allows children to think about their behavior, trace back events, and see consequences for their actions, which provides linkages in both social and emotional growth in this understanding of cause and effect (Finkelstein, 2005; Damasio, 2004; Gilbert, 2008). This awareness of and ability to self-control is paramount at this age for learning the discipline necessary in dance, as well as in social relationships (Gilbert, 2008; Elkind, 1976). Positive reinforcement by authority figures as well as peers, helps youth to build confidence and competence in all areas of development as they grow to understand the values of their society and cross-culturally (DeBord, 2004; Kolberg, 1969). Children at this age still retain their playfulness – they enjoy creating games, language, and codes with words and movement (Finkelstein, 2005), though emotionally and socially they are developing a sense of industry – the need to bring a productive situation to completion (Erikson, 1950). Middle childhood bridges the dependence of early childhood with independence, bringing with it self-consciousness and explorations of potential through movement, which may contribute to emotional and social maturation (Sansom, 2009; Papalia, 1992).

Artistic Development

Expanding upon the concepts of elements of dance learned in early childhood (Space, Time and Energy), elementary students now deepen their movement awareness through explorations that explore diagonals, curves, and twists – moving into asymmetry (Gilbert, 2008; NDEO, 2005). An awareness of personal space is enhanced through dances that move through space without interacting with other dancers on all levels and with changing energies and movement textures supporting affective growth as well as cognitive challenges (Spitz, 2006). Performance considerations that are appropriate for this level include collaborative activities in duets, trios, and small groups that strengthen emotional and social awareness, foster confidence (Stinson, 2007). Learning the essentials of being a performer as well as an audience member through in-class sharing of dance pieces supports emotional maturation and teaches empathy and competence (Erikson, 1956; Bucek, 1992).

Essential to the dance curriculum for this age are an introduction and experience with dances from children's own heritage and environment, as well as a continued multicultural and historical exposure to different cultures and time periods. Traditional folk dances taught within a cultural context introducing different lands and languages, and basic movements from different dance styles, expands awareness of the elementary student's personal life within their world (Hong-Joe, 2002; Dils & Albright, 2001).

Building upon the early childhood curriculum in dance, students now are able to create and share their own original movements that are created from their newly acquired knowledge and understanding of other cultures. Respecting ones health – physically and emotionally – assists students at this age to cognitively understand others, and respond in socially positive ways to their peers' health, too (Steinberg, 2007).

Pedagogical Practices Appropriate to Elementary Students of Dance

Youth in elementary school classes in grades 2 – 5 should be able to execute isolated as well as coordinated dance movements, maintaining alignment and balance, as well as more complex and contrasting body movement patterns (NDEO, 2005; Finkelstein, 2005). Through repetition there is increasing strength, coordination, and an expanding range of motion with flexibility within the body, and through space that leads to physical development (Hanna, 2008; Stinson, 1999). The cognitive development of sequencing, analysis, revision and mastery is supported through kinesthetic explorations that require the development of movement phrases through improvisation, patterning combinations in a choreographic form (Bond & Stinson, 2009; Gilbert, 2008). Discussions and movement explorations about feelings and content, assist students in fulfilling their intent for their original dances, which supports their cognitive development in literacy and supports emotional growth (Ruffin, 2004; Papalia, 1992). Both genders should be given the same range of activities at this level to avoid stereotyping, while also supporting boys and girls in being proud of who they are and their accomplishments (DeBord, 2004).

Additional Considerations

As noted for our early childhood learners, the developmental range physically, aesthetically, cognitively, emotionally, and socially between 2nd graders to 5th graders is expansive. The NDEO standards are categorically on point, and yet must naturally be simplified, pared down to basics for the youngest dancers in this range. For the older, more developed learners in this band, dance explorations delving into more advanced concepts need to be presented. Our earliest elementary school students (6- to 8-year-olds) can rarely sit for longer than 15 – 20 minutes, while the older elementary students have a longer attention span (DeBord, 2004).

As children mature physically in the elementary school years, it is challenging for educators in all fields to recognize that along with being multiple-intelligence learners, with strengths in different aspects of intelligence (Gardner, 1984), they are also at very different levels within each individual in different areas or types of development (Lao, 2008; Ruffin, 2009).

Especially urgent at this age level is the need for the physical activity – through dance and other activities, and nutritional education and monitoring. Too many children at this age level are overweight (Papalia, 1992) and this growing self-awareness links directly now with the socioemotional development (DeBord, 2004).

Middle School (Grades 6 - 8)

Developmental Characteristics

As youth move out of childhood into adolescence, hormonal changes in the body are major considerations in physical, aesthetic, cognitive, emotional, and social development. Girls begin puberty around 10 or 11 and it ends around 16 years old. For boys, puberty starts around age 12 and lasts until around 17 (Steinberg, 2007). The physical changes that accompany puberty impact the emotional development of a positive self-image and their social relationships (Ruffin, 2009).

Cognitively, adolescents are still primarily concrete thinkers, and yet they are more aware of their actions' consequences and fairness in the world (Damasio, 1999; Kohlberg, 1969). They do have a strong sense of invincibility that causes them to be risk-takers, and, increasingly, they question rules and authority (Knox, 2010). They are very self-focused, and believe they are the center of the world – this also leads to their self-consciousness. Physical appearance is very important at this age and status also forms the framework for many choices (Ge, Conger, & Elder, 2001). Socially, adolescents are spending more time with peers than family, and identity formation is taking place (Strauch, 2003). This need to create independence impacts relationships with family, and may lead ungrounded youth to experiment with more risk-taking behaviors to express emotional questionings (Palo Alto Medical Foundation, 2001; Ruffin, 2009).

Artistic Development

Middle school students are able to return to many concepts of elements learned in early childhood and elementary dance classes, yet approach them with an expanded perception of dance. They can learn, rehearse, and truly dance different styles of dance, understanding and feeling in the body, how they are different, and in what ways they are connected. Opportunities that challenge students to create their own dances with peers that contain movements they have created and revised, have put together with choreographic understanding of structure, dynamics, use of space and time, allow them to access their developmentally aligned physical, cognitive, and social abilities (NDEO, 2005). Beginning at this middle school level, students are now able to learn traditional ethnic and multicultural dances, and also dances from classical and modern dance repertory (Finkelstein, 2005). Emotionally, students are now developmentally able to delve into their feelings through movement, and are trusting, autonomous, and industrious when given a task (Erikson, 1950). They now understand dance as a form of multilayered communication (Hanna, 2003). These choreographic exercises may begin as short solo works and then expand into works with peers. Further, students should be given opportunities to continue work on their dances for longer than one class visit, so they can reflect, revise, and complete all aspects of dance making (Gilbert, 2008). Physical development now allows for longer classes with more repetition, which builds discipline. Explorations into different accompanying musical styles and compositions with a broad range of instrumentation supports their growing awareness of the world (NDEO, 2005).

Pedagogical Practices Appropriate to Middle School Students of Dance

Connecting with middle school students through dance to foster physical, aesthetic, cognitive, social, and emotional development is a complex task, which begins in a safe, trusting class. Essential for growth in all areas, is the requirement that students are in a supportive, challenging, yet nonjudgmental environment (Sparkes, 1997). The physical challenge of being introduced to, practicing, and mastering basic dance techniques (Ballet, Modern, Jazz, etc.) affords middle school students cognitive challenges of focus, revision, and repetition and brings intense concentration that aids in cognitive growth (Csikszentmihalyi, 1997). Learning more lengthy and complex movement phrases that include rhythmic and muscular understanding and control support physical and cognitive maturation (Gilbert, 2008; Ruffin, 2009). Classes that include time for composition and choreography incorporate emotional and

social challenges, which address the middle school students' need and ability to overcome awkwardness, build trust among peers, work independently, and reflect on their own qualities as dancers relating to their training – the beginning of understanding a personal knowing of one's own motion, or bodily kinesthetic intelligence (Blumenfeld-Jones, 2009; Gardner, 1999).

Channeling students' risk-taking proclivity into aesthetic exercises that provide students experiences in balancing, jumping, turning, and stillness foster motor, cognitive, emotional, and social growth by promoting self-confidence as well as acceptance of self and others (Strauch, 2003; Ruffin, 2009). The intrinsic biological connections of motion and emotion for the middle school-aged student indicate that explorations that mine their creative expressiveness contribute to cognitive development through articulating neural and muscular systems, and integrating feeling and logic (Sylwester, 2003). These physical, improvisational motor exercises now may incorporate whole brain processing through the development of complex logical sequences, reordering of progressions and reversals, and mental transformations and imaginings (Gilbert, 2008).

Additional Considerations

Knowing that middle school students are developing their sense of self through personal and social challenges, the dance curriculum for this age should include opportunities that are structured and defined to push physical and cognitive limits in a trusting, safe, supportive classroom (Ruffin, 2009). Understanding students' needs to avoid embarrassment and awkwardness as they move through puberty, dance classes provide a place to coordinate physically and express their feelings and needs, with emotional freedom within the context of choreography (Gilbert, 2008). They are able, and need opportunities to share their original dance pieces to build confidence and self-awareness (NYCDOE, 2005).

High School (Grades 9 - 12)

Developmental Characteristics

A major consideration as adolescents move through the teen years in high school into adulthood is their social and emotional development. They learn a great deal about themselves, others, their community, and living a meaningful life through social interactions (Gilbert, 2008; Whitlock, 2009). Current brain science is showing that though motor and physical development has reached an adult maturity by around 16 or 17 years old, the connections between neurons affecting emotional, physical, and mental abilities are incomplete (Strauch, 2003) in high school students, which explains why some teens make inconsistent choices (Knox, 2010). The task of defining the physical self as both a personal identity and as a social form is paramount (Brettschneider & Heims, 1997) for high school youth, and through this process they recognize the significance of bodies, both as resources and social symbols that "give off messages" about a person's identity (Shilling, 1997). Social development intertwines with personal emotional development as students this age acquire self-certainty as opposed to self-consciousness and self-doubt (Erikson, 1965). Unfortunately, those who do not meet societal ideals often internalize feelings of anxiety and guilt about their apparent lack of self-control (Sparkes, 1997; Ruffin, 2009).

In aesthetic development, the growing complexity and depth of the art- and dance-making process can lead high school students to a knowledge of the social extensions of differing styles, forms, and cultural perspectives (Parsons, 1987). Further social development in the dance arts occurs when a dialogue

between an artwork and an adolescent is expanded into a full conversation with other peers (Burnham, 1994; Ruffin, 2009). Finding and making meaning through the dance arts is a deeply valuable experience that impacts the emotional and aesthetic maturation of students, as it does with adults – we value objects and experiences that we find most meaningful – those which resonate within us (Burton, 2000).

Artistic Development

Understanding the linkages between dance and other disciplines, literacy, other cultures, and its performance and social aspects, high school students are now physically able to perform at an aesthetically elevated level (NYCDOE, 2005). Daily techniques classes in various genres allow students to gain proficiency and mastery of specific techniques. At this point, they are able to form and articulate their own personal approach to the arts and knowing their strengths and weaknesses they develop their own aesthetic, and need opportunities to create and perform from this knowledge (Burton, 1999). Dance explorations that are structured around the NDEO standards including movement skills, somatics, elements of dance, choreographic forms, and expressive communication are all supportive of high school students' brain, motor, and emotional development (Ruffin, 2004). Socially, exercises that afford high school students the chance to share their feelings and ideas with peers in a space that is safe and supportive, as dance classes naturally should be, aid in identity development and security (Ruffin, 2004; Erikson, 1965). Digital films, videos, and live performances are necessary to expand high school dance students' awareness of the cultural, historical, and expressive value of the movement arts.

Pedagogical Practices Appropriate to High School Students of Dance

For the high school student, dance provides physical, aesthetic, cognitive, social, and emotional challenges and opportunities for growth. At this age, if students have taken dance since early childhood, they are able to train as professionals from a technical perspective. For those that have not had such continued training, they still bring a level of maturity that allows them to grasp the discipline of the process of training the body. This involves classes of an hour or more, five days a week, with awareness of the health and artistic demands required. Warm-up exercises that prepare the body in strength, agility, and safety are now able to be understood cognitively, and performed with aesthetic awareness, also (Barr & Lewin, 1994; NYCDOE, 2005). Dance projects that support social and emotional development include opportunities to initiate, plan, and produce independently, but in coordination with others. Emotional development is intimately linked with the competence afforded by physically demanding technique and composition classes where high school students can invest themselves fully in the "flow" of the total experience (Csikszentmihalyi, 1997).

Learning dance terminology and choreographic principles, structure, and processes provides high school students with cognitive work that builds connections with other disciplines and supports dance as another form of discourse or literacy (Hong-Joe, 2002). Using critical analysis and comparison, they are able to articulate their impressions and critiques of dances they observe as active, informed audience members whether of peers' works, videoed dances, or performances in professional venues.

Additional Considerations

High school students are now in a range of levels in their dance training – some are continuing rigorous training as they envision careers as performers, while many take dance classes as an elective, for gym credit, or simply for fun. Designing separate courses that can address these various levels, intentions, and needs is critical for the high school dance curriculum. Performance opportunities within the

classroom, as well as for the school and wider community, allow high school students to participate in all aspects of the art form, with growing professionalism.

The thoughtful and thorough inclusion of college and career counseling in the high school dance program will provide students with needed information for planning next steps. Additionally, the inclusion of assignments to research online provides students access, inspiration, and information to the world of dance history, world dance, music for dance, and historical and current dance performance.

College (Grades 13 - 14)

Developmental Characteristics

For late teens and young adults in their early years of postsecondary education, there are five psychosocial issues that they must deal with: establishing identity; establishing autonomy; establishing intimacy; becoming comfortable with one's sexuality; and achievement. (Ruffin, 2009; Weiss, 1999). While many of these challenges begin during the high schools years, these issues are intertwined with the physical and cognitive developmental of young adults as they essentially repeat and remap the developmental movement patterns that initially wired the central nervous system sparking brain – body learning in infancy (Gilbert, 2008; Damasio, 2000). If they are able to emotionally and socially develop at this time by experiencing the value of intimacy and love versus isolation, it makes it possible for them to create genuine friendship and even long-lasting relationships or marriage (Erikson, 1965).

Physical development of motor movements has matured, and the young adult is able to refine and focus intent on specific motor articulations and specialties of their own choosing. If one chooses to become a professional dancer, the physical, emotional, and social development is in place to support the rigors of the discipline and integrate internal reorganization and reconstruction and promote cognitive growth as well (Barr & Lewin, 1994). Making life choices concerning career, is a crucial and challenging task, and yet the dance arts may support this process through fostering confidence, providing expressive communication possibilities, and a community of supportive peers and mentors (Hanna, 2008).

