

Preliminary Effects of a Leisure Education Program to Promote Healthy Use of Free Time among Middle School Adolescents

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This paper documents the development and first year evaluation of the *TimeWise: Learning Lifelong Leisure Skills* curriculum, which aims to increase positive free time use, and mitigate or prevent the initiation of substance use and abuse. The sample was comprised of 634 school youth attending nine middle schools in a rural area in eastern United States. Results from self-report data indicate that students who received the *TimeWise* curriculum reported being less amotivated and more motivated by identified and introjected forms of motivation. Students in *TimeWise* reported being better able to restructure boring situations into something more interesting; having higher levels of decision making skills, initiative, community awareness; and participating in new interests, sports, and nature-based activities.

KEYWORDS: *Adolescents, free time, healthy time use, leisure education, prevention.*

Introduction and Literature Review

As a child moves into early adolescence, he or she experiences increased freedom to engage in self-managed leisure opportunities because parents begin to relax their authority and allow room for their adolescents' growing need for autonomy and responsibility (Wright, 1956). It is important to understand the role leisure plays in adolescent development because leisure is a "key context for education and learning, for health care and the decisions that impact young people's health. . ." (Irby & Tolman, 2002, p. 3) and a number of researchers have argued that leisure engagements have the potential to contribute to a youth's successful transition into adulthood. Issues such as the development of autonomy from parents, experimentation with

social roles, achievement orientation, and identity development are often associated with leisure behavior and experience (e.g., Harter, 1990; Kleiber, 1999; Kleiber & Kirshnit, 1991; Larson, 1994; Shaw, Kleiber & Caldwell, 1995).

Increased freedom in adolescence is associated with role and identity experimentation. This experimentation, which often takes place in the free time context, is essential for healthy development, but it also includes behaviors that might be developmentally maladaptive. For example, leisure time is also a context for adolescent rebellion, vandalism, and participation in unhealthy activities such as using drugs and alcohol, violent activities, and risky sexual behavior (e.g., Caldwell & Smith, 1995; Irby & Tolman, 2002; Levin, Smith, Caldwell, & Kimbrough, 1995). We recognize that some experimentation is developmentally productive (e.g., Baumrind, 1987, 1991) but of concern to this project was to prevent adolescents from repeatedly engaging in these problem behaviors over the long term, which has been documented as predicting poor life outcomes.

Recognizing the important developmental opportunities afforded by participation in healthy leisure, the *TimeWise: Learning Lifelong Leisure Skills* curriculum-based intervention was developed to *promote* personal development through healthy leisure engagement and *prevent* the onset of substance abuse and other unhealthy behavior among rural middle school youth. The purpose of this paper is to document the development and preliminary evaluation of *TimeWise*, which was funded through a grant from the U.S. National Institutes of Health, National Institute of Drug Abuse (NIDA). *TimeWise* was designed so that students systematically learned about their own leisure and how to regulate or take action to achieve optimal experiences. The efforts of the first year of the three-year project are discussed in this paper.

Before *TimeWise* and its evaluation are described, the theoretical background is presented. First, the need for leisure education will be established from a risk reduction and protective factor perspective. This discussion will be followed by a discussion of the metatheoretical bases of the curriculum. Finally, specific theories that were used to design the intervention are explained in the context of the specific *TimeWise* lessons, and these are mapped onto the proximal outcomes of the study.

Leisure, Education, and Prevention

The way youth-focused research and youth programs have been conceptualized over the last thirty years has gradually evolved in light of scientific theory and evidence about the nature of vulnerability, risk and opportunity (Pittman, Irby, Tolman, Yohalem, & Ferber, 2001). Many programs currently strive to both reduce the impact of risk factors and promote factors that are conducive to well-being (Garbarino, 2001; Sameroff, Bartko & Seifer, 1997; Scales, Benson, Leffert & Blyth, 2000). For example, Pittman and colleagues (2001, p. 1) argued that the goals of youth development programs should

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be to simultaneously "prevent problems, promote development, and encourage engagement." This focus is consistent with the family of contemporary human development theories that highlight the role of "multi-directional influences" and "developmental systems" (Ford & Lerner, 1992; Larson, 2000; Lerner, Freund, De Stefanis, & Habermas, 2001; Silbereisen & Todt, 1994) and provides the metatheoretical basis for the *TimeWise* intervention.

Despite the evolution in thinking about how to develop effective prevention programs, the youth development approach is still relatively new and has been often ignored; the more epidemiological or risk reduction approach to reducing problem behaviors continues as the norm, especially in school-based settings. This is documented by the numerous "risk reduction" or "prevention" curricula that are available to middle school teachers (e.g., substance use prevention programs and sex education programs). Recently, however, advocates of including a positive youth development approach within a prevention framework suggested that research should be conducted on how factors associated with social settings affect risk and protection (Catalano, Hawkins, Pollard, & Arthur, 2002; Pittman, Diversi & Ferber, 2002). Still others have advocated that it is not the "filling of time" that is important, but rather activities should develop skills, create challenges, and provide fulfilling experiences (Carnegie Council, 1992; Zill, Nord, & Loomis, 1995). Since leisure is the "social institution most closely associated with the world of adolescence" beyond school (Fine, Mortimer, & Roberts, 1990, p. 227), and is simultaneously a context of risk and protection, it is a natural context for prevention programs that adopt a positive youth development perspective.

These observations are ironic when positioned next to John Dewey's argument in 1912 that schools should be educating youth for the wise use of leisure time. Even though "leisure education" programs have been developed, particularly those devoted to after school child care and sports, they have not always been sustained and typically have been targeted to youth with disabilities. Moreover, they did not focus on the whole population of students. Although the expanded prevention perspective (which includes health promotion and positive youth development) has been at the fore of some recent youth programs (e.g., Positive Action Program, Flay, Allred, & Ord, 2001), typically the free time context is still ignored and an implicit assumption has been that if youth are prevented from engaging in risky behavior they will naturally possess skills for the constructive use of free time and meaningful engagement in leisure pursuits.

Unfortunately, this is not typically the case. Dealing with the choices associated with increased amounts of freedom has been associated with stress because there are fewer clear guidelines on how to manage daily decisions (Larson & Richards, 1994) and many youth do not know how to make their time meaningful and reap healthy and developmentally supporting benefits from their free time choices (Carnegie Council, 1992). In an era where the leisure of many youth is dominated by TV watching, computers, and video

game playing, it is not surprising that the ability to self-initiate meaningful activities alone or with peers is an uncommon skill. To further compound this issue, leisure among some youth today is so often tightly structured and controlled that by the time they reach the age where they are developing autonomy from parents, and are concomitantly faced with blocks of "freedom" (i.e., leisure time), they are often unprepared and ill-equipped to construct meaningful activities.

To understand the role leisure plays in healthy adolescent development, a close examination of how leisure contributes to healthy development is essential. Self-determination, intrinsic motivation, perceived self-competence, and pleasurable experiences have been treated as defining elements of optimal leisure experiences (e.g., Mannell & Kleiber, 1997; Neulinger, 1981; Iso-Ahola, 1980). However, as Kleiber (1999) argued, these defining elements of optimal leisure experiences have often been oversimplified, resulting in a rather undifferentiated view of leisure experiences. That is, the personal and environmental conditions associated with optimal leisure and the processes by which one achieves these optimal states of engagement have not been given adequate consideration (Kleiber). The theory behind *TimeWise* addresses these issues.

Metatheoretical Bases of TimeWise

Theories of adolescent development share a number of underlying tenets, which "are not tied to a particular content domain" (Lerner, 1998, p. 1). These theories stress the mutual and multi-directional influences among various levels of organization within the person and across the contexts in which they function (Bronfenbrenner & Morris, 1998; Ford & Lerner, 1992; Gottlieb, 1992) and serve as broad guides to understanding human development and behavior. This convergence in theoretical foundations is, in part, tied to viewing human development in terms of intraindividual *developmental processes*. In the case of *TimeWise*, our orientation towards developmental processes maintains that healthy human functioning is characterized by that individual's active orientation in self-constructing how they operate in their environments (Lerner & Walls, 1999; Sameroff, 1980; Wolhwill, 1973).

To a limited extent, a number of these theories have been directly applied to the domain of free time activities, leisure, and/or youth development programs (Baltes, Lindenberger, & Staudinger, 1998; Bronfenbrenner & Morris, 1998; Larson, 2000; Ryan & Deci, 2000; Silbereisen & Eyferth, 1986; Silbereisen & Todt, 1994). While using slightly different language, the general explanatory foundation of these theories accounts for *taking action in context* (Silbereisen & Eyferth), and addresses the developmental consequences of sustained activity engagement within a given context.

