

A True Manifestation of gMp: Dogs in Elementary School Learning

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ABSTRACT

This chapter presents the basic concept and the components of the Dogs in Learning (DiL) program, as a true reflection of the gMp. The implementation of the program at ACS Athens has shown that curriculum subjects can be taught more effectively and in a playful and enjoyable manner when the learner is fully engaged with the help of dogs in the learning process. By following a Spiral Curriculum using instructional dogs, several basic issues related to human behavior are internalized by the students. In addition, the DiL program can successfully address the bullying phenomenon of our society; and, finally, the DiL program can inspire students to develop the wisdom to transform their educational experience.

Keywords: gMp; Morfosis Educational Philosophy, Aristeia Leadership, Elementary School, School Dogs, Alternative Education, Spiral Curriculum

INTRODUCTION

Educational institutions must inspire their students to develop the wisdom to transform their educational experience into social, economic, environmental, intellectual and ethical resources to improve their lives. As a result, academic institutions, now more than ever, have to provide new educational opportunities and experiences. ACS Athens by strongly believing in fulfilling that need, as well as by having a culture of developing and implementing innovative programs while adopting an authentic leadership approach to transform student's lives, it has developed and implemented an educational approach called the Global Morfosis Paradigm (gMp), which has been described in detail earlier in the book (Preface).

Moreover, based on the ever-present desire of the ACS Athens' leadership to utilize such an integrated Educational Paradigm in its program, a new educational approach has been developed and applied (K-5), that is called *Dogs in Learning (DiL)* (Birbil et al., 2015). This program which represents a noteworthy Manifestation of the Global Morfosis Paradigm is designed to use highly trained instructional dogs as an inspirational vehicle to help children understand and apply everyday issues to learning, and thus create a fresh and innovative approach to teaching and learning. This approach is based on the understanding that, like humans, dogs possess psychological and behavioral norms, and thus we can easily relate dogs' actions to human behavior in correlation with the principles of gMp.

The program leaders are a certified dog educator (T. Koutsopoulos) and a first grade teacher (C. Birbil). It is important to note that the teacher's daily class schedule involves her three-legged, rescued dog (Captain Chip).

MANIFESTING THE GLOBAL MORFOSIS PARADIGM: DOGS IN LEARNING (DiL)

As it was mentioned earlier the Global Morfosis Paradigm is a dynamic pedagogical approach consisting of three inseparable, interconnected, and interrelated components: the Morfosis Educational Philosophy, from the Greek word Μόρφωση (ethical, intellectual and social shaping of the human character); the i^2 Flex (isquareFlex), a non-traditional learning methodology; and the Aristeia, from the Greek word Αριστεία (pursuing excellence under the guidance of ethos). Therefore, any educational program within this framework, such as the Dogs in Learning, have to clearly manifest as well as fulfill the goals and objectives of these components.

The Morfosis Educational Philosophy in DiL

In general, the Morfosis Educational Philosophy is a Holistic approach focusing on successfully combining academic, emotional, physical, intellectual and ethical components of education in order to ensure a healthy and balanced individual. That is, students addressed all questions in a holistic approach not only intellectually but also emotionally. Whether it is in mathematics, social studies, or a reading question they are immersed in the learning process using all of their senses at the same time that their intellectual ability is challenged.

Based on this philosophy, in the Dogs in Learning program, students in answering a meaningful question related to amount of food a specific dog needs to survive or how much it will cost to keep a dog healthy, basically eliminate the usual questions asked by them such as “why it is important to learn a specific concept?” or “where I am going to use this mathematical concept”? At the same time, principles and values such as: is it ok to abuse a dog? What is our responsibility to helpless animals as ethical citizens students are tested, answered and reinforced.

The i^2 Flex Methodology

Drawing on the research and practice of blended learning, i^2 Flex integrates independent, inquiry-based student learning that is guided by a faculty mentor, and face-to-face learning that is flexible in terms of pace, time, place, and/or mode of delivery. Given this delivery methodology, much of the world of knowledge acquisition associated with the intellectual process of remembering, understanding, and application, can be accomplished through online learning activities, as well as independent, purposeful investigation. Students using this methodology are engaged in learning opportunities that exist in many forms, and thus learning occurs anywhere, anytime, with the support of instructional technology and media (Avgerinou, et. al., 2014). In the context of the DiL program, together with technology-supported media such as blogs, and videos, dogs are utilized as instructional media that facilitate the process of teaching and learning.

This methodology was applied in the Dogs in Learning program so students could independently think and achieve various goals and accomplish different tasks appropriate for their grade. That is, students were asked to research by themselves and answer questions such as: how many years a dog lives? what a specific breed eats? what disease might get? etc. Others asked to research what happens to a street dog in Athens, what support exists, and how many there are in animal shelters. Moreover, some very challenging questions were asked, including a two-step creative thinking exercise. For example, how many steps does a specific dog take to cover a distance of 10 meters? The first level is to answer the questions, “how do we define a step for a dog, which has four legs”, and then “how do we count dog steps?”. In addition, students were able to observe their own dogs at home or videos or simulations and they were asked to present and discuss their findings outside of the classroom with the presence of their dogs. Such

flexibility takes students in a natural environment discussing meaningful and relevant questions to their life and to life in general.

