The compelling case for youth apprenticeships

ROBERT I. LERMAN & HILLARD POUNCY

EIGHT YEARS of an expanding economy have brought high employment and raised real incomes, but we remain surrounded by the daily evidence of social disarray—drug-related murders, child abuse, illegitimacy, homelessness, school failure, and the like. Less dramatic but also disturbing are the continuing signs of U.S. economic weakness, as evidenced by America's low productivity growth and large trade deficits.

Educational improvement should offer solutions, and liberals and conservatives agree that better public elementary and secondary schools are needed. Most people, especially employers, have lost confidence in the ability of high schools to educate effectively. The Reagan administration's 1982 report *A Nation at Risk* was only the most publicized of a whole wave of reports documenting the failures of America's elementary and secondary schools. The resultant school reforms have already moved through several phases, emphasizing first the basics, and then the development of higher-order skills. Other educational reforms have included the testing of both students and teachers, pay increases for teachers, and increased school accountability.

The many strands of school reform, unfortunately, have brought only modest overall gains to date. For many inner-city youth, improvements stemming from school reform have been negated by the depressing rise in crime and drug use. Clearly, another strategy is necessary. The most appropriate one, we suggest, is to tie students' schooling to their subsequent jobs and careers.

There is no such link in today's American high schools for students who do not go on to college. Although better performance in school does ultimately lead to increased wages, it has little effect on a student's first job. Employers rarely obtain high school transcripts, examine high school teachers' recommendations, or test students' knowledge themselves. The bleak career outlook for workers without college education discourages young people, particularly inner-city minority youth, to whom the gains from studying look trivial in comparison to the lures of the street. This, in turn, causes many young people to do poorly in school, which means that they do not acquire necessary skills.

The deficiencies in education and skill of high school graduates have no doubt contributed to the widening gap between their earnings and those of workers with college educations. Between 1973 and 1987, the ratio of college graduates' wages to high school graduates' wages rose from 1.49 to 1.81 for young men with five to nine years of work experience. In fact, in terms of purchasing power, the earnings of high school graduates actually declined over the last fifteen years.

It is critical somehow to link students' schooling to their subsequent careers. But the connections cannot be artificial, cannot stem from the charitable impulses of local firms. Genuine links must make young workers more productive, thereby increasing their pay and occupational status. Such links can best be forged through a system of career internships and/or apprenticeships for non-college youth, beginning in their late high school years.

Elaborate apprenticeship systems are widely used throughout Germany, Switzerland, and Austria. But only recently have U.S. policy makers begun to examine their method of launching young people into jobs and careers. Albert Shanker, former president of the American Federation of Teachers, contends that an apprenticeship system would be "worth more than all the anti-dropout programs in the country." The W.T. Grant Commission, headed by former U.S. Commissioner of Education Harold Howe III, highlighted the earnings problems of non-college youth and

called for a variety of policies, including apprenticeship. The recent report of the Commission on the Skills of the American Workforce, headed by former labor secretaries William Brock and Ray Marshall, emphasized the weakness of American career-oriented programs for non-college youth. The commission proposed several new steps, including a system of technical and professional certificates based on national competency standards for various occupations. Employers would help prepare young people to meet these standards through part-time work and training. The U.S. Department of Labor recently signaled its interest in such programs when James Van Erden, director of the new Office of Work-Based Learning, recommended that we expand work-based training that uses features of apprenticeship. And the Pew Memorial Trust, the nation's second largest foundation, recently began supporting a project to develop youth apprenticeships in fifteen sites throughout the country.

Motivating students

The link between school and careers is important because it can encourage students who do not go on to college to do better in school. Such students have a general sense that earning a high school degree will affect their access to jobs. Their schools typically offer little guidance about the job market, however, and students tend to see little connection between how well they do in school and their chances of obtaining good jobs and entering specific careers.

Students' perception that schooling is irrelevant to their future jobs contributes to peer pressure that discourages many from working hard in school. This problem is especially severe in many inner-city black communities. A study conducted in Washington, D.C., found that many black students deride striving for academic success as "acting white." The resulting tensions force good students to disguise their efforts to succeed. Even in high schools outside minority inner-city areas, students who do not go on to college rarely receive sufficient rewards for academic success to lead them to withstand the mockery of their peers.