Two theories, selective optimization with compensation (SOC) theory (e.g., Baltes, 1997; Lerner, Freund, De Stefanis, & Habermas, 2001) and self-determination theory (SDT; Deci & Ryan, 1985; Ryan & Deci, 2000) are

particularly compatible to each other and have strong empirical support. These two theories provided the metatheoretical basis for *TimeWise*. We next provide a brief general overview of these theories and then discuss the more specific integration of them, and related theories (such as boredom and initiative), in the *TimeWise* conceptual framework.

SOC. Lerner et al. (2001) suggested that the theory of selective optimization with compensation (e.g., Baltes, 1997) could provide a framework for understanding how youth attempt to regulate their own lives as they interact with their environments. SOC is predicated on the adaptive relation between human and context and posits successful development as the "conjoint maximization of gains (desirable goals or outcomes) and the minimization of losses (avoidance of undesirable goals or outcomes)" (Baltes, Lindenberger, & Staudinger, 1998, p. 1054). The self-regulatory processes of selection, optimization, and compensation are not linear, nor are they mutually exclusive, and are heuristically posited as interactive and dynamic processes (Baltes, 1997; M. Baltes & Carstensen, 1996; Freund & P. Baltes, 1998, 2000). In consideration of how these processes apply to adolescent development, Lerner et al. stated that SOC informs the study of adolescent development as investigating,

... how a youth decides what "to do," how he or she "does" (what is selected), and how he or she may either "keep at it" or identify alternative routes to healthy functioning in the face of failure or loss. Thus, selection, optimization, and compensation denote processes of goal-selection, goal-pursuit, and goal-maintenance/alternation, respectively. (p. 32)

That is, Lerner et al. (2001) present SOC as an explanatory framework that encompasses developing preferences or goals, choosing and committing to goals, maintaining and adhering to goals for advancement, or in the face of loss, failure, or decline, the compensation and reformulation of goals. These processes are generally studied in specific content areas or domains, such as free time or leisure.

SOC establishes goal selection, goal-pursuit, and goal-maintenance/alternation as a basic framework for conceptualizing activity engagement. When SOC is viewed in terms of the pursuit of goals, the conceptual similarity with other motivational or self-regulatory theories such as self-determination theory (SDT) is clearly evident. At the broadest theoretical level, SOC and SDT posit healthy adolescent development as the ability to successfully "developmentally regulate" and adapt to one's situation (Lerner & Walls, 1999; Ryan, Sheldon, Kasser & Deci, 1996; Deci & Ryan, 2000; Walls & Little, under review). SOC helps to conceptualize adolescent functioning with respect to general self-regulatory dynamics, while SDT provides a more complete framework for assessing underlying motivational states associated with variation in activity engagement.

SDT. Ryan and Deci's recent extensions of SDT have reemphasized motivation as a self-regulatory process (Ryan & Deci, 2000). SDT addresses the natural human tendency to actively engage in the world and is a framework

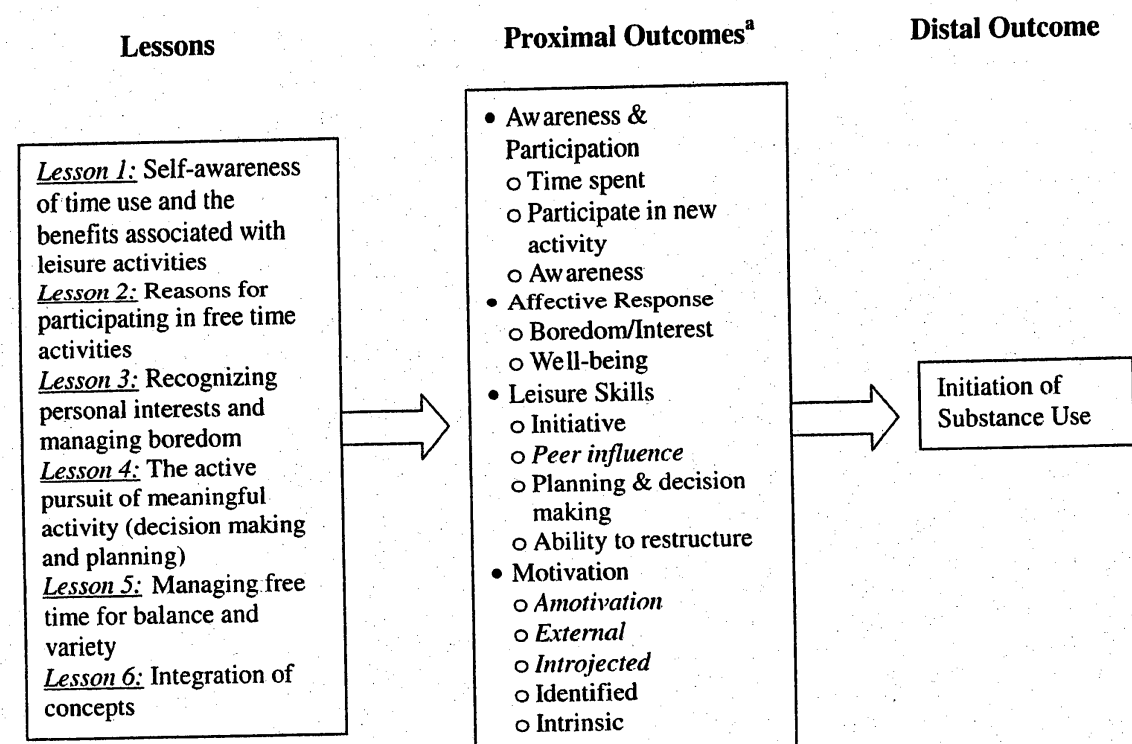
for investigating the social or environmental factors that enhance or forestall intrinsically and extrinsically regulated forms of motivation.

Previous applications of self-determination theory to the domains of sport and leisure have often treated intrinsic and extrinsic motivation in a dichotomous manner (Vallerand & Fortier, 1997). The more elaborate conceptualization is as a continuum of motivation or self-regulatory style, which involves the descriptive and functional differences among individuals' style of relating to the pursuit of a given activity (Ryan & Connell, 1989). Individuals who are intrinsically motivated exhibit "the inherent tendency to extend and exercise one's capabilities, to explore, and to learn" as the defining characteristic of their motivation in a given area and reside at one end of a continuum of motivational self-regulation (Ryan & Deci, 2000, p. 70). Thus at one end of this continuum, *fully intrinsically* motivated individuals are found. In the middle of the continuum, four different regulatory styles have been described: (a) in *integrated* regulation, the goal and its pursuit has been integrated into the self and is in congruence with personal values and needs; (b) in *identified* regulation, a goal is adopted, its pursuit is owned, and it is seen as personally important but not fully owned; (c) in *introjected* regulation, regulatory behaviors are adopted in a superficial way, but not fully owned; and finally, (d) in *external* regulation, behaviors proceed purely for the receipt of a reward. At the far end of the continuum, a final state, *amotivation*, reveals completely unmotivated characteristics. All of these styles of motivation pertain to adolescents except for the integrated style, which is too complex and "mature" for the developing adolescent (e.g., Vallerand, 1997).

Although SOC and SDT provided the metatheoretical foundation for *TimeWise*, other theories, which can be subsumed under this metatheoretical framework of human action, also provided guidance to developing the intervention. The six curricular lessons in *TimeWise* (grade 7) were designed to operationalize concepts found in these theories that suggested activities that could serve as vehicles to reduce risk or promote healthy engagement in free time. These theories also served to help us identify the proximal outcomes of the study and will be described next in the context of the specific grade seven lessons.

TimeWise Conceptual Framework

The strong reliance on theory to develop the *TimeWise* curriculum allowed for a clear specification of proximal outcomes. Although the main purpose of the overall study was to determine the efficacy of *TimeWise* in preventing the onset of drug use, the analysis reported in this paper focuses on the proximal outcomes of *TimeWise* among grade 7 students. (Data suggest that the typical onset of substance use among this population is grade 9). The proximal outcomes were those believed to either promote positive use of free time and thus protect against initiation of substance use, thus we hypothesized they were important mediators to substance use. Figure 1 diagrams the general logic model of the curriculum.



^aNote: Outcomes in italics were to decrease in level due to the intervention; non-italicized outcomes were to increase in level.