To reinforce these concepts and to promote the development of communication, critical thinking, and public speaking, students are divided into groups. Various groups debate the issue of whether or not the government or the local community is responsible for housing and feeding the homeless street dogs. In doing so, each group of students is asked to adopt a viewpoint, conduct research, prepare an informative short paper, and come into a meeting to debate and strongly defend their own informative point of view. In trying to convince the members of the other groups to adopt their own view, students learn how to articulate arguments, and engage in productive and civic debate for the sick, and the service of the common good and society. They also learn how to tolerate others who might have a different viewpoint than theirs, as well as how to accept the fact that other arguments might be better than theirs and better for society and the common good. However, to make the teaching approach of the given learning activity more productive, teachers should allow students to participate in executing a learning activity. Specifically, addressing the five factors essential in a typical role-playing situation: 1) the problem to be solved; 2) the characters to be played; 3) the roles to be followed; 4) essential information to be gathered and; 5) procedures for the play to be adapted (Cherif & Somervill, 1994; 1995). Therefore, at the first level of “Student-Level of Involvement” in the “Role Playing Teaching Model” as shown in the table below, students carry out pre-assigned activities: they are actors for a scripted play. When students are involved in the planning of role-playing activities they are able to have a greater educational experience from what may seem a simple role-playing activity. For the highest productivity, teachers should lead students toward level 6, even if that level cannot be achieved. As the difficulty level increases, so does the amount of time, effort, and best of all, enthusiasm among the students. The final level of student involvement is critical assessment (Cherif, et. al, 2009).

*Table 1. Student-Level of Involvement" in the Role Playing Teaching Model**
(Cherif, et. al, 2009, p. 345)

The Level of Involvement	Problem to Be Solved	The Characters in the Play	Role of the Characters	Essential Information	Procedures for the Play
I	Given	Given	Given	Given	Given
II	Given	Given	Given	Given	Not Given
III	Given	Given	Given	Not Given	Not Given
IV	Given	Given	Not Given	Not Given	Not Given
V	Given	Not Given	Not Given	Not Given	Not Given
VI	Not Given	Not Given	Not Given	Not Given	Not Given

** While individual students are expected to achieve various levels of involvement in the learning activity based on the grade levels, intellectual maturity, etc., the activity should be considered successful if, for example, lower classes can reach level I or II, freshman can reach level III and juniors and seniors can reach levels IV and above.*

The Aristeia Leadership

This innovative approach is defined by two essential components: the establishment of an Authentic Leadership Identity and the creation of a Collective Leadership-Partnership Approach. The first component is based on the idea that “knowing oneself” is a necessary first step in creating the leadership vision and defining its philosophy of education. The second component is based on defining the professional goals through a process of self-reflection and revision (Gialamas & Pelonis, 2009).

The application of the Dogs in Learning program has provided leaders who had embraced the Aristeia leadership as it is mirrored into the following:

- Allowing Faculty to propose a provocative, expensive, risky and without precedence new path in teaching and learning using dogs. In particular since there was no data reflecting any evidences for possible success of the initiative, which might result in improvement in teaching and learning mathematics.
- Requiring from the leader to be open minded, self confident, and determined to invest time, energy and resources for the implementation of such an authentic and difficult initiative as the DiL program.
- Educating parents and convincing them that such an initiative will be meaningful for the learning of their students.
- Undertaking the responsibility to identify resources and justify the allocation. Human recourses (two outstanding dog trainers and educators), dogs (five instructional dogs, which are trained for the obedience level, and are also functional, friendly, and cooperative with 60 kids once a week per dog)
- Financing the new program.

THE DOGS IN LEARNING PROGRAM

In order to appreciate the manifestation of the Global Morfosis Paradigm (gMp) in the *Dogs in Learning* (DiL) program, there is a need to fully understand the program and how its components can be utilized within the paradigm. The concept of Dogs in Learning was first introduced by Birbil et al. (2015) pointing out that nowadays there is a new category of dogs whose value and necessity are beyond the known types of dog utilization. More specifically, the above authors argue that there is a need for a classroom dog that is capable of being an inspirational vehicle in learning, to assist children in applying the basics of empathy and human behavior. To take a step further in that direction, the DiL can be described as an educational program based on interaction with dogs that can be fully determined in a three dimensional space consisting of the principles axis, the objectives axis, and the classroom benefits axis (Figure 1)-axes that are integral parts of the gMp.

Insert Figure 1 about here

Figure 1. DiL Framework

More specifically, the DiL program possesses four essential principles (Resiliency, Empathy, Emotional Intelligence and Social-Emotional Learning, and Promoting Animal-Loving Sentiments), helping in achieving five important, socially acceptable and educationally fundamental types of educational/social objectives (Patience, Confidence, Team work and Leadership), which in turn create four teaching and learning fundamental forms of classroom benefits (Academic, Social, Emotional and Psychological). This way a framework emerges that can successfully serve and support the ACS Athens approach to education using the gMp.

DiL Principles

The basic principles of the DiL program are to link empathy, as well as to social and emotional learning within an academic context that highlights behavioral concepts, facilitates learning and instills animal-loving sentiments. More specifically, the program is based on the following principles:

Resiliency: This basic principle refers to a holistic approach to education using dogs, which is physical, cognitive, social and emotional.

Empathy: Dog behavior and treatment of the dog promotes this principle by:

- Caring about others and having a desire to help them.
- Discerning what another person is thinking or feeling.
- Understanding and connecting to the emotions of another soul.
- Nurturing relationships.
- Bringing out the best of human feelings.

