The Use of Money as a Motivator for Academic Progress

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We examined the use of money as a motivator for academic progress. Students were given money for meeting fluency aims on computerized academics, completing assignments and other academic behaviors as determined by education staff. Students lost money for defined inappropriate behaviors. Money could be spent on shopping, food or at the contract store, located in the school. Monetary rewards were individualized, based on students ' academic strengths and weaknesses. Money earned was always displayed on the subject's computer screen. Data will be presented showing the effects this had on academic progress, to include lessons passed, timings completed and overall academic effort.

Method

Students and Setting

There were ninety-two students in this study. Their ages ranged from 9 years to 22 years old. There were a total of 58 males and 34 females. Students were diagnosed with a variety of disabilities however the majority being learning disabled and emotionally disturbed, although we did have a couple of students diagnosed with autism. The students were chosen as a result being capable of understand the value of money to include being able to exchange/purchase items that they wanted.

Each student was in a classroom with a maximum of 10 students and 1 teacher and at least 1 aid. Within the classroom setting all students had access to a computer. Those students that require additional instruction in specific areas, were required to complete lessons in one of the computer programs. JRC develops many of the computer programs that the students use. Students with a higher academic ability work on vocabulary skills in all areas (Science, Social Studies, Mathematics, Spanish, and Language Arts), basic math facts, spelling skills, health, vocational, and grammar. We also have more functional based computer programs that we utilize. These include Basic Skills, Alphabet Skills, Numbers, Telling Time, Receptive Vocabulary, Sight Words, and Phonics. Additionally we have other non JRC created programs such as Headsprout Reading program, Expert Typing and Dollars and Cents.

While in the classrooms students also participate in whole classroom lessons focusing on communication, vocational activities, daily living skills, Language Arts, Science, Social Studies, Health, Spanish, Current events, plays, group projects etc. They also complete individual work assigned by the classroom teachers.

Through the use of the computer programs as well as the group and individual lessons completed, student had the opportunity to earn money for mastery of each assignment/lesson completed. They also were fined for lack of work, inappropriate behaviors or destruction of property.

Measures and Instruction

Students were required to complete assigned work given by the teacher in order to earn the money reinforcer. This included work from textbooks, group instruction, computer assignments, group assignments, projects, reading assignments, etc. While working, the teacher had the ability to enter a monetary value or type in the number of lessons a student passed, they would then click enter and the money would automatically update the student's account which was on the student's computer. (Figure 1). The top of the screen would light up green if the student was credited money. The student could then click on the onscreen account, set up very similar to a bank ledger and see the last transaction. The student computer assignments were automatically synced up to this system. Once a student completed a computer assignment meeting the pre-determined aim set by the teacher, the account would automatically be updated, through the database. Students that met a higher aim then set by the teacher would get a .1% increase in the money earned for that lesson, for example if a student's money value for passing a lessons was .20 cents and the aim was set at 10 and the rate they scored 11 they would earn a total of .22 cents for that lesson. Student's money value was individualized. The average student earns 30 cents per lesson. However, this was increased or decreased depending on the student's abilities and motivation levels. Originally when a student enters our program we may set the value at $1.00 to initially motivate them to work, however, over time this value decreases. We can assign a specific value to a specific lesson as well. For instance, if a writing assignment is of great difficulty for a student we may increase the value of that lesson from .30 cents to $2.00 or higher.

