# «Reinforcing positive behavior and supporting students' development of self-regulation skills with the *Class Dojo* online tool»

# Gkantolias Vasilios. E.<sup>1</sup>, Mavridis Dimitris<sup>2</sup>

<sup>1</sup>M.Sc., Teacher, Arsakeio Primary School of Ioannina, Ioannina, Greece v-gandolias@hotmail.com <sup>2</sup>Assistant Professor, Department of Primary Education, University of Ioannina, Ioannina, Greece dmavridi@cc.uoi.gr

# ABSTRACT

Students with positive behaviors and self-management skills achieve better learning outcomes. These achievements are further boosted when accompanied by some reward and motivation.

The purpose of this study was to investigate the effects of Class Dojo, an on-line behavioral monitoring system, on students' development of self-regulation skills.

We conducted a small empirical study and showed that the use of Class Dojo significantly improved overall student behavior. The sample consisted of 25 Greekstudents aged 8-9 years of age on average.

A pre-post-follow up-study was conducted. In this study, data on the behavior of students was collected on two occasions. a) before the introduction of the Class Dojo tool in the classroom and b) two (2) months after the students start using it.

Students showed greater active participation in the classroom, increased focus, chatted less witheach other and disruptive behaviors were substantially reduced. Finally, the vast majority of students responded positively to the use of this behavioral monitoring tool in their classroom.

**KEYWORDS:** Class Dojo; self-regulation; Educational software; Classroom behavior management

# INTRODUCTION

As far as conventional behavior management is concerned, students are often punished for undesirable behaviors while desirable behaviors donot get the meritand reward they deserve. An example of a desirable behavior that often goes unnoticed is students' ability to self-regulate (MacLean-Blevins, 2013). In the context of learning, Hwang (1998) states that self-regulation is the process through which students guide and strengthen their knowledge, thoughts, behaviors and incentives in order to achieve their learning goals.Boekaerts (1996) notes that students who can self-regulate in a learning environment, have also the ability to exercise control over the various dimensions of the learning process, such as undertaking the selection, association and coordination of knowledge-building strategies that harmonize the learning process.

We define self-regulation and its application in the classroom. We focus mainly on how technology can help assess the behavior of students in a way that is considerably more enjoyable and playful as opposed to conventional behavioral management systems. We also describe the *Class Dojo* (https://www.classdojo.com/), an on-line program that enables the teacher to keep daily records of student behaviors and the frequency of their occurrence with the aim to build or shape a targeted skill or value. In addition, we present the methodology of the empirical study we employed. We describe data collection and methods of analysis and we present the results of the analysis. We conclude with a discussion.

#### **SELF-REGULATION**

Manichander & Manjula (2016), report that classroom management refers to the extensive variety of skills and techniques that teachers use to keep students organized, focused on task, and academically productive during a class. When classroom-management strategies are effectively employed, teachers minimize the behaviors that impede learning for both individual students and groups of students, while maximizing the behaviors that enhance learning.

According to Roache & Lewis (2011) there are three models that refer to classroom management and student behavior: (a) teacher-oriented, with rewards and punishments(b) student-centered, where self-regulation develops responsible behavior; and (c) group-oriented, in which decision-making is done by students under the guidance of the teacher. From the above it follows that the *Class Dojo* focusing on rewarding positive behaviors is oriented to the second model.

The ability of an individual to control and regulate his behavior is considered a desirable characteristic for learner autonomy (Harris, Frizzelle & Graham, Friedlander, Saddler, 2005). Daly and Ranally define self-regulation as the set of actions a person takes to modify or maintain his behavior (Daly & Ranally, 2003). In learning, self-regulation pertains to the degree in which individual incentives are initiated and regulated (Pintrich & DeGroot, 1990). Examples of self-regulatory behaviors in a learning environment include the maintenance of one's attention span, the perseverance and willingness to complete an assignment, the ability to manage time and the desire to put in the required effort (Dermitzaki, 2003; Schunk & Zimmerman, 1994).