Figure 1. TimeWise Logic Model

The proximal outcomes were grouped into four categories: motivation, affective response to leisure, leisure skills, and awareness and participation in leisure. Determining whether *TimeWise* affected these proximal outcomes is the basis for this preliminary evaluation study.

Curriculum overview. The *TimeWise* study followed one cohort of early adolescents for three years. In the first year (grade seven), students received six lessons, lasting about 50 minutes each. This was the most intensive period of the program, which was designed to build a firm base in the language and skills offered in the program that the students could then implement. Each lesson built on the next, and topics were often revisited in multiple places in the curriculum (e.g., self-determination and interest development). The first year curriculum was comprised of six lessons: (a) self-awareness of time use and the benefits associated with leisure activities, (b) reasons for participating in free time activities, (c) recognizing personal interests and managing boredom, (d) the active pursuit of meaningful activity (decision making and planning), (e) managing free time for balance and variety, and (f) integration of concepts. In each of the second and third years (grades eight and nine), students received three booster sessions of *TimeWise*.

Lesson one: Time use and benefits of leisure. In the first lesson students identified the kinds of things they did in their free time and were asked to reflect

on the benefits (e.g., physical, mental, and spiritual) they received from activity participation. The concept of benefits was introduced along with the concept of activity consequences. Students were encouraged to reflect on their activity choices and consider the possible healthy and unhealthy consequences. Students were also asked to complete a four-day time diary (two weekdays and two weekend days) for homework. This diary was referred to throughout the six lessons.

A number of theoretical perspectives were incorporated broadly into this lesson, which sets the stage for subsequent lessons. SDT (e.g., Ryan & Deci, 2000) provided the idea that to take action on desired activities, youth must first become aware of their current leisure patterns. Therefore, self-analysis was an important part of this lesson. From a prevention perspective, encouraging youth to take responsibility for their own leisure time by doing things to increase their benefits in leisure promotes healthy behaviors and decreases negative behaviors (e.g., Simeonsson, 1994). Developmentally, helping youth identify their leisure patterns and matching benefits corresponds to the process of establishing emotional autonomy in a responsible manner.

Lesson two: Reasons for participating in free time activities. The constructive use of free time requires balancing what one "has to do" with "what one wants to do" and is a complex and dynamic process. Employing a differentiated view of motivation as a theoretical basis of *TimeWise* (SDT) meant that students were introduced to reasons associated with amotivated, externally, and internally motivated styles of leisure activity engagement. The lesson focused on the intrinsic enjoyment of activities based on a real interest in the activity (intrinsic motivation), or because the activity served a future purpose, such as learning to play an instrument to get into the school band (identified motivation). Students were taught that more benefits accrue if they do things in their leisure time that are in line with intrinsic or identified forms of motivation. In contrast, situations associated with acting because they have nothing else to do (amotivation), they have to (external motivation), or are driven by the need to fit in or be popular with their friends (introjected motivation) were also discussed.

During adolescence, peers are a predominant source of external pressure and a potential threat to internalization and the expression of intrinsic motivation. Thus, the optimal self-regulatory style is to assess one's peer context and determine whether one's peer group needs to be narrowed, adapted, or modified (Lerner et al., 2001). This type of developmental regulation is a particularly important leisure skill because (a) associating with peers supportive of substance use is associated with higher levels of substance use and (b) spending time in unstructured social settings predicts substance use, which is mediated through time spent in a party-type social setting (Caldwell & Darling, 1999). In this lesson, students were encouraged to think about their own motivational styles, what happens when they internalize others' desires (which can be both positive and negative), and how they can

support their own intrinsic interests, even when they are contrary to their immediate peer group or parents.

A number of behavioral consequences or subjective conditions have been associated with the varying motivational styles. Specifically, identified and intrinsic forms of motivation have been positively associated with the expression of interest, which contributes to positive developmental outcomes (Larson, 2000). Boredom is associated with extrinsic forms of motivation as well as amotivation and has been well documented with risk behaviors (as described in the next section). Thus the next lesson focused on developing interests and managing boredom.

Lesson three: Developing interests and managing boredom. We were particularly interested in boredom because perceptions of nothing to do, no place to go, and boredom have been linked with a number of problem behaviors such as alcohol and drug abuse (Brake, 1997; Caldwell & Smith, 1995; Iso-Ahola & Crowley, 1991; Orcutt, 1985), higher rates of dropping out of school (Farrell, Peguero, Lindsey, & White, 1988), vandalism (Caldwell & Smith, 1995), and obesity (Abramson & Stinson, 1977; Ganley, 1998; Rodin, 1975; Wilson, 1986). Although there are multiple reasons for experiencing boredom in leisure, reasons that resonate most with adolescents are "I don't have anything to do" and "I have to do it" (Caldwell, Darling, Payne, & Dowdy, 1999). Lesson three directly addressed understanding and overcoming boredom and helped students begin to identify current and future interests as an antidote for boredom.

Interest development is very much connected with the concept of initiative (Bronfenbrenner & Morris, 1998; Larson, 2000) and is linked with healthy development (Lerner et al., 2001). According to Lerner et al., initiative occurs when a preferred activity is selected, constraints to participation are faced, and the challenges presented are overcome, allowing continued involvement in the activity. Lerner et al. noted, "constraints and limitations of (internal and external) resources (e.g., stamina, money, social support) are present throughout the entire lifespan [e.g., P. Baltes, 1997] . . ." (p. 32). Therefore, SOC theory suggests that youth should learn to select interests that are personally meaningful and doable from a range of possible choices. Lerner et al. suggested that this focused approach prevents "diffusion of resources" (p. 32), which may prevent a youth from pursuing one or two meaningful activities. Although this concept is introduced in this lesson, in lesson five, a discussion about the need for variety and balance in one's leisure is continued. Attitudes and stereotypes that constrain one from developing or even thinking about a potential interest were discussed in this lesson; other types of constraints were discussed later in the curriculum and will be discussed subsequently in this paper.

Ability to restructure. Avoiding boredom is important, but also important is the ability to turn a boring situation into something that at least is somewhat interesting. We view this ability as an important part of developmental regulation that will assist youth in having healthier leisure. Although having a variety of interests helps one to avoid boredom, youth naturally find them-

selves in situations they classify as boring. The theory behind the ability to restructure a situation (for example, choose different goals or change the focus of activity) comes from Iso-Ahola's (1980) work on optimal arousal, as well as from SOC. Iso-Ahola and Lerner et al. (2001) stressed the importance of developmental regulation in response to the context or specific situation one finds oneself in. Lerner et al. suggested that, in particular, the "optimization" component of SOC is particularly linked with the process of developmental regulation, consistent with Iso-Ahola's discussion of the need for one to regulate one's arousal level. *TimeWise* provides youth with specific ideas about how to restructure boring situations.

These first three lessons were preparatory for the "action" orientation of the next three lessons. In lessons four through six, students learned about planning skills and resources that would enable them to effectively act on their environments in order to pursue desired leisure interests. Lesson four directly dealt with planning and decision making skills, as well as overcoming interpersonal and structural constraints to preferred activity.

Lesson four: Planning and decision making skills. The theoretical impetus for this lesson stemmed from the work on initiative development (Bronfenbrenner & Morris, 1998; Larson, 2000), SOC (Lerner et al., 2001) and development as action in context (Silbereisen & Eyferth, 1986; Silbereisen & Todt, 1994). Building from the previous lessons, where youth discovered what their interests are and why having long-term interests are important (e.g., avoiding boredom), here youth learned to actively construct their own free time in ways that are meaningful and interesting to them. They were asked to select one or two activities that they would really like to pursue from the list of possible interests they developed in lesson three. In order to maximize their opportunities to be involved in preferred leisure activities, we began the lesson with a discussion of the planning process and youth were encouraged to plan ahead for some activities so that they could participate in those activities they were interested in. We also guided youth through exercises that increased their awareness of things to do in and around their communities.

Constraints theory (e.g., Jackson & Rucks, 1995) was an important foundation for this lesson. After having encouraged youth to think of a number of things that interested them in the previous lesson, here we helped youth narrow the range of alternatives to focus on the most doable activities given resource and other possible constraints. This was very important to the youth in our study as they lived in rural areas where resources were limited. In a discussion of constraints and persistence, youth identified potential constraints to their desired interests, determined whether or not the constraints were real or perceived, and problem solved ways to negotiate the constraints. Youth were cautioned that sometimes constraints are real and that they have to adapt, have back-up interests and perhaps chose different goals.