As Lauren Resnick, former president of the American Educational Research Association, has pointed out, the irrelevance of schooling to non-college youth is accentuated by the enormous differences between the learning methods that schools use and the methods used at work and elsewhere. For example, schools stress

individual rather than team approaches, and students manipulate symbols and abstract thoughts; elsewhere people work in groups and use tools to deal with specific situations. Not surprisingly, many students do better when their learning has concrete applications. The experience of many recruits in the armed forces demonstrates that students with limited abilities often succeed better in courses taught under the "functional context" approach than through standard methods. Many students, for example, learn electronics most effectively by seeing how equipment functions and how to maintain it.

Perhaps because of these differences in learning styles, many students choose vocational over academic education programs. Students go to these programs because they like work more than school, and because they prefer practice to theory. Vocational education is appealing enough to induce some potential dropouts to remain in school and to improve their academic skills by taking courses that stress learning through applications. Unfortunately, vocational education in American high schools today is defective, most notably because the students' courses of study often do not match their subsequent jobs. Less than three of ten vocational-education graduates work at jobs in which they use the skills that they learned in school.

Postsecondary vocational-education schools are also problematic. Although many of them train students effectively and place them with employers, the training often reflects the schools' strengths rather than the demands of the job market. Thus the students' training frequently fails to prepare them for the jobs in which they are placed. The system is also rife with abuses. Proprietary vocational schools sometimes profit by attracting impoverished students who qualify for federal loans, and then sending them to facilities that lack equipment or trained instructors. In addition, students often default on their loans—in 1986 their default rate was 40 percent—and thus end up paying little toward their schooling.

The weaknesses of the existing vocational-education system are inherent. Schools are run by people who have little incentive to ensure that they offer good training. It is true that providing such training can improve a school's reputation. But schools can use other methods to attract students, and potential consumers often know little about a school's record. The situation is far different when an employer spends his own money to train workers whom

he expects to remain with his firm for many years. Those who train such workers have an incentive to perform well, since their employer is in a position to evaluate their students' success.

Apprenticeship in Germany

Germany successfully links education to the workplace. The German model succeeds by offering incentives to employers, students, and educators. Employers as a group believe that their training system gives them a major competitive advantage over foreign rivals. The individual employer who sponsors apprentices can realize a return on the training investment, through the increased long-term productivity of his workers; the employer is also able to observe potential workers during try-out periods. The investments and expected returns vary from industry to industry, and also according to firm size. Large employers, especially in the manufacturing fields, spend more on training than most small firms; this is because they expect a high return, with 80 to 90 percent of apprentices remaining with the firms that train them, often staying for many years. Small firms generally invest less and expect lower returns, since they employ proportionately fewer apprentices and retain them for fewer years.

Students learn about occupations in detail from seventh through ninth grade. School tracking begins about seventh grade; some students go into college-preparatory or academic-technical programs, while others enter vocational programs that prepare them for semiskilled occupations. By ages sixteen to eighteen, over half of the vocational students sign contracts with employers that specify the training and compensation that they are to receive. The students receive on-the-job training and stipends from their employers, but they must also attend school part-time. Apprentices demonstrate their abilities by taking interim and final examinations offered by boards of examiners established by employer and worker organizations. After receiving their certification, more than half of the apprentices remain with the firms that trained them; many of the rest stay in the same occupation.

The Federal Institute for Vocational Training (Bundesinstitut für Berufsbildung) coordinates the system. This institute is not a government agency, but rather an entity governed by a board drawn from employers, unions, and the government. Through the institute, competency standards are developed for nearly four hundred occupations. This process often takes years of research and negoti-

ation among the parties. The standards specify the minimum competencies for an occupation as well as a training plan that guides the timing, sequencing, and organization of the training. Regional chambers, made up of business and union representatives, govern the program at the local level. They check the suitability of the training that firms offer, organize exams, deal with complaints, provide technical assistance, and help match prospective trainees with suitable firms.

Individual companies decide the number of apprenticeships, not a national or regional plan. Thus the system is responsive to the needs of employers. Nonetheless, the system has also successfully accommodated increasingly large numbers of students wanting positions. Between the mid-1970s and early 1980s, for example, the demand for apprenticeships jumped by 50 percent, largely because of demographics. Yet German employers were able to meet most of this unusually large increase in demand; new apprenticeship contracts rose by over 50 percent, even though total employment was falling then by 6 percent.