Self-regulation strategies aim to teach students to control their behavior rather than rely on the encouragement of their parents, teachers or other role models. Generalization and maintenance are very basic outcomes of selfregulation interventions (Hoff, Kathryn, DuPaul& George, 1998 · Stevenson & Fantuzzo, 1984 · Rhode, Morgan & Young, 1983 · Burgio, Whitman & Johnson, 1980 · Hughes & Agran, 1993 · Gureasko-Moore, Dupauland & White, 2006). Alertness of the student is a key characteristic for generalizing the self-control and self-regulation across the field of learning

As reported by Skinner & Smith, (1992) self-regulation may prove to be a useful strategy for managing the behavior of students in the classroom. By teaching students to employ self-observation as well as to record, evaluate, modify and drive their own behaviors, teachers are in turn able to create a classroom environment that can more easily achieve its learning objectives.

In addition, from a teacher's perspective, students' understanding on how to self-regulate substantially reduces the time spent on behavioral management and prevents the academic challenges that may arise during the classroom lesson (Hoff, Kathryn, Farrell & Hoff McDougall, Skouge, DuPaul & George, 1998).

From a student's perspective, the ability to self-regulate their behavior provides the opportunity to learn a series of skills that modify unwanted actions without the intervention of an adult. As a result, the student becomes more responsible and is more likely to take initiative in classroom activities (Agran, Blanchard, Wehmeyer & Hughes, 2001).

From a societal point of view, a person who is able to work independently without direct supervision is overall perceived better by society. Hence, a child must acquire the necessary competencies to increase his selfconfidence. Opportunities that allow children to demonstrate their independence are likely to increase their participation, reduce problematic behaviors and counteract negative feelings (DuPaul & George, Hoff, Kathryn, 1998 · Harchik, Sherman & Sheldon, 1992).

Nowadays, students are from an early age accustomed to technology. Hence their self-regulatory skills may as well be developed via new technologies that in turn could contribute to the achievement of learning outcomes. Such learning outcomes, if accompanied by stimuli that increase students' interest, will most likely lead to long term and sustainable knowledge.

Solomon & Schrum (2010) report that many Information Technology (IT) tools can be used in the classroom with little to no cost. Despite these benefits, the majority of teachers do not use such tools in the classroom. An internet connection alone allows access to multiple sources of information, which can provide long-lasting learning results if used in combination with other teaching resources.

From the early stages of their formal education, students are subject to various behavior management systems where they are primarily undermined because of undesirable behaviors. Additionally, many behavior management systems lack the element of fun, which often leads to the opposite outcome than the one expected. For this reason, we set out to present to primary school students an on-line behavior monitoring system, the *Class Dojo*, which is both customizable and targets specific behaviors, either positive or negative.

The Class Dojo tool aims to create happier classrooms in the following way: It begins with the assumption that each student presents a number of different behaviors in a classroom. A key element of the tool is earning points. The class teacher gives or takes away points for each type of behavior presented by each student. With the Class Dojo tool, each student has his own profile and avatar, which can change in appearance during the course of the game depending on the number of points earned or lost. The teacher defines the rules of the game and either grants or takes away points. The teacher can also monitor the behavioral progress of each student and that of the whole class on a daily and weekly basis. By implementing the Class Dojo tool, the objective is to strengthen the positive behaviors of children, but also to provide a pleasant, yet effective, method to punish undesirable behaviors in the classroom.

It is important to use *Class Dojo* in combination with a number of other principles. Some of these principles are: Continuous formative assessment and feedback on them, self-assessment and the formulation of goals by students for their behavior as well as express teaching of desirable behavior and communication repertoires.

The authors of this research were only able to find a single study in the existing literature on the effect of the *Class Dojo* tool on the promotion of self-regulation behaviors in students. In a sample of 24 students aged 8-10 years old, MacLean-Blevins (2013) found that the frequency of pre-identified positive behaviors indeed increased when using the *Class Dojo* tool while there was a decrease in distracted and disruptive behaviors. However, a number of limitations emerged in the MacLean-Blevins study including scheduling conflicts, a short experimental period and lack of quantitative data.

Considering that today's students, from their first years of formal schooling, are familiar with new technologies and bearing in mind the degree of excitement IT tools can provoke in children, as these are now able to assess their behavior through a process that is substantially more pleasant and playful, this paper sets out to explore 1. If the *Class Dojo* tool quantifiably improves student self-regulation behaviors and 2. To what extent students enjoyed this new behavioral assessment tool.

#### METHODOLOGY

This study was conducted with 3<sup>rd</sup> grade primary school students in the city of loannina in Greece. Similarly to other western nations, Greece is a democratic and developed country with an advanced high-income economy, a high quality of life, and a very high standard of living and education.