Knowing oneself as a unique and idiosyncratic individual, allows young adults to create dance movements, sequences and entire dances that are solely theirs alone, which provides great satisfaction of accomplishment and infuses the experience with great meaning (Burnham, 1994). Interacting and engaging in conversations about dance takes an investment of time, space, and self, yet creates meaningful experience that supports aesthetic, cognitive, social, and emotional maturation (Lavendar, 1999).

Artistic Development

Offerings in postsecondary institutions' dance departments should include a broad range of courses that support movement learning for adult beginners as well as professional level dancers. Classes in various dance techniques and ethnic genres at beginning, intermediate, and advanced levels, composition and choreography, exploratory or improvisational, music for dance, dance notation (Labanotation), video technology, and performance, stage technology (sound, lighting, set), and dance history address the current dance standards for performing, creating, responding, and interconnecting at all levels.

The critical thinking involved in the aesthetics of learning dance as a distinct performing art is crucial in all courses and supports cognitive development at this age level (Warburton, 2008). Developmentally, young adults are now able to focus their dance learning with an intentionality that enhances the process of maturely developing the bodily-kinesthetic intelligence (Blumenfeld-Jones, 2009; Gardner, 1999).

Pedagogical Practices Appropriate to Postsecondary Students of Dance

Rigorous, professional-level classes should be offered in colleges for those students who are advanced in the arts, yet committed to pursuing a liberal arts education (Finkelstein, 2005; Chappell, Craft, Rolfe, & Jobbins, 2009). For young adult beginners, classes that honor their cognitive, social, and emotional developmental maturation, yet offer basics in technique for specific physical development in dance are recommended employing various teaching strategies to reach all levels (Barr & Lewin, 1994). All young adults will benefit from an exploratory and improvisational dance component to continue supporting emotional health and growth (Lavendar, 1996). Young adults also are capable of being reflective of their lives, strengths, weaknesses, and goals, and delving into these issues through critical evaluations of dance pieces with peers in composition classes will support further social and emotional development as well (Smith-Autard, 2002; Erikson, 1956).

Additional Considerations

College students may now be professional dancers, and the demands of their lives attempting to incorporate their careers with their academic studies may be challenging. Awareness of the varied needs of the range of young adult dancers requires dance professors, and dance departments to be highly sensitive to their course offerings, times of courses, and support systems when designing their programs.

Additionally, many professional dancers do teach to support their performing lives. This fact is often left unaddressed in college course offerings for dance. More attention needs to be given to training dancers in pedagogy, as well as in developmental theories and milestones, and in the psychology of teaching and learning before they attempt to teach. Further, if we do, in fact, support students choosing careers in dance as performers, we should also offer classes in financial planning to give them the best tools possible to create and manage a successful life as a dance professional in our country that provides minimal support for the arts.

Conclusion

Developing appropriate Dance Standards for all ages and stages of learning must include opportunities to foster, stimulate, and refine physical/motor, aesthetic, cognitive, social, and emotional development (Gilbert, 2008; Stinson, 1999; Bonbright, 1980; Bucek, 1992).

Within all of these categories of development there is a set of principles that characterize the process of growth: development proceeds from the head down, from the center outward, from simple (concrete) to the more complex, and from general to specific. Further, development depends upon maturation and learning readiness, is a continuous process, and the rates of growth are idiosyncratic (Ruffin, 2009). Within our dance standards, this awareness of the multilayered and multidimensional characteristics of the individual learner is paramount (Gilbert, 2008; Damasio, 2004; Gardner, 1999).

In dance, the curriculum must necessarily include learning physical dance skills and techniques, creating and performing dances with intent and aesthetic value, as well as integrating and relating dance to other disciplines, peoples, places, times, and concepts (NDEO, 2005; NYCDOE Blueprint, 2005). By valuing dance as a vocation and an avocation (Klein, 2005), a sequential study of dance from Pre-Kindergarten through Postsecondary learning and beyond, has the potential to enhance and enrich all of our lives.

Recent research into the still developing adolescent brain (Knox 2010; Strauch, 2003), provides a new awareness of the risk-taking, impulsive qualities, and other cognitive issues of teens that drive their inconsistent actions and moods. We need to develop standards that mine this proclivity – more improvisational work, rigorous physical demands through technical challenges, and heightened opportunities for discussion and sharing, as well as social peer connections around movement.

Now that current research on the brain-body connections for learning is documented (Damasio, 2004; Kolb, Gibb, & Robinson, 2004), we need to include more movement in all areas of the academic curriculum, as well as cognitive challenges throughout the dance curriculum. The evolving field of somaesthetics (Schusterman, 2008) challenges our pedagogy in dance to consider the body, or soma, as not just a collection of bones and muscles, but as a living, feeling, purposeful, and sentient being. By acknowledging this concept of embodiment, our standards curriculum will be more holistic and address the whole child.

Music

The review of the literature reveals that educators have brought a variety of innovative strategies to teaching music, but that music instruction especially in primary, middle, and secondary schools has continued to center on traditional methods. Research suggests that inclusion of more styles of music, including popular music and music from various cultures, will increase student participation and creativity. Smaller and more varied types of ensembles, both instrumental and vocal, are encouraged, to provide students with more choices. Adding composition, often computer-aided, to music classes is recommended by a number of studies as a way of involving more students in school music programs. Students' widespread fascination with and use of technology, at all ages, is a resource for music teachers to tap, and the increasing use of technology and the Internet in music education curricula bodes well for their increased use in schools.

Early Childhood (Pre-K – Grade I)

Developmental Characteristics

Fetuses in the third trimester of pregnancy respond to external sounds with changes in body movement and heartbeat (Abrams, Huang, Sain, Langford, & Gerhardt, 1998; Lecanuet, 1996; Lecanuet, Graniere-Deferre, Jacquet, & DeCasper, 2000; Parncutt, 2006) and show a preference for low-frequency sounds (Hepper & Shadidullah, 1994; Lecanuet et al, 2000). In contrast, by six months of age, infants show an attention bias for high pitches (Trainor & Zacharias, 1998; Werner & Vandenbos, 1993), a preference that appears to persist for some time. Right after birth, babies show recognition of tunes heard repeatedly during pregnancy (Hepper, 1991; Wilkin, 1995), and although the long-term effect of prenatal musical experiences is still unclear, research suggests that the first year of life is an optimal time for the development of auditory/musical perceptual abilities (Trainor & Corrigall, 2010).

During this first year, babies show some sophisticated responses to the music they hear (Trehub, 2006) and can differentiate contrasting pitches and pitch combinations, rhythmic patterns, timbres, meters, textures, and styles (Costa-Giomi, Cohen, Solan, & Brock, under review; Ilari & Polka, 2006; Krumhansl & Jusczyk, 1990; Trainor, Tsang, & Cheung, 2002). Studies have shown that they can tell when notes in a melody have been altered (Trehub, Bull, & Thorpe, 1984), when a singer is singing in a different register (Trainor & Zacharias, 1998), and when an accompaniment has been added to a melody (Ilari & Sundara, 2009). There is also evidence of long-term memory for music. Second semester newborns show recognition of folk songs, Mozart piano sonatas, and more complex music (e.g., Ravel) that they heard repeatedly for 7-10 days, even after delays of 2 weeks (Ilari & Polka, 2006; Saffran, Loman, & Robertson, 2000; Trainor, Wu, & Tsang, 2004).

Babies show the ability to differentiate combinations of sensory events such as the facial expression and voice of a singer, to concentrate on a unitary event such as a person clapping or singing while ignoring other nearby stimuli, and to identify spatial correspondence of objects and their sound sources (Bahrick, Lickliter, & Flom, 2004). Studies show rapid development of perceptual abilities having to do with stimulation of various kinds and combinations, especially in interaction with a caregiver, in the first year of life (Trehub, Plantinga, & Brcic, 2009; Malloch & Trevarthen, 2009; Srinivasan & Carey, 2010).

Toward the second semester, babies develop neural networks for higher order sensory information processing (Fujioka, Mourad, & Trainor, 2011) and around their first birthday, they begin to pay more

attention and develop better discrimination when listening to scales (Lynch & Eilers, 1992) and meters (Hannon & Trehub, 2005; Soley & Hannon, 2010) found in the music of their culture, showing that enculturation has already had an impact (Hannon & Trainor, 2007). Children's musical experiences become more various as their social and cultural worlds expand (Young & Ilari, in press) and their musical-perceptual abilities correspondingly develop with age and experience (see Corrigall & Trainor, 2010; Morrongiello, 1992; Trainor & Corrigall, 2010, Zenatti, 1969). Yet studies have shown that children ages 4 and 5 show less musical enculturation than adult listeners and are more open and accepting of unfamiliar musical styles (Flohr, Persellin, Miller, & Meeuwsen, 2011; Kopiez & Lehmann, 2008).

Preschool and first grade children generally have a positive attitude to participation in group singing (Blyler, 1960; Mizener 1993; Phillips & Aitchison, 1998; Siebenaler, 1999, 2008; Welch, Himonides, Papageorgi, Saunders, Rinta, Stewart, & Hill, 2009). Children's vocal range expands greatly between the ages of 2 and 6. 50% or more 2-year-olds can sing from D4 to A4, and by age 6 down to A3 and up to G5 (Jersild & Bienstock, 1934). 50% of first-graders can sing an octave or more, and almost 10% can sing two octaves or more (Wassum, 1979). Studies suggest, however, that when allowed to choose their own starting pitch for a song, children often start on a pitch lower than pitches printed in many texts, and when asked to sing familiar songs choose to sing in the bottom part of their potential range (Hattwick, 1933; Jersild & Bienstock, 1931, 1934; Buckton, 1977; Geringer, Nelson, & Kostka, 1981; Vaughan, 1981; Porter, 1977; Welch et al, 2009; Moore, 1991). Vocal instruction can cause the preferred starting pitch to rise, as evidenced by 3- and 4-year-olds who, when asked to sing a song learned from a vocal model and a song of their own choice, consistently chose a higher starting pitch for the learned song (Mang, 2002). Studies show that children attending schools with music instruction had wider vocal ranges than those attending schools without music instruction (Schneider, Zumtobel, Prettenhofer, Aichstill, & Jocher, 2010).

Studies show a gradually expanding ability in young children for song acquisition, with 3-year-olds able to use characteristic tune segments and musical conventions, 4-year-olds exhibiting expanding range and more singing independence, and 5-year-olds gaining pitch accuracy (Kreutzer, 2001). Studies comparing song acquisition by a phrase-by-phrase approach with immersion, in which children heard a new song repeatedly and were invited to join in the singing when they felt comfortable, find the latter approach superior (Brand, 1998; Klinger, Campbell, & Goolsby, 1998; Moore, Brotons, Fyk, & Castillo, 1997).

Children appear to begin to develop the ability to discriminate tonality and harmony at age 4 or 5 (Trainor & Corrigall, 2010; Trehub, Cohen, Thorpe, & Morrongiello, 1986; Costa-Giomi, 2003; Costa-Giomi, 1994; Corrigall & Trainor, 2010; Koelsch, Grossman, Gunter, Hahne, Schroger, & Friederici, 2003), and show that they are sensitive to key membership, but only to a certain extent to implied harmony. The singing of 5-year-olds, while accurate in melodic contour and rhythm, is often characterized by an unstable sense of tonality (Kreutzer, 2001; Ramsey, 1983; Dowling, 1985). By age 6, children notice the lack of a conclusive cadence if it is missing (Imberty, 1969), but discrimination of various types of cadences and structural chords comes only by age 7 or 8 (Costa-Giomi, 2003; Zenatti, 1985). First-graders seem confused when asked to sing a familiar song with unfamiliar accompaniments (Sterling, 1985).

While perception of harmony is a fairly sophisticated ability that seems to develop later, children between ages 1 and 4 are able to recognize familiar songs by contour and rhythm and show an understanding of pitch-related concepts such as high and low (Campbell & Scott-Kassner, 1995). Rhythmic patterns and groupings are perceived by infants of 2 months, while variations in tempo and

frequency are recognized at 7 months (Trainor & Corrigall, 2010). Two-and-a half-year-olds appear able to perceive a steady beat and synchronize to it (Provasi & Bobin-Begue, 2003), but only around age 4 can children extract the metrical structure from the music that is presented to them and synchronize to changes in tempo (Eerola, Luck, & Toiviainen, 2006; Trainor & Corrigall, 2010).

While some scholars believe that emotional expression in music has its origin in infant-directed speech and singing (Trainor & Corrigall, 2010), and infant behavior varies when listening to lullabies or playsongs (Rock, Trainor, & Addison, 1999), other studies suggest that emotional association with different types of music happens only later, at age 4 or 5 (Trainor & Corrigall, 2010; Trainor & Trehub, 1992; Dalla Bella, Peretz, Rousseau, & Gosselin, 2001); however studies of toddlers' perceptions of musical emotions are still relatively few in number. Some studies suggest that 3- to 5-year-olds listen to music in rather idiosyncratic ways when given the opportunity to control their own listening experiences (Sims, 1985; Sims & Cassidy, 1997), and future studies could investigate how these self-guided listening experiences relate to musical emotions and emotional development. Also in need of study are the possible differences in childhood musical development and emotional associations with music in children growing up in other musical cultures or in combined cultures.
Children's perception of modes and association of emotions with modes (principally the major and minor modes) have received comparatively greater attention (Bartlett & Dowling, 1980; Imberty, 1969; Pick, Palmer, Unze, Jones, & Richardson, 1988; Schultz, 1969; Hufstader, 1977), with most studies suggesting that very young children have more difficulty detecting changes in mode than in rhythm, timbre, key, or melodic contour, but recent research shows that they can distinguish mode when provided with appropriate means of expressing their perception (Costa-Giomi, 1996; Kastner & Crowder, 1990; Koelsch, Grossmann, Gunter, Hahne, Schröger, & Friederici, 2003). Whether they naturally associate emotions with major and minor modes, or learn these associations only later, children of ages 5 and 6 can easily learn these terms to label major and minor melodic patterns (Costa-Giomi, 1996).