Figure 1

Money Value — Transactions

Filter | Clear Filter

Number of Records Displayed: 826

Ref	Trans Date	Trans Type	Trans Value	Debt Paid	Run Debt	Run Bal	App Type	Desc	Acad
152...	10/29/2010 3:49...	Credit	3.5	0	0.0000	22.85	Vocational	Typing	☑
152...	10/29/2010 2:45...	Debit	-0.2	0	0.0000	19.35	Behavioral Data ...	IVB1(1) 1...	☐
152...	10/29/2010 11:2...	Credit	2.1	0	0.0000	19.55	General Entry (A...	Spanish t...	☑
151...	10/29/2010 9:41...	Credit	0.35	0	0.0000	17.45	Vocabulary Builder	Social St...	☑
151...	10/29/2010 9:37...	Credit	0.35	0	0.0000	17.1	Vocabulary Builder	Social St...	☑
151...	10/28/2010 3:35...	Debit	-0.2	0	0.0000	16.75	Behavioral Data ...	IVB1(1) 1...	☐
151...	10/27/2010 3:29...	Credit	0.7	0	0.0000	16.95	General Entry (A...	Quiz	☑
151...	10/27/2010 3:29...	Credit	0.7	0	0.0000	16.25	Math	Math wor...	☑
151...	10/27/2010 3:27...	Credit	0.7	0	0.0000	15.55	English	Repeated...	☑
151...	10/27/2010 3:23...	Credit	0.7	0	0.0000	14.85	Math	Math wor...	☑
151...	10/27/2010 3:17...	Credit	2.1	0	0.0000	14.15	English	Repeated...	☑
151...	10/27/2010 3:12...	Credit	3.15	0	0.0000	12.05	English	English p...	☑
151...	10/27/2010 1:21...	Debit	-0.2	0	0.0000	8.9	Behavioral Data ...	IVB1(1) 1...	☐
150...	10/26/2010 9:06...	Credit	2.1	0	0.0000	9.1	English	Book report	☑
149...	10/25/2010 12:4...	Debit	-9	0	0.0000	7	Takeout Order	Take-Out...	☐
149...	10/25/2010 11:5...	Credit	0.7	0	0.0000	16	English	Journal E...	☑
149...	10/25/2010 9:49...	Credit	1.75	0	0.0000	15.3	Social Studies	passed t...	☑
149...	10/25/2010 9:12...	Debit	-4	0	0.0000	13.55	Behavioral Data ...	NCMP1(1...	☐
149...	10/22/2010 3:07...	Credit	0.7	0	0.0000	17.55	Math	Math wor...	☑
149...	10/22/2010 11:1...	Credit	2.45	0	0.0000	16.85	Vocational	Typing	☑
148...	10/21/2010 3:21...	Credit	0.7	0	0.0000	14.4	General Entry (A...	Quiz	☑
148...	10/21/2010 3:17...	Credit	0.7	0	0.0000	13.7	Math	Math wor...	☑
148...	10/21/2010 1:32...	Debit	-0.2	0	0.0000	13	Behavioral Data ...	IVB1(1) 1...	☐
148...	10/21/2010 1:08...	Credit	0.35	0	0.0000	13.2	Vocabulary Builder	Language...	☑
148...	10/21/2010 1:04...	Credit	0.35	0	0.0000	12.85	Vocabulary Builder	Language...	☑
148...	10/21/2010 1:03...	Credit	0.35	0	0.0000	12.5	Vocabulary Builder	Language...	☑
148...	10/21/2010 1:02...	Credit	0.35	0	0.0000	12.15	Vocabulary Builder	Language...	☑
148...	10/21/2010 12:5...	Credit	0.36	0	0.0000	11.8	Vocabulary Builder	Language...	☑
148...	10/21/2010 12:5...	Credit	0.35	0	0.0000	11.44	Vocabulary Builder	Language...	☑
148...	10/21/2010 12:5...	Credit	0.38	0	0.0000	11.09	Vocabulary Builder	Language...	☑
148...	10/21/2010 12:5...	Credit	0.37	0	0.0000	10.71	Vocabulary Builder	Language...	☑
148...	10/21/2010 10:5...	Credit	0.36	0	0.0000	10.34	Vocabulary Builder	Language...	☑
148...	10/21/2010 10:3...	Credit	0.35	0	0.0000	9.98	Vocabulary Builder	Language...	☑
148...	10/20/2010 3:39	Credit	0.7	0	0.0000	9.63	Math	Math wor...	☑

Tree navigation: Money Value — Academic Mastered Statistics, Academic Multiplier Editor, Behavior Multiplier Editor, Transactions By List, Transactions By Record, Rewards Accounts, Reporting (All Students)