Apprenticeship and America's problems

A German-style system could substantially benefit us. The initial training, to be offered in places like service stations, banks, or factories, would be serious and would yield certifiable competencies; apprentices would realize that the program's training could launch them on the road to attaining desirable positions as mechanics, service-station owners, financial-service representatives, or bank managers.

Once in place, the new system would greatly enhance the incentives of students not bound for college to perform well in high school. Those who had done well by their sophomore year would have the widest pick of apprenticeships. Appropriate guidance or even street knowledge about placements would teach students by the seventh or eighth grade that academic success would be rewarded.

After starting their apprenticeships, students would see clear links between learning and future success. Their training and education would help them develop abilities relevant to their long-term careers. Bank trainees would learn to be responsible; they would see that mathematics is needed to calculate interest rates and financial returns, and that reading comprehension is necessary to understand contracts and the laws that banks must follow.

Landscape apprentices would have to gain competence in varied fields to understand things like the chemical composition of fertilizers, the budgeting process, and the art of presenting proposals. In these and other cases, apprentices would quickly recognize the connection of their schoolwork to the completion of their apprenticeships and to success in their careers.

The high returns from apprenticeship training would encourage students to work hard both at work sites and schools. Successful apprentices would be launched on desirable careers. Unsuccessful ones, who spent three years with an employer without learning the required competencies, would forfeit time and energy, give up on potentially rewarding careers, and would have to start their job searches all over again.

Apprenticeships would also have the desirable effect of introducing students to new peer groups. Juniors and seniors who were drawn into an adult work environment would be exposed to expert workers who could be their mentors. Participants would spend less time surrounded by adolescents in schools with few links to the adult world, where learning is often denigrated and diligent students are attacked as sycophants. The majority of students who now work part-time tend to have low-skill positions, often at fast-food or retail stores, that provide minimal training and do not lead to long-term career success. In fact, the spending money that students earn at such jobs often reinforces the belief that education is unimportant.

Several existing programs recognize the need for adult mentors, especially for the large number of adolescents who lack ties with their fathers and with other adults in mainstream occupations. Some managers and professionals volunteer to help adolescents to finish school, identify career goals, and avoid crime, drugs, and out-of-wedlock pregnancies. Although these mentoring programs can be beneficial, the links that they create between adults and adolescents are somewhat artificial, focusing chiefly on the potential failures of young people. In contrast, the mentoring that characterizes apprenticeships arranged by schools and employers would be shaped by the mutual interests of trainers and students in performing concrete tasks. More lasting and stronger ties are likely to evolve from such interactions, because the apprentices would aspire to enter the occupations of the trainers and other workers.

Supporting evidence

However compelling the logic behind an apprenticeship policy, logic alone cannot persuade a skeptical public. Government officials and legislators will rightly demand concrete evidence that the policy has actually worked, at least in an experimental or demonstration context. Such evidence is provided by the long-term and continuing success of youth apprenticeships abroad, as well as by limited U.S. experience.

The German experience most clearly demonstrates the success of the apprenticeship model. In Germany's modern, dynamic, and rapidly growing economy, about 70 percent of young people enter the job market through the apprenticeship system. Only six months after passing the German apprenticeship examination, the vast majority of graduates—over 68 percent—work in the occupations for which they were trained. German executives attribute much of their business success to their sophisticated work force, trained largely under the apprenticeship program.

Detailed studies confirm their convictions. French sociologists compared the performance of selected French and German firms in the same industries with similar physical plant and equipment. They found that German firms are more productive, largely because of the German system of training and certifying workers. German factory workers not only attain higher skills, but also develop closer working relationships with other workers, including supervisors. Many managers and supervisors are former apprentices; thus they know from experience what entry- and middle-level jobs involve.

German firms are also more productive than their British rivals, largely because German workers are better trained. Germany trains workers at about four times the British rate to serve in five major skilled occupations, including those of electricians, skilled construction workers, and skilled office workers; it does so without any sacrifice in quality. Overall, about 60 percent of German workers have intermediate-level skills—twice the British rate. The high skill levels improve production and quality in many ways, easing the implementation of new technologies, and enabling employees to organize production and undertake complex and varied tasks.