Timbre perception, intense during the first year of life, and related to the development of the ability to talk by age 2, is relatively easy for children and develops rapidly. By first grade, children can discriminate, identify, and manipulate different timbres in music readily (Flowers, 1984; Fullard, 1967; Jetter, 1978; Loucks, 1974), and with more ease than other musical characteristics such as rhythm, duration, pitch, or harmony (Hufstader, 1976; Pflederer, 1964; Zimmerman, 1981). Children's responses to timbre have been studied to identify their musical preferences, with studies showing a preference for instrumental over vocal timbre, except in the context of popular music (Fung, 1994, 1995; Darrow, Haack, & Kuribayashi, 1987; LeBlanc, 1981; LeBlanc & Cote, 1983; Shehan, 1981); woodwinds over brass instruments (Gordon, 1991), male voices over those of women (LeBanc & Sherrill, 1986); and instruments they are familiar with (Cutietta & Foustalieraki, 1990).[1] It has been shown that children who choose an instrument to study because they like its timbre are more likely to persist in learning to play it than those who choose based on cultural biases or gender stereotyping (Gordon, 1991). Studies show that instruction on timbre and identification of different instruments is effective even in very early childhood (Fullard, 1967; Jetter, 1978; Kersey, 1965; Wooderson & Small, 1981) and that long-term instruction in a particular instrument sharpens the perception of sound produced by that particular instrument (Pantev, Candia, et al, 2001; Pantev, Ross, Fujioka, et al. 2003).

Loudness, or dynamic contrast, is readily described and manipulated by children from a very young age (Burnsed & Sochinski, 1995; Flowers, 1984; Flowers, Wapnick, & Ramsey, 1997; Hufstader, 1977; Lewis,

[1] Ages of children in these studies about preference were not specified in the review of the literature.

1988; Pflederer, 1964, Romanek, 1974; Zimmermann, 1981). While children's use of expressive musical elements including loudness has not been fully researched (Snyder, 1986), it is clear that children can perceive, produce, and describe musical expression from a young age and that these abilities improve with age (Rodriguez, 1995), even when they cannot verbally describe these expressive elements (Gibson, 1986).

Spontaneous music making in preschool children has been studied by observing their vocalizations, including chant and invented songs (Whiteman, 2008, 2009; Mang, 2005; Sundin, 1998) and instrumental play (Moorhead & Pond, 1978; Pond, 1981; Tarnowski & Leclerc, 1994). The content of children's spontaneous music includes variants and fragments of familiar songs as well as material of their own invention, and their purposes in this activity are various, including sound play (Moorhead & Pond, 1978; Pond, 1981; Whiteman, 2009), communication (Mang, 2005; Pond, 1981; Whiteman, 2009), accompaniment to other solitary and group play activities (Sundin, 1998; Whiteman 2009), role playing (Young, 2002), and invitations or cues to other children to play (Tarnowski & Leclerc, 1994). However this spontaneous music making is characterized by a tendency to decrease and sometimes disappear with age, but studies show that children who have participated in music programs that included improvisation activities with voices, bodies, and instruments scored significantly higher on measures of musical flexibility, originality, and syntax (MCTC-II, Webster, 1994) than a matched group of peers whose musical instruction did not include improvisation (Koutsoupidou & Hargreaves, 2009).

From a very young age, children respond to music through movement (Campbell & Scott-Kassner, 2002; Jaques-Dalcroze, 1980; Walters, 1992), with hand gestures, especially, yielding facilitation of perception and description (Gromko & Poorman, 1998a; Lewis, 1988; Metz, 1989; Morrongiello & Roes, 1990; Persellin, 1992; Sims, 1986; Van Zee, 1976; Hair, 1977; Fung & Gromko, 2001; Gromko & Russell, 2002). Invented notations of rhythm and melody have been studied from age 5, with 69% of 5-year-olds using pictures, while older children develop figural and then metric representations (Davidson and Scripp, 1988; Hargreaves & Zimmermann, 1992). In studies of very young children (Gromko, 1995, 1998, 2003), it was found that children ages 2-3, when asked to compose a song or sing or play a song they had already learned, and then draw "the way the song goes" on a large tablet, scribbled without apparent reference to the song. By ages 3-4, the drawings showed zigzagging lines, slashes, or dots in a one-to-one correspondence with sound. By about age 5, when they could move their hands in relation to the pitches of the song, children could transcribe the song's contours with peaks and valleys in a line drawing, and also, if they patted the pulse of the song on their knees while singing, they could indicate where downbeats fell by dots in their drawings. As their perception developed, their invented notation became more detailed, leading naturally to introduction of traditional musical notation.

Pedagogical Practices Appropriate to Early Childhood Students of Music

Evidence that many neural pathways important for music making are established during the first year of life suggests that musical interaction with infants by parents and caregivers is of potential importance for later musical involvement. Playing music of various styles, singing, identifying the names of the notes, and playing rhythmic games could well have an effect on later musical abilities. Babies can participate in music making with body movements, responsive vocalization, play with toy instruments, and even computer-aided musical experimentation.

The interest of young toddlers in musical timbres suggests use of instruments, particularly instruments they can manipulate themselves, in both guided and unguided musical "improvisations." They can learn the names of music instruments and how they look and sound. The role of technology can here be seen

to be potentially very useful, as toddlers can experiment with many musical timbres using computers. Young children who show an interest in learning to play an instrument should be encouraged to choose one whose timbre attracts them.
In teaching young children songs, care should be taken that the pitches of the song fall within their comfortable range, which varies with age. Repetition of the whole song, rather than phrase-by-phrase teaching, seems to foster quicker acquisition of the song. Body movements are effective in teaching songs, especially hand gestures indicating pitch and other characteristics of the music. Children in this age group readily engage in spontaneous music making, either vocal or instrumental, and studies show they continue to do this and are more inventive when adults assume the role of observer or responsive partner, rather than leader or director (Berger & Cooper, 2003; Tarnowski & Leclerc, 1995). Research shows that the strongest foundation for music literacy is a music education that includes singing, dancing, playing by ear, and inventing ways to represent familiar and original songs, and that skill in representing music symbolically may transfer to tasks in other domains as well (Chan & Cheung, 1998; Costa-Giomi, 1999; Douglas & Bilkey, 2007; Gromko, 2005; Gromko, Hansen, Tortora, Higgins, & Boccia, 2009; Gromko & Poorman, 1998b; Hetland, 2000; Rauscher, Shaw, Levine, Ky, & Wright, 1994).

Technology has an increased role in music classes for young children, enabling improvisation and creative interaction. Addessi & Pachet (2005) report on a study of 3- to 5-year-old students using an interactive, computer-based music system called the *Continuator*, which interacts with a piano keyboard. The children can perform short gestures on the piano and the program answers back with a gesture based on the child's. The study includes video-based observations of 27 children interacting with the system singularly and in groups of two. The researchers also collected drawings the children made based on the experience and solicited questionnaires from the parents about the children's reactions.

Elementary (Grades 2-5)

Developmental Characteristics

As children mature, their vocal accuracy usually improves (Bently, 1968; Davies & Roberts, 1975; Geringer, 1983; Gould, 1969; Green, 1990, 1994; Moore, Fyk, Frega, & Brotons, 1995/1996; Moore, Brotons, Fyk, & Castillo, 1997; Yarbrough, Green, Benson, & Bowers, 1991), as well as their appreciation of tonality and harmony in accompaniments to songs (Costa-Giomi, 2003). However, with each passing year after they enter elementary school, the attitude of many children toward singing becomes less positive (Blyler, 1960; Mizener, 1993; Bowles, 1998; Phillips & Aitchison, 1998; Siebenaler, 1999, 2008; Welch et al, 2009). As singing is a major component of music instruction in elementary schools, much research has been devoted to identifying the causes of this decline in enthusiasm. Girls tend to be more confident about and enjoy singing more than boys (Mizener, 1993; Siebenaler, 2008; Welch et al, 2009; Baker, 1980; Phillips & Aitchison, 1998). Cultural and societal factors may play a part in this gender distinction, and these may vary regionally. Spanish-speaking boys rated selected songs recommended by the Music Educators National Conference higher than any other group of third-, fourth-, or fifth-graders regardless of gender or native language (Siebenaler, 1999) and African American students of both genders had higher participation rates in choir than their Hispanic peers (Siebenaler, 2008).
The type of music is a factor: studies have shown that children distinguish between "real music" heard outside of school and "school music," preferring the former (Mizener, 1993; Phillips & Aitchison, 1998; Siebenaler, 2008; Welch et al. 2009). Various preferences with regard to text content have been observed at the different grade levels, and children tend to prefer songs they know best (Siebenaler, 1999), that are in their native language (Moore, 2002), and that are in a style with which they are

familiar (Baker, 1980). However, their opinion can be improved with only 10 minutes of rehearsal of unfamiliar music (Siebenaler, 1999). Children also enjoy playing drums with songs (Mizener, 1993), moving while singing (Moore, 2002), and playing musical games (Bowles, 1998). Most children do not like singing alone (Mizener, 1993; Phillips & Aitchison, 1999), and poor attitudes toward singing may carry over to other music activities (Mizener, 1993).

Studies comparing methods of song acquisition, mentioned above, show that elementary students usually learn songs more quickly when they first capture a sense of the overall structure, working out the details as the song becomes more familiar (Brand, 1998; Klinger, Campbell, & Goolsby, 1998; Moore, Broton, Fyk, & Castillo, 1997). Comparing immersion versus phrase-by-phrase learning further, Gault (2002) found that the structure and demands of different songs might require different teaching strategies.

The vocal range of children in grades 2-5 extends gradually with age (Jersild & Bienstock, 1934; Wassum, 1979; Moore, 1991; Schneider, Zumtobel, Prettenhofer, Aichstill, & Jocher, 2010) but with high variability, and children show a preference for a lower comfortable range than many song texts specify, and when asked to sing a familiar song will position it in the bottom part of their potential range (Jersild & Bienstock, 1931,1934; Buckton, 1977; Geringer, Nelson & Kostka, 1981; Welch et al, 2009; Vaughan, 1981; Porter, 1977; Moore, 1991). While gender is not a significant factor in pitch range in lower elementary school, voice change has been shown to begin in many fourth- and fifth-grade and most sixth-grade boys (Fisher, 2010; Killian, 1999). Cultural differences (Vaughan, 1981) and speaking a tonal language (Chen-Haftech, van Niekerk, Lebaka, & Masuelel, 1999; Mang, 2002) may have an effect on range and pitch preferences. Specific training in conjunction with song singing has been shown to be effective, including interval practice (Jersild & Bienstock, 1934), speech-to-song activities (Roberts & Davies, 1975), breathing exercises (Phillips, 1985), keyboard and kinesthetic reinforcement (Jones, 1979), and a planned program of progressive vocal technique (Phillips & Aichison, 1997). However, singing practice without feedback does not seem to bring improvement in pitch accuracy (Hattwick, 1933).

Alongside pitch accuracy, expressiveness in singing has been shown to improve in students at these grade levels when teachers focus on phrasing, conduct without playing the piano, engage students in playing instrumental accompaniments, and teach songs through rhythmic notation rather than mere rote imitation (Froelich, 1977, 1979). On the other hand, researchers have found that modeling of dynamics and tempi and articulations, rather than giving verbal instructions, enhances students' interpretive performances (Baker, 1980; Sims, 1991, 1995).
The literature reviews provided for this summary do not address instrumental ensembles in elementary school. However, many students of this age period (as well as middle school) are beginning to study piano and other instruments privately or in school, and some studies have examined the effect on later expertise of skill development and practice strategies of beginning students. Pre-instruction, children have been observed to choose activities (or instruments) that they expect to be successful at (McPherson & Davidson, 2006) and to have already an idea about whether they will continue playing as adults (Ester & Turner, 2006). Sex-stereotyping of instruments (e.g., harp and flute–girls, trumpet and drums–boys) persists (Hallam, Rogers, & Creech, 2008; Killian & Satrom, 2011; Sheldon & Price, 2005), despite the presentation of performer models to counteract these gender associations (Harrison & O'Neill, 2000). Various factors have been seen to affect retention, including a later starting age (7th grade) for string students (Hartley & Porter, 2009) and teacher attention and approval for piano students (Costa-Giomi, Flowers, & Sasaki, 2005).

Reports from high-achieving musicians reiterate the importance of adult support for the beginning music student (Lehmann & Ericsson, 1997; Sloboda, Davidson, Howe, & Moore, 1996; Sosniak, 1990). Students may need support in practicing much longer than many parents suspect (McPherson & Davison, 2006; McPherson & Renwick, 2001). Not only may they need reminders and support for longer than one year, they need the right kind of direction, namely stopping to correct errors and strategies for learning new pieces (Pitts & Davidson, 2000). Brokaw (1983) found a statistically significant relationship between parental support and beginning wind students' achievement. Beyond the first weeks of novelty, students may need motivational support to sustain their interest and effort (Sloboda et al, 1996).

Students of differing personalities may need help setting realistic goals (O'Neill, 1997) and assessing their successes and failures (Dick, 2007; Schatt, 2011; Schmidt, 2005). Some students demonstrated higher motivation to practice self-selected repertoire (Renwick & McPherson, 2002). Given the complexity of skills to be learned, beginning students frequently are overwhelmed. They often exhibit avoidance behavior like shuffling papers or instrument cleaning (Pitts & Davison, 2000). They regularly are observed to use repetition of entire pieces as their primary mode of practicing (McPherson & Renwick, 2001) and to focus on pitch at the expense of rhythm (Hallam, 1997; McPherson & Renwick, 2001). While repetition is needed to acquire certain skills (Hallam, 1998), it is not the method that expert musicians use (Lehmann & Ericsson, 1997). Studies have shown that effective practice methods include strategies of chanting and silent fingering (McPherson, 2005), planning the practice session and setting goals (Kinney, 1992), and balancing repetition with variation—including selecting specific measures to practice (Stambaugh, 2011). The use of aural models is shown to be most effective when students are directed to listen for a particular musical parameter (Anderson, 1981; Linklater, 1997; Zurcher, 1975).

Elementary students rarely report that they "just listen." Instead they do homework, dance, talk, play games, etc. (Boal-Palheiros & Hargreaves, 2004; Jellison & Flowers, 1991; Sloboda, O'Neill, & Ivaldi, 2001; Woody, 2004). Sustained and focused listening is thus a novel activity to many elementary school students. Studies using the Continuous Response Digital Interface have included children, however, looking at their music preferences (Gregory, 1994), focus on musical elements (DeNardo & Kantorski, 1998), response to musical tension (Frederickson, 1997), and aesthetic response (Paul, 2008a, 2009). These studies found that elementary school students were able to manipulate the CRDI dial to track their musical reactions over time, and that their temporal graphs of musical tension and aesthetic response were very similar to those of adults who listened to the same pieces (Frederickson, 1997; Paul, 2008a, 2009).