Student Name

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Students were also fined. Fines included not completing homework/class assignments, not meeting an academic aim set by the teacher, losing homework/class assignments, not attending to the teacher or assignments while working, property destruction and for inappropriate behaviors targeted in their behavioral program. Fines varied and were individualized to the students. Students' fines can be different for each behavioral topography. For example, most students had Aggression, Health Dangerous, Major Disruptive, Noncompliant, Educational/Socially and Inappropriate Verbal behaviors as categories listed under their behavioral program. Within those topographies, different behaviors were targeted according to the students needs. The student's clinician set an appropriate fine for each behavioral category. An example of this would be if the student has Aggression as a behavioral category the fine may be $10.00 (this category may include hitting, kicking, punching spitting etc). Another example may be if talking out is targeted for a student, this falls within the Inappropriate Verbal topography, they may be fined .10 cents per talk out. We also had the luxury of making many different changes to the fines values. If a student very rarely engages in aggressive behaviors we may reduce the fine to $1.00 of .50 cents. If their talking out in classroom was a big concern we increased their fines in those areas to $2.00 or even higher if necessary. Each

students program was different and fines were set depending on the need of the student (Figure 2).

Figure 2
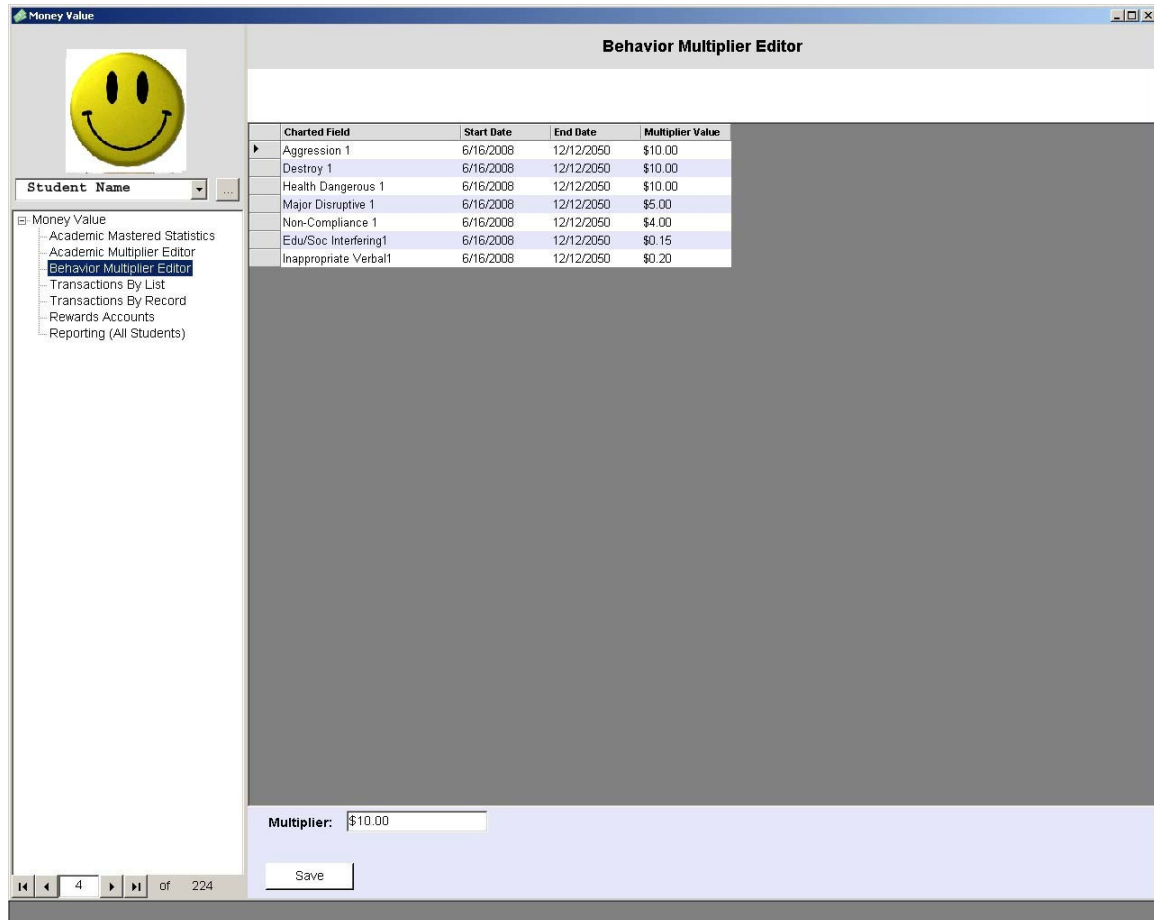
Another feature of this program is the "debt" accounts. A student's behaviors and or lack of educational work can put a student into debt. For instance if a student engaged in multiple acts of aggression they may be fined $30.00. However, their account only had $10.00 in it. This means that the $10.00 of their account would be taken out and $20.00 would go towards their debt. In this program we also developed what is called a pay back rate. This was created specifically for when students go into debt. Students will complete a lesson and if they pass they will earn the money. However, rather than all of the money going to pay back the debt that they have accrued, the teacher or clinician could set up the students' account so that for each lesson they pass only a certain percentage goes towards their debt. An example would be if a student earns $1.00 per lesson and their pay back rate is 20% then .20 cents would go towards their debt and .80 cents would go to their regular account, we can also do the opposite, set the pay back rate to 80% leaving .80 cents to their debt and .20 cents to their regular account. This was created to help students pay off their debt and also continue to

