

Innovative Educators

Teaching Decision Skills to Troubled Teens

Non-profit foundation aims to help young people make better choices about their lives.

By Ali Abbas, Nathan Hoffmann, Ronald Howard and Chris Spetzler

The U.S. Department of Justice recorded 2.2 million juvenile arrests in 2003 [1]. Juvenile courts handled 1.6 million delinquency cases in 2002, up from 1.1 million in 1985. Nearly 25,000 16-year-olds in residential placement have an average stay of 105 days in public facilities, and about 85 percent of teens admitted into a juvenile detention center return at least once. For these young people, becoming involved with the juvenile detention system is a traumatic experience that carries with it the danger of being drawn into a cycle of repeated offenses.

Operations research professionals have received well-deserved attention for their contributions to improving the criminal justice system and making a significant impact on its pressing issues (see for example, Blumstein [2007] and Morgan [2007]). Our focus in this article is on our experience of teaching decision skills to the teens and officers of the Champaign County Juvenile Detention Center (JDC) in Urbana, Ill. The program is led by Ali Abbas, assistant professor of Industrial and Enterprise Systems Engineering at the University of Illinois at Urbana-Champaign (UIUC), in partnership with the Decision Education Foundation (DEF), a non-profit organization dedicated to helping young people make better decisions about their lives. Ronald Howard, one of the founders of the field of decision analysis, is president of the DEF.

DEF has designed and delivered innovative curricula for at-risk teens as well as programs for academically gifted and mainstream youth (for some recent work on teaching academically gifted teens see Abbas, Reiter, Spetzler and Tani [2004]). A long-time volunteer with the Decision Education Foundation and advisory board member, Abbas was instrumental in creating the partnership between the College of Engineering at UIUC, the Champaign County JDC and DEF.

The program started with an initial visit to meet Connie Kaiser, the superintendent of the Champaign County JDC, to tell her about the possibility of delivering decision-making workshops to teens. A sign posted at the entrance explained the mission of the JDC: "Only kids with the highest risk to harm others are detained for as little time as absolutely necessary, where caring, competent, compassionate staff are helping kids build skills for productive law-abiding lives, and reducing risk to re-offend."

It was clear to us that teaching decision skills fits well with the mission of the JDC. Kaiser recognized the value of this venture and embraced the idea of developing a program to help residents make better decisions.

Teaching Decision Skills at the JDC

We started with two, four-hour workshops for two groups of teens. Material delivered in the workshops was taken from the field of decision analysis and normative decision-making. While this material had long been tested with graduate students, a key objective in our endeavor was to test this material with teens at the JDC and to gather feedback for use in future workshops.

Abbas, Chris Spetzler and Jessica Fulton (an undergraduate UIUC student at the time, and now a high school math teacher in Chicago) delivered the first workshop. As the team entered the JDC, they passed

through three locked doors to reach a small classroom, decorated with posters of animals and bookshelves of textbooks. The classroom looked much like any other school classroom, except that it had no outside windows and had special security door knobs. Two officers entered the room with four residents, all boys in their teens.

When Jessica handed each resident a colorful pamphlet from the Decision Education Foundation that outlined the topics for discussion, one of the officers said, "Please pull the staples from the pamphlets. You can't give these kids staples; it is for their own safety." This was a striking difference between teaching at a regular classroom and at the JDC. In addition, no monetary incentives were allowed in any of the demonstrations. While \$20, \$5, and \$100 bills were used as investment resources in our classroom demonstrations at school, we could not use the same incentives at the JDC. Only "tokens" could be handed out and obtained by asking the officers for them. A token is a colorful piece of paper printed at the JDC and given as an incentive for good behavior. Residents use tokens to "purchase" snack items.

Over the next four hours, we talked to the teens about making good decisions, decisions vs. outcomes and the six elements of decision quality. The officers also listened.

The session had touching moments when residents shared their hopes about changing their lives. In one of the demonstrations, residents were asked what they would do in the following situation: A mother with two teenage girls is facing a decision of whether a grandmother, with worsening Alzheimer's disease, should move in with them or move into assisted living. If she does move in with them, the mother would have to adjust her work schedule and work fewer hours. The teenage girls would have to share a bedroom.

In other settings, students often pause to think about the pros and cons of each alternative. Residents at the JDC shared their own experience with their families. Some of their comments included:

Resident 1: "When my grandma went out of jail she came and lived with us. It is only natural that a daughter takes care of her mother when she is older."

Resident 2: "I would just get a job working at the nursing home. Then she could live there and I could still see her every day."

In keeping with the importance of "family comes first," the residents all decided to make sacrifices to take care of their grandmother. The officers were watching with interest and impressed by the participation of the kids. We observed how supportive the officers were of the teens and how the teens confided in them and trusted their advice. At the end of the session, one of the officers commented, "We thought you would be lucky to go an hour with them and you kept their attention for all four. We have never seen these kids so excited about learning."