Emotional Intelligence and Social-Emotional Learning: This principle promotes positive thinking through a series of actions and activities such as:

- Coordinating thoughts and actions.
- Enhancing critical thinking skills.
- Encouraging responsible and ethical decisions.
- Promoting healthy pro-social behavior.
- Building character-enhancing academic achievement.
- Building self-esteem.
- Encouraging role-play.
- Opportunities for fun educational activities.

Promoting Animal-loving Sentiments: This principle determines the interaction with dogs in order to achieve:

- Responsible pet ownership.
- Caring for the instructional dogs (provide: food, water, grooming, walking, playing and training).
- Promoting multi-dimensional, positive hands-on experiences with dogs.

It should be noted that all these principles have been embedded within the ACS Athens (K-5) School Curriculum.

DiL Objectives: The Spiral Curriculum

The DiL program is a well-designed educational program based on a Spiral Curriculum repeating five key elements within the school's curriculum through the use and engagement of dogs.

The Spiral Curriculum is an old and well-known approach suggested by Jerome Bruner (1960), who proposed that each learning experience should presuppose our belief that any subject can be taught (in a pedagogically sound way) to any child no matter his/her developmental stage. Bruner's followers accept that even the most complex material, if properly structured and presented, can be understood by very young children. As a result, the basic features of the spiral curriculum are:

- The student revisits a topic, theme or subject several times throughout their school career using various learning pathways and methods for instruction.
- The complexity of the topic or theme increases with each revisit.
- New learning has a relationship with old learning and is put in context with the old information.

In turn, this process provides the following benefits:

- The information is reinforced and solidified each time the student revisits the subject matter.
- The Spiral Curriculum allows for a logical progression from simplistic ideas to increasingly complex ideas.
- Students are encouraged to transfer their previous knowledge to meet later course objectives.

It is the simplicity of this curriculum approach and the benefits it provides that tipped the scale in deciding to use it in the DiL program. Moreover, DiL can operate within the ACS Athens teaching philosophy and curriculum.

The Key Elements and their spiral position in the ACS Athens (K-5) curriculum are:

- 1st Grade: PATIENCE
- 2nd Grade: PATIENCE-CONFIDENCE
- 3rd Grade: PATIENCE-CONFIDENCE-FOCUS
- 4th Grade: PATIENCE-CONFIDENCE-FOCUS-TEAM WORK
- 5th Grade: PATIENCE-CONFIDENCE-FOCUS-TEAM WORK-LEADERSHIP

By working with dogs at ACS Athens, students are taught a new element every year while repeating the elements of previous years in a more advanced manner, which illustrates depth of knowledge. It should be noted that in the educational spiral approach, the operating principle is that a child at any stage during his/her development can be taught any of the above elements. As a result, the program can start at any grade level.

It should be also noted that all these objectives have been embedded within the ACS Athens (K-5) School Curriculum through the use and engagement of specially trained dogs.

DiL Classroom Benefits

All educators strongly believe that schools have an effect on children's development, allow teaching and learning to have various, including non educational, benefits to pupils. That is, by offering an enriched program via innovative educational methodologies, students can be inspired and empowered psychologically, socially, emotionally and above all academically. Indeed the literature has shown that the effect that school has on children's development allows us to examine critically, creatively, and sensitively, the environmental factors that contribute to children's positive adjustment to school. Schools are important contexts for children's development as the time spent in school influences their experiences (life and learning), self-perceptions, and how one's life progresses (Baker, et. al. 2001). Children who develop positively have several specific characteristics in common such as: a) sufficient personal assets and competencies and, b) effective nurture and support from the social environment. It is these resources that protect the children from stress and dysfunction (Luthar, et.al., 2000).

It is essential to examine the number of ways in which positive adaptation has been conceptualized in the school setting. Some of these ways include: a) the school climate (Epstein & McPartland, 1976), b) classroom structures, goals and practices (Ames, 1992; Eccles et al., 1998), c) school organization and structure (Baker et al., 2001), d) student demographics, e) student academic ability, f) student mental health, g) family relations, and h) peer relations (Doll, 1996). School practices that foster positive adjustment or holistic health (social, emotional, physical and cognitive balance) are: a) enhancing children's meaningful connections to others in the school environment, b) enhancing children's sense of competence as learners, and, c) promoting a sense of autonomy and self-direction that are associated with positive school attitudes and overall healthy functioning both in school and society (Baker & Dilly, 2003).

Greenberg et al. (2003) also suggested that children who are socially and emotionally competent tend to be happier, more confident, and equipped with strong interpersonal skills across various contexts and roles- thus supporting the importance of social and emotional learning as an intrinsic aspect of children's academic learning and performance, motivation to achieve and overall holistic wellbeing.

Social-emotional learning engulfs the process of developing fundamental social and emotional competencies or skills (Zins & Elias, 2006). These skills enable children to manage their emotions, experience empathy, develop positive relationships, make good decisions, and conduct their behavior ethically and responsibly (Collaborative for Academic, Social and Emotional Learning, 2013).

Research on the interaction between humans and animals not only advances the social, emotional and behavioral benefits, but the physical ones as well. Increased contact with animals not only fosters nurturing behavior in children, and increases social skills, but also reduces physiological aspects of children's health, such as lower blood pressure, reduced allergies, and increased relaxation (McCardle, et al., 2010).