be motivated to work on their school work. Students could also be fined or charged for breaking items and will have to pay JRC back for them at a certain price. For example, a student puts a hole in the wall; they will have to pay to fix that hole. Or if they break a video game system they may have to pay a percentage of what that game system costs or the whole thing. This will go into their debt account and over time they can pay it back.

Students could utilize their money in many different ways. They had the opportunity to purchase items in our school store, shop online, shop at a mall, order out food on Fridays, buy clothing, shoes, and manicures, pedicures, hair cuts or colors, field trips, or take it home when they visit. These were just a few of the options that they had access to. Every time a student purchased an item it was debited from their account and they could immediately see what they purchased and how much it was.

As previously noted students had the ability to view their accounts at any point during the day. Every transaction was noted and some were completed automatically. They could see what their earnings per lesson should be and what their fines per behavioral topography were. They had the option to ask to change either the earnings or the fines if they choose too. They also had the ability to see what other students are earning for that week and who the top earners were at that time.

RESULTS

The results of this study found that lessons/assignments completed and lessons/assignments mastered significantly increased with the implementation of the money program. Data was taken 6 weeks prior to the start of the money program and 6 weeks of data was taken after the full program was put into place. Students completed a total of 24,483 timings prior and mastered a total of 3,883 after its implementation. After the money system was created we found that students completed a total of 47,937 timings and mastered a total of 15,996. (Figure 3) Students were averaging a total of $ 30 dollars per week but some have received as much as $120 in a week. Additionally we discovered that there was a significant deceleration in student's inappropriate behaviors that were targeted with the monetary fines. Furthermore, those students that had a tendency to engage in property destruction also significantly decreased those behaviors.