Pedagogical Practices Appropriate to Elementary Students of Music

In elementary singing classes the importance of selecting material in a comfortable range for the students, and of subject matter that appeals to them, is clear. Feedback from teachers is essential for improving pitch accuracy, and providing an aural model demonstrating desired dynamic and articulation treatment in a song can improve expressiveness. Including student participation in accompaniment with various instruments and adding kinesthetic movements to the performance appear also to be effective at this level.

Programming vernacular songs and songs from various cultures would seem a promising strategy toward improving student attitudes and participation. The Tanglewood Symposium, some 45 years ago, issued the recommendation that school music include "popular teenage music and avant-garde music,

American folk music, and the music of other cultures" (Choate, 1968). Bridging the gap between what children perceive as "real music" and "school music" with more varied repertoire should strike a chord with children.

For students beginning to study an instrument (and perhaps participating in a school ensemble) the music teacher's role in developing practice strategies that work to build skills and confidence is an important one. Along with parents, teachers can provide needed encouragement and direction. Aural models (YouTube is a ubiquitous source for music performances for music students of all ages) have been shown to be more effective when the student's listening is directed toward specific parameters. Numerous computer programs exist by which elementary students can hone their musical skills including interval recognition, study of scales and chords, rhythm practice, knowledge of terms, recognition of styles, etc. Improvisation and composition, with or without computer, can foster elementary students' confidence by allowing them to participate in music making in an error-free environment (Higgins & Campbell, 2010), where spontaneous play develops into exploration and risk-taking and a search for musical meaning (Kanellopoulos, 2007a; Beegle, 2010; Fischlin & Heble, 2004; Hickey, 2009; Nachmanovitch, 1990; Sawyer, 2006; Stige, Ansdell, Elefant, & Pavlicevic, 2010).

Middle School (Grades 6-8)

Developmental Characteristics

Middle School students are included in the statistics of increasing vocal range, increasing pitch accuracy, and decreasing positive attitudes toward participating in school choir. Numerous studies of the development of singing in younger grades show that accuracy increases with age at least through grade six (Goetze, Cooper, & Brown, 1990; Petzold, 1963; Rutkowski & Miller, 2003; Welch, 2008). Studies of middle school students have also focused on the relationship of singing accuracy to perceptual skills (Demorest, 2001; Demorest & Clements, 2007), to type of vocal model (Price, Yarbrough, Jones, & Moore, 1994; Yarbrough, Green, Benson, & Bowers, 1991; Yarbrough Morrison, Karrick, & Dunn, 1995), and the influence of instruction (Phillips & Aitchison, 1997a). All of these research studies took place in either choral or general music classes and did not compare students' accuracy with that of the general population. Studies also have shown that a sung model, particularly female and not a sine wave, can help students up to grade 8 with pitch accuracy (Yarbrough, Green, Benson, & Bowers, 1991; Price, Yarbrough, Jones, & Moore, 1994; Yarbrough, Morrison, Karrick, & Dunn, 1995).

Teaching that addresses posture and respiration, speaking voice development, singing voice production, diction, and expression improves singing skills but not necessarily pitch accuracy (Phillips & Aitchison, 1997a). Demorest and Clements (2007), in a study of junior high boys using single isolated pitches and a pitch pattern that ended on a longer held pitch that they were asked to match, found that students did much better in the contextual condition. In general, students could match pitch better in slower tempi. Mizener (1993) in a study of upper elementary students found that there was no relationship between actual singing skill and either self-perception of singing ability or attitude toward singing. Voice change in boys, as mentioned above, and also in girls, evidenced by increased breathiness, decreased pitch accuracy, and increased register breaks (Gackle, 2000), can affect self-confidence in singing. Clements (2002) found that students' self-perceptions of their musical ability were a stronger predictor of continued participation than their actual ability. Higher music self-concept, followed closely by a positive attitude toward music, was the strongest predictor for any elective music participation. Studies showing the effect of sociocultural factors at this age level would be indicated.

Middle school students who participate in band and orchestra have usually studied their instruments for a year or more by this age, and have developed some self-regulated practice strategies. Studies find that repetition, however, is still widely used (Leon-Guerrero, 2004) and that 8th-grade students averaged only 2.6 practicing strategies (Rohwer & Polk, 2006), with a significant correlation between number of strategies and performance achievement. Middle school students who participated in self-evaluation studies (Aitchison, 1995; Byo & Brooks, 1994; Morrison, Montemayor, & Wiltshire, 2004; Darrow & Marsh, 2006; Hewitt, 2001, 2002, 2005, 2011b; Bundy, 1987; Daniel, 2001) were often inaccurate in their evaluations but tended to have a more positive attitude toward their achievement. Middle and high school students seem to be better at evaluating their performance of rhythm, melody, and tempo than of tone, intonation, interpretation, and technique (Hewitt, 2005, 2011b).

Music listening is one way that adolescents formulate identity and share their identities with others (North & Hargreaves, 1999; North, Hargreaves, & O'Neill, 2000). Studies show that after entering adolescence, young people show preference for a narrow range of popular music styles (Hargreaves, North, & Tarrant, 2006). LeBlanc, Coleman, McCrary, Sherrill, & Malin (1988) also noticed this narrowing of preferences at the middle school level. At this same time (frequently coinciding with transition from music as core curriculum to music as elective), students may spend more time with their music teacher than with any other teacher, e.g., having one band director during all of middle school (Adderley, Kennedy, & Berz, 2003; Morrison, 2001). The potential for music teachers to have an influence on students' preferences and opportunities is thus very real in this period—a time of transition, of developing diverse intellectual, physical, social, and emotional competencies (Gerber, 1994), and of formation of lifelong values (Melton, 1990).

Some adolescents go beyond listening and learn to sing or play their chosen vernacular music, usually outside of school (Kamin, Richards, & Collins, 2007; Campbell, 1995; Green, 2002). Several aspects of this kind of informal group learning may be of interest to music educators: it provides the setting for much personal and social identity development and musical growth (Davis, 2005); the ability to choose preferred musical materials boosts motivation and self-evaluation (Green, 2008); without the aid of music notation, the participants use their ears to reproduce the music they love and create original songs; and collaboration with peers provides the chance to give and receive feedback (Jaffurs, 2004; Kamin, Richards, & Collins, 2007; McGillen & McMillan, 2005).
Music educators have felt a disconnect between school music and the "real music" that people listen to (Boal-Palheiros & Hargreaves, 2001; Campbell, Connell, & Beegle, 2007; Hargreaves & Marshall, 2003; Lamont, Hargreaves, Marshall, & Tarrant, 2003; Woody, 2011). They have noticed how teaching exclusively from notation has resulted in students with severely limited musicianship (McPherson & Gabrielsson, 2002; Woody, in press; Pogonowski, 2002). Research shows that performing by ear contributes to other musical skills such as sight-reading, memorizing music, and improvisation (McPherson, Bailey, & Sinclair, 1997; Woody & Lehmann, 2010). Teaching music skills in a comprehensive musicianship approach has gained support in recent years, in curricula for various ensembles from authors such as Jagow (2005), Sindberg (2007), and from the various authors of the "Teaching Music Through Performance" series for band, choir, orchestra, and jazz ensemble. Austin (1998) finds that music achievement scores were consistently higher for students taught using a comprehensive approach. Morrison (2001) notes that by recognizing school music programs as real musical cultures, educators may understand better the program qualities that students value and choose future directions for an ensemble program's structure and content.

Pedagogical Practices Appropriate to Middle School Students of Music

That students in middle school start to have less positive attitudes toward singing in school suggests a number of educational interventions: studies suggest that attitudes are connected with self-concept rather than actual skill at singing, and that these self-concepts are formed in the elementary years. Therefore, prioritizing healthy, accurate singing by the end of grade five might be productive toward positive attitudes in the next grades, as well as promoting the skills that students use also in instrumental studies. Some studies have shown that the negative attitudes, especially in boys, are directed toward school choral singing, not necessarily to singing in general, suggesting that a broader variety of singing activities could usefully be offered, such as smaller groups or individual singing lessons, and inclusion of musical theater or popular music (Welch et al., 2008).

Pedagogical techniques to address the problems of voice change in boys include frequent testing and trusting boys' comments about vocal discomfort (Killian, 1997; Killian & Wayman, 2010b) and, above all, careful repertoire selection, rather than making boys attempt to sing outside their comfortable range (Ashley, 2009; Barharm & Nelson, 1991; Beery, 1996; Collins, 2006; Cooksey, 1977; Crocker, 2000; Freer, 2007; Friddle, 2005; Hook, 2005; Killian & Wayman, 2010b; Demorest & Clements, 2007; Leck, 2009; White & White, 2001). Whether training can remediate the breathiness characteristic of girls' voice change is an open question, but while waiting until musculature develops and the female vocal chords grow, teachers can teach girls to sing with better tone, flexibility, and breath support (Gackle, 2011; Huff-Gackle, 1985).

Middle school instrumental students clearly benefit from teacher guidance in their individual practicing, reminding them to structure practice in ways other than simple repetition. Teachers can have students apply those strategies during group rehearsals as well, helping to develop their practice habits. Seventh- and eighth-grade band students who practice rote learning of short songs in unfamiliar keys have been shown to significantly improve their ability to play by ear in those keys, compared to technical practice in those keys (Musco, 2006). Allowing students to choose some of their own repertoire will likely increase motivation, and engage them in evaluating their own skill levels, the difficulty level of their selections, and what is musically meaningful for them. High self-efficacy seems to be important for success in instrumental music at beginning and advanced performance levels (Robert, Davidson, & McPherson, 2010; McPherson & McCormick, 2006), and is positively correlated with middle and high school instrumentalists' self-evaluation and self-evaluation accuracy (Hewitt, 2011a). Use of self-evaluation has been shown to improve attitudes.

If music educators successfully grapple with the different value systems of vernacular music and Western art music (Boespflug, 2004), and the challenges of incorporating popular music into music education curricula (Emmons, 2004; Westerlund, 2006) so that teachers are prepared in these areas, they will very probably find much to applaud in adding vernacular music to programs for middle school students. Beyond increasing student participation with the inclusion of popular music in selections for choir and instrumental ensembles, it appears that providing students the opportunity in school to create music in small groups can foster peer communication, both verbal and nonverbal, in rehearsal, enable group creativity, encourage playing by ear, and lead to playing several instruments as well as singing (Allsup, 2003; Jaffurs, 2004; McGillen & McMillan, 2005; Hickey, 2009; Wiggins, 2006; Green, 2002). Adding popular music to middle school programs is a way of including students who have no prior music training.

Studies show that many students thrive musically and emotionally when given the opportunity to write original music (Hargreaves & Marshall, 2003). With use of technology even very young students can manipulate sound and create compositions. The inclusion of text, visual art, and dance in much popular music offers teachers potential for interdisciplinary programs. The collaborative processes of authentic vernacular music may provide students motivation and skills to continue music making in their adult lives (Hargreaves & Marshall, 2003; Myers, 2008; Woody & Parker, 2011).

Koutsoupidou (2005) studied teacher perceptions and practices in U.K. primary classrooms, finding that teachers viewed improvisation positively and that 81% incorporated it in their music teaching. In contrast, despite the recommendations of the National Standards, teaching of improvisation in American classrooms continues to be viewed as problematic (Azzara, 2002; Boyce-Tillman, 2004; Watson, 2004; Berke & Cowell, 2004; Brophy, 2002; Byo, 1999; Forsythe, Kinney, & Braun, 2007), suggesting a need for changes in music education curricula for teachers.

Although few studies about teaching musical materials, theory, and composition at the middle school level were included in this review, Buehrer (2000), in writing about the teaching of aural skills at the college level, shows how technology can play a major role by offering students the tools to explore music theory and aural skills in an exploratory and problem-based fashion, in which students can learn independently and individually. Smith (2002) has studied the use of computer-assisted instruction to develop rhythm reading skills in middle school students. Dammers (2010) describes the development of cell phone and laptop/tablet ensembles with middle-school children. Savage and Butcher (2007) describe experiments in which students of various ages create custom music instruments using Playstation 2 and a personal computer. The created instruments can be played with ensembles. Crow (2006) points out that students using computers can create and communicate music in the absence of "traditional" musical skills or conceptual understanding. He suggests that educators consider the possibility of many music curricula, in a variety of genres.

Greher (2004) used a multimedia program with middle school students to encourage music listening, with participants from three inner-city classes. The program presented alternate music sound tracks to movie clips, encouraging students to decide which were the best matches and why. The students also could create their own music, and hear the original film tracks, for comparison.

High School (Grades 9-12)

Developmental Characteristics

In high school, students study music mainly as an elective in American schools, primarily participating in band, choir, or orchestra, with more emphasis on performance than in earlier grades. High school students are beginning to make career choices and are gaining independence, while still experimenting with identity and self-image concepts. Lifelong bonds are formed in high school and are viewed as one of the most important aspects of secondary music experiences (Adderley, Kennedy, & Berz, 2003; Morrison, 2001).

A survey of teachers across Indiana indicated that the median level of secondary school ensemble participation statewide was 6% for string ensembles, 17% for band, and 24% for choral ensembles (Schmidt, Baker, Hayes, & Kwan, 2006). Nationwide, data from the National Center for Education Statistics' Education Longitudinal Study of 2002 indicated that 21% of high school students were

enrolled in music ensembles, with considerable regional variation (Elpus and Abril, 2010). Cultural and socioeconomic factors were shown to affect participation, with Hispanic students, students from lower-income households, and students with lower test scores and educational expectations being underrepresented in participation. Studies show also that participation of disabled students in ensembles is limited, despite presence of interest (Jellison & Flowers, 1991; Nabb and Balcetis, 2010). There is also a noticeable drop in participation of boys, especially in choirs. The effects of voice change may be considerable: studies confirm that voice change in boys can lead to loss of self-confidence, avoidance of singing, and resignation from choirs (Killian, 1997; Ashley, 2008, 2009; Freer, 2010; Shields, 2001; Harrison, 2004; Power, 2008).

Gender-based challenges are a problem with instrumental ensembles as well: Eros (2008) finds that association of gender with particular instruments results in fewer instrumental choices for individuals, limiting ensemble participation, and causes peer disapproval for students who cross the gender boundaries formed around certain instruments.