Lesson five: Managing free time for balance and variety. This lesson extended the previous lesson where students learned to be planful and deliberate in their leisure time in order to maximize their opportunities to be involved in

preferred leisure activities. In lesson five, youth learned to manage the unplanned or unexpected events that occur in their free time, including negotiating things that happened when they hang out with friends and/or encountering periods of being bored. Also in this lesson youth learned the importance of having a variety of activity types and friends in their repertoire, and a balance of how they spend their time on a daily and weekly basis. Still based broadly on SDT and SOC, the theoretical basis for this part of the lesson addressed the need for stability and novelty (optimal arousal; Iso-Ahola, 1980; Mannell & Kleiber, 1997) and the need to avoid boredom.

Lesson six: Integration. The last lesson in grade 7 was a synthesis of concepts learned across all lessons. Students engaged in a review session, and then choose among a number of exercises (e.g., collage, poetry writing) to express what they learned in *TimeWise*.

Methods

To evaluate *TimeWise*, a three-year, single cohort, quasi-experimental design was employed (Shadish, Cook & Campbell, 2002). Both outcome and process data were collected. Nine school districts in central Pennsylvania participated in the evaluation, four of which received the *TimeWise* program and five served as comparison schools. The evaluation of *TimeWise* is almost completed and two waves of data, Time 1 and Time 2, are used in this paper to assess the impact of the main part of the curriculum on the proximal outcomes of interest.

Procedures

The *TimeWise* curriculum was pilot tested in the fall of 2000 and implemented in four rural school districts in central Pennsylvania in the spring of 2001 (20 classrooms participated). Baseline data were collected in September and October 2000 after gaining human subjects approval from the university of the authors and parental consent was obtained. A team of trained university students followed a strict protocol and distributed questionnaires that participants self-administered in their classrooms, typically during homeroom. In order to help students feel comfortable filling out questions on sensitive material (i.e., substance use), teachers were not present during the administration of the questionnaire. No students refused to participate during data collection, and they took between 20 and 40 minutes to complete the questionnaires. The first wave of follow-up data was collected in the spring of 2001. At both time points, if students were absent on the day of data collection, we went back to the school at another time to re-administer the questionnaire. There were between three and six weeks between the end of the *TimeWise* program and administration of the questionnaire at Time 2.

Sample

We developed an aggressive protocol for collecting active parental consent, which was applied in exactly the same way in each school. This protocol

included teacher and student incentives (gift certificate to an office supply store and a pizza party, respectively) if 80% of the students returned signed consent forms (regardless of whether consent was given or withheld). We prepared packets that were sent via express mail to each school, with detailed instructions and a return express mail envelope provided. The day the package was to be received, we phoned the school to remind the principal and teacher of the consent protocol. Based on these efforts, we received parental permission from and collected data on between 51% and 88% of all grade seven students in each of nine schools (the average was 67%). There was a slight difference in parental consent rate between treatment and comparison schools. The overall consent rate for the four treatment schools was 68.7% and for the comparison schools it was 60.8%. Examination of response rates revealed no systematic pattern of consent or lack thereof.

Of the 634 seventh grade students at baseline (fall 2000) who received parental permission and agreed to participate in the study, 315 were female (49.7%). Ninety-five percent of all students were European-American. The areas where the participating schools were located were rural, as indicated by students' responses about where they lived; 30.4% reported living in a rural area, 29.0% lived in a neighborhood but not "in town," and 25.2% lived in town. Only 6.9% reported living on a farm. Using the means students used to buy lunch as a proxy measure for socio-economic status, 56.7% of students reported buying lunch at full price, 20.8% received a free lunch, and 11.3% were eligible for reduced price lunches. About 4.5% of students either brought lunch from home, or went home for lunch. These results suggest that about a third of the students came from a lower socio-economic background. Although there were some significant differences across schools on these variables, there were no significant differences on these variables between the treatment and comparison schools, thus indicating that the youth from both groups came from similar socioeconomic backgrounds.

Due to student absences and lack of ability to re-contact them, 14 students who had parental permission were not surveyed in the second wave of data collection (spring 2001). Thus, the total number of students in the second wave was 617.

Measures

Many of the measures were developed specifically for this study. Because of this, cognitive interviews (Willis, 1994) were conducted with a convenience sample of adolescents to help assess the validity, readability, and understandability of the measures. Eight adolescents, aged 12 to 16, participated in a series of interviews. First, the adolescents read the items in the questionnaire and responded using the Likert-type response scale given. Second, after the adolescents completed the questionnaires, two members of the research team asked the adolescents about each item. The questions asked by the researchers assessed any problem areas the adolescents had understanding specific items or the wording of items. Face validity was also discussed as the youth were asked if the question would make sense to young adolescents.

Each of the eight adolescents' responses to such probing questions was recorded, and the entire research team studied each item based upon the feedback given by the subjects. A revised item pool was then developed based on the information gained through this process.

Table 1 provides the descriptive statistics for the scales used to measure these constructs. Except for reporting number of hours participating in specific leisure activities, students responded to a series of items for each construct using the following response scale: 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, and 5 = strongly agree. Items were reverse coded as necessary. Scales were constructed such that a high score indicated a high level of the construct.

Motivation. Motivation was measured using the Free Time Motivation Scale for Adolescents (FTMS-A, Baldwin & Caldwell, 2003), which was based on earlier work on motivation, including the leisure scale for high school students (Pelletier, et al., 1995), the Self Regulation Questionnaire for elementary students (Ryan & Connell, 1989), the Academic Motivation Scale (Vallerand, et al., 1992), and measures of motivation in the sport domain (Chatzisarantis, Biddle, & Meek, 1997; Goudas, Biddle, & Fox, 1994). The

TABLE 1
Descriptive Statistics for Proximal Outcomes at Time 2

Category	Measure (No. of Items)	Mean (s.d.) ^a	Alpha
Affective response	Interest (7)	3.93 (.66)	.75
	Well-being (4)	4.17 (.67)	.67
Leisure skills	Peer Influence (4)	2.70 (.80)	.64
	Initiative (4)	3.82 (.70)	.65
	Planning and decision making (4)	3.93 (.70)	.80
	Ability to restructure (4)	3.99 (.77)	.84
Awareness and participation	Awareness	3.56 (.86)	.50
	Increased participation (6)	3.96 (.63)	.72
	Time spent in a natural public area (1)	3.84 (1.37)	NA
	Time spent in organized sport (1)	4.62 (1.60)	NA
Motivation	Time spent in school or community club (1)	4.01 (1.83)	NA
	Amotivation (4)	1.97 (.82)	.76
	External (5)	2.30 (.86)	.75
	Introjected (5)	3.34 (.76)	.72
	Identified (4)	4.05 (.67)	.71
	Intrinsic (4)	4.51 (.53)	.71

Note: Items coded on a 5 point scale where 1 indicates a low level of the construct and 5 indicates a high level. The exception is for the leisure participation variables "time spent," where 1 = never and 6 = almost daily.

FTMS-A assesses five of the motivational self-regulatory styles: (a) amotivation (e.g., I don't know, nothing much interests me, $\alpha = .77$), (b) extrinsic motivation (e.g., That is the rule in my house, $\alpha = .77$), (c) introjected motivation (e.g., I want people to like me, $\alpha = .78$), (d) identified motivation (e.g., What I do is important to me, $\alpha = .68$), and (e) intrinsic motivation (e.g., I like what I do, $\alpha = .70$). These dimensions have been empirically verified to exist along a continuum from intrinsic to extrinsic motivation (Baldwin, & Caldwell, 2003; Ryan & Connell, 1989; Walls & Little, under review).

Affective response to leisure. A second type of proximal outcome focused on affective response to free time. For this study, two types of affective response were considered: the degree to which one was bored or interested in activities and the degree to which one felt free time activities contributed to one's sense of well-being. To measure degree of boredom, the boredom subscale of the Leisure Experience Battery for Adolescents (Caldwell, Smith, & Weissinger, 1992) was expanded to include level of interest. Thus, this measure included seven items such as, "For me, free time just drags on and on," as well as "My free time activities are very interesting to me." Cronbach's alpha for internal consistency for this seven-item measure was .75. The expanded dimensionality of this measure mirrored the way in which the "boredom and interest development" *TimeWise* lesson was structured. In this lesson, boredom and interest were treated as opposite feelings one could have about free time, and students were helped to think about what made things boring, what made things interesting, and how to turn a boring situation into an interesting situation.

Well-being was measured with four items ($\alpha = .54$) that assessed how healthy students perceived their free time to be. For example, items such as "I think that most of my free time activities are good for me," and "The things I do in my free time are not healthy" were used.