Workers who are less able academically gain most from the German approach. Only 10 percent of German students leave

school without a certificate of competence in a variety of basic subjects. One reason for this is that German students realize that the apprenticeship system gives them access to many different occupations.

The U.S. evidence comes from small programs that resemble European apprenticeship programs. Such programs can provide only limited indicators of success; they cannot measure how apprenticeships affect the motivation of students in elementary school and junior high school, or how they alter the expectations of employers concerning the availability of skilled workers.

Nevertheless, the results of U.S. high school vocational education suggest that the apprenticeship approach is desirable. Although vocational education has little overall impact on earnings, students who find jobs in fields related to their studies do achieve significant gains, through reduced unemployment as well as increases in hourly wages. Increases are particularly large for black youth. In fact, black graduates of vocational education earn as much as whites, when we compare youths with the same vocational concentrations, transferability of training to jobs, and personal characteristics.

Vocational-education courses have also helped noncollege students learn basic skills like math. A number of high schools are developing programs of applied learning, which integrate academic and vocational subject matter and thus help students learn in context through hands-on techniques.

Formal apprenticeship programs within the U.S. have operated for many years but have trained only a small share of the labor force. The typical U.S. program differs substantially from the youth-apprenticeship approach that we propose. Under existing programs, unions restrict the number of apprenticeship positions and limit available ones to experienced workers in their mid- to late twenties. Economists have criticized union rules, arguing that they lower the number of future skilled workers. Critics also charge that union officials and others who manage apprenticeship programs have used these restrictions to benefit their friends and relations, to the exclusion of less advantaged groups, especially blacks.

Despite their problems, existing apprenticeship programs have demonstrated their effectiveness in training productive workers. A study of the construction industry (where current apprenticeship programs are especially widespread) found that union firms were

more productive than non-union firms, partly because of the better training passed on in union apprenticeship programs.

The U.S. experience with apprenticeship programs for high school students that resemble those operating in Austria, Germany, and Switzerland is extremely limited. One demonstration project sponsored by the U.S. Department of Labor in the late 1970s funded local school districts, state education agencies, community colleges, and nonprofit corporations to operate in-school apprenticeship projects at eight sites. In general, the projects were highly successful. The sites trained over 3,000 youths; 95 percent of them expressed satisfaction with the project. Although the working collaborations between schools, apprenticeship agencies, and employers took a few years to develop, most employers approved of the program; 63 percent had already recommended that other employers join. The added government costs were extremely low, averaging only $1,384 per apprentice.

Potential opposition

Any effort to develop a major youth-apprenticeship initiative will certainly generate controversy. Among educators, the initiative is likely to resurrect the debate over the role of vocational versus academic education. Some educators will probably oppose vocational training for high school students on three grounds. First, they will argue that vocational education narrows students' educational experience, their ability to share in the nation's cultural heritage. In addition, they will contend that vocational education in the late high school years is counterproductive, because new technologies make specific occupational knowledge rapidly obsolete. Finally, opponents will contend that apprenticeships could restrict the occupational mobility of less advantaged youth, especially racial minorities, relegating them to less rewarding, nonprofessional careers.

Such educators will claim that high school students are too young to choose a career. They believe that full-time schooling is intrinsically valuable, that general education does more to help workers adapt to changing technologies.

These viewpoints have merit, but they ignore some key facts. Many students are weary of school by age sixteen or seventeen; by then they are reluctant to work hard in school unless they perceive a direct link between schoolwork and their future occupational success. For such youths, the time spent receiving work-site train-

ing may actually stimulate a more active interest in general education. In fact, some of those who spent their adolescence productively as apprentices might even prove to be more eager to attend college than many students in purely academic programs.

The fear that apprenticeship programs will train students in skills that will soon become obsolete is generally unwarranted. As John Bishop has remarked, "Skills and knowledge deteriorate ... from non-use much more rapidly than they become obsolescent." New occupational skills usually build on old skills rather than replace them. Well-designed apprenticeship programs teach many skills that can be generalized and applied broadly. Employers know that they have to provide continuing training to their workers, but they also recognize that workers who bring skills to their jobs are easier to train and can better accomplish different tasks with modest amounts of incremental training.