The divide between students' musical tastes and the music performed in high school ensembles figures prominently in the literature (Madsen, 2000; Woodford, 2005). Campbell, Connell, and Beegle (2007) note that popular music has considerable potential to connect with the everyday lives of adolescents, and that inclusion of improvisation and group composition techniques, used in creation of popular music, could make the educational experience more attractive to high school students. Abramo (2011) suggests that the prevalence of large ensembles, with instruction using traditional Western notation, has limited educators' ability to adapt instruction to meet the interests of secondary students. Volk (2004) argues for including instruction about other cultures' musical practices. Studies show that musical enculturation has an effect on many aspects including preference (LeBlanc, 1982; Abril & Flowers, 2007), melodic perception (Krumhansal, 2000, 2003), rhythmic synchronization (Drake & Ben El Heni, 2003), written description (Morrison & Yeh, 1999), and affective response (Arikan et al, 1999, Madsen, 1997). Multicultural offerings, including mariachi bands, African drumming groups, gamelan ensembles, and choral music from other countries, are gaining currency, and studies are needed to show the effect on participation as well as on students' musical skills.

Among high school students who participate in instrumental ensembles, self-evaluation accuracy improves in high school students, with significant improvement in their ability to evaluate tone, intonation, tempo, interpretation, and technique/articulation more accurately than middle school musicians (Hewitt, 2005, 2011b). Kepner (1986) finds that high school band students identified more errors while listening to a recorded performance than in a live performance, when they may be too busy with the task at hand to exert evaluative listening. High school students appear to benefit from comparison of their performance to an ideal model (Morrison et al, 2004). Practicing in high school students begins to resemble that of university students. Miksza (2007) finds that strategies effective at this level include using a metronome, repeating a section, slowing the tempo, rehearsing the whole piece, then sections, then the whole piece again, and identifying critical spots for extra practice.

Pedagogical Practices Appropriate to High School Students of Music

Studies of traditional choirs and ensembles have taken note of the positive aspects for students who participate in such groups, often for several years. School music teachers become mentors and the ensemble becomes a second family. Nonetheless, current research recommends that schools introduce

smaller and more various ensembles to recognize the music that students are listening to in the outer world and to attract more participation in music programs in the high school years. In small ensembles, students learn from one another, play more by ear, and give one another feedback. Goodrich (2007), in a study of mentoring within a jazz ensemble, found that students mentored one another not only in rehearsal but outside of rehearsal and for social purposes as well, and suggests that teacher education programs implement mentoring, to encourage future music teachers to encourage peer mentoring in their ensemble programs. Distance-learning, enabled by computers, can offer high school students mentoring programs with university students (Reese, 2001), as well as exposure to music of other countries.

Including popular music and music from other cultures in the curriculum is a recurring theme. Besides potentially attracting more participation, a variety of musical styles can help students develop listening skills and broaden their musical perspectives. Abril (2005) notes that students respond more positively to songs in unfamiliar languages after receiving lessons related to the sociocultural issues surrounding those songs. Green (2004) advocates "purposive listening," observing the way popular musicians learn music, as a way of developing students' listening skills to enhance their own performance, composition, or improvisation. Participation in a variety of ensembles may encourage students to try different instruments, including those which formerly were the objects of gender bias.

Technology offers ways to enhance instruction of band students: Fautley (2002) suggests exchange of audio files with email commentary, use of MP3 files for supporting home practice, and use of recordings to evaluate practice. Reid and Petocz (2001) describe a multimedia program designed to encourage ensemble performance, in which five contemporary compositions for recorders were created, to which video, notation, graphics, and text were added. Computer-based instruction can also be useful for teaching students with disabilities (Gregory, 2002).

Whereas composition is one of the skills recommended in the National Standards for Arts Education in 1994, Strand (2006) finds that only 5.9% of Indiana public school teachers who participated in her survey reported using composition tasks often in their classes. Numerous studies report on the difficulties: Odam (2000) and Berkley (2001) discuss the problems teachers encounter, including the mixed abilities of students in their classes, wasted time in group work, inappropriate methods, and problems with progression and preservation of pupils' work. On the other hand, Odam (2000) asserts that there is strong evidence that many students enjoy composing in and out of school. Rusinek (2007) investigates student perspectives in a collaborative composition project in a Spanish secondary school. Randles (2010), investigating the compositional experiences of high school students, found that over a 12-week period, compositional experience had a significant effect on self-perception of music ability.

Considering the number of research studies devoted to the subject, it would seem only a matter of time and teacher preparation before composition finds a useful role in school music programs. The review notes three books devoted to composition and creativity (Hickey, 2003; Rinehart, 2002; Sullivan & Willingham, 2002) as well as numerous articles on the subject. Studies treat such topics as innovative ways of employing computer-based collaborative composition (Gall and Breeze, 2008) and (Seddon, 2010), use of computer-based composition as a vehicle for self- and teacher-evaluations (Seddon & O'Neill, 2006), raising students' performance in music composition (Pitts & Kwami, 2002), and acoustic collaborative composition in songwriting (McGillen, 2004; McGillen & McMillan, 2005). Demski (2011) reports on initiatives of several teachers in the U.S. who seek to reach the 80% to 90% of high school student populations currently not enrolled in music classes. Use of computers appears to be a major attraction (Salaman, 2008), but Kennedy (2000) advocates both acoustic and computer-mediated

assignments in her proposal to engage the "missing music students" through stand-alone composition courses or composition tasks embedded in traditional ensemble programs.

College (Grades 13-14)

Developmental Characteristics

Music students at the college level comprise a. students who take music courses as electives; b. music majors who have an interest in performance or music education, c. students majoring in music administration or other adjunct programs, or d. college students who participate in music groups or study music outside of their enrolled studies. The literature reviews included in this summary refer only to students in music performance and music education. Their musical-perceptual aptitudes are various depending upon prior exposure to or training in music.

A recent study of focus of attention (Duke, Cash, & Allen, 2011) finds that university piano students, when asked to focus their attention on either their fingers, the piano keys, the piano hammers, or the sound produced, performed significantly better when they focused their attention externally, to the sound produced. Studies comparing the mental plans of experienced adult and novice child pianists find that expert and experienced pianists chunk pitches or rhythms together into meaningful sets, using conceptual plans, while novices use a combination of conceptual and motor plans, motor plans being defined as single pitch to finger mapping (Gruson, 1988; Palmer & Meyer, 2000). Glenn (2000) studied the use of the *SmartMusic* intelligent accompaniment program with college students in applied oboe, clarinet, and bassoon instruction. Students reported that they enjoyed the intelligent accompaniment software and that it contributed to their musicianship.

Bergee and Cecconi-Roberts (2002) found that college-level music students frequently are inaccurate self-evaluators (compared with teachers' evaluations). Woodwind players in their study appeared better able to assess interpretation tone, technique, articulation, and musical effect than intonation. University vocalists appear more adept at evaluating their tone and intonation than technique, and are less competent at assessing interpretation, diction, and musical effect. Kostka (1997) discovered that piano class students rated themselves lower than their teacher did, across five performance skills (sight-reading, musicality, technique, hand position, and correct fingering). Daniel (2001) discovered that undergraduates found it difficult to analyze their own performances objectively even after incorporating a video recording and evaluation procedure into their regular lesson routine.

Entering music freshmen in five randomly selected, publicly supported schools of music in the Mid-western U.S. (n=311) completed a survey (83% return rate) to determine their experience of, skills with, and attitudes toward technology (Meltzer, 2001). Relationships between these variables and demographics and use of technology by the students' high school teachers were studied as well. A full 97% of the respondents had experience with word processing software, 20%-46% with email and spreadsheet applications, and roughly one-third with music software of various types. When music education students self-evaluated their comfort with use of technology, they indicated a need for training in higher levels of music technology knowledge such as creation of Web pages, using a music editor, and using music education software (Barry, 2004).

Pedagogical Practices Appropriate to Postsecondary Students of Music

Applied music majors at the college level are typically under pressure to learn and perfect music at a rapid rate. Directing students' attention externally, to the sound produced, appears to improve performance. Practice strategies suggested by research include grouping of notes and rhythms into conceptual sets to facilitate a more efficient style of reading and learning. To improve applied students' self-evaluation abilities, teachers can work with the students to develop criteria for them to compare their performances with others' in specific areas. Use of a wide spectrum of listening examples is recommended, including other students' performances and teacher examples and selected YouTube recordings. Feedback is essential, from teachers and peers, either oral or written or using software such as SoundCloud, a Web-based tool where audio tracks are uploaded and comments posted.

Buehrer (2000) describes how technology can be used to teach aural skills and music theory at the college level, offering students a method for independent, exploratory learning. Reese, McCord, & Walls (2001) offer a compendium of teaching strategies in music technology, for performance, composition, and general music. Bauer (2003) has edited a series of articles on music technology application, including articles on Web resources that address the National Standards, music composition in the schools, the digital piano, and music notation software. Reese (2001) offers a review of software that can enable teachers to teach composition, or "thinking in sound," at different instructional levels. Use of the Internet in a mentoring project, in which teacher education students were teamed with practicing music educators, is described by Bush (2001). Griscom (2003) summarizes the widespread use of the Internet to distribute audio for music instruction on college campuses. The integration of Web-based material into graduate music research teaching can provide supplemental links to resources, Web-based teaching sequences, and various media to support course content (Barry, 2003). The possibilities of video-conferencing and Web-based instruction are discussed by Eberle (2003), and the growing interest in partnerships between institutions like the New World Symphony in Miami and music schools such as the Manhattan School of Music and the National Arts Centre in Canada using Internet2 is documented by Winzenried (2002).

Theatre

This literature review provides an overview of the developmental (social, emotional, cognitive, physical, and artistic characteristics) for four levels of human development as they relate to teaching and learning in a theatre classroom. The levels included in this brief study are pre-k through elementary school, middle school, high school, and early college. Each portion of the review begins with a description of developmental characteristics of each area in which social, cognitive, and emotional developmental characteristics are summarized and is contextualized within the context of artistic development as it relates to making theatre. The work purposefully acknowledges the commonalities among all four educational levels. Finally the literature review finishes with a summary of pedagogical practices thought to be appropriate to the developmental needs of secondary and postsecondary learners.

Artistic Development Through Theatre

Theatrical practice is a component of arts development that can influence the well-being and growth of individuals at various phases of human development. Theatre is an interdisciplinary art, and when used optimally can aid in physical, social, emotional, and cognitive development (Innes et al. 2001; Mages, 2006; Mages, 2008; Saldana, 2005).

While there is no clear consensus on how best to elucidate conceptions of theatre from early childhood through postadolescence, there are common understandings that govern educational theatre practice (Mages, 2006). To this end, theatric disciplines value a variety of representational modes and experiences that encourage the development of cognition, language, and kinesthetic abilities and also social, cultural, and ethical considerations of theatre making and viewing. (Hughes & Wilson, 2004; Mages, 2006, 2008; Podlonzy, 2000; Saldana, 2005).

Qualitative evidence suggests that when supported in educational environments, theatre practice influences ways of being in late adolescence and established attitudes and beliefs about the influence of theatre extend into adulthood (McCammon, 2009; Zdriluk, 2010).

Pre-K Through Elementary (Ages 1-9, Grades Pre-K-5)

Developmental Characteristics

Children from 1 to 9 years of age are developing and learning through a variety of domains—physical, social, emotional, and cognitive—and the development and learning that occurs in each of these domains influences what takes place in the other domains (Bransford, Brown, & Cocking, 1999; Dickinson & Tabors, 2001; Shonkoff & Phillips, 2000). It is well documented that children at this stage are beginning to embrace greater complexity, are beginning to practice self-regulation, and are invested in exploring their own symbolic or representational capacities (Bodrova, & Leong, 2005; Epstein, 2007). Early childhood development is also influenced by multiple social and cultural contexts as learning occurs in family, school, and community settings. Children are also influenced by belief systems and patterns of behavior that are explicitly or implicitly presented by the various sociocultural entities that they encounter (Bowman & Stott, 1994; Bronfenbrenner & Morris, 2006; Gonzales-Mena, 2008). Additionally, children at this stage learn in a variety of ways and benefit from a broad range of learning strategies (Bransford, Brown, & Cocking, 1999; Bowman, Donovan, & Burns, 2000). It is particularly important to note for the purposes of our study that play is a valuable medium for developing self-regulation as well as for promoting language, cognition, and social competence (Davidson, 1998; Duncan

& Tarulli, 2003; Elias & Berk, 2002).

Artistic Development

Theatre researchers generally believe that children in pre-kindergarten through elementary settings are developmentally prepared to explore social and cultural contexts, expand their literacy capacities, and actively participate in representational play in which they broaden their language, cognition, and social abilities (Hughes & Wilson, 2004; Mages, 2006, 2008; Podlonzy, 2000; Saldana, 2005).
Research from the theatre field suggests that children are invested in exploring beginning ideas about self and the world in creative drama environments, and that "creative drama provides a unique way to put their imagination into action" (Rosenburg, 1989, p. 27). There is agreement among scholars that children practicing drama strategies at this stage acquire cooperative group skills (Rosenburg, 1989; Innes et al., 2001). They also utilize beginning critical-thinking skills to make observations about others in relation to self (Innes et al., 2001; Rosenburg, 1989; Saldana, 2005), and they feel comfortable imagining what it feels like to be another person or in another time or space (Hughes & Wilson, 2004; Saldana, 2005). Characteristics of this liminal space, or liminoidal activities, can "offer a context, outside of normal routines, for [children] to explore uncharted territories or individual possibilities and experiment with different ways of playing a part in social processes" (Hughes and Wilson, 2004, p. 69). There is also evidence that pre-kindergarten through elementary age children are obtaining and assimilating new knowledge about literacy (reading, writing, and creating) that can be enhanced by their exposure to theatre processes that encourage the development of narrative skills (Cremin et al., 2006; Innes et al., 2001). Theatrical play and practice fosters communication abilities, including "speaking, listening, and critical thinking with reading and writing" (Innes et al., 2001, p. 216). Drama tools can also be used as an effective tool to increase story understanding (Innes et al., 2001; Podlozny, 2000; Rosenburg, 1989), and there is evidence that investigating narrative with dramatic tools nurtures and expands children's cognitive abilities. For example, Mages notes the role of the imagination in drama's ability to foster the narrative development of young children, saying, "the imagination need not apply solely to visual stimuli or images but can also apply to the imagining of other sensations such as tastes, sounds, smells, and textures" (2006, p. 338).