We repeated the same workshop for another group that afternoon. During the session, a staff member entered with a can of milk and a sandwich for each resident. One of the residents also got a token. A resident's written response is typical of the experience and comments we received that day: "This session has made me look at decision-making a lot differently and (made it) easier to make a decision."

By the end of the day something significant had begun at the JDC. The concept that decision-making can be taught in a way that attracts the interest of the residents was established. This experience quickly led to four more workshops — two aimed at the teens and two at the correctional officers who wanted to learn more about decision-making.

In January, Abbas and two other UIUC graduate students, Sarah Miller and Nathan Hoffmann, presented two workshops to the juvenile detention officers. Later, the officers told Abbas and Hoffman many

stories about the teens and the challenges the residents faced. We used this input to create several case studies for workshops delivered at the JDC in March 2007.

We Have No Decisions Here

We began one workshop by asking a staff member in advance for 20 tokens to use in an investment demonstration. An officer entered the room with six residents, four boys and two girls. After introductions, Abbas introduced the topic of decisions and asked for examples from the residents. One girl at the JDC, we will call Amanda, raised her hand.

Amanda: "You talk about decisions, but we don't get many decisions here or in our lives."

Abbas: "Did you make a decision to come to class this morning? Could you have said no?"

Amanda: "Yes, I could, but that would have meant bad behavior. I need to get out of here fast, and I need a letter from the staff of the JDC so the judge can release me next week."

Abbas: "So in fact you do have decisions here. You made a decision of coming to class. You chose to have good behavior at the JDC to get out faster. What about your decisions when you leave? Would you like to return?"

Amanda: "No, never again. I will make sure that I do not do anything to get me back."

Abbas: "How will you do that?"

Amanda: "I will never shoplift again and will abandon those friends that encouraged me to do so."

Abbas: "That sounds like another decision to me."

After some discussion the residents began to understand they make decisions every day, and that they bear the consequences of the decisions they make.

Abbas asked for a volunteer. A girl we will call Janice raised her hand. "Thank you, Janice," said Abbas. "Here are your five tokens for volunteering."

Janice didn't understand him at first. "You're kidding, right?" Five tokens was a significant prize — enough chips and treats to last a few days. "I don't take money from people," Janice added.

Convincing the group of his intentions, Abbas posed an investment opportunity to Janice.

"What is an investment?" she asked.

"An investment is like a stock; its price can go up or down, and you can get more money back or even lose money if you choose to invest," offered another teen resident.

Abbas mentioned the payoff will be 20 tokens if the investment is successful and no tokens if unsuccessful. This captured the attention of all six residents.

"Now that's a big decision!" exclaimed one resident.

"I need another volunteer," Abbas continued.

All six youths eagerly raised their hands. Abbas chose Bill and described the deal to the group: Janice

can choose to invest her five tokens. If she does, Abbas will ask Bill a true-false movie trivia question. If Bill answers correctly, Janice will receive 20 tokens. If Bill answers incorrectly, Janice will lose her five tokens. In addition, she will sing, "Mary Had a Little Lamb" in front of the group.

"Well, Janice, would you like to invest?" Abbas asked.

This created an opportunity to discuss non-monetary attributes (singing in front of the class) when added to a deal. The residents were fascinated by the deal. Rather than thinking of ways to pass another Saturday in the Juvenile Detention Center, they faced an opportunity with real consequences that they all understood.

One resident offered enthusiastic advice to Janice. "You should invest," he said. "You could always earn the five tokens back if you lost, but it will take a real long time."

Amanda agreed. "Janice should invest," she said. "Bill has a 50/50 chance of getting the question right."

"But does he?" Abbas replied. "When a decision has only two possibilities, the outcomes are not always equally likely. There are only two possibilities of life on Mars, but do you think that is a 50/50 chance?"

The group grasped a simple but critical concept — for Janice, the odds of Bill correctly answering the question are her degree of belief in Bill's knowledge of movies. Based on what she knew about Bill, she had to decide if she wanted to make the investment.

"I don't watch a lot of movies," Bill offered. "My favorite movie is 'Boys 'N' the Hood.' "

Abbas presented Janice with another alternative. He showed the group a large medallion with two faces the group named as Heads and Tails. "I have here a medallion. If you choose to invest your five tokens, I will flip this medallion to determine the outcome of your deal."

By this time Janice was visibly nervous about her decision alternatives: not to invest, to invest in Bill's movie expertise or to invest in the flip of the medallion. The other residents were excited about her "game" and offered their opinions. Some locked on the medallion as the best alternative since Bill, the "expert," had not convinced them of his movie expertise. When the decision finally came the residents were on the edge of their seats. Amanda began humming the theme from the game show "Jeopardy." Janice decided not to invest and kept her five tokens.

With her decision made, Abbas asked Janice which investment decision she preferred: Bill or the medallion. On the urging of her peers, she chose the medallion. Just for fun, Abbas tossed the medallion and Janice correctly called heads.

"Oh, no!" exclaimed Daniel.

"Did she make a good decision?" Abbas asked. He took the opportunity to teach another critical concept: we cannot judge the quality of a decision by observing the outcome. This idea was clearly new for the group.