The classroom consisted of 25 students aged 9 years of age on average. A similar sample of US students was analyzed in a qualitative study by MacLean-Blevins (2013). In our sample, 16 students were girls and 9 were boys. The classroom teacher used the *Class Dojo* tool to record the positive behaviors of students with the aim of reinforcing them and, in this way, utilizing a more playful and modern style. The Class Dojo tool was used in every school-day of the week for a total of 6 months i.e. from January to June and the class teacher was the only person allowed to give or take away student points. The tool was mainly in use when the students worked independently, but was also used when students worked in small groups. A few minutes were set aside every Friday to review student's behavioral progress throughout the week. A discussion was thereafter held with students on their behavioral challenges and a brainstorming session followed where students had the opportunity to suggest improvements. These enabled students to set certain behaviors as objectives via the creation of a list. Based on international research, only behaviors that could be scientifically assessed in a classroom were selected to be part of this study. These behavioral variables were similar to those in the MacLean-Blevins study and were equally consistent with those listed by the students. The following behaviors were quantitatively assessed before and two months following the implementation of the Class Dojo tool.

- (1) I raise my hand when I want to speak
- (2) I ask the teacher for help
- (3) I take notes
- (4) I'm able to work quietly
- (5) I can stay focused
- (6) I chat with my neighbor
- (7) I speak loudly, dance and disturb the class
- (8) I look around, I get up from my seat and I am distracted

#### DATA COLLECTION

We collected data on the behavior of students a) before the introduction of the *Class Dojo* tool in the classroom and b) two (2) months after the students start using it. Here, it is important to mention that the classroom teacher used the experimental tool for a total of 6 months. At the end of the school year, students were asked to fill in a questionnaire in whichthey were asked to describe their experience. To minimize bias, we asked another teacher of the same Primary School to observe the frequency of the aforementioned eight (8) behaviors prior to the introduction to the *Class Dojo* tool, and two months after its use. The observed behaviors, both before and two months into the experimental stage were recorded on a frequency checklist.

Before the experiment and two months into its implementation, the observer (volunteer teacher) followed these systematic steps: The observer grouped together 5 students sitting near each other and then recorded the frequency of the listed behaviors for one (1) minute. If the same behavior occurred simultaneously by two (2) students, then two (2) points were recorded. If, during the one-minute time frame, a student changed a given behavior, one (1) point was recorded for each behavior conducted. The observer then moved on to examine the behavior of another group of five (5)

students for an additional one (1) minute. Observations were performed a total of five (5) times in order to record the behaviors of all 25 students in the classroom (5 x 5 = 25). This same data collection method was used in the MacLean-Blevins study and served as a reference to the current study.

At the end of the school year, and after having completed the experiment, students were asked to provide their feedback in a questionnaire with open-answered questions. This questionnaire was completed two or three days before the end of the school year so that students had the opportunity to write their opinion freely and without pressure, meaning that there wasn't any possibility of losing or gaining a point at this stage seeing that the experiment had reached its end. Also, to maintain the anonymity of responses, students were asked not to put their names or any other information on the questionnaire that would otherwise reveal their identity.

#### DATA ANALYSIS

The data analysis was performed using the IBM SPSS Statistics software 23.0(IBM Corp. Released 2014. IBM SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp). The objective of the behavioral checklist analysis was two-fold. We computed averages, standard deviations and confidence intervals for each behavior for pre-measurements and post-measurements. We performed t-tests for correlated data to determine statistically significant differences in the frequency of the eight aforementioned behaviors before and during the use of *Class Dojo*. We computed correlations among each pair of variables (before and during the experiment) to determine valid relationships among behavioral improve.

#### RESULTS

Table 1 shows the results for each behavior.

At this stage, it is important to mention that possible significant improvements cannot be attributed solely to the *Class Dojo* tool, considering that there are many confounding factorsoperating in the study and in the classroom.Nevertheless, the data analysis revealed statistically significant findings, which demonstrate the positive effects of the *Class Dojo* tool.

As shown in the table, after having used the Class Dojo on-line tool for two months, students showed a statistically significant improvement in their classroom participation as demonstrated with the frequency in which they engaged themselves in behaviors 1 (raised their hand to speak,p-value: 0,001 <0,05), 3 (keeping notes,p-value: 0,000 <0,05), 5 (more focused, p-value=0.001<0.05), 6 (chatting less with peers, p-value=0<0.05), 7 (disturbing classmates, p-value=0,004<0.05) and 8 (look around, get up from seat,p-value=0,022<0.05).