Leisure skills. A third set of variables assessed the degree to which students perceived they possessed a set of leisure skills that were hypothesized to act as risk or protective factors to substance use. These measures, all developed for this study, included *initiative* (e.g., I give up easily if things don't go my way, $\alpha = .65$), *peer influence* (e.g., It is easiest to do what everyone else wants to do in my free time, $\alpha = .64$), *planning and decision making skills* (e.g., I can plan activities myself without help from my parents, $\alpha = .75$), and the *ability to restructure a boring situation* (e.g., [I know how to. . .] Turn a boring situation into something that is more interesting to me, $\alpha = .84$).

Awareness and participation. The final set of variables dealt with students' awareness of leisure activities in their communities and levels of participation. *Awareness* was measured with four items, including for example, "[In my community. . .] I know of places where there are lots of things to do, $\alpha = .50$." We were also interested in whether they had *participation in new and interesting leisure activities* (e.g., In the last six months, I learned a new activity; I have at least one hobby I am really interested in; $\alpha = .72$). Three additional survey items regarded *amount of time participating* in various activities; students

rated how often they had gone to a natural public area, participated in school or community clubs, and participated in organized sports (response scale ranged from 1 = never to 6 = almost every day).

Gender: It was possible that the effects of the intervention would vary by gender. The prevention literature suggests that gender differences in youth have not received adequate attention practically or theoretically (Substance Abuse and Mental Health Services Administration, 2000; Trieman & Beck, 1996). As an understanding of mediators to substance use grows, there is evidence that motivation for substance use differs by gender. In particular, boys' desire to increase social bonding (Newcomb, Chou, Bentler, & Huba, 1988), mitigate boredom (Wilson & Herrnstein, 1985), and enhance self-perception (Liu & Kaplan, 1996) have been empirically linked to the initiation of substance use. Girls, on the other hand, have been shown to use substances for less external and more internal reasons—they use to overcome emotional stress, tension, and difficulties with relationships (Liu & Kaplan, 1996; Robbins, 1989).

Likewise, the leisure literature suggests that there are gender differences in terms of the affective and behavioral aspects of leisure (Busser, Hyams, & Carruthers, 1996; Henderson, & King, 1998; Philipp, 1998; Shaw, Caldwell, & Kleiber, 1996; Shaw, et al., 1995). Therefore, gender was included in the analysis of proximal effects.

Results

To assess the impact of *TimeWise* on the proximal outcomes, a series of GLM repeated measures procedures was conducted. The dependent variable was the outcome of interest (e.g., initiative). We accounted for within-subject variability across time points in our analysis before assessing between-subject differences, therefore, time (e.g., initiative at Time 1 and initiative at Time 2) was the within-subjects repeated measure. Condition (experiment or comparison group) and gender were between-subjects factors. Main effects for time, condition and gender and two- and three-way interactions were tested.

Before discussing condition effects, results for main effects of gender and time are described. The following statistically significant main effects for time and gender were found for self-determination outcomes (mean scores by wave or condition are shown in parentheses). External motivation decreased over time ($T1 = 2.35$, $T2 = 2.25$; $p = .009$) and males had higher levels than females (males = 2.40, females = 2.20; $p = .002$). There was also a gender by condition interaction for external motivation, which will be described following the discussion of condition effects. Introjected self-determination increased over time ($T1 = 3.28$, $T2 = 3.36$; $p = .026$), as did identified self-determination ($T1 = 3.98$, $T2 = 4.07$; $p = .003$).

Males were more influenced by their peers than females (males = 2.80, females = 2.57; $p = .001$). Over time, students became less aware of community opportunities ($T1 = 3.46$, $T2 = 3.38$; $p = .048$). There were also

gender differences in the number of hours spent going to natural public places and participating in school and community clubs. Males spent more time than females in natural places (3.93 vs. 3.66, respectively, $p = .001$) and females spent more time than males in school and community clubs (4.35 vs. 3.58, respectively, $p = .045$). Amount of time spent in these two activities increased over time (for natural places, $T1 = 3.68$, $T2 = 3.87$, $p = .000$; for schools and community clubs, $T1 = 3.84$, $T2 = 4.00$, $p = .000$).

No other significant main effects for gender and time were reflected for amotivated or intrinsic motivational characteristics, boredom, well-being, initiative, restructuring, planning and decision making, activity participation, participation in new and interesting activities. In addition, there were no other interactions of the between-subjects factors, gender and condition.

Next, we present the results of the intervention. Analyses indicated that the *TimeWise* program significantly affected the following proximal outcomes. For each of the following outcomes, Time 2 (i.e., posttest) mean scores for those who participated in the *TimeWise* program (TW) are compared to those students who did not participate (C). In each case, pretest scores (Time 1) were accounted for in the GLM procedures (the repeated measures or within subject score). Interaction scores were also assessed. Table 2 displays the results of these analyses, as well as presents the effect sizes. Effect size was calculated using Cohen's d , $2\sqrt{F/df}$ (Rosenthal, 1994).

Affective Response to Leisure

Students in *TimeWise* reported higher levels of interest (and thus lower levels of boredom) than comparison group students ($TW = 4.01$, $C = 3.86$, $p = .010$). *TimeWise* youth also indicated higher levels of well-being in leisure than youth in the comparison group ($TW = 4.26$, $C = 4.10$, $p = .032$).

Leisure Skills

Youth who received *TimeWise* scored higher than the comparison group on initiative ($TW = 4.16$, $C = 4.05$; $p = .038$) and the ability to restructure boring situations ($TW = 4.01$, $C = 3.86$; $p = .005$). Finally, students in *TimeWise* also reported higher scores on the ability to plan and make decisions in free time than students in the comparison group ($TW = 3.82$, $C = 3.76$; $p = .005$).

Awareness and Participation

TimeWise youth also reported participating in new and interesting activities more often than the students in the comparison group ($TW = 4.05$, $C = 3.91$; $p = .011$) and being more aware of leisure opportunities in the community ($TW = 3.46$, $C = 3.29$; $p = .002$). More time was spent by *TimeWise* youth in organized sports ($TW = 4.82$, $C = 4.41$, $p = .018$) and going to natural public places ($TW = 3.97$, $C = 3.58$, $p = .000$).

TABLE 2
Repeated Measures GLM Comparison of Time 2 Means While Accounting for
Within Subject Variability at Time 1

Variable	TimeWise Mean (s.d.)*	Comparison Mean (s.d.)*	P value	Effect Size
Interest (Boredom)	4.01 (.589)	3.86 (.615)	.010	.21
Well-being	4.26 (.672)	4.10 (.656)	.032	.18
Peer Influence	2.48 (.702)	2.61 (.654)	.128	.13
Initiative	4.16 (.761)	4.05 (.740)	.038	.17
Planning and decision making	3.82 (.510)	3.76 (.547)	.005	.15
Ability to restructure	4.01 (.722)	3.86 (.766)	.005	.24
Awareness	3.46 (.800)	3.29 (.893)	.002	.29
Increased	4.05 (.616)	3.91 (.640)	.011	.24
participation				
Time spent in a	3.97 (1.35)	3.58 (1.37)	.000	.38
natural public area				
Time spent in	4.82 (1.60)	4.41 (1.67)	.018	.24
organized sport				
Time spent in school	4.15 (1.84)	3.93 (1.80)	.890	.01
or community club				
Amotivation	1.89 (.779)	2.04 (.834)	.010	.23
External motivation	Male 2.30(.920) Female 2.89(.766)	Male 2.32(.86) Female 2.27(.846)	.062 ^a	.16
Introjected motivation	3.35 (.750)	3.23 (.763)	.045	.17
Identified motivation	4.17 (.662)	3.97 (.659)	.000	.36
Intrinsic motivation	4.54 (.563)	4.48 (.506)	.101	.14

Note: Items coded on a 5 point scale where 1 indicates a low level of the construct and 5 indicates a high level. The exception is for the leisure participation variables "time spent," where 1 = never and 6 = almost daily.

^a Gender by condition interaction

Motivation

Students in *TimeWise* reported lower levels of amotivation (TW = 1.89, C = 2.04; $p = .010$) and higher levels of identified (TW = 4.17, C = 3.97; $p = .000$) and introjected (TW = 3.35, C = 3.23, $p = .045$) motivation. A marginally significant gender by condition interaction was indicated for external motivation (*TimeWise* means were 2.30 for males and 2.89 for females while comparison means were 2.32 and 2.27, respectively, $p = .062$).

Significant results were not found for peer influence, time spent in school or community clubs, and intrinsic motivation. Effect sizes for all results were small to moderate, ranging from .15 to .38.