The manifestation of the literature findings in the application of the DiL program at ACS Athens has been impressive. A very brief presentation of that application follows:

Psychological Benefits: The existing evidence indicates that children at ACS Athens, who are growing up in a society where animal neglect is prevalent, have become empowered to make a difference, and not turn a blind eye. In addition, they exhibit a passion in what they do through compassion. Enabling students to care for, work with, and train a dog has helped them to realize that every action has a consequence regardless of who they are or how old they are. Moreover it was understood that this attitude has the power to change the way they feel about themselves and others, and build compassion, empathy, and respect.

Social Benefits: By socializing and training dogs, children at ACS Athens have been educating themselves on how to incorporate the dogs into their daily lives through a solid basis of respect. In addition, students have learned the basics of animal handling, including:

- How to properly approach and meet a dog.
- Overcome dog phobias (if any).
- Basic training commands (come, heel, sit, sit-stay and down-stay).
- Responsible pet ownership, including walking, feeding, grooming, and playing with a dog.
- Understanding dog behavior.

Emotional Benefits: Children across all grade levels have the opportunity to experience meaningful moments in bonding with ACS Athens Dogs. Throughout the day, students' self esteem was solidified as they were interacting with and seeing their dog respond to their requests. This provided a tangible experience in leadership, as well as empowered students to become accountable decision-makers in all areas of life.

Academic Benefits: The program is integrated into the academic curriculum of the school, differing from the rest of the educational activities in that it utilizes the expertise of faculty who have professional dog training and behavior experience, as well as the involvement of a hand-picked team of dogs to enrich and enhance student learning in a variety of subject areas, via various approaches. For example, the elementary school children of ACS Athens have been inspired, during the pilot stage, to write letters to Captain Chip (1st grade dog) as well as read aloud to him on a daily basis (both activities continue to maintain fan club status), and thus inspire children to be more communicative, compassionate, and involved. The act of reading aloud to a non-biased listener has enabled them to feel safe while they take

risks. In addition, the presence of dogs in the classrooms not only has facilitated the teaching of reading and writing, but also the teaching of mathematics, biology, social studies etc., which will be presented in the next section.

THE ROLE OF THE INSTRUCTIONAL DOGS IN THE LEARNING PROGRAM at ACS ATHENS

The ACS Athens dogs used in the elementary school classrooms have undergone in-depth positive reinforcement training and thus have been rigorously assessed for their competence and safety to work within the school environment. That is, the ACS Athens dogs are fully equipped to put into operation the overall goals of the DiL program, following the Spiral Curriculum, which has been adopted for each grade to fit the needs and abilities of its students. Therefore, in each grade level, the ACS Athens dogs have helped in accomplishing the identified objectives and goals that enable students to better achieve academic learning outcomes in a hand-on way. As a result, the utilization of the ACS Athens dogs has had many positive benefits, achieving various tasks by performing a series of objectives from simple to more substantive. More specifically, the ACS instructional dogs can be:

a. Classroom Participants

ACS Athens dogs can simply be present in the classroom during daily classroom work. As a result, their very presence has a calming effect on the children.

b. Listening Audience

By being incredibly calm, ACS Athens dogs are happy to have an individual child read to them or join a group of children whilst they are having a book reading session. As a result these dogs:

- Improve reading levels as the child practices the skill of reading (especially in emerging readers)
- Increase positive self-esteem as the dog is a non-judgmental, attentive listener
- Motivate child to read as reading is now associated with something fun
- Facilitate conversation and socialization amongst the children with whom they interact

c. Reward Providers

Working and playing with a dog improves children's social skills and self-esteem. Moreover, considering that ACS Athens dogs are gentle, loving, and approachable, their very presence is a reward. Children at ACS Athens spend time undertaking certain responsibilities for their classroom dog, which include: providing food and water, walking, grooming, playing, and training. These opportunities enable students to build their self-esteem by feeling needed and responsible for the benefit of another, and these experiences also encourage pro-social behaviors while working within a group.

d. Social Facilitators

ACS Athens dogs bring much joy and help to all the children they meet and are happy to provide plenty of attention and affection to children who are spending time with them. The classroom dog provides some comic relief during anxious times, and also act as a friendly ice-breaker, since their very presence diverts attention from the individual to the dog, thus encouraging pro-social skills and dialogue. In other words, children who struggle with social interaction find a reassuring friend in an ACS Athens dog.

e. Psychological Supporters

ASC Athens dogs work with children on a one-to-one basis, thus helping children who may be going through upsetting/difficult times or have been scared/phobic of dogs. In addition, they help students with low self-esteem improve their self-image, well as enable reserved students to take more risks. Finally, ACS Athens dogs help to improve morale, concentration, anxiety, and hyperactivity.

f. Empathy Providers

ACS Athens dogs encourage a broad range of emotional states in children, including caring for other people and having a desire to help them; experiencing emotions that match another person's emotions; discerning what another person is thinking or feeling; and making less distinct the differences between themselves and others. In other words, by identifying and relating to the classroom dog, they intrinsically learn to apply and manage their emotions in the way they treat other people.

g. Education Facilitators

ACS Athens dogs have shown that from the school's perspective, their most important contribution is that they can facilitate learning in various in number, subjects, and difficult concepts such as: literacy and language development, mathematics, biology, social studies etc. Faculty members have embraced this approach, and have enhanced the existing curriculum by providing learning activities which include the instructional dogs.