In the rest of the behaviors, we did not detect any statistically significant differences but this may be due to lack of power.

A more detailed SPSS analysis shed light on the existing correlations among these differences in behavior.

Behavior	Mean	Conf.interval	Test for mean		
		post-pre	equal zero		
1. Raise hand to talk post measurement	1,12	(0.250,	†(24)= -3.98,		
Raise hand to talk pre-measurement	0,60	0.790)	p-value		
			=0,001		
2. I am asking help from the teacher	0,60	(-0,069,	† (24) = -		
post measurement	0,44	0.387)	1.445,		
I am asking help from the teacher pre-			p-value		
measurement			=0,161		
3. I'm keeping notes post measurement	0,16	(-0.314, -	† (24) = 2.138,		
I'm keeping notes pre-measurement	0,32	<b>0.006)</b> p-value			
			=0,043		
4. I work quietly post measurement	1,68	(0.278,	† (24) = -		
I work quietly pre-measurement	1,16	0.762)	4.437,		
			p-value		
			=0,000		
5. I'm focused post measurement	1,48	(0.250,	† (24) = -3.98,		
I'm focused before pre-measurement	0,96	0.790)	p-value		
			=0,001		
6. I'm talking to the student next to me	0,24	(-1.082, -	† (24) = -		
post measurement	1,00	0.438)	4.879,		
I'm talking to the student next to me			p-value		
pre-measurement			=0,000		
7. I disturb my classmates post	0,28	( -0,595, -	† (24) = 3.166		
measurement	0,64	0,125)	p-value		
I disturb my classmate'spre-			=0,004		
measurement					
8. I look around, I get up from my seat	0,64	(-0,369, -	† (24) = 2.449,		
post measurement	0,84	0.031)	p-value		
I look around, I get up from my seat pre-			=0,022		
measurement					

Table 1: Averages, confidence interval&hypothesis testing for each behavior.Statistically significant differences between pre-measurements and post-<br/>measurements are shown in bold.

The following relationships among behavioral improvements emerge from the data analysis:

- There is a significant correlation between the change in the frequency students raised their hand to speak and that in which they chatted with their peers. The former is also correlated with increased regularity in student focus.
- Equally, a significant correlation appeared between an increased ability to remain quiet and the frequency in which students chatted with their neighbor. The former is also correlated with increased

student focus. These two behaviors do not show significant correlations with other behaviors of analysis.

- Finally, the variable that didn't show any statistically significant improvement was the frequency in which students asked their teacher for help during the lesson. This change did not have any correlation with the changed in the other variables aside from the increase in how often students raised their hand. This can be justified by the fact that students often raise their hand to ask questions.
- Looking closer into the above analysis, there were statistically significant improvements in overall student behavior and only a single behavior did not show a statistically significant result before and during the use of the *Class Dojo* tool. It is important to note that in a sample of 25 students we lack power to obtain statistically significant differences. Nevertheless, during the use of the *Class Dojo* tool in the classroom students showed greater active participation, they were more focused, chatted less among them and reduced disruptive conduct.
- Finally, observations from the class teacher himself regarding the effects of *Class Dojo* on student behavior in the classroom were collected. The classroom teacher stated that when students became aware of the mouse moving over the *Class Dojo* application they immediately returned to their work where they remained focused and quiet.

#### DID THE STUDENTS ENJOY THE CLASS DOJO TOOL?

For a classroom management tool to have lasting results it must be understood and accepted by both teachers and students. Hence, the research team assessed to what extent students enjoyed *Class Dojo* as an alternative behavioral assessment method. Students were requested to fill in a questionnaire about their feelings about the *Class Dojo* tool. At this point it should be emphasized that while it was optional for students to give feedback on the *Class Dojo* all of them were actively willing to complete the questionnaire. Students' answers are presented in the following Figures.

From the students' anonymous feedback, which they provided voluntarily on an open-question questionnaire, it is evident that they had a positive experience using the *Class Dojo* software and they expressed wanting to continue to use this behavior assessment tool in the classroom (Figure 5). The majority stated that with this tool they have a strong incentive to properly behave in the classroom. Some students said they would like their avatars to be more esthetically pleasing and interesting and they suggested for the software to use their own pictures instead of images of avatars.