Figure 3

Academic Computer Timings
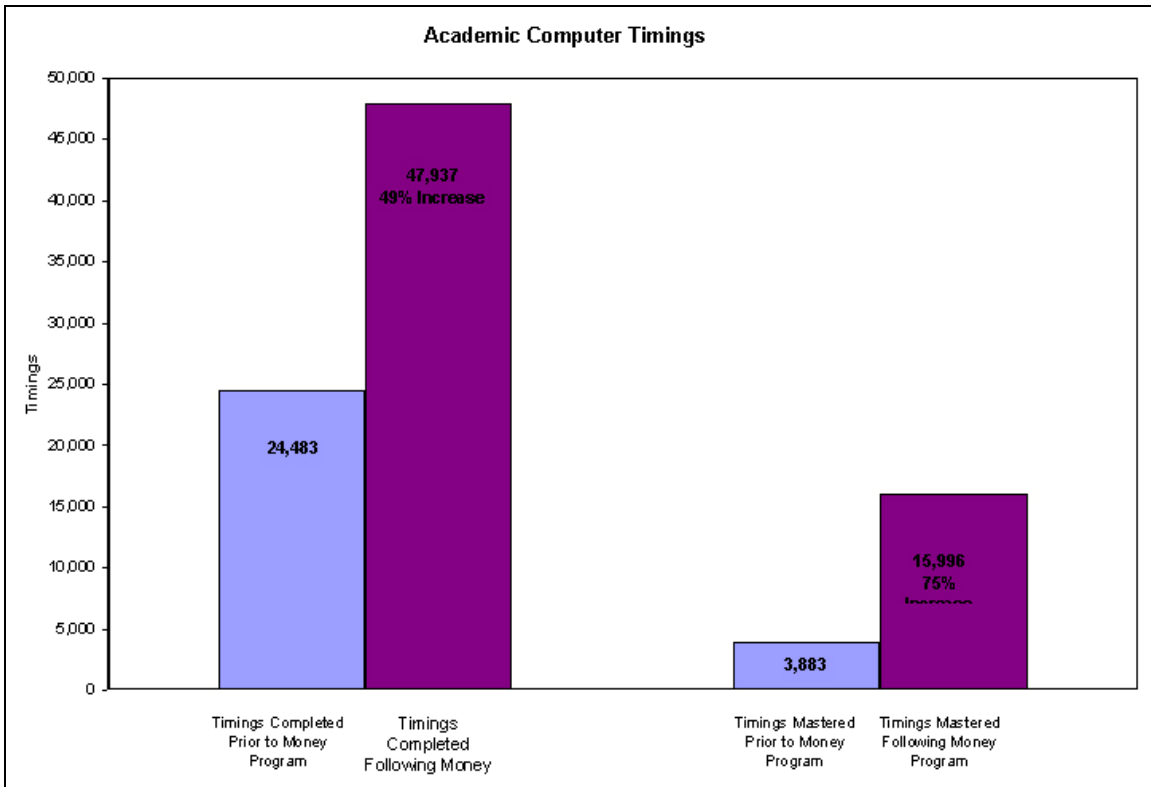
Data	Lessons Completed	Lessons Mastered
6 weeks prior to Money System	24,483	3,883
6 Weeks after Money System began	47,937	15,996
Percentage Increase	49%	75%

DISCUSSION

All of the students in this study continue to utilize this program. Since the time this was completed additional students have been added to this system. At this time there are a total of 112 students. The original intention of this system was to target the students with Emotional Disabilities, in order to encourage greater academic participation. As this system continues to improve, we have found out how much of an impact it has had on the students. As a result of this we started expanded this program to our adult clients. Then after some time we began expanding it to more of our student's diagnosed with Mild to Moderate Mental

Retardation as well as students with Autism. Although we have found that a few of those students did not benefit from this system many of them have. They have also begun to have a greater understanding of the value of money and how it used. As time passes we continue to make changes to our system. We have been able to modify it so that students can only earn money for passing the same computer lesson twice. Although the computer system moves students on automatically, they have found loopholes to remain on the same lesson or would complete the last lesson of a unit over and over again in order to earn more money. We recently have created an application where the student's "wish list" is placed on their computer screen and as the students earn money they can see how close they are to actually earning that item. A bar moves across the screen until they reach the goal. We have also noticed a significant increase in how often students review their behavioral charts. Since the implementation of this program the views of both academic and behavioral charts have doubled. Students either want to see their educational progress, behavioral progress or to see if a mistake was made in their fines. Overall this program has been very beneficial for the majority of our students and clients. We will continue to make changes and modifications to the system and will also continue to see if we can expand this program to more of our students and adult clients.