Additionally, the representational activities associated with drama and theatre for young children ultimately allow them a space in which play becomes a conduit to their development. Theatre scholars and practitioners purport that this type of play is most effective "where internal processes and external behaviors resemble those of the child at play and the artist at work" (Rosenberg, 1989, p. 26). Children surveyed about their own experience with representational play connected to theatre-learning were able to articulate a developing knowledge of the world around them (Innes et al., 2001, p. 218). They noted an improved ability to express themselves, and demonstrated greater open mindedness (Hughes and Wilson, p. 66). Children in upper elementary grades were also able to assess the influence and effects that dramatic play had on their social interactions with peers (Saldana, 2005, p. 117).

Pedagogical Practices Appropriate to Pre-kindergarten Through Elementary Students of Theatre

The brief literature review above suggests that educators should be mindful of the following pedagogical practices as they teach and learn alongside very young people in pre-kindergarten and elementary school settings:

- **Leverage theatre tools to help children explore and understand the world around them.** Creative drama activities encourage the development of critical-thinking skills. Teachers can provide opportunities for students to make observations about others and use dramatic strategies that allow children to take on a variety of roles to explore what it feels like to be another person or in another time or space (Hughes & Wilson, 2004; Innes et al., 2001; Johnson, 2002; Rosenburg,1989; Saldana, 2005).

- **Expand students' literacy capacities through active participation in representational play.** Researchers concur that theatre is an effective way to stimulate literacy learning through experiences that allow the very young to broaden their language skills, apply cognitive abilities in the exploration of narratives, and increase their social awareness through theatre activity (Hughes & Wilson, 2004; Mages, 2006, 2008; Podlonzy, 2000; Saldana, 2005).

- **Foster activities that engage students in imaginative play and increase their understanding of self in relation to others and their surroundings.**
  There is evidence that introducing theatre conventions and processes into pre-kindergarten and elementary settings can make children more aware of their interpersonal relations with others (Innes et al., 2001; Hughes & Wilson, 2004), and alert them to aspects of their surroundings that they had not considered or explored (Mages, 2006).

- **Provide authentic theatre activities and experiences that help young people to value artistic processes.**
  Research shows that attaining beginning theatre skills can be empowering for elementary aged students (Hughes & Wilson, 2004; Innes et al., 2001; Saldana, 2005). However, it is vital that these skills are also regularly contextualized as conventions within a discipline. While theatre tools are often effectively used to teach non-theatre topics, it is also important to introduce the notion of theatre as an art to students. It is important to provide authentic activities that help them to value artistic processes (Rosenburg, 1989).

- **Provide a safe space with a small audience that allows children to gain confidence in performing.**
  Performing spontaneously in front of an audience can be overwhelming for very young students, even when they have volunteered to do so. Earliest performances should be in intimate, safe spaces for small audiences only. (Garratt, 2011). Children of elementary age may also develop inhibitions about performing in front of a group, and approaches to instruction should consider and scaffold for these fears. (Garratt, 2011).

<u>Middle School (Ages 10-14; Grades 6-8)</u>

Developmental Characteristics

During this phase of development young adolescents are growing physically, intellectually, ethically, and emotionally. Physical development at this stage involves improved motor skills and further progress toward biological maturity (NMSA, 2009) and is marked by significant changes in height and weight. Significant changes also occur in the skeletal and muscular systems (Kellough & Kellough, 2008).

The onset of puberty during this period increases interest in and experimentation with sexual activity (Manning & Butcher, 2005). Simultaneously, dramatic change is occurring within the brain. Key to this

stage of brain development is the ongoing development of brain functions that allow for planning, reasoning, sustaining attention, and decision making (Caskey & Ruben, 2007).

Brain development allows young adolescents an increased ability to understand and reason (Stevenson, 2002). Intellectual curiosity also develops, and young people are "eager to learn about topics that they find interesting and useful" (NMSA, 2009, online). Research shows that young adolescents prefer active over passive learning experiences and are most engaged in learning when they are allowed to interact with their peers during education activities (Kellough & Kellough, 2008).

While young adolescents can be characterized by idealism (Kellough & Kellough, 2008), they are also beginning to utilize developing abilities to analyze and reflect to assert their beliefs and understandings about others and the world (Roney, 2005).

Certainly early adolescence has been characterized as a time in which the young begin a "quest for independence and identity formation" (NMSA, 2009, online); conversely, it is also marked by efforts to maintain peer approval (Kellough & Kellough, 2008). These contradictory desires can make young people vulnerable and sometimes place them at risk of making decisions that have an adverse effect on the person or circumstances (Milgram, 1992).

Artistic Development

Research demonstrates that artistic development of young adolescents is shaped by the young person's constantly shifting notions of self and the world. Key themes that arise when researchers consider middle schoolers' responses to theatre performances and activities are the young people's perception of how the theatre endeavor influences their growing concerns about self. Young adolescents believe theatre experiences are valuable when they aid them in the development of identity, improve self-efficacy, stimulate intellectual curiosity, encourage active engagement, or invite them to participate in positive peer-community interactions (Catteral et al, 1999; Catteral, 2006; Fredricks et al., 2002; Montgomery, 2010; Moorefield-Lang, 2010).

Young people in middle grades are invested in extracurricular activities like drama when they feel confident in their abilities to carry out the activities presented in the educational atmosphere (Fredricks et al., 2002, p.78). Studies report that theatre aids in the development of students' self concept (Catteral et al, 1999, Catteral, 2006), and that students are motivated by how much they enjoy the class and how much they are inspired to participate in that setting (Moorefield-Lang, 2010). Students are drawn to drama classrooms and other arts spaces that provide this type of motivation through cultivating habits of "personal discipline, collaboration, and work ethic." (Moorefield-Lang, 2010, p. 5).

Young people also have quality learning experiences in drama settings when they feel challenged intellectually and physically (Daykin et al., 2008, Seidel, 1991). Saldana reports that theatre experiences are successful for young people when young audience members are able to "negotiate personal meanings for personal payoffs" (Saldana, 1995, p. 29). Omasta (2011) found that young adolescent audience members are capable of some complex reasoning when they describe their experiences as theatre-goers. For example, when presented with messages imposed on the play by its creators, middle grade student were able to distinguish between the messages that the theatre producers intended to address and their own opinion of those same social issues (p. 48-49). Teachers report that intellectual and physical challenges stimulate learning in theatre classrooms, too. In one study, students who previously struggled with academic or behavior problems were engaged in drama classrooms where

they were “given a lot of choices” (Montgomery, 2010. p. 69). These students were observed by their teachers and were regularly described as “empowered” by the active engagement that occurred when using drama tools (Montgomery, 2010).

This age group also values positive peer and community interactions. Adolescents are often said to participate in arts activities because these activities provide them with opportunities to be with their friends or to meet new friends (Catteral,et al.,1999; Fredricks et al., 2010).

Finally, there is evidence that students in middle grades are capable and eager to participate in situated learning experiences that occur within authentic theatre environments (Andersen, 2004). They have the aptitudes necessary to value the concepts of the discipline, practice the skills and procedures of the discipline, and understand the dispositions and attitudes of artists within the field.

High School and Post High School (Ages 15-21; Grades 9-14)

Developmental Characteristics

The middle adolescent has the ability to think deductively, inductively, conceptually, and hypothetically, and is able to synthesize and use information in effective ways. Many young people demonstrate their cognitive growth by engaging in new forms of mindfulness in relation to self and others around them (Bandura, 2006).

Expanding on the ethical and social growth of their early adolescence, young people in this phase experience a need to belong and have a sense of self-worth (Bandura, 2006; Hurd, 2008). They are invested in principles rather than directives. Interest in social issues grows, and students often become interested in activist movements. In this developmental stage adolescents often make claims about their identity—sexuality, race, spirituality and gender—while they are simultaneously trying to reconcile their own expressions about sexuality, race, spirituality and gender within the normative paradigms that are presented in family, school, and community settings (Mezirow, 2000).

Social growth is influenced by continued physical growth. Older adolescents and young adults are negotiating gendered attraction and sexual orientation. Both sexes are fully developed and have generally gained more assurance about their physical appearance. They are interested in preserving their health and managing the pressures associated with young adulthood, yet they often participate in activities that lead to greater health risks (Hurd, 2008).

By late adolescence, young adults are beginning to see themselves as producers and creators of knowledge, as opposed to the past where they have viewed themselves primarily as consumers. Because of this cognitive shift, young adults are invested in educational opportunities and are often invested in broadening their peer groups to include a more diverse and varied group of people.

While most young adults continue to grapple with their personal life choices, they are also invested in the moral and philosophical perspectives that shape the world around them. Late adolescence is a period of transformation in which young adults actively utilize a variety of educational experiences (formal and nonformal) to make impactful and consequential decisions (Bandura, 2006; Hurd, 2006).

Increasingly, both the middle adolescent and the late adolescent are influenced by their experiences with technology. They utilize technological tools as means of communications, entertainment, and intellectual and creative stimulation (Boyd, 2007; Jenkins, 2006; Kress, 2003).

Artistic Development

Middle and late adolescents are regularly observed as beginning to think of themselves as creative producers of theatre processes and products. Young adults learn quickly to think like theatre practitioners, and are eager to participate in the decision-making processes of the art form (Gutierrez et al., 2008; Lazarus, 2004). Engaging in theatre processes allows them opportunities to understand their own needs in relation to others (Larsen & Brown, 2007; Metz & McNally, 2001; Gallagher, 2000); explore cultural and societal issues that relate to their real life contexts (Larson & Brown 2007; Woodson, 2004); value interpersonal relations as they contribute to or detract from theatre-making processes (Denton & Ryder, 2009; Gallagher, 2007; Gonzalez, 2006; McCammon, 2009; McLauchlan, 2010); collaborate to transform works of art through their own and their peers' conceptions (Denton & Ryder, 2009; Gutierrez et al., 2008; Woodson, 2004); and reflect on and analyze their own theatre-making processes (Gonzalez, 2004; Jensen, 2010; Lazarus, 2004; Woodson, 2004).

Young people in high school settings can conceive of their own theatre work within larger contexts. They are interested in theatre production that moves beyond classroom activities and into larger public venues (Guttierez et al., 2008; McCarthy et al., 2004; Seidel, 1991). In both high school and college settings, motivation to create theatre derives from interest in addressing relevant issues and exploring real-life emotions (Larson & Brown, 2007; Mages, 2010). They become invested in theatre roles and skills and curious about theatre spaces and materials (Gutierrez et al., 2008; McLauchlan, 2010; Mello, 2004). Especially as young adults move into college settings, they become aware of and interested in how their own theatre work honors, refutes, or challenges the traditions of the art form (Dolan, 2001).

Healthy mentoring relationships in late adolescence often aid young adults in making vocational and personal life choices as they demonstrate interest in becoming theatre practitioners. Mentors can aid in this process by challenging them to see themselves in various theatre roles including "artists, critics, intellectuals, and citizens of a participatory democracy" (Dolan, 2001, p. 3). This type of exploratory activity includes exposing them to the artistry, history, and theories of the discipline at large (Canning, 2011), as well as introducing them to the personal, social, cultural, and economic benefits of advocating for the arts (Dolan, 2000; Gainor & Wilson, 1995; Robbins, 2010; Rohd, 1998; Nicholson, 2009).

Finally, middle and late adolescents are actively engaging with media technology, including MP3 players, social networking websites, cellular and mobile technologies, and other interactive digital media tools. Many researchers assert that drama educators are uniquely suited to engage with young, digital natives. Theatre researchers emphasize that educators should increasingly utilize drama theories and pedagogies to engage young people in conversations about new media (Carroll, Anderson & Cameron, 2006; Davis, 2010; Haseman, 2004; Jensen, 2008). As stated throughout this section, adolescents should be prepared to be producers and active creators of the knowledge that surrounds them. This requires an acknowledgment that both types of texts (theatre and media) utilize modes of production and reception through which students can articulate who they are in the world (Jensen, 2008; Weltsek, 2011).

Pedagogical Practices Appropriate to Secondary and Postsecondary Students of Theatre

This literature review suggests that educators should be mindful of the following pedagogical practices as they teach and learn alongside young people in secondary and postsecondary theatre settings:

- **Provide students with access to knowledge through theatre texts and tools.**
  Research shows that students are successful when they are exposed to theatre texts and materials that introduce them to new conceptions of the world or aid them in the exploration of real-world issues or authentic problem solving (Jensen, 2010; Lazarus, 2004; Gonzalez, 2006; Seidel, 1991 Woodson, 2004).

- **Offer students theatre-centered opportunities to analyze and evaluate their own needs and beliefs in relation to others— including worldviews as well as the views and beliefs of family, peers, and community members who surround them.**
  The literature regarding high school and postsecondary students suggests that students are eager to use theatre tools and spaces to investigate interpersonal relations as they relate to creative processes (Denton & Ryder, 2009; Gallagher et al., 2010; Gonzalez, 2006; McCammon, 2009; McLauchlan, 2010; Nicholson, 2009).

- **Teach theatre concepts and skills that stimulate intellectual curiosity and encourage active engagement and creative play.**
  Active learning as well as artistic exploration that invites students to play is empowering. Inquiry-based strategies that encourage this type of environment will help students to new possibilities as it relates to their own theatre-making processes (Catteral, 1999; Fredricks et al., 2002; Montgomery, 2010; Moorefield-Lang, 2010).

- **Design opportunities for creative collaboration that mirrors authentic processes that occur in theatre practice.**
  Research on middle and late adolescents generally advises teachers to help students make correlations between their classroom work and the discipline that they are studying. These efforts should engage theatre meaning-making processes that are relevant in real-world settings. Students should be exposed to the range of theatre responsibilities, genres, cultural forms, and tools that make up the collaborative art form. These experiences should not only address the ways things have been done throughout theatre history, but should also encourage students to explore new creative uses for theatre tools and understandings in the contemporary world (Denton & Ryder, 2009; Gutierrez et al., 2008; Jensen, 2010; Woodson, 2004).

Conclusion

The literature suggests that there are a variety of pedagogical methods that are developmentally appropriate at each stage of development. Educators should consider each of the methods described in the three sections of this literature review. This review of current research and other resources is a good beginning, but it is clear that further qualitative studies will be necessary to develop a comprehensive plan of action for teaching and learning with late adolescents.