As shown in the above figures, students want to use *Class Dojo* in the classroom and try to earn points, having a high motivation to have the right behavior. They also want to report to their parents and friends the points that earn, something they do not want to do when they do not behave properly

and lose points.

Correlatio ns	Raisin g hand	Askin g for help	Keepi ng notes	Work quietl y	Be focus ed	Talkin g to the stude nt next	Disturb classmat es	Look aroun d and get up from seat
Raising hand	1							
Asking for help	,452 (023)	1						
Keeping notes	,014 ,(948)	,129 ,(540)	1					
Work quietly	,353 ,(084)	,247 ,(235)	,015 ,(942)	1				
Be focused	-,419 ,(037)	-,189 ,(365)	,137 ,(513)	-,741 ,(000 )	1			
Talking to the student next	-,485 ,(014)	-,206 ,(322)	,306 ,(138)	-,540 ,(005 )	,768 ,(000)	1		
Disturb classmat es	-,219 ,(293)	-,037 ,(861)	,055 ,(796)	-,592 ,(002)	,681 ,(000)	,574 ,(003)	1	
Look around and get up from seat	,707 ,(000)	,336 ,(100)	,014 ,(948)	,570 ,(003 )	-,665 ,(000)	-,597 ,(002)	-,531 ,(006)	1

**Table 2:** Correlations (including p-values in parenthesis) among the frequencies of thevarious behaviors. Significant correlations are shown in bold.



Figure 1: How I feel about Class Dojo?



Figure 3: How often do you lose points in Class Dojo?



Figure 5: Do you get motivated to have good behavior in the classroom with Class Dojo?



**Figure 2:** Do you say something to a friend or parent when you gain points in Class Dodo?



Figure 4: How often do you earn points in Class Dojo?



Figure 6:Would you like to continue to use Class Dojo in the classroom?

#### CONCLUSIONS

Having spoken to several colleagues in Greek schools, it was agreed that instead of discouraging specific negative behaviors, which is the main principle behind many behavioral management systems, students should be rewarded when they behave properly in class. With Class Dojo, students were able to establish individual goals, they were given the opportunity to specifically consider how to achieve these goals and finally to discuss these with their teacher. Through this process, the class, as a whole, had increased its engagement in self-regulatory behaviors, and reduced the frequency of those behaviors that disturb a quiet classroom environment. The use of Class Dojo positively supported the strategic thinking of students in order to determine how they should behave in the classroom. The improvement of students' behavior resulted in greater focus attained during the taught lesson, also noticed by the class teacher. which was Consequently, learningobjectives were much easier to achieve.

Class Dojo is a customizable on-line behavioral monitoring system and can serve as an essential tool to promote the self-regulatory behavior of students throughout the school year. From a practical perspective, the class teacher expressed that using the Class Dojo software throughout the whole of the school year may not be a viable option. The tool had been used for six months, i.e. from January to June. To be able to operate the Class Dojo tool for one full school year, modifications are needed in order to achieve sustainable positive results. It needs to be mentioned that this was not the first time Class Dojo was applied by the classroom teacher. The tool had already been used with 4<sup>th</sup> grade primary school students for six months with similar results to this study but systematic research in this case was not conducted. It would be of interest to test Class Dojo in smaller or larger classrooms with appropriate amendments made to the avatars (i.e. perhaps discuss them with the students). The proposal made by one student to have photos of themselves instead of avatars could be a further incentive, especially for older students. At the end of the Class Dojo experiment students were given a prize containing their favorite avatar and the medal it had won (gold-silverbronze). The teacher decided the color of the medal granted to each student, according to the total points earned. For educational reasons, the teacher decided to give all students a class medal. As a whole, the Class Dojo tool is quite configurable and each teacher can include his or her own ideas to make it even more interesting to students. Finally, during the research phase, the frequency of behaviors that both students and the international literature deem as important in order to succeed had improved significantly. The students found that Class Dojo was a fun and pleasant alternative and said they would strongly appreciate having their behavior monitored in this fun way as they got older.

There is a series of limitations in the current study and caution is needed when generalizing its results. It required effort to get students to understand the questionnaire items. It is equally important to mention that a sample of 25 students does not yield the necessary power to detect statistically significant differences. The lack of a control group was also a limitation of this study. Equally, we do not know for sure if the improvement in desired behaviors was due to the educational software or such progress would have been otherwise obtained in itself after some months. There is also a plethora of classroommanagement strategies, other than Class Dojo, and we can not evaluate the added value of Class Dojo.Randomized experiments or analyses of observational evidence from classes using *Class Dojo* and classes using traditional teaching or other classroom management strategies may help us disentangle the effects of using the software from the effect of time and the added value of Class Dojo. Finally, because young students are easily excited by activities that are fun and different from those they are accustomed to, they may show greater enthusiasm about this program than perhaps older students.