Discussion

Overall, there is indication during the first year *TimeWise* youth responded to the program on many of the leisure outcomes of interest to this

study, although there were a few proximal outcomes that were either not influenced (i.e., intrinsic motivation, participation in school and community clubs, and peer influence) or were influenced in the opposite direction from that which was hypothesized (i.e., introjected self-determination). Before the effects of *TimeWise* are discussed, we will discuss the main effects of gender and time on the proximal outcomes.

Developmentally, one would expect adolescents to become less externally motivated over the grade seven year, which is what we found, although males had significantly higher levels than females. At the same time adolescents were feeling less externally motivated, they were also becoming more motivated by doing things to please others (introjected) and doing things to accomplish a goal (identified). These latter forms of motivation depend on one's ability to increasingly internalize reasons for behavior. That these adolescents moved along the motivation continuum from external motivation toward more internally motivated behavior is developmentally consistent with their need to increase their autonomy.

Consistent with males reporting being more externally motivated, they reported being more susceptible to peer influence than females. In an analysis of friendship behavior, Buhrmester (1996) suggested that males are more often in contexts where agentic rewards (such as personal achievement, recognition, and power) are pursued through sports and competitive games. Females, he suggested, are more likely to involve themselves in activities that support communal rewards (such as interpersonal connection). These observations are consistent with our finding that males spent more time going to natural public places than females, while females spent more time than males participating in school and community clubs.

Effects of *TimeWise*

We posited that not only is increasing levels of self-determined behavior an important factor in risk reduction, but it is also critical to the ability to self-regulate one's behavior in terms of developing and persisting in healthy leisure activities. Overall, youth in *TimeWise* had desired levels of motivation—higher levels of internalized behavior (identified and introjected motivation) and lower levels of amotivation. This finding is important for two reasons. First, being able to internalize activities that are not entirely intrinsically motivated (that is, the impetus comes entirely from within the person) is an important challenge for adolescents to overcome. Although some activities are done that have no appeal to the self and are entirely externally motivated, reality dictates that often people have obligations that they must do. To the extent one can learn to internalize reasons for participating in these activities, one will have better experiential outcomes (Ryan & Deci, 2000).

The fact that levels of introjected motivation was higher for youth in *TimeWise* raises some issues that need further exploration. Deci and Ryan (1985) viewed introjected motivation among adolescents as a potentially problematic orientation. Although becoming more internalized is positive,

this complex form of motivation can be challenging to adolescents and parents. As youth struggle with growing levels of independence from parents, and dependence on peers, the activities that are internalized, and the way adolescents learn to internalize extrinsically motivated behaviors, are topics that should receive increased attention. In particular, the differences and processes between internalizing one's motivation to participate in developmentally healthy activities versus participating in problem behaviors needs to be examined, especially since internalization often occurs as a result of one's social group (Deci & Ryan, 2000). Here, also, a fruitful but perhaps uncomfortable topic for some would be to examine how, when, and under what conditions some risk behaviors (in the name of experimentation perhaps) are actually developmentally positive.

The gender by condition interaction for external motivation suggests that females responded better to the program. This is consistent with the finding that males appear to be at the point in time where they do things to please others and for externally motivated reasons. *TimeWise* was not able to overcome these motivating factors in male's lives and the content should be reexamined to better respond to these findings. The ability to adapt one's context or modify one's peer group, according to Lerner et al. (2001), implicates cognitive functions and the ability to change oneself if one cannot change the context (i.e., peer group in this case). Perhaps females at this developmental stage are more easily able to do this than males. This ability to adapt the way in which one achieves one's goals is the hallmark of optimization (Freund & Baltes, 1998, 2000; Lerner et al., 2001).

Decreasing amotivated behaviors is considered a protective factor, and youth in *TimeWise* reported lower levels of being amotivated. Amotivation has been negatively linked with optimal leisure experience (Kowal & Fortier, 1999) as well as substance use, although in the latter, it is unknown whether amotivation causes substance use (in particular marijuana use) or the reverse is true.

Because one of the program's foci was helping youth systematically choose interests that lead to healthy benefits, having students report that they were more goal-oriented in their leisure was not surprising (and was desired). It is likely that *TimeWise* students did not report higher levels of intrinsic motivation because typically students report already high levels of intrinsic motivation and there may be a ceiling affect in the way in which this variable was measured and used. Subsequent analysis using the FTMS-A (Baldwin & Caldwell, 2003) will likely use a cluster analysis technique to group students into motivational styles, which would help overcome this problem. For the purposes of this first evaluation effort, however, we were interested in how *TimeWise* affected each form of motivation discretely.

Students who had *TimeWise* reported an increased interest in their activities and lower levels of boredom than the comparison students. Moreover, students in *TimeWise* reported the ability to restructure boring situations into more interesting experiences, and reported higher levels of initiative. The increase in ability to manage one's level of optimal experience is a potentially

important mediator to substance use, since boredom has been linked with substance use (Brake, 1997; Caldwell & Smith, 1995; Iso-Ahola & Crowley, 1991). Furthermore, reporting higher levels of initiative meant that youth persisted in pursuing activities of choice despite constraints. Thus, not only did students report being more interested in their activities, behaviorally they acted on their interests. These findings combined suggest that *TimeWise* was possibly effective in helping students select, optimize, and compensate in their leisure. They displayed initiative and the ability to self-regulate. These skills were behaviorally manifested as *TimeWise* students spent more time in activities and had higher rates of participation in new activities. They also reported higher levels of awareness of community opportunities and planning and decision making skills.

Given these findings, there is the suggestion that youth who receive *TimeWise* may be more protected against initiation of risk behaviors, as well as become more engaged with their environments. Two booster *TimeWise* sessions (in grades 8 and 9) and two more waves of data collection will help answer whether the effects seen in this analysis persist over time and whether the proximal outcomes do affect the ultimate outcome of preventing substance use. The preliminary findings do, however, validate that the program as designed did what it was intended to do—affect youth's ability to become responsible for their leisure. Youth can be taught to think about their levels of motivation as well as how to find interesting activities that are fulfilling (and thus motivating) and persist in these activities. Better effort is needed to understand how males might be better reached with this type of program.

Potential Improvements

There are, of course, numerous improvements that could be made to the *TimeWise* program, based on its ability to affect leisure-related variables. Six sessions is the minimal number of sessions that seems reasonable, although given the demands on principals and teachers to meet educational standards, we were lucky to have been given this time. More sessions would allow not only the ability to further explore some concepts in more depth and even add additional concepts; it would also allow an experiential component. A legitimate criticism of the program as it currently exists is that there is no opportunity for skill development and trying out possible interests. Ideally the six-session curriculum would be combined with an after school program to achieve this configuration. The experiential component would hopefully more effectively activate the classroom lessons.

Moreover, it is possible that a more intensive dose of *TimeWise* would increase effect sizes. The effect sizes were rather small, although it is worthy to note that with only six lessons given during the first year of implementation, it is not reasonable to expect very large effect sizes.

Another configuration or application of *TimeWise* would be to target its delivery to certain youth in certain contexts. Lerner et al. (2001) claimed that this is one of the benefits of using the SOC theory (and we would add

one of the benefits of using a developmental systems approach in general)—meeting the needs of diverse youth in diverse settings. In this application, youth who might be identified by teachers, parents, or other adults as lacking in their free time skills and having unhealthy leisure behavior might benefit from *TimeWise*. This is an empirical question (see, for example, Graham, 2001).

Limitations

There are limitations to this study that must be acknowledged in considering the results. Of particular concern is that the parental consent rate was not as high as we had hoped. This is a problem faced by most people who do research on adolescents in western cultures; gaining active parental consent usually results in a sample typified by youth with higher academic achievement and more involved parents (Henry, Smith, & Hopkins, 2002). Thus, the effects of *TimeWise* were reported for only those youth whose parents had consented for their child to be in the study, although all youth in the schools received the program as part of their standard curriculum.

This study was specifically developed to prevent substance use among rural middle school youth because this is an area often overlooked in prevention research. Given the geographic characteristics, our sample was almost entirely of European decent. It is unknown whether or not *TimeWise* would be as effective in an urban environment, or with adolescents who come from different ethnic and racial backgrounds. Two studies are currently underway that will address the generalizability of *TimeWise*. The first study is occurring in a large, racially and ethnically mixed school district and the second is a pilot study occurring in eastern Germany with an ethnically mixed group of youth. Finally, *TimeWise* has been incorporated into a more comprehensive health education curriculum designed to reduce HIV/AIDS and risky sexual behavior, the onset of substance use, and promote positive use of free time among a sample of economically disadvantaged youth in a large city in South Africa. These endeavors will assist us in determining the generalizability of the concepts and procedures of the intervention among diverse youth.

