PROJECT INFORMATION:

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COUNCIL CONTRACT NUMBER: 805-12

DATE: October 4, 1993

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* The work leading to this report was supported by contract funds provided by the National Council for Soviet and East European Research. The analysis and interpretations contained in the report are those of the author.
SUMMARY

This paper consists of three sections. 1) A brief summary of changes in higher education during perestroika, limited to a few basic principles: 2) a discussion of the most recent programs for reform of higher education in Russia, which represent the most complete statement of current thinking about higher education; and 3) a commentary on the likely impact of the reforms and their broader societal implications.

The most complete outline of Russian Republic plans for higher education were published by the RSFSR State Committee for Science and Higher Education in 1991. Although the plans were adopted while the USSR still existed, they were the work of individuals who continue to have responsibility for education in Russia, have been refined but not superseded since, and constitute a fundamental shift towards humanism and development of personality - a "human capital" approach in the best sense of the term. They include a harsh criticism of the "social," "economic," and "administrative/financial" shortcomings of the Soviet education system, and include a listing of the consequences of allowing the prevailing system to continue.

While, like much else in Russia, the reform programs are at present "in a fog," they still officially represent the intentions of Russian higher education administrators, and if the worst is avoided, may be expected to reappear. The economic crisis affecting all public institutions has had a devastating impact on both education and science, and virtually every institutional actor has taken the stance that the crisis requires devotion to basic survival, and that it would be disastrous to "experiment" now. Even some of the initial success stories are failing. The economics and business programs that enjoyed a major boom for several years are turning out hardly to prepare individuals to function in "bizness po Russki."

The magnitude of the changes also constitutes a challenge to the West. If the education (and science) system in Russia is destroyed the loss will be great, and not only to Russia. But serious Western help will depend on Russia itself producing a rational program to confront the crisis, and such an approach is not yet in evidence.
RUSSIAN HIGHER EDUCATION

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Well before the demise of the USSR, some analysts sought to demonstrate that, far from being a totalitarian monolith impervious to social influences, Soviet institutions were deeply affected by characteristics of the society. For example, the misguided debate over the "militarization" of Soviet society generally ignored the reciprocal influences of social problems on the military (Odom, 1976; Balzer, 1985). With the frenzy of revelations and self-criticism accompanying perestroika, Western specialists joined their Soviet colleagues in providing an unprecedented chronicle of the difficulties besetting the society (Jones et. al., 1991). For a few years, it was enough merely to demonstrate that the "USSR has warts, too" to generate newspaper headlines. But the days of such easy shots are numbered. Now analysts, and the Russians themselves, must move on to the much more demanding task of chronicling the complex interrelationship between institutions and society.

I have argued elsewhere that education in any industrial society is intimately bound up with the entire social system (Balzer, 1991). In the USSR, this interrelationship meant that the repeated efforts at social engineering through education were strongly influenced by societal forces, frequently producing results different from those intended by Soviet planners.

The education system in Russia and the rest of the former Soviet Union is now in the midst of changes even more sweeping than those envisioned during perestroika. The only parallel may be the revolution in education carried out in the 1920s and early 1930s; but even those changes affected a smaller portion of the population. All that may be stated with certainty at this stage is that the new system(s) will be more diverse and much harder to monitor than was the highly centralized Soviet system. How long it will take for this diversity to provide a positive payoff in terms of educational attainment and economic performance is decidedly an open question. Thus far there have been a few small reasons for optimism alongside a daunting array of difficulties and unanswered questions.

This paper consists of three sections. First, we briefly summarize the changes in higher education during perestroika. These reforms have been recounted in some detail elsewhere (Balzer, 1987, 1989, 1991; Kerr, 1991), and the treatment here may be limited to
a few basic principles. Second, we examine the most recent programs for reform of higher education in Russia. While all such projects are subject to revision, these programs represent the most complete statement of current thinking about higher education. We conclude with some comments about the likely impact of the reforms and their broader societal implications.

The most recent cycle of Russian higher education reform began in 1986, following the announcement of initiatives to "restructure" secondary education. Despite the greater involvement of Gorbachev reformers in preparing the higher education reform program, raising hopes that it might surpass achievements in general education, change was painfully slow. While a few leading VUZy (VUZ is the acronym for vysshoe uchebnoe zavedenie, higher educational institution), led by innovative administrators, implemented interesting experimental programs, most institutions of higher education remained under the control of conservative rectors. The higher education administration was slow to act in encouraging substantial change.

The education reforms, like all of the early initiatives encompassed in perestroika, were a response