Visual Art

Introduction

The following literature review provides an overview of the social, emotional, cognitive, and artistic characteristics for five levels of human development: early childhood, elementary school, middle school, high school, and early college. Each section begins with a brief description of artistic development at that particular stage, then offers a summary of social, cognitive, and emotional developmental characteristics, followed by developmental qualities pertaining to art making. Noting the commonalities among varying educational levels, the literature review additionally offers a series of recommendations of pedagogical practices thought to be appropriate to the developmental needs of learners in the visual arts.

Artistic Development

Artistic development, as one thread of human development, is a cumulative, culturally inflected, complex "layering" of re-presenting[2] life's experiences and understandings (Burton, 2004, 2005); it is neither a linear, universal, nor age-determined unfolding of intrinsic traits (Burton, 2000, 2005; Kindler, 1999, 2004). While debate persists regarding the ways in which to best conceptualize artistic development, consensus in the field suggests that given optimal cultural conditions (Csikszentmihalyi, 1999), artistic development does occur, and might be understood through changes in a variety of visual repertoires (Burton, 1980/81, 2000, 2005, 2009; Kindler, 1999, 2004). Furthermore, substantial anecdotal evidence suggests that, if supported in education, artistic development extends into early adulthood (Burton, 2000, 2004), though qualitative descriptions are needed of students' thinking and pedagogical practices in art classes (Burton, 2000; Eisner, 2002; Hafeli, Stockroki, & Zimmerman, 2005).

Early Childhood (Grades PreK-2)

Developmental Characteristics

Children of this age range are active, hands-on learners. They have short attention spans, cannot sit still for long periods of time, and learn best through hands-on exploration and manipulation of materials from the world around them (Wood, 2007, Wexler, 2004). Learners in early childhood are social and talkative, and a narrative impulse runs through many of their activities, from drawing to imaginary play. In the earliest segment of this age bracket, parents, teachers, and other caregivers are the primary social influences, but by early elementary age, friends can be highly socially influential as well.

Preschool and early elementary students learn well from modeling, and need chances to practice new behavior (Wood, 2007). Learning experiences need to be simultaneously structured and exploratory (Wexler, 2004), providing opportunities for open-ended exploration with materials and ideas that fit within a classroom routine that has a defined beginning and end. Students of this age are very enthusiastic and eager to learn, but are generally more interested in process than product. By the later stages of early childhood, students' fine motor coordination has begun to develop somewhat, but in general this stage is primarily concerned with the development of gross motor abilities, and precise movements or fine detail are not in the range of students' interests or abilities.

[2] Art educator Judith M. Burton defines the term "re-presentation" as the infinite ways in which artists (of all ages) translate life experience in a tangible, aesthetic form that might be experienced by others who encounter the work.

Artistic Development

Students of this age level need to actively play and explore, and learn best by moving large muscle groups (Wood, 2007). Preschool and early elementary education often involves hands-on time with a variety of materials: crayons, markers, and other drawing implements, paint, clay, and blocks and other manipulatives. Art making at this stage (especially age five and below) is about experimentation with materials and the kinesthetic experience of manipulating them much more than it is about trying to represent a particular object or idea (Louis, 2005, Kindler, 1994). When children begin drawing, they are not very attentive to the visual characteristics of the marks they produce; their main concern is that they are able to make marks (Kindler, 1994). They gradually begin to explore the relationship between marks (Kindler, 1994) and perhaps name the marks (Lowenfeld, 1987). Gradually, students begin to develop intentional forms that grow into symbolic representations of things, as they come to realize that marks can convey meaning (Kindler, 1994, Lowenfeld 1987, Gardner, 1980). Typically, the first fully-developed symbol a child depicts is that of a person (Lowenfeld, 1987).

When children begin attempting to represent people, objects, ideas, or stories, they draw from their own personal experience (Olson, 2003), but these experiences include the influences of family, community, and media (Thompson, 2003). Gradually students' graphic images – a house, a person, a favorite character – become increasingly similar to other students' drawings, reflecting a growing desire to communicate socially shared meaning (Louis, 2005).

Art making at this stage is a primarily social activity (Pearson, 2001) in addition to being an active and kinesthetic one. Students often "think out loud" as they work (Thompson, 1995), and are eager to re-tell the story of a drawing to anyone (especially adults) who would like to hear. There is a very close relationship between language arts and visual arts at this age (Olson, 2003).

Pedagogical Practices Appropriate to Early Childhood Students of Visual Art

- **Allow for open-ended exploration within a structured environment.**
  It is widely recommended for educators of early childhood learners to provide a structured environment for arts learning, with dedicated space, materials, and beginning and end times, but to allow for open-ended exploration during that time (Bleiker, 1999). The Reggio Emilia approach to early childhood education, which regards the classroom environment as a teacher in itself (New, 2007) has become especially popular with art teachers of very young students. In Reggio classrooms, or ateliers, art materials are carefully selected and arranged for children in a visually pleasing way, and the entire classroom is arranged in a way that is intentionally meant to support learning (New, 2007). What children are to do with the materials is not dictated; rather, lessons are a process of collaborative inquiry, where teachers pose ideas and situations to stimulate children's curiosity, and students' responses, ideas, questions then inform the direction of the art experience (New, 2007).
  "[W]hen children come in contact with new materials and situations, they learn to ask questions and become self-motivated learners" (Pitri, 2003).

- **Do not impose meaning or ideas on student work.**
  In earlier stages of drawing, painting, and other media explorations, marks are often not intended to stand in for anything else; they are a record of a child's movement and exploration. Yet often, educators and parents ask students to tell them what they have created a picture *of*, or to describe what is happening in the image, when the student did not intend for there to be

any particular symbolism or narrative. The adult interest and adult insistence on decoding images in terms of the presence of things that are not actually there may communicate to a child that there is something wrong with recording their actions only, or suggest that it is less valuable than a symbolic representation of a thing (Kindler and Darras, 1998). Early childhood art educators are advised not to suggest to students (especially those on the younger end of this grade band) what they should draw. These suggestions are confusing, as children are often unable to predict exactly what will happen when pen hits paper (Thompson, 1995).

- **Use age-appropriate media and techniques.**
  Educators are advised to offer materials to students that do not require much fine motor coordination to manipulate, such as thick crayons, markers, clay, or blocks. Paint is also easy for students to manipulate (provided their brushes are big enough) and may allow for more expressive potential than drawing implements (Louis, 2005).

- **Look at art with students.**
  Early childhood arts education is often involved with experiences of art making only, but art viewing can be included as well, especially in later stages of early childhood (grades 1-2). Students can begin by making choices as to which works of art they would like to view with the educator (from a small selection), and engaging in short conversations about the works (Eyestone Finnegan, 2001).

Elementary (Grades 3-5)

Developmental Characteristics

In later elementary school, students have increasingly more refined motor coordination, and are more able to engage in delicate work with a wider range of tools, or revisit earlier processes with greater sophistication (Beal, 2001). Students are restless and still need physical activity, though their attention spans are longer than those of their younger peers (Wood, 2007).

> Elementary-aged students have an ever-expanding understanding of themselves in relation to the world more broadly, and are eager to explore the world and its systems. They are intellectually curious and industrious, and are interested in varieties of new arenas of knowledge, or facts and skills (Wood, 2007). They are able to consider more abstract concepts than their younger peers, and are more readily able to consider the world from another's point of view.

Friendships are increasing in importance at this stage and become ever more important into the middle school years. Elementary students are forming a self-identity, becoming more individualistic and socially independent, and their status as part of a group of friends is an important component of this. This increased social interest makes students more able to participate in group projects than their younger peers.

Artistic Development

At this stage, art making is less of a tool of communication than it is for younger students. As students get older, they typically rely less on visual communication and more on verbal abilities to express their ideas and understandings of the world around them (Edens and Potter, 2001). The art of elementary students still provides a number of insights into their overall development, however. In terms of drawing development, this stage is sometimes referred to as the "gang age," (Lowenfeld, 1987) as children of this age very typically create drawings of groups of friends, reflecting their growing social interests and the importance of friends.

Students in later elementary grades have a growing interest in achieving realism in their work and in mastering artistic techniques. They may draw the same object or figure several times, aiming to perfect their idea, rather than experiment with a fuller range of subject matter. Students at this level are ready to be introduced to new facets of artistic production; for example, they are readily interested in using sketchbooks (Thompson, 1995), and often have the perceptual and technical facility to begin drawing from observation (Goldsmith Conley, 1994). Students of this age range are increasingly less comfortable with artistic risk-taking and experimentation, and are more sensitive to perceived criticism about their artistic abilities.

Pedagogical Practices Appropriate to Elementary School Students of Visual Art

- **Integrate art into other subject areas, but don't justify arts education in terms of non-arts learning.**
  There is evidence that integrating art into other subject areas, including science, can enhance students' abilities to learn new concepts, and pictorial representation techniques in these subjects may effectively be used to communicate their ideas more fully. In these scenarios, student drawings can contribute directly to learning, rather than being an extension activity (Edens and Potter, 2001). Researchers warn not to justify arts education solely on its benefits for learning in other subject areas, however (Edens and Potter, 2001), and argue that it is better to have a strong arts program in place first and then experiment with arts integration, rather than developing an arts program solely for the purpose of instrumental outcomes (Brewer, 2002).

- **Engage students in critique and reflection; cultivate critical-thinking skills in students.**
  As students' understanding of the world in general is expanding, their understanding of the world of art can expand as well, and instruction can be expanded to introduce students to art history, aesthetics, and criticism in an age-appropriate manner (Goldsmith-Conley, 1994, Eckhoff, 2007). Through the use of higher-order questioning strategies, students can be encouraged to observe works of art closely and interpret them thoughtfully (Goldsmith-Conley, 1994, Perkins, 1994). Conversations about works of art may focus on a variety of topics; students could be encouraged to construct a narrative based on what they see, or discuss which techniques the artist may have used in executing a particular work, for example (Eckhoff, 2007). Students should apply skills of critical reflection to examinations of their own work as well (Burton, 2001).

- **Continue to allow for open-ended exploration, even within structured assignments.**
  The literature on strategies for teaching art to elementary school students continues to emphasize the importance of open-ended exploration in the art classroom. Even within the context of structured assignments, educators are encouraged to develop a sense of flexibility in

the art classroom, allowing students to experiment with new ideas as they work. Educators are to encourage inquiry and discussion among students, enabling them to take ownership of their learning, develop their own areas of expertise, and share these findings with other students. (Milbrandt, 2004).

- **Connect to students' lives and experiences.**
  In the later elementary years, art experiences continue to be an effective vehicle for connecting to students' own lives and personal interests, and educators should continue to provide a platform for personal experiences as art content (Burton, 2001).

Middle School (Ages 10-14; Grades 6-8)

Developmental Characteristics

In this phase of development, young people become more conceptually sophisticated, express an expanding interest in a range of topics, and increasingly question rules, mores, and conventions as they become increasingly aware of their future teen and adult years (Burton, 2004; Eisner, 2002; Kerlavage, 1998). Their growing social awareness is expressed through a greater interest in social relationships, popular culture, and peer opinion (Burton, 2004; Hurwitz & Day, 2007). There is a shift from same-sex friends to friends of mixed genders, and an intensifying curiosity about sex (Hurwitz & Day, 2007; Kerlavage, 1998). As these young people become more aware of and interested in social, political, and personal qualities of people in their world, so, too, are they more intrigued by these same influences in art (Burton, 2004; Kerlavage, 1998). And, while they may have fresh insights into sociopolitical conditions and interpersonal relationships, they may simultaneously maintain rigid moral positions and be relatively intolerant of divergent opinions (Burton, 2004; Eisner, 2002; Hurwitz & Day, 2007; Kerlavage, 1998).

Expression of emotions may seem to be inconsistent as these young people strive for competency in many endeavors, in their search for autonomy, independence, and identity (Burton, 2004; Hurwitz & Day, 2007; Kerlavage, 1998).

Artistic Development

Consensus in the field suggests that it is during the middle school years that young people, often experiencing confused thoughts and feelings about their place in the world, "drop out" of art making altogether (Burton, 2004; Carroll, 2007; Eisner, 2002; Gardner, 1990) as ideas about self and world rapidly become more complex and out of step with ideas about what art materials can and cannot do—in particular the "technical skills of composing visual ideas, as these are determined by the culture, and the personal-idiosyncratic responses deriving from new body-sensory orientations to materials" (Burton, 2000, p. 339). Artworks by those young people who sustain their engagement with art making appear to be strongly influenced by the ways in which these young people engage the world, and such artworks can become an occasion for expressing new understandings of self-in-the-world (Burton, 2004; Gardner, 1990). It is thought that opportunities for embodied knowing through the open-ended exploration of materials may help adolescents synthesize the changing physical, cognitive, and affective experiences encountered during this phase of human development (Burton, 2004).

It is not unusual for middle schoolers to make images based on deep levels of feeling; images that are questioning, provocative, difficult, and aesthetically challenging (Burton, 2004, p. 55). In fact, for middle schoolers, aesthetic form seems to be of less importance than it had been in their elementary years; personal work moves toward graffiti, cartoons, and private journals, while the kind of spontaneous drawing typical of preadolescent years decreases (Burton, 2004; Eisner, 2002). In an attempt to locate their "new physical self" in space, adolescents frequently turn to the representation of three-dimensional space on a two-dimensional plane (Burton, 2000). While perspective is one artistic convention appropriate to shaping volumes of space, it is important for adolescents to understand that "in the arts they can transcend conventions of the culture and bend them to their own expressive purposes" (Burton, 2000, p. 340). Working against cultural conventions often appeals to the adolescent artist, for whom risk-taking and expressivity are thought to create more "broadly based habits of mind" such as to imagine "divergent vantage points of an idea, event, or problem, . . . to sustain focused perception over time, . . . [and] to express their ideas and feelings openly and thoughtfully" (Burton, 2000, p. 340).

Middle schoolers tend to use three different distinctive modes of drawing in order to achieve three different ends: working from observation, imagination/memory, and copying (Burton, 2004). Observation reflects young peoples' interest in the world of facts and details, in interpreting personal experience, and particularly, in capturing an experiential likeness rather than a photographic one (2004). Drawing from imagination and memory serves to explore and practice visual response without obligation to create convincing likenesses (2004). Imaginative drawing tends to be playful and open-ended; characterized by simpler, flatter shapes; explore emerging visual ideas such as occlusion; resist adhering to everyday logic (2004). Doodling, as one form of imaginative drawing, serves newly emergent sensory and emotional responses (2004). The third mode of drawing—copying, whether from pop-cultural forms such as cartoons, fashion models, and advertising, or from "high" culture master artworks, serves the young adolescents' needs to explore their own efforts in relation to adult work (Burton, 2004, pp. 44-52).