Another worry is that the youth-apprenticeship approach will limit the job options of low-income—particularly minority—youths. In reality, the new initiative is more likely to widen their access to jobs. Minority students not bound for college would see realistic and potentially rewarding alternatives to dropping out of school or taking dead-end jobs. The difficulty facing such youths today is that most jobs are found through informal contacts; and the increasing isolation of inner-city minorities means that minority young people, often raised in single-parent households, have less and less access to a network of job holders. The loss of informal contacts increases the importance of formal mechanisms that can reach the vast bulk of minority youth. As the youth-apprenticeship system developed, access to good careers would become less dependent on the networking of young people's relatives and friends.

A second, indirect, favorable effect is also likely. If the least academically oriented students saw that their learning led to attractive careers as they began working constructively with adult mentors and their own peers at work sites, the entire school atmosphere might change; hard work at school might be respected rather than denigrated. While many educators will claim that starting an apprenticeship in eleventh grade is too early, many observers of inner-city minority youth argue, to the contrary, that such a beginning point may be too late.

Another broad concern about youth apprenticeships is that the labor market will fail to generate enough good jobs and careers for the graduates. In fact, the job market is paying an increasing

premium for skill, indicating that the demand for skilled workers is rising faster than the supply. This is one reason why employers and labor organizations are likely to participate and offer apprenticeship-training slots. Yet even if existing skilled and semiskilled jobs were in short supply, the number of good jobs would certainly rise in response to an increase in available skilled workers. An increase in the number of skilled technicians, engineers, and landscape specialists would permit firms to upgrade their production methods; it might even encourage consumers to buy better goods and services.

Apprenticeship training might give many young people not only occupational skills, but also self-esteem and maturity. Stephen Hamilton points out that German eighteen-year-olds are not inherently more responsible than youth from the U.S., but that the Germans have "a clear, direct, and functional path into careers that is absent in the U.S." If such paths were widely available in the U.S., the focus on careers would hasten the onset of responsibility in many adolescents. American adolescents' current tendency to remain in school or to take a succession of low-level jobs too often delays their maturity.

A final worry is that the restrictiveness of several U.S. apprenticeship programs, especially in the construction trades, will extend to the new system. The low proportion of U.S. jobs covered under union contracts limits this possibility, however; for their part, employers will have no incentive to restrict entry. Thus, so long as employers or employer associations play the primary role in determining the number of workers, the danger of monopoly power is minimal. On the other hand, it is important that some group—whether employee organizations, schools, or state agencies—assure that students receive broad enough training to move among firms and to facilitate their future training.

Implementation

Instituting a youth-apprenticeship system in America is feasible, but doing so will require sustained, long-term efforts. If such a system is to succeed, employers must believe that it benefits them; they must not view their participation altruistically. Judging by the German experience, U.S. firms would come to understand that they benefited from training workers whom they could hire on a probationary basis. The investment patterns may vary, with large firms investing and recouping more value from the training, and

small firms drawing more from the work effort of trainees. But in any case, employers themselves would have to finance the stipends and training.

Implementing an effective program in the U.S. would change the school system and the job market in important ways. Schools would have to take key steps to prepare students for their possible vocations, to develop course work to complement the work training, and to place the students in appropriate apprenticeships.

First, for eighth- through tenth-grade students, schools would have to develop a system of vocational counseling, incorporating student visits to work sites, and even job sampling by students. Employer representatives would visit schools and describe their programs and career ladders.

In addition, the school week and the curriculum would need to be altered to accommodate student interns/apprentices who were being trained and educated at work sites. Course work would be adjusted so that students could relate their reading, writing, and math skills to their occupational fields. In some cases, formal schooling would continue through a thirteenth year to complement the third year of apprenticeship.

Finally, placement assistance would have to be developed. Prospective employers would require reliable information about student applicants. Students, conversely, would stand in need of counseling to help them apply for and understand alternative youth-apprenticeship arrangements.

Students, of course, would spend their time differently than they do in American schools today. In seventh through ninth grade, they would be exposed to various occupations. In tenth grade, they would apply and be interviewed for apprenticeships in a wide variety of occupations; they could also opt for a purely academic track, of course. Those choosing apprenticeships would then sign agreements with employers at the end of the academic year.

Beginning in eleventh and twelfth grade, students would mix training at work sites together with general courses designed by and taught at the high schools; time spent at the work site would typically increase from 30 to 75 percent, depending on the occupation. Late in twelfth grade, apprentices would take their interim examinations.