"I see, a decision is a choice you make," added Daniel. "And an outcome is what happens after the decision."

Six Elements of Decision Quality

Next we moved on to the six elements of decision quality: the alternatives, information, preferences,

commitment to action, framing and values. Abbas described the importance of individual values. "What are your values, Daniel?" he asked.

"In life?" said Daniel. "To own my own carpentry business. I'm going to go to trade school when I leave here. I can save money and get a job. The better degree I have, the better job I could get. I already have the tools. That's what I value, man."

Others said they valued happiness, life, money, personal belongings, school and freedom. One of the officers in the room asked the group if they valued their friends. "Not the friends I have right now," said Tom. "I have associates, not friends, and ones that don't care much about me." Reese agreed.

"Now that we understand what good decisions are, let's talk about STDs," said Abbas. After the expected giggles subsided, he explained that the STD he was talking about stood for "Stop, Think, Decide." The simple acronym resonated with the group.

"You're talking about impulsivity," said Bill. "We don't take the time to think about the consequences of our decisions. We just act on impulse."

Daniel agreed: "My friends don't think about my troubles. They just want me to come out with them when I am grounded, so I do it without thinking."

Real Life Case Studies

We also collected case studies from the local paper, reprinted below with original names removed:

Headline: "Stolen Steel Recovered" — "A Champaign man and a teenager were arrested for stealing some steel I-beams from a construction site in Champaign. The man, 25, who listed an address in Champaign, was arraigned Wednesday on a charge of felony theft. He pleaded not guilty and is due to return to court Jan. 9 for a pretrial hearing. Bond was set at \$5,000. According to Champaign police, officers were called to the 600 block of West Anthony Drive shortly after 7 a.m. Tuesday. Witnesses reported seeing a man and a youth steal six steel I-beams and leave in a vehicle ... Police found the vehicle and arrested the man and a 16-year-old male." — *The News-Gazette*, Dec. 1, 2006

The man in the clipping was a close family member of the teen. The youth had just left the Champaign Detention Center a week earlier. The officers knew him well. We asked the residents how they would have responded to a close family member's request for their help.

"Well, my uncle, for example, would beat me down if I told him I wouldn't help him," said one boy.

Abbas: "What if you go along with your uncle?"

"You could be arrested or you could get away with the crime," were the responses.

Abbas: "If you get away, what would you do with the I-beam?"

Daniel: "Sell it, but the buyer would know it is stolen and would give us very little money and might even turn us in."

"Is it worth it then?" Abbas asked.

Seeing the branches of the decision tree and their uncertainties outlined on the board provided a graphical picture about consequences of this decision for the residents, as well as a follow-up discussion about

ethics in our daily lives.

Ongoing Work

We have received positive feedback from the residents and the officers at the JDC. Kaiser continues to be very supportive and has agreed to send two officers on a longer-term training course at the Summer Institute sponsored by DEF at Stanford University. Upon their return, Abbas will provide them with the teaching material and know-how to teach decision-making to the residents. At this stage we are training more people at the JDC, building an online Q&A system for the teens and deriving measures of effectiveness for teaching decision skills at the JDC. We hope to see a drop in recidivism and success of the residents in making better decisions as they leave the JDC. As the program develops, we also plan to provide a model that can be incorporated into similar programs to help teens at juvenile detention centers throughout the country.

Ali Abbas is an assistant professor of Industrial and Enterprise Systems Engineering, University of Illinois, Urbana-Champaign. He has practiced and taught decision analysis with business executives, graduate students and high school math teachers. He is also a member of the Decision Analysis Council of the Decision Analysis Society of INFORMS.

Nathan Hoffmann is a graduate student in Systems and Entrepreneurial Engineering at the University of Illinois, Urbana-Champaign, and an officer in the United States Navy.

Ronald Howard directs the Decision Analysis Program of the Department of Management Science and Engineering, Stanford University. He defined the profession of decision analysis in 1964, is a founding director of Strategic Decisions Group, a member of the National Academy of Engineering, and a Fellow of INFORMS and IEEE.

Chris Spetzler is program director with The Decision Education Foundation and has practiced and taught decision analysis with teens, business executives and pharmaceutical companies.

Note: None of the juveniles' real names were used in this article.

References

1. U.S. Department of Justice; Office of Justice Programs; and Office of Juvenile Justice and Delinquency Prevention, Juvenile Offenders and Victims: 2006 National Report
2. Abbas, A. E, D. Reiter, C. Spetzler, S. Tani, 2004, "[Teaching Teens How to Make Good Decisions](#), *OR/MS Today*, Vol. 31, No. 4, August 2004.
3. Blumstein, A., 2007, "An O.R. Missionary's Visits to the Criminal Justice System," *Operations Research*, Vol. 55, No. 1.
4. Morgan, J., 2007, "[O.R. & Criminal Justice: Together Again](#)," *OR/MS Today*, Vol. 34, No. 3, June 2007.