

Improving Students' Decision Making Skills

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Everyone knows what decision-making is: making choices, solving problems, selecting the best alternative. Push a little, though, and the clarity soon fades:

Q: So what is a "good" decision?

A: One that works out well.

Q: Do good decisions always work out well?

A: Yeah, that's what a good decision is.

Q: But what does that mean, "works out well?"

A: Oh, I don't know; somebody gets what they want.

Q: What if the choice also brings things that aren't wanted?

A: Like buying a car that's cheaper but it might break down more?

Q: Yeah.

A: Well, if you end up with something you don't want, maybe it was a bad decision.

Many educators view improvements in student decision-making capabilities as a critical element of secondary-school curriculum restructuring efforts. Teachers feel that better decision making may improve study habits and aid classroom learning objectives. Parents and potential employers look to decision skills as a key component of successful and independent behavior. In spite of this widespread perception, little has been done to get decision-skills curricula into the classroom. There is little consensus regarding what decision skills to teach, how to fit them into busy classroom schedules, or even, as the dialogue above suggests, just what "good decision making" really means.

For many years we have researched human judgment and decision making and taught these topics at the college level. Two years ago, we began to work with secondary-school teachers in the Eugene, Oregon 4J school district, helping teachers to bring elements of decision making into their

existing curricula. In this article, we describe our approach to decision making, how we have developed curriculum modules to dovetail with teachers' existing course materials, and the successes we have experienced in a variety of different classes.

Decision-Making Myths

Let's start by debunking some myths about decision making. For example, one myth is that the purpose of a decision is simply to choose an alternative. In our view, this perspective is too narrow because it ignores the primary reason for caring about any decision; different choices can affect things we care about. We make decisions because of our values, not because alternatives are thrown in our path. A key to good decision making is to express these values clearly, to create a set of alternatives that address those values, and finally to choose the best one (Keeney, 1992).

Another myth is that a good decision always yields a good outcome. Suppose you plan a camping trip for the week of July 26th, knowing (based on historical records) that this is expected to be the driest time of the year in your area. Just after you reach your destination, rain begins to fall heavily. Have you made a bad decision? Should you have planned the trip for some other time, when more rain is expected? Of course not; you were unlucky and have nothing for which you must apologize.

This example demonstrates the difference between good *processes* and good *outcomes* in decision making. Of course, we make decisions because we are interested in the outcome; our values tell us what we would like to have happen, and that is what we try to achieve in making the decision. Often the quality of an individual decision cannot be measured in terms of its consequences, though, simply because bad luck can ruin the outcome. Likewise, poor decision making can be disguised by unusually good luck. For this reason, it is important to look at the *process* used to make a decision and determine whether that process has the characteristics of good decision-making.

A third myth is that effective decision skills are beyond the capability of most secondary-school students or that good decision making requires more introspection, thought, and analysis than most students are willing or able to give. Our view is just the opposite: decision making takes place all the time, the principles of sound decision making begin with knowing one's own objectives, and

these principles can be learned and practiced by everyone. The active lives of secondary-school students can benefit greatly from flexible yet powerful tools for improved decision making.

Curriculum Modules and Decision-Making Themes

So what constitutes a good decision process? We identify eight themes (see table) as basic elements of such a process, and these themes have guided the development of specific educational modules and tasks. A guiding concept in our work is that students can practice decision skills in all classroom activities as part of the choices they make, tradeoffs they face, and in collaborative activities with peers. We see no need for stand-alone curricula focusing on decision making; the required skills instead can be included as part of normal classroom activities. Using our eight decision themes as guidance, we have worked closely with teachers to create tasks that naturally engage students in authentic learning environments and enhance their creativity. By clarifying their own values, wrestling with conflicting objectives, and thinking through tough choices, students learn skills they can use in problems of personal health, safety, employment, or family decisions.

Key Decision-Making Themes

- Establishing the decision context
 - Identifying values
 - Understanding uncertainty
 - Structuring consequences
 - Quality of information
 - Creating alternatives
 - Making tradeoffs
 - Groups negotiations
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Our eight decision themes begin with the definition of the problem and the establishment of a *decision context*. Recognizing that a decision opportunity exists and identifying the key players in the decision process is the essence of defining the context (Is it a decision the student can make alone? Is peer, parent, or teacher participation helpful or necessary?). We then ask students to think about their *values*, in the sense of identifying why a decision matters to them, and to recognize the primary

sources of conflict across values. *Uncertainty* affects the probable occurrence of various *consequences*, and students are encouraged to think about the distinction between resolvable and unresolvable sources of uncertainty. The powerful analytic and visual tool of decision trees is introduced to relate consequences to decision opportunities and chance events. Keeping values in mind and asking questions about the quality of *information* can help to refine consequence estimates and resolve inconsistencies. Students are reminded to recognize the link between the decision context and information ("Is this really what I need to know?") and to search for discounting evidence. The combination of clearly structured values and relevant information then can lead to the creation of an improved set of decision *alternatives*. Each of these options will have different strong and weak points, which highlight the *tradeoffs* implied in the different alternatives. Working as part of small groups, students' different perspectives on the problem and clearly expressed values provide a social basis for *negotiations* designed to arrive at a mutually agreeable joint decision.