Concluding Remarks

Increasingly park and recreation departments are adopting not only a prevention focus, but also a leisure education focus, given the shift to move beyond prevention to include development and engagement. While this trend is sporadic, those departments or entities that adopt this philosophy might find *TimeWise* adaptable to their situations.

In light of contemporary concerns about youth obesity, substance abuse, and other risky behaviors, leisure education is a means for helping youth learn to actively and positively engage with their world. This approach to preventing risky behaviors and promoting engagement and initiative is fully

in concert with the positive youth development approach currently being advocated. This study has lent support to the idea that youth can learn to take positive action and manage their free time in healthy ways.

References

- Abramson, E. E., & Stinson, S. G. (1977). Boredom and eating in obese and non-obese individuals. *Addictive Behaviors*, 2(4), 181-185.
- Baldwin, C. K., & Caldwell, L. L. (2003). Development of the Free Time Motivation Scale for Adolescents. *Journal of Leisure Research*, 35, 129-151.
- Baltes, P. B. (1997). On the incomplete architecture of human ontogeny: Selection, optimization, and compensation as foundations of developmental theory. *American Psychologist*, 52, 366-380.
- Baltes, M. M., & Carstensen, L. L. (1996). The process of successful aging: The impact of resources. *Aging and Society*, 16, 397-422.
- Baltes, P. B., Lindenberger, U., Staudinger, U. M. (1998). Life-span theory in developmental psychology. In W. Damon (Series Ed.), R. M. Lerner (Vol. Ed.), *Handbook of child psychology: Vol. 1. Theoretical models of human development* (5th ed., pp. 1029-1143). New York: Wiley.
- Baumrind, D. (1991). The influence of parenting style on adolescent competence and substance use. *Journal of Early Adolescence*, 11, 56-95.
- Baumrind, D. (1987). A developmental perspective on adolescent risk taking in contemporary America. *New Directions for Child Development*, 37, 93-125.
- Brake, S. B. (1997). *Perspectives on boredom for at risk adolescent girls*. The Pennsylvania State University, University Park.
- Bronfenbrenner, U. & Morris, P. A. (1998). The ecology of developmental processes. In W. Damon (Series Ed.), R. M. Lerner (Vol. Ed.), *Handbook of child psychology Vol. 1: Theoretical models of human development* (5th ed., pp. 993-1028). New York: Wiley.
- Buhrmester, D. (1996). Need fulfillment, interpersonal competence, and the developmental contexts of early adolescent friendship. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.) *The company they keep: Friendship in childhood and adolescence*. New York: Cambridge University Press.
- Busser, J. A., Hyams, A. L., & Carruthers, C. P. (1996). Differences in adolescent activity participation by gender, grade, and ethnicity. *Journal of Park and Recreation Administration*, 14 (4), 1-20.
- Caldwell, L. L., & Darling, N. (1999). Leisure context, parental control, and resistance to peer pressure as predictors of adolescent partying and substance use: An ecological perspective. *Journal of Leisure Research*, 31, 57-77.
- Caldwell, L. L., Darling, N., Payne, L., & Dowdy, B. (1999). "Why are you bored?" An examination of psychological and social control causes of boredom among adolescents. *Journal of Leisure Research*, 31, 103-121.
- Caldwell, L. L. & Smith, E. A. (1995). Health behaviors of leisure alienated youth. *Loisir & Societe/Leisure and Society*, 18, 143-156.
- Caldwell, L. L., Smith, E. A., & Weissinger, E. (1992). Development of a leisure experience battery for adolescents: Parsimony, stability, and validity. *Journal of Leisure Research*, 24, 361-376.
- Carnegie Council on Adolescent Development. (1992). *A matter of time: Risk and opportunity in the nonschool hours*. New York: Carnegie Corporation of New York.
- Catalano, R. F., Hawkins, J. D., Berglund, L., Pollard, J. A., & Arthur, M. W. (2002). Prevention science and positive youth development: competitive or cooperative frameworks? *Journal of Adolescent Health*, 21, 230-239.

- Chatzisarantis, N. L. D., Biddle, S. J. H., & Meek, G. A. (1997). A self-determination theory approach to the study of intentions and the intention-behaviour relationship in children's physical activity. *British Journal of Health Psychology*, 2, 343-360.
- Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. New York: Houghton Mifflin.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Farrell, E., Peguero, G., Lindsey, R., & White, R. (1988). Giving voice to high school students: Pressure and boredom, ya know what I mean? *American Educational Research Journal*, 4, 489-502.
- Fine, G. A., Mortimer, J. T., & Roberts, D. (1990). Leisure, work, and the mass media. In S. S. Feldman & G. R. Elliott (Eds.), *At the threshold: The development adolescent* (pp. 225-254). Cambridge, MA: Harvard University Press.
- Flay, B. R., Allred, C. G., & Ordway, N. (2001). Effects of the *Positive Action* program on achievement and discipline: Two matched-control comparisons. *Prevention Science*, 2, 71-89.
- Ford, D., & Lerner, R. M. (1992). *Developmental systems theory*. Newbury Park, CA: Sage Publications.
- Freund, A. M., & Baltes, P. B. (1998). Selection, optimization, and compensation as strategies of life-management: Correlations with subjective indicators of successful aging. *Psychology and Aging*, 13, 531-543.
- Freund, A. M., & Baltes, P. B. (2000). The orchestration of selection, optimization, and compensation: An action-theoretical conceptualization of a theory of developmental regulation. In W. J. Perrig, & A. Grob (Eds.), *Control of human behavior, mental process and consciousness: Essays in honor of the 60th birthday of August Flammer* (pp. 35-58). New York: Erlbaum.
- Ganley, R. M. (1998). Emotion and eating in obesity: A review of the literature. *International Journal of Eating Disorders*, 8(3), 343-361.
- Garbarino, J. (2001). An ecological perspective on the effects of violence on children. *Journal of Community Psychology*, 29(3), 361-378.
- Goudas, M., Biddle, S., & Fox, K. (1994). Perceived locus of causality, goal orientations, and perceived competence in school physical education classes. *British Journal of Educational Psychology*, 64, 453-463.
- Gottlieb, G. (1992). *Individual development and evolution: The genesis of novel behavior*. New York: Oxford University Press.
- Harter, S. (1990). Self and identity development. In S. Feldman, G. R. Elliott, (Eds.). *At the threshold: The developing adolescent*. (pp. 352-387). Cambridge, MA: Harvard University Press.
- Henderson, K. A., & King, K. (1998). Recreation programming for adolescent girls: Rationale and foundations. *Journal of Park and Recreation Administration*, 16(2), 1-14.
- Henry, K. L., Smith, E. A., & Hopkins, A. M. (2002). The effect of active parental consent on the ability to generalize the results of an alcohol, tobacco, and other drug prevention trial to rural adolescents. *Evaluation Review*, 26, 645-655.
- Irby, M., & Tolman, J. (2002). *Rethinking leisure time: Expanding opportunities for young people and communities*. Washington, D.C.: The Forum for Youth Investment.
- Iso-Ahola, S. E. (1980). *The social psychology of leisure and recreation*. Dubuque, IA: Wm. C. Brown Company Publishers.
- Iso-Ahola, S. E., & Crowley, E. D. (1991). Adolescent substance abuse and leisure boredom. *Journal of Leisure Research*, 23(3), 260-271.
- Jackson, E. L., & V. C. Rucks, (1995). Negotiation of leisure constraints by junior-high and high-school students: An exploratory study. *Journal of Leisure Research*, 27, 85-105.
- Kleiber, D. A. (1999). *Leisure experience and human development: A dialectical interpretation*. New York: Basic Books.