Across all modes of expression (observation, memory, copying), middle school art work is characterized by attention to realism and narrative (Eisner, 2002; Gardner, 1990; Kerlavage, 1998); an increased attentiveness to detail (Eisner, 2002; Kerlavage, 1998); and an interest in color, design, and space (Carroll, 2007; Eisner, 2002; Hurwitz & Day, 2007). Early on, young adolescents seem to believe that there is a single standard by which all art is judged, though they later tend to develop a more relativistic view that all judgments in the arts are equally tentative (Gardner, 1990).

High School (Ages 14 -18, Grades 9-12)

Developmental Characteristics

At the high school level, development is characterized by the deepening of new understandings that had been encountered in the middle school years: students tend to think in increasingly sophisticated ways, expand competencies in a range of topics, and continue to question rules, morality, and conventions (Burton, 2004; Eisner, 2002; Kerlavage, 1998). Social relationships and popular culture are important influences in the lives of high school adolescents (Burton, 2004; Hurwitz & Day, 2007); and there is typically an increase in sexual awareness and desire (Burton, 2004; Kerlavage, 1998; Kroger, 2004). These young people enjoy autonomy: the freedom to move about a classroom, to have informal self-directed spontaneous dialogue, and to make choices for themselves and their work (Graham, 2003;

Kroger, 2004). They may feel as though they are invulnerable and thus may freely engage in risky behaviors and have difficulty foreseeing consequences (Kerlavage, 1998; Kroger, 2004). Students have a sense of being special and unique as they seek to build a sense of self, and may believe that others, especially adults, cannot understand them (Kerlavage, 1998; Kroger, 2004). At the same time, however, high schoolers seem to want to belong to a community (Anderson & Milbrandt, 2004; Kerlavage, 1998), and will to seek out adult role models and adult support as they begin to envision the adults they will become (Burton, 2004; Carroll, 2007; Kerlavage, 1998; Kroger, 2004). As with middle schoolers, high school students have a strong desire for competency in disciplines in which they are interested (Burton, 2004; Hafeli, 2008).

Students in secondary school have the capability to think abstractly and metaphorically, an increased capacity for metacognition, and the ability to identify knowledge gaps and to manipulate visual metaphors (Burton, 2004; Hafeli, 2008; Hetland, Winner, Veenema, & Sheridan, 2007; Kerlavage, 1998). They are more able to understand alternative viewpoints, and may seek out many possible vantage points (Anderson & Milbrandt, 2004; Burton, 2004; Eisner, 2002; Hafeli, 2008). There is an increasing ability to focus, to engage and persist, and to resist closure to a particular endeavor (Burton, 2000, 2004; Hetland et al., 2007). There is an increase in the young person's capacity for working from memory, for imagining next steps, and for creating mental pictures (Hafeli, 2008; Hetland et al., 2007; Kerlavage, 1998).

Artistic Development

In this phase of development, the self moves to the center of conceptions of art (Anderson & Milbrandt, 2004; Burton, 2004; Hafeli, 2008; Kerlavage, 1998). Students learn to think like artists and engage in studio thinking (Anderson & Milbrandt, 2004; Hetland et al., 2007; Kerlavage, 1998), which may include: wedding their needs, wishes, and anxieties to the art-making process, including engaging in art problems of personal relevance (Anderson & Milbrandt, 2004; Burton, 2005; Eisner, 2002; Graham, 2003; Hetland et al., 2007); observing more closely (Graham, 2003; Hetland et al., 2007); playfully exploring without a preconceived plan (Hetland et al., 2007); reflecting on and analyzing their art (Carroll, 2007; Graham, 2003; Hetland et al., 2007; Kerlavage, 1998); and forming strategies for moving to a higher level of artistic involvement (Carroll, 2007; Graham, 2003; Hetland et al., 2007; Kerlavage, 1998).

Young people in high school begin to conceive of their own art as existing within larger traditions, from which the work takes its authenticity (Burton, 2004; Hafeli, 2008). They learn to use tools and materials, in part through the playful and exploratory treatment of visual form and the exploitation of media qualities for aesthetic satisfactions (Eisner, 2002; Graham, 2003; Hetland et al., 2007). While there is a continued interest in locating things in space (Burton, 2000, 2004; Graham, 2003), motivation to make art derives from a variety of sources: feelings, observations, skills, materials, ideas, and "the compulsion to offer an alternative or critical view of the social order" (Burton, 2004, p. 56). Some important qualities— elaboration, observation, fluency, and resistance to closure—are evident in late adolescents "who have been exposed to arts education for considerable periods of their education" (Burton, 2000, p. 340). Elaboration enables youngsters to be attentive to details of their perceptions and ideas, explore further information and, in general, to entertain different possibilities on an idea, problem, or experience. Originality involves seizing some of these different possibilities and reconceiving them in fresh ways; in short, originality undergirds independent thinking about things, making the familiar strange and vice versa. Fluency is the ability to make ideas flow, to move them forward or backward, to sift out and interweave ideas and responses into new unities. Resistance to closure, of course, implies

the ability to keep an open independent mind, consider possibilities, move thinking forward into new domains of insight and understanding (Burton, 2000).

College (Grades 13-14)

Developmental Characteristics

As many agree that the boundaries between adolescence and adulthood are blurry, college learners, especially those in their first two years, might be thought of as both "late adolescents" and "young adults" (Mihalyi Csikszentmihalyi & Larson, 1984; Kroger, 2004; Mezirow, 2000; Skipper, 2005). Therefore, it must be noted that developmental characteristics of adolescents (middle school and high school students) may have some relevance to the development of college students. For example, some adolescents might be able to reflect critically on their own beliefs in addition to reflecting critically on the values of others, but usually the ability to reconsider one's own assumptions occurs later, in adulthood (Mezirow, 2000).

In general, it is thought that by early adulthood individuals have a particular "frame-of-reference" from which they understand themselves and their relationship to the world (Mezirow, 2000). Transformational change in adults is usually brought on by some encounter with the world that does not fit within their existing frame-of-reference (2000). Such encounters, or dissociative experiences, whether they occur in life or in formal schooling, often lead to questioning one's assumptions, to re-thinking one's frame-of-reference (2000). Dissociative experiences are initiated by dramatic or profound encounters, such as moving away from home to study at college, but also by more subtle life experiences, such as simple requests to take on new skills, modify a learning style, or increase self-confidence (Kegan, 2000, p. 67). In college, dissociative events leading to cognitive and affective development occur both inside and outside of the classroom (Skipper, 2005). The first year of college may be a particularly dramatic dissociative experience, as it is often:

> "...characterized by the subtle and overt messages a college freshman gets that he is on his own in the conduct of his academic and private life [which] can serve to honor that newly emerging voice in the development of personality. But for a person who has not yet begun this emergence, the same messages—which professors and advisers may think of as confirmations of the student's adulthood—can be experienced as an abandonment, a refusal to care and a disorienting vacuum of expectation." (Kegan in Kroger, 2004, p. 186)

For optimal development to proceed during the transition from adolescence to adulthood, mentors must come to know the adolescent in their "initial meaning-making balance," then contradict or challenge them at "an appropriate time with an appropriate response," and then remain present and supportive as the adolescent engages in the "evolutionary passage," or transformational change, brought on by the challenge (Kroger, 2004, p. 188). Similarly, adults seem best able to reconsider their personal beliefs and assumptions, their frame-of-reference, if they have a place to be self-reflective, think critically, and have a dialogue with trusted others (Mezirow, 2000). The more reflective and open adults can become, the more they will be able to try on other points of view, and the more richly imagined their "alternative contexts for understanding" will be (2000, p. 20).

An imaginative response reflecting adult transformative learning is most often expressed through language (Mezirow, 2000). However, such learning might also be "presented" as motion, color, texture, aesthetic or kinesthetic experiences, empathy, inspiration, or transcendence for which language is

unnecessary (Mezirow, 2000, p. 5). This "presentation" of knowledge is analogous to what some in the field of art education have called embodied knowledge, knowing intuitively, or knowing "by hand"; terms that describe experiential dimensions of thinking, made manifest in visual actions and products (Burton, 2005; Burton & Hafeli,(forthcoming); Eisner, 2002; Shusterman, 2000).

Artistic Development

Engaging with art making seems to encourage adults to explore more freely, to become willing to ignore existing boundaries, and "to work for hours without need of outside reward, approbation, or stimulation" (Gardner, 1990, p. 21). For adults, art "provides a special (unique even) avenue of personal expression . . . and possibly the only avenue for effective expression of what is important to them at that time" (Gardner, 1990, p. 21). In fact, the central purpose of a college level studio art education appears to be in furthering personal development rather than in identifying a particular studio art profession (Bekkala, 1999; Edström, 2008; Madge & Weinberger, 1973).

Studio art education enables adults to develop aesthetically, to appreciate different kinds of art, to see things from multiple points of view, to articulate their thoughts about art, to value the process of making art, to be more aware of their own thinking, and often to be motivated to continue exploring art making (James, 1996, 1997, 2004; Kent, 2001). In addition, students may develop confidence in their "unique, artistic expression"; feel more comfortable with uncertainty; and develop a sense of trust that something interesting will happen in the art-making process (Edström, 2008, pp. 8-11).

It does not seem, however, that adult conceptions of art are "susceptible to rapid transformation" (Gardner, 1990, p. 17). Didactic training of adults "toward more sophisticated understandings [of art] are destined to fail" (Gardner, 1990, p. 17). Instead, new understandings of art emerge over several years of study as a result of regular, immersive interactions in artistic, physical, and social contexts (Bekkala, 1999; Edström, 2008; Gardner, 1990). Therefore, teachers of art should: involve students deeply in the particular studio domain over a significant period of time; encourage regular interaction with individuals who are somewhat (rather than greatly) more sophisticated; and give the students ample opportunity to reflect on their own emerging understandings (Gardner, 1990, p. 17).

Pedagogical Practices in Studio Art Appropriate to Secondary and Postsecondary Learners

The literature suggests that a number of pedagogical practices appear to transcend secondary and postsecondary academic boundaries. Therefore, these teaching and learning practices are identified separately in the following section so as to emphasize their importance in nurturing artistic development—in middle school, high school, and college.

- **Provide students choices.**
  Individual choice making during the art-making process seems to encourage students to take more risks in art making, to identify their own problems or ideas for artworks, to persist in developing an artwork, and to manage time (Burton, 2004; Burton & Hafeli (forthcoming); Carroll, 2005, 2007; Hafeli, 2008; James, 1996, 1997, 2004).

- **Know the students.**
  The literature in postsecondary education and K-12 art education suggests that teachers should know their students so that new information can be contextualized and made relevant to students' lives (Bain, 2004; Burton, 2000, 2004; Eisner, 2002; James, 1996; Schön, 1990).

- **Make learning relevant and meaningful.**
  Across K–12 art education, postsecondary studio art, and higher education generally, researchers advise teachers to help students make connections between the subject of study and the world beyond the classroom (Anderson & Milbrandt, 2004; Bekkala, 1999; Burton, 2005; Carroll, 2005, 2007; Eisner, 2002; Gardner, 1990; Graham, 2003; Hafeli, 2008; Hafeli et al., 2005; James, 1996, 2004; Kane, Sandretto, & Heath, 2004; Shulman, 2004).

  Meaning making is facilitated by using figurative language and developing visual metaphors (Anderson & Milbrandt, 2004; Burton, 2004; Carroll, 2007; Eisner, 2002; Hafeli, 2008); by working thematically (Anderson & Milbrandt, 2004; Burton, 2004; Carroll, 2007; Walker, 2001); by exposing students to a range of cultures, artworks and artifacts, both past and present (Anderson & Milbrandt, 2004; Burton, 2004; Carroll, 2007; Hafeli, 2008); and by using authentic assessment processes such as portfolios and process journals (Anderson & Milbrandt, 2004; Burton, 2004; Carroll, 2007; Graham, 2003; Hafeli et al., 2005).

- **Create opportunities for artistic play and exploration.**
  An effective way to stimulate student learning at middle school, high school, and college levels appears to be through an inquiry approach that includes strategies of exploration and play (Burton, 2000; Gude, 2010; James, 1996, 1997; Walker, 2001; Zimmerman, 2009).

  In employing inquiry-based experiential strategies, learners may be better able to think in a medium (Anderson & Milbrandt, 2004; Burton, 2004, 2005; Eisner, 2002; Hetland et al., 2007; Hurwitz & Day, 2007), and resist closure, elaborate, take risks, and trust the process (Burton, 2000; Walker, 2001; Zimmerman, 2009).

  Strategies of exploration and play may also allow teachers to frame tasks that challenge students to think in new ways and that open students to new possibilities (Anderson & Milbrandt, 2004; Burton, 2000, 2004, 2009; Eisner, 2002; Gardner, 1990; Graham, 2003; Hafeli, 2008; Hafeli et al., 2005; Zimmerman, 2009).

- **Teach skill (but not as an end in itself).**
  The attainment of technical skill is often empowering for adolescents and young adults as increased skill serves to assuage their need for competency. However, art educators should teach skill as guided by conceptual considerations, rather than skill as an end in itself (Anderson & Milbrandt, 2004; Bekkala, 1999; Burton, 2004; Eisner, 2002; Graham, 2003; Hafeli et al., 2005; Hurwitz & Day, 2007; James, 1996, 1997). Conceptual considerations include attending, noticing, and observing (Burton, 2005; Eisner, 2002; Graham, 2003); heightening and refining the senses; and translating one's sensation of experience in the world (Burton, 2000, 2004, 2005; Eisner, 2002; Gardner, 1990; Hetland et al., 2007).

- **Create a safe learning community.**
  Teachers should facilitate a learning environment in which students know one another, support one another, and a have a sense of shared goals and values, as such environments are conducive to learning and creativity (Bekkala, 1999; Burton, 2000, 2004; Carroll, 2007; Edström, 2008; Eisner, 2002; James, 1996; Zimmerman, 2009). To that end, teachers might facilitate peer/group dialogue (not just teacher-student dialogue) and craft collaborative assignments (Burton, 2004; Carroll, 2007; Gude, 2010; James, 2004). The model of lecture-*cum*-rote-

memorization that has long dominated postsecondary academic subjects has been widely disparaged, leading theorists to advocate that teachers adopt a studio art mentoring model, which is thought to aid students in developing social and collaborative skills and in engendering a stronger sense of community (Bain, 2004; Kane et al., 2004; Schön, 1990).

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