IMPLEMENTING THE DiL PROGRAM (GRADES 1ST TO 5TH)

The ACS Athens DiL program was initiated and applied over the last three academic school years (2012-13, 2013-14 and 2014-2015), starting the first year as pilot program applied only to three grades of the school (1st, 2nd and 5th). During this pilot period, and using Captain Chip (the first dog of the program), 1st graders and later 2nd and 5th graders, had an enriched program which provided them with innovative educational methodologies inspiring and empowering children psychologically, socially, and emotionally, as well as academically. The DiL program, in addition to working with elementary ACS Athens students, has also extended its participation in citizenship activities in the K-12, providing many positive benefits and achieving various tasks. Moreover, through the DiL program students in all grades can perform a series of educational objectives from simple to more substantive, in a playful and pleasant way, the latter being a major contributing factor of the program.

Due to its success, starting last year (2014-15), a full implementation of the program has begun in the homerooms of all grade levels in the elementary school. The overall goals of the program, following the Spiral Curriculum, have been individualized for each grade to fit the needs and abilities of its students. Therefore, in each grade level, the accomplishment of the identified objectives (i.e. student skills) enables students to better correlate academic learning outcomes with this program in a hands-on way. It should be noted that the overall objectives and goals of the now expanded program are essentially those achieved during the pilot period, yet improved and refined to reflect the experience gained during that period of time. Finally, the dogs used in the ACS Athens program are: Nero (1st grade), Iro (2nd grade), Zanvert (3rd grade), Aris (4th grade), and Izzy (5th grade).

First Grade

The objectives in the first grade is to meet and greet dogs as well as train them to obey basic commands using treats. ACS Athens faculty members work with students teaching them about dogs and how to

handle them (what to do, what not to do, and why). In doing so, the students are taught about the meaning and importance of patience. By training a dog to focus, the goal is for children, to work with PATIENCE.

To accomplish these objectives and goals, students have to work closely with all faculty involved (their teacher, the homeroom team and a faculty-certified dog trainer). The faculty teaches children to bond with their dog through socializing with, and caring for him. Training their ACS Athens dog in basic commands helps educate children on how to incorporate the dog into their daily lives through a solid basis of respect. All ASC Athens dogs as new animals to students, initially required an adjusting process in training and handling. The faculty involved has inspired children to be patient while handling ASC Athens dogs.

In an educational institution such as ACS Athens of major concern is the academic application of any program, including the DiL program. The academic objectives of the DiL program for the 1st graders are to be inspired to develop reading skills, written communication skills, conversational skills, all in close relation to ASC Athens dogs in order to help them to increase their vocabulary and ultimately their sense of self and self-worth within a group. And at the same time, it makes learning fun, encourage risk-taking, and increase happiness. It is considered essential that some of the DiL program activities related to student's skills, as they are described and required in the school curriculum, be provided as examples- i.e. the same approach will be followed for all grades. Some of these examples are:

- Reading, writing and conversation:
1st graders are inspired to develop reading skills, written communication skills, conversational skills all within relation to Nero, thus increasing their vocabulary and ultimately their sense of self and self-worth within a group. All of the above make learning fun, encourage risk-taking, and increase happiness.
- Adding and subtracting within 20 to solve word problems, and fluently add and subtract within 10:
1st graders are divided into teams (5 students in each team) and each team gets 20 pieces of dry food. After they count the pieces, each student is asked to keep two pieces and calculate how many pieces are left. Then each student gives one piece of food to the dog and returns the other to the instructor, and is asked again to calculate how many pieces are left.
- Comparing two digit numbers using more, less, equal:
Students are asked to make an assumption and justify which one of two dogs weights more than the other. Both dogs are weighted and their weight is compared in general terms. To find their exact difference, they put the lighter dog on the scale and add weight (i.e. small cubes) until the dog reaches the weight of the heavier one.
- Following the 5 steps of the Scientific Process (question, hypothesis, investigation, observation, conclusion):
 - ✓ Question: how many similarities in appearance are there between humans and dogs?
 - ✓ Hypothesis: students might have different kind of estimations.
 - ✓ Investigation: a dog and a student can stand up in order for the similarities to be observed.
 - ✓ Observation: the observation should come up with a response referring to ears, nose, eyes, mouth, teeth, neck, body, legs, nails, hair, etc.
 - ✓ Conclusion: overall there are ten similarities and two differences (dogs have tails and human have hands).

Second Grade

The objective of the DiL program in the 2nd grade is to transfer from treat-oriented dog training to 'the promise' of a treat. This means that the class dog is responding to students requests based on the child,

and not on the treat. The dog learns to respect the command requested because of pack leadership, so children must exhibit confidence in order to attain the dog's attention. As a result, the key connection made in this grade level is equating dog behavior with how children behave towards others, and why. The goal is to have children work with CONFIDENCE. Students are taught that it is important to be confident about what he/she does when working with a dog, so that the dog feels secure next to him/her.

To accomplish these objectives and goals, students learn how to bond and communicate with their dog throughout the day. As a result, as they see the dog responding to their requests, their self-esteem is firmly established. This also provides them with the tangible experience of Confidence.