- Kleiber, D. A., & Kirshnit, C. E. (1991). Sport involvement and identity formation. In I. Diamant (Ed.) *Mind-body maturity: The psychology of sports, exercise, and fitness* (pp. 193-211). New York: Hemisphere.
- Kowal, J., & Fortier, M. S. (1999). Motivational determinants of flow: Contributions from self-determination theory. *Journal of Social Psychology*, 139, 355-368.
- Larson, R. (2000). Toward a psychology of positive youth development. *American Psychologist*, 55, 170-183.
- Larson, R. (1994). Youth organizations, hobbies, and sports as developmental contexts. R. K. Silbereisen, & E. Todt (Eds.), *Adolescence in context: The interplay of family, school, peers and work in adjustment*. New York: Springer.
- Larson, R., & Richards, M. H. (1994). *Divergent realities: The emotional lives of mothers, fathers, and adolescents*. Cambridge, MA: Harvard University Press.
- Lerner, R. M. (1998). Theories of human development: Contemporary perspectives. In W. Damon (Series Ed.) & R. M. Lerner (Vol. Ed.) *Handbook of child psychology: Vol. 1 Theoretical models of human development* (5th ed., pp. 1-24). New York: Wiley.
- Lerner, R. M., & Walls, T. A. (1999). Revisiting Individuals as producers of their development: From dynamic interactionism to developmental systems. In J. Brandtstädter & R. M. Lerner (Eds.), *Action & self-development: Theory and research through the life span*. Thousand Oaks, CA: Sage.
- Lerner, R. M., Freund, A. M., De Stefanis, I., & Habermas, T. (2001). Understanding developmental regulation in adolescence: The use of the selection, optimization, and compensation model. *Human Development*, 44, 29-50.
- Levin, D., Smith, E. A., Caldwell, L. L., & Kimbrough, J. (1995). High school sports participation and violence. *Pediatric Exercise Science*, 7, 379-388.
- Liu, X., & Kaplan, H. (1996). Gender-related differences in circumstances surrounding initiation and escalation of alcohol and other substance use/abuse. *Deviant Behavior: Interdisciplinary Journal*, 17, 71-106.
- Mannell, R. C., & Kleiber, D. A. (1997). *A social psychology of leisure*. State College, PA: Venture.
- Neulinger, J. (1981). *The psychology of leisure*. (2nd ed.). Springfield: Charles C. Thomas.
- Newcomb, M. D., Chih-Ping C., Bentler, P. M., & Huba, G. J. (1988). Cognitive motivations for drug use among adolescents: Longitudinal tests of gender differences and predictors of change in drug use. *Journal of Counseling Psychology*, 35, 426-438.
- Orcutt, J. D. (1985). Contrasting effects of two kinds of boredom on alcohol use. *Journal of Drug Issues*, 14, 161-173.
- Pelletier, L. G., Fortier, M. S., Vallerand, R. J., Tuson, K. M., & Briere, N. M. (1995). Toward a new measure of intrinsic motivation, extrinsic motivation, and amotivation in sports: The sport motivation scale (SMS). *Journal of Sport & Exercise Psychology*, 17, 35-53.
- Philipp, S. F. (1998). Race and gender differences in adolescent peer group approval of leisure activities. *Journal of Leisure Research*, 30, 214-232.
- Pittman, K., Diversi, M., & Ferber, T. (2002). Social policy supports for adolescence in the twenty-first century: Framing questions. *Journal of Research on Adolescence*, 12, 149-158.
- Pittman, K. J., Irby, M., Tolman, J., Yohalem, N., & Ferber, T. (2001). Preventing problems, promoting development, encouraging engagement: Competing priorities or inseparable goals? Working draft, The Forum for Youth Investment, Takoma Park, MD.
- Robbins, C. (1989). Sex differences in psychosocial consequences of alcohol and drug abuse. *Journal of Health and Social Behavior*, 30, 117-130.
- Rodin, J. (1975). Causes and consequences of time perception differences in overweight and normal weight people. *Journal of Personality and Social Psychology*, 31, 898-904.
- Rosenthal, R. (1994). Parametric measures of effect size. In H. Cooper & L. V. Hedges (Eds.), *The Handbook of research synthesis* (pp. 231-244). New York: Russell Sage Foundation.

- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55, 68-78.
- Ryan, R. M. (1993). Agency and organization: Intrinsic motivation, autonomy, and the self in psychological development. *Developmental Perspectives on Motivation*, Vol. 40, The Nebraska Symposium on Motivation, University of Nebraska Press, Lincoln, NE.
- Ryan, R. M., & Deci, E. L. (2000b). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, 25, 54-67.
- Ryan, R. M., & Connell, J. P. (1989). Perceived locus of causality and internalization: Examining reasons for acting in two domains. *Journal of Personality and Social Psychology*, 57, 749-761.
- Ryan, R. M., Sheldon, K. M., Kasser, T., & Deci, E. L. (1996). All goals are not created equal: An organismic perspective on the nature of goals and their regulation. In P. M. Gollwitzer, J. A. Bargh et al. (Eds.), *The psychology of action: Linking cognition and motivation to behavior*. NY: Guilford Press.
- Sameroff, A. (1983). Developmental systems: Contexts and evolution. In W. Kessen (Ed.), *Handbook of Child Psychology*, Vol. 1. *History, theory, and methods* (pp. 237-294). New York: Wiley.
- Sameroff, A., Bartko, T. & Seifer, R. (1997). Environmental perspectives on adaptation during childhood and adolescence. Chapter in Luthar, S., Burack, J. A. Cicchetti, D. & Weisz, J. R. *Developmental psychopathology: Perspectives on adjustment, risk, and disorder*. New York: Cambridge University Press
- Scales, P. C., Benson, P. L., Leffert, N., Blyth, D. A. (2000). Contribution of developmental assets to the prediction of thriving among adolescents. *Applied Developmental Science*, 4(1) 27-46.
- Shaw, S. M., Caldwell, L. L., & Kleiber, D. A. (1996). Boredom, stress and the social control in the daily activities of adolescents. *Journal of Leisure Research*, 28(4), 274-292.
- Shaw, S. M., Kleiber, D. A., & Caldwell, L. L. (1995). Leisure and identity formation in male and female adolescents: A preliminary examination. *Journal of Leisure Research*, 27, 245-263.
- Silbereisen, R. K., & Eyferth, K. (1986). Development as action in context. In R. K. Silbereisen, K. Eyferth, & G. Rudinger (Eds.), *Development as action in context: Problem behavior and normal youth development* (pp. 3-16). New York: Springer-Verlag.
- Silbereisen, R. K., & Todt, E. (1994). *Adolescence in context: The interplay of family, school, peers, and work in adjustment*. New York: Springer-Verlag.
- Simeonsson, R. J. (1994). *Risk, resilience & prevention: Promoting the well-being of children*. Baltimore, MD: Paul Brooks.
- Substance Abuse and Mental Health Services Administration (2002). The national cross-site evaluation of high-risk youth programs. Center for Substance Abuse and prevention, Department of Health and Human Services Publication No. (SMA) 00-3375. Rockville, MD.
- Treiman, K. A., & Beck, K. H. (1996). Adolescent gender differences in alcohol problem behaviors and the social contexts of drinking. *Journal of School Health*, 66(October), 299-304.
- Vallerand, R. J., Pelletier, L. G., Blais, M. R., Briere, N. M., Senecal, C., & Vallieres, E. F. (1992). The academic motivation scale: A measure of intrinsic, extrinsic, and amotivation in education. *Educational and Psychological Measurement*, 52, 1003-1017.
- Vallerand, R. J. (1997). Toward a hierarchical model of intrinsic and extrinsic motivation. In M. P. Zanna (Ed.) *Advances in experimental social psychology*, (pp. 271-360). San Diego, CA: Academic Press.
- Vallerand, R. J., & Fortier, M. S. (1998). Measure of intrinsic and extrinsic motivation in sport and physical activity: A review and critique. In J. L. Duda (Ed.), *Advances in sport and exercise psychology measurement* (pp. 81-101). Morgantown, WV: Fitness Information Technology.
- Walls T. A. & Little, T. D. (under review). Relations among personal agency, motivation, and school adjustment in early adolescence.
- Willis, G. B. (March, 1994). *Cognitive interviewing and questionnaire design: A training manual*. Working Paper Series, No. 7. Office of Research and Methodology, National Center for Health Statistics, CDC, US Dept of HHS.

- Wilson, G. D. (1986). Eating style, obesity, and health. *Personality and Individual Differences*, 7, 215-224.
- Wilson, J. Q., & Herrnstein, R. J. (1985). *Crime and human nature*. New York: Simon and Schuster.
- Wright, H. F. (1956). Psychological development in Midwest. *Child Development*, 27, 265-286.
- Wohlwill, J. F. (1973). *The study of behavioral development*. New York: Academic Press.
- Zill, N., Nord, C. W., & Loomis, L. S. (1995). *Adolescent time use, risky behavior and outcomes: An analysis of national data*. Department of Health and Human Services. Available: <http://aspe.os.dhhs.gov/hsp/cyp/xstimuse.htm> [2001, December 10].