Group Tasks, Personal Values, and Decision Making

Cooperative-learning tasks provide an ideal environment in which to incorporate our eight decision themes. By working with peers, students are able to recognize diversity in the views of their classmates while being held accountable, on an individual basis, for their own learning (Johnson, Johnson, & Holubec, 1986). Students learn to communicate their personal values and to appreciate the tradeoffs they and other students face (Gregory, Gaultney, & Tish, 1994). Students also distinguish between what is important to themselves (their own internal value structure) and what is known about the consequences of the various alternatives (the factual information, available from external sources). A group learning environment also improves students' ability to work together toward desired project results, such as an enthusiastic reception to a presentation from classmates or compliments and a good grade from the teacher. Finally, students collaborating on a project are less subject to individual "grade-grubbing" and better prepared for success in a world in which cooperation among coworkers is the rule (Business Roundtable, 1991).

Our emphasis on values clarification as the basis for making choices is inherently self-empowering; the only expert about anyone's values is that individual. This is not an argument for

unbridled hedonism, though, because most people have values that relate to the welfare of others. Values clarification also brings out the simple truth that different people want different things, and hence the importance of self-expression. Under the best of circumstances, students' exploration of the basis for their own values can lead to an explosion of problem-solving and creativity (Newmann & Wehlage, 1993). Part of the work of group members is the simultaneous encouragement of creative ideas and the harnessing of individual expressions into a coherent group product.

Implementation Strategies: Bringing Decision-Making Curricula into the Classroom

Our efforts to develop and implement decision-making curricula began with visits to local school administrators. In the course of extensive discussions with school-district experts in curriculum, research, and evaluation, we encountered strong support for the concept of closely integrating decision-making skills with the current school curricula.

In each of six targeted schools, we first held a general meeting for all interested teachers. In the usual case, two or three members of our curriculum-development team would attend along with the school principal, a representative of the district, and 5 – 25 teachers. We hoped to work with the teachers to set up decision-skills curricula that would improve students' ability to function successfully in the world of jobs and tough choices while facilitating their learning in conventional subject areas such as biology, mathematics, physics, or geography.

As one example, consider the 9th grade geography class that designs, draws, and interprets a series of maps as a mid-year class project. Working closely with the teachers, we developed a module that requires students to learn map-drawing skills but also asks them to use decision-making skills in the context of drawing a map, thereby giving the map-design process more meaning. Students in one class thought about the purposes of a map as they drew maps of their state from several different perspectives: driving a car, riding a bicycle, and walking. In another class, students drew maps of their home from the standpoint of their own objectives (where is the stereo?), a blind person (where are the stairs?), and the needs of a thief (where are the unlocked windows?).

Other aspects of the map unit highlight different decision-skill themes. For example, students deal with tradeoffs when they acknowledge wanting their maps to be complete but knowing that, if

too many details are included, the map can become difficult to read and to follow. A similar point concerns size: a map that is too large can be cumbersome whereas a map that is too small can be difficult to read. Students also must address the issue of information quality in deciding how much they need to know about their subject in order to make a defensible map. For example, some students elected to draw a map of their home from memory, while others took careful measurements of dimensions and floor plans.

Through the course of the decision-skills map curriculum, students come to see that they are making decisions all the time: in defining their values, in making tradeoffs across objectives, and in deciding how much information is necessary to do a credible job. Students begin to pay more attention to the costs of making poor decisions such as time wasted on useless map details, maps that are hard to read, or maps that fail to address the questions that users most wanted to answer.

Another example comes from a curriculum introduced as part of a 12th-grade physics class. Students place themselves in the position of science advisor to the Governor, who is interested in replacing an aging oil-fired electricity plant with a new one. In choosing between two energy-efficient designs, students must acknowledge both the presence of uncertainty and the tradeoffs between average and maximum pollution levels. As part of the class discussion, students are encouraged to recognize the challenge posed to policymakers by the conflict across objectives and the presence of uncertainty. In this way, students are motivated to become active decision makers, and they gain a different perspective on the requirements for both professional and personal success.

Does Decision-Skills Training Help?

Teachers report seeing clear evidence of the impact of decision-skills lessons on student performance. For example, teachers tell us that students involved in the decision-making tasks become better listeners, demonstrate improved abilities to organize and structure subject-based tasks, and are better able to delegate responsibilities in a group setting. One teacher reported that "it was amazing [to see] what they had taken with them that we weren't aware of on the surface. I mean, they had all of it there." Teachers also report that students become more active questioners of the

information they are given, less willing to accept information at face value and better equipped to search for and fill in missing data.

Some of the greatest improvements in student skills may come from their enhanced ability to work as part of problem-solving groups and to engage in constructive negotiations with other class members. Once different perspectives on a problem can be welcomed, students are able to see that many problems have more than one solution and that option-generating techniques such as brainstorming can prove to be extremely useful. For example, teachers noted that students appeared to be more aware of overall project objectives and, as a result, gave more attention to selecting partners who fit the skill requirements of the task. Other teachers noted that exposure to the decision-skills curriculum encouraged students to become more decisive, and to select topic areas and co-workers for projects more quickly. These skills are important because the successful decision maker of tomorrow will be the person who knows how to work well with others, how to search for information that is not readily available, and how to prioritize both personal and organizational needs.

Conclusion

Our efforts to create and implement decision-skills curricula point in exciting directions. The key steps in decision making take place constantly in students' lives, and once we acknowledge that good decision making is an important and learnable skill, many doors open. Students can become more actively engaged in the classroom and can learn to work successfully in groups to address complex problems. Moreover, students can extend their learning beyond the classroom as they apply their decision skills to real-world problems. Without a doubt, decision skills can be introduced successfully in a broad range of classroom settings, a fact which lies at the heart of our hope for students to become active and creative decision makers.

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