In terms of the academic requirements that can be achieved through the utilization of the ASC Athens dogs, the 2nd graders have the opportunity to connect subjects hands-on. For example, in mathematics, students practice in a playful way to count the number of steps they have to take forwards or backwards, in a certain area to allow the dog to perform an exercise. Additionally, they are asked to count the time needed in order for the dog to complete the required task and then reward it. This process provides them with the opportunity to solve meaningful, real world mathematical problems. However, most of the DiL program activities are related to student's skills, as they are described and required in the school curriculum. Some of these student skills are provided as examples below:

- Measure the length of an object by selecting and using the appropriate tools:
Students in teams are asked to measure three obstacles used by the ACS Athens dogs (the Alfa, the Step, and the Door obstacles) as well as the dog itself. Each team has to decide which tool to use for measuring, and justify their choice. Moreover, they have to compare the size of the dog with its height, and the height of the obstacle. For instance, is the dog able to jump or climb the obstacle and how many times its size the dog can jump?
- Fluently adding and subtracting within 100:
Students in teams are asked to call a "come" command to a dog from a distance starting at 10 meters and gradually increasing to 100 meters.

A key point is that the dog needs to respond to the student's command following a straight line. The dog is not allowed to respond following any non-straight movement and when such behavior appears, the student has to call his command from a smaller distance. In this way, the student has to calculate how many meters smaller the distance is for the dog to respond in a straight line. At the beginning, the dog will be able to respond to student's command going straight to him for short distances, but as the student moves away from the dog, the dog will not respond going straight and therefore the student has to move closer to the dog. As the dog learns from the repetitions, it will go straight to the student from greater distances. In this way, students will need to add and subtract numerous times until they reach the distance of 100 meters, for the dog to respond

- Know tools and machines are used to apply pushes and pulls (forces) to make things move:
A student is asked to hold some different size dogs (the pull force) while another is calling the dog to move toward him (the push force). Then the holding student can feel and measure (using a dynamometer) the pull and push forces. When a dog does not move, the pull and push forces are equal- otherwise they are not. But in both cases they can be measured.

Third Grade

The objective of the DiL program in the 3rd grade is to teach students how to concentrate their efforts when handling an energetic dog. More specifically, focus is built in the classroom through their interactions with a specific dog. By requiring students to keep their focus on the dog for a certain amount of time, they realize that the moment they themselves lose focus towards the dog, they immediately lose the focus of the dog to them. Of course as the class progresses, the amount of time is shortened, thus forcing students to be more alert. The goal in this grade is to have students work with FOCUS. By concentrating their effort and directing their attention toward a specific outcome, students can achieve their desired result in the dog.

In academic terms, the DiL program is focusing on providing 3rd graders with the opportunities to integrate academic subjects utilizing their ACS Athens dogs. For example, in class and in small groups students are asked to count the number of times an exercise is performed by the ASC Athens dog, in order to follow its progress and express mathematical relationships. This is done by observing how many times a dog needs to repeat an exercise until it feels confident. Therefore, they collect, organize, classify data and reflect on them to draw a conclusion.

As for the DiL program activities related to student's skills, as they are described and required in the school curriculum, the following examples are provided:

- **Tell time to the minute:**
3rd graders are divided into teams and each team performs the whole obstacle course. Students from another team give them the starting signal, with a whistle or horn, count the time elapsed using a stopwatch (the students doing these activities need to be synchronized) and write down the time each team needs to complete the whole obstacle course.
Based on these results:
 - ✓ The fastest and the slowest teams are identified.
 - ✓ The exact difference in time between teams is calculated by converting minutes to seconds
- **Communicate with others using a code:**
Students are asked to discuss ways to devise an obedience code through which a dog can understand what it is asked to do. They are led to accept that there is only one way to ask a dog to perform a command, namely, the clicker. Moreover, it was decided that:
 - ✓ 1 long click stands for the HEEL command.
 - ✓ 1 click stands for the SIT command.
 - ✓ 2 clicks stand for the DOWN command
 - ✓ 3 clicks stand for the STAY command
 - ✓ 4 clicks stand for the COME commandIn addition, as they perform the exercise they should also find a code between themselves (using hand signals or whistle to communicate with their teammates what they have accomplished). In this way, they understand that a communication code is necessary to communicate not only between themselves and the dog, but among themselves.

Fourth Grade

The objective in the 4th grade is to ask students to participate in dog exercises that need team cooperation to be completed. In addition, while the task remains the same, the role of every team member changes so they can appreciate the importance that all have to contribute towards the final objective. The goal in this grade is to teach students the principle of TEAMWORK. That is, the work that needs to be done is accomplished when each member is on task doing their part with the consistency of the final outcome remaining the same. TEAMWORK requires the goals from the previous grades of PATIENCE, CONFIDENCE, and FOCUS.

Given the focus of this grade, the academic requirements that can be achieved through the utilization of the ASC Athens dogs, are for the 4th graders to be able to work in a team where each member is assigned a different responsibility when working with the dog in an obstacle course. Here, students learn to solve measurement problems using different units; one student can keep record of the time needed for the dog to overcome the specific obstacle or the entire course; another can measure the height the dog needs to jump; another, the distance covered by the dog etc. In terms of the student's skills, as they are described and required in the school curriculum, some examples are:

- Subtract and add, multiplication of thousands, division:
Students are asked to calculate the yearly expenses of a medium sized dog. Costs include: Food to be calculated, veterinarian expenses (vaccination=50 Euros + yearly check up=100 Euros= 150 Euros), Health insurance to be decided and Extras (kennel + leashes + collars + beds + toys= 300 Euros).
 - ✓ Food Calculation: The dog eats 250 grams of dry food per meal twice a day.
 - Daily consumption in grams: 250 grams x 2 times=500 grams
 - Monthly consumption in grams: 500 grams x 30 days=15,000 grams/month
 - Yearly consumption: 15,000 grams/month x 12 months=170,000 grams
 - Convert grams to kilos (1 kilo= 1000grams)
 - Monthly consumption in kilos: 15,000/1000= 15 kilos
 - Yearly consumption in kilos: 15 kilos x 12 months= 170 kilos
 - Bags of food needed: a bag of dry food contains 15 kilos
 - Monthly consumption: 15 kilos/15 kilos per bag= 1 bag
 - Yearly consumption: 1 bag x 12 months= 12 bags
 - Food costs: a bag of dry food costs 60,00 Euros
 - Monthly cost: 1 bag x 60 Euros= 60 Euros
 - Yearly cost: 60 Euros x 12 months= 720 Euros
 - ✓ Insurance calculation: If a dog has an accident or a health problem that might need surgery, and surgery costs from 300 Euros and can go up to 3,000 Euros, the veterinary costs cannot be calculated. However, there is the option to get pet insurance that costs 250 Euros per year. Students are given the option to decide whether they will risk paying for an operation or to get insurance that will cover the veterinary expenses.
 - ✓ TOTAL YEARLY COSTS: 1420 Euros (Food=720 Euros; Veterinarian expenses = 150 Euros; Health insurance=250Euros; Extras= 300 Euros). Here we take the opportunity to introduce different cultures and societies by asking students to convert the amounts of Euro they have come up with, into various currencies. This can also be a starting point to transition into a different topic within the curriculum.
- Identify Shapes:
Food is hidden under cones at the corners of different shape surfaces (triangle, parallelogram etc.) and the dog, by using its ability to track/smell the food hidden under the cones, it practically outlines the shape of the corresponding surface.
Students are asked to use appropriate materials, such as chalk, to sketch and measure on the ground the shapes and angles outlined by the dog.

Fifth Grade

The objectives of the 5th grade are based on the psychological theory of human-animal bond and pack dynamics. It is a unique method in which the dog elects the student as his leader of his own free will. Furthermore, the roles for each team member are decided by the students themselves- as opposed to the 4th grade where students were assigned their roles). By deciding themselves what they will do, students gain hands-on, meaningful experiences in exercising LEADERSHIP.

The goal is for students to understand and appreciate how much their relationship with the dog improves, if the dog actually wants to cooperate of its own free will and not by force. This bond happens when the dog recognizes a patient, confident, and focused individual. By gaining experience in the theory behind the psychology of the human-animal bond and pack dynamics, students learn to handle their behavior appropriately and learn to appreciate the meaning of LEADERSHIP.

To accomplish these objectives and goals the students are deepening their learning about dogs, the pack and how to handle a dog in various circumstances. That is, students can be taught leadership through dogs because key factors of their own character, their instinct and their importance, determine how powerful a dog is and how its reactions are directly correlated with our own actions.

In order to illustrate pack leadership in action, students need to be able to distinguish the difference between being a leader (calm) and being a bully (bossy). A typical exercise used towards that objective is for the faculty to use an ACS Athens dog to show students the importance of the true leader and the bully as follows:

One person holds the dog and the faculty approaches it in three different ways:

- 1st way: The faculty approaches the dog reluctantly with slow moves, not confident about himself and indicating that he is a little scared. The reaction of the dog is that it becomes suspicious of her faculty and looks at him with mistrust.
- 2nd way: The faculty approaches the dog with confidence, walking towards it normally and calmly as well as petting it. The dog's reaction is to wag her tail and enjoy the faculty's affection.
- 3rd way: The faculty approaches the dog walking with big steps, emitting to the dog an aggressive body language. The dog's reaction is to step back and lean on the person holding it. As a result, it becomes fearful and immediately lies down, showing a total submission to the owner without understanding the reason of his attitude.

By witnessing the above reactions to leadership and bullying behaviors in their ACS Athens dogs, students can gain a clear picture of what a positive leader looks like and what their actions instill in others, as opposed to a bully and how their actions can impact those around them. These examples teach students the importance of true leadership and a correlation to the anti-bullying theory. However, it should be noted that 5th graders are involved with all five key elements in the Spiral Curriculum approach. That is, all the objectives (Patience, Confidence, Focus, Teamwork, and Leadership) are incorporated into their program.

5th graders in addition to being inspired by the five key elements at an advanced level, they are given the opportunity to work in a series of academic subjects. That is, some of the DiL program activities related to student's skills, as they are described and required in the school curriculum, are applied to them as shown below:

- Apply mathematical thinking and modeling:
5th graders, by measuring the speed of two dogs of different heights, they can correlate the length of a dog's leg(s) with his running ability.
- Convert units within a given measurement system (example cm to meters, inches to centimeters):

Students are asked to count a dog's steps. In order to do so, they are asked to tie a light to one of the dog's legs and then measure the distance between the point that leg first touches the ground, with the point it touches the ground again (they can use various units of measurement, i.e. cm, meters). Then they are asked to measure the soccer field's perimeter by simply counting the dogs' steps. Given that the perimeter is many centimeters, they are asked to convert the centimeters into meters, or perform any other conversions depending on the units used.