# REFERENCES

- Agran, M., Blanchard, C., Wehmeyer, M. & Hughes, C. (2001). Teaching students toself-regulatetheir behavior: the differential effects of student vs teacher-delivered reinforcement.*Research in developmental disabilities*, 22(4), 319–332.
- Burgio,L.D., Whitman, T.L.,& Johnson, M.R. (1980). A self-instructional package forincreasing attending behavior in educable mentally retarded children. *Journal of applied Behavior Analysis*, 139, 443-459.
- Hughes, C. & Agran, M. (1993). Teaching Persons with Severe Disabilities to Use Self-Instruction in Community Settings: An Analysis of Applications. Journal of theAssociation for Persons with Severe Handicaps, 18(4), 261-274.
- Boekaerts, M. (1996).Self-regulated Learning at the Junction of Cognition and Motivation. European Psychologist, 1, 100-112.
- Daly, P. & Ranalli, P. (2003). Using Countoons to Teach Self- Monitoring Skills. *Teaching Exceptional Children*, 35(5), 30-35.
- Dermitzaki, I., & Kiosseoglou, G. (2004). Self-Regulation during problem solving insecond graders: Relations with students' performance and goal orientation. Hellenic Journal of Psychology, 1, 119-146.
- Gureasko-Moore, S., Dupaul, G.J. & White, G.P. (2006). The Effects of Self-Management in General Education Classrooms on the Organizational Skills of Adolescents with ADHD.Behavior Modification, 30(2), 159-183.
- Harris, K., Friedlander, D., Saddler, B., Frizzelle, R.& Graham, S. (2005). Self-Monitoring of Attention Versus Self-Monitoring of Academic Performance: Effects.Among Students with ADHD in the General Education Classroom. *The journal ofspecial education*, 39(3), 145-157.
- Hoff, K.E., & DuPaul, G.J. (1998). Reducing disruptive behavior in general education classrooms: The use of self-management strategies. *School Psychology Review*, 27(2),290-303.

- Hughes, C. & Agran, M. (1993). Teaching Persons with Severe Disabilities to Use Self-Instruction in Community Settings: An Analysis of Applications. Journal of the Association for Persons with Severe Handicaps, 18(4), 261-274.
- Hwang, Y.S. (1998). Kindergarten children's self-regulated learning. Unpublished doctoral dissertation, Abrn University, Alabama.
- IBM Corp. Released (2014). IBM SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp)
- Maclean-Blevins, A. & Muilenburg, L. (2013). Using Class Dojo to Support Student Self-regulation. In J. Herrington, A. Couros & V. Irvine (Eds.), Proceedings of EdMedia: World Conference on Educational Media and Technology 2013 (pp. 1684-1689). Association for the Advancement of Computing in Education (AACE).
- Manichander, T.,& Manjula, H.S., (2016). Management of school education.
- Pintrich, P & De Groot V. (1990). Motivational and Self-Regulated LearningComponents of classroom Academic performance. Journal of Education Psychology, 82(1), 33-40.
- Rhode, G., Morgan, D.P. & Young, K.R. (1983). Generalization and maintenance of treatment gains of behaviorally handicapped students from resource rooms to regular classrooms using selfevaluation procedures. *Journal of Applied Behavior Analysis*, 16, 171-188.
- Roache, J.E., & Lewis, R., (2011). The carrot, the stick, or the relationship: what are the effective disciplinary strategies? European Journal of Teacher Education, 34 (2), 233-248.
- Schunk, D. H., & Zimmerman, B. J. (1997). Social origins of self-regulatory competence. Educational Psychologist, 32, 195-208.
- Smith, D. J. et al. (1992). The effects of a self-management procedure on the classroom and academic behavior of students with mild handicaps. School psychology review, 21(1), 59-72.
- Stevenson, H.A., & Fantuzzo, J.W. (1984). Application of the "generalization map"to a self-control intervention with school-aged children. Journal of applied behavioral analysis, 17, 203-212.
- Solomon, Schrum, L., (2010): Web 2.9: How-To for Educators.