Those students going on to thirteenth grade would spend 75 to 80 percent of their time at work sites, but would also draw on community colleges for some supplementary courses. In addition, some

students, especially in technical fields, might choose to go beyond apprenticeship education by attending college and pursuing a degree program.

Perhaps the most difficult and extensive work required before an apprenticeship program can be established is to define the occupational areas covered and to specify the necessary levels of competence and the training standards. Employers, employer associations, and labor representatives would have to work with government education and labor agencies to achieve solid programs in each career field. The employers would have to provide the trainers, who themselves would have to undergo training and to demonstrate their competence. Perhaps two to three years would be needed to develop each occupational program. Certificates awarded through the programs would have to offer convincing evidence to potential employers that the recipients were worth hiring; they would also have to testify to competencies that would attract more than one firm in an industry.

Employers ought to bear the direct costs of training the apprentices; they should also have considerable flexibility in delivering the training. Government outlays would go for technical assistance in developing and operating the programs, monitoring the trainees' performance, and testing the competencies of graduates. Funds that now underwrite traditional vocational-education programs could defray these costs, while also paying for the schools' new functions of counseling and staging visits to work sites.

Government and labor representatives might have to agree to accept a training wage that is below the market wage, and at times perhaps even below the minimum wage. Alternatively, the interns or apprentices might receive a training allowance in lieu of a wage for at least part of their time at the work site.

Although few training schemes of intensity and depth are currently available to high school students, a number of schools are beginning to experiment with such programs. Theme schools have been organized around occupations in the health professions, the travel industry, and the entertainment industry. In addition, the Pittsburgh school system has attempted to forge relationships with employers that can provide internships for students specializing in a vocational field. While promising, these initiatives must expand to cover a wide range of occupations and training programs designed to teach and test the key competencies in each career field.

What success can mean

Success in developing a youth-apprenticeship system would be significant enough to justify restructuring the school and job-training systems, because combining job-based education with other school reforms would help to remedy many pressing domestic problems.

First, providing serious training and entry-level jobs for large numbers of noncollege youth would increase the supply of skilled workers. Since employers would be offering and paying for most of the training, the skills would be marketable. The increase in relevant skills would raise productivity and aid in the implementation of new technologies. In fact, better training would do more to raise productivity than increased physical capital.

Second, as the productivity of youths without college education increased, their wages would rise, reducing the income gap between them and college-educated workers. We could expect employers to build on the capacities of apprentices by developing new job ladders and providing additional career training. These steps would, in turn, create more professionalized careers for former apprentices, thus raising their social status.

Third, the prospect that training begun in the eleventh grade could lead to promising careers would spur students to improve their academic skills. Raising the proportion of noncollege youth who study hard and seek productive careers could change the school atmosphere, so that good students would no longer face peer pressure against academic success.

Fourth, enhancing the prospects of noncollege youths would renew hope among many who today harm themselves with drugs and through ill-advised pregnancies. Over the last century, sexual activity has begun earlier, while entry into responsible jobs has generally occurred later. If apprenticeships drew large numbers of young people, especially disadvantaged minority youth, into serious training as early as eleventh grade, early parenting would become less attractive and marriage more attractive. The realistic prospect of rewarding careers would be one factor, but perhaps as important would be the interaction with responsible adults in the work place.

The ultimate hope is that a large, effective youth-apprenticeship program would help to bring today's urban underclass into the mainstream of economic and social life. Significant improvements could take place relatively quickly, since the program would pri-

marily benefit noncollege youths, who account for most neighborhood crime and for a large part of the drug problem. It is nevertheless the case that only a strategy aimed at a broad spectrum of young people will prove workable; both adolescents and potential employers would view programs geared exclusively toward the poor as providing second-rate jobs and inferior workers.

This brings us to the final important advantage of the youth-apprenticeship strategy—its natural appeal to the public. Unlike other initiatives, this job-based education strategy is inclusive, not exclusive; it aims to enhance productivity, not simply to redistribute wealth; and it encourages students to learn and to earn, rather than rewarding idleness. The program can do most for young minority workers, yet it does not stigmatize them or give them advantages over white workers.

Years may elapse before youth apprenticeships are sufficiently widespread to yield major successes. But the public will support the program, because it knows full well that only long-term solutions can achieve major success in overcoming society's fundamental problems.