- Gain experience with the concept of force and the application of force to do work: Students are asked to attach a shopping cart to a dog (using the leash and a collar vest). As the dog pulls the shopping cart by moving it, the dog uses force and produces work. The students can add extra weight in the cart, so the dog will have to put with more force in order to make the cart move (they can use a dynamometer to see the exactly force used). Finally they are asked to check if the equation for Work, namely, $W = F \times d$ (where W =Work, F = Force and d =distance) can be verified.

INITIAL FINDINGS

The results of the initial implementation of the DiL program have shown that the classroom dogs at ACS Athens can have many benefits. Among others, these are:

- Improve reading skills.
- Overcome the phobia of dogs.
- Motivate those children who are often not that attentive.
- Help calm children down.
- Build confidence.
- Form a bond among classmates and strengthen their team ethics.
- Improve academic achievement.
- Provide children with responsibility and encourages them to respect all life.
- Provide happy, playful, yet constructive time.
- Modify Behavior.
- Promote Empathy.

Moreover, the faculty, using various dog training techniques, teaches the children all the five key elements in the spiral curriculum approach: Patience, Confidence, Focus, Team Work, and Leadership. Through the DiL program students have the opportunity to understand how they may lack confidence when they work with a dog for the first time. By exercising patience and remaining calm, they have the opportunity to gain confidence in the field, thus learning to keep the dogs' focus and attention on them. In addition, they realize that in order to reach their goals they have to work as a team. Finally, by working and handling a dog in this way they become true leaders.

TOWARD A SUCCESSFUL IMPLEMENTATION OF DiL: LESSONS LEARNED

Upon reflection on the first few years of running the DiL program, we would recommend that in order for it to be successfully implemented the following resources, support, and infrastructure are required:

- A dog educator responsible for training the faculty.
- Appropriate certified dog assistant educators to support faculty.
- Acquisition of classroom dogs for each grade, which requires their selection after evaluation as well as a series of preparatory tasks such as vaccinations, insurance etc.
- A well-written curriculum with clear goals and objectives.

- A series of equipment such as the obstacle course.
- Administrative support.

RECOMMENDATIONS FOR FUTURE RESEARCH

As the DiL program continues to develop, progress and fine tune all of its' essential delivery components, advances in research can be carried out at ACS Athens, or in any other institution with similar programs. In the Elementary School at ACS Athens, students' attitudes and feelings about the DiL program will be explored in the upper grade levels (4th and 5th grades). These two grades, not only provide for a valid sample population with a minimum of 100 students, but older students are also more developmentally ready to respond to questions pertaining to the described program. Students will be given a survey based on a Likert-type scale, which will consist of a number of questions related to their experiences (attitudes and feelings) as learners and participants of the DiL program. The responses to the questions are scaled on degrees of agreeableness. The surveys will be collected; the data coded and results statistically analyzed by the appropriate faculty members.

CONCLUSIONS

Educational institutions must inspire their students to develop the wisdom to transform their educational experience into social, economic, environmental, intellectual, and ethical resources to improve their lives. As a result, academic institutions, now more than ever, have to provide new educational opportunities and experiences. As we demonstrated above, the main contribution of the **Dogs in Learning (DiL)** program is that through the presence and use of dogs in the classroom, a manifestation of the Global Morfosis Paradigm (GMP) is attained. More specifically, following a spiral educational curriculum using the five key elements, some basic issues related to human behavior are internalized by the elementary school children at ACS Athens, which can further their understanding of, and appreciation of the emotional and feeling states of other people (i.e. kindness, empathy, joy, loss, sadness, and anger). Additionally, they are provided with opportunities to feel connected, safe, and secure.

It should be noted that the five key elements can certainly be taught to elementary, middle and high school students using the DiL program as well as other academic techniques, or by using different educational approaches. However, the position presented here is simple in its explanation, but radical when considered in terms of the current practices in education. That is, educational processes and the teaching of the basic key elements such as Patience, Confidence, Focus, Teamwork and Leadership cannot be addressed as successfully with traditional educational practices. In addition, curriculum subjects can be taught more effectively and in a playful and enjoyable manner when the learner is engaged in the learning process. Providing meaningful hands-on opportunities to children allows them to take their learning to a different level. In essence, these elements and other subjects can be successfully taught because animals, especially dogs, are capable of attracting and holding the attention of children and can inspire students of all ages (a very difficult task in traditional educational approaches). The most representative example we face today is the anti-bullying phenomenon which, in our opinion, the DiL program successfully addresses in a hands-on and meaningful manner, which is extremely effective, engaging, and long-reaching. Most importantly, the DiL program represents the successful manifestation of a learning approach which is the dialectic entity of the Global Morfosis Paradigm (gMp).

Therefore, the DiL program inspires students to develop the wisdom to transform their educational experience. In addition, the DiL program, in its infancy, proves that young learners can be inspired to reach their maximum capacity ethically, emotionally, socially, physically, intellectually and academically. We need the next generations of leaders to lead with ethos, kindness and mindfulness;

basic tenants of the Morfosis Paradigm, in order to establish a better world in which to live for all (Gialamas, 2014).

Finally, it should be clear that if the goal of education is to successfully prepare students for the future, we cannot continue educating them in ways that address education and market needs of the past. The world has changed exponentially in ways that are not always easy to understand, so we need to predict the needs of the future as accurately as possible, and prepare students accordingly. Thus, an educational reform is not only necessary, but also critical in bringing about drastic changes in educational curricula as well as the way these are implemented. We strongly believe that such an educational reform could be based on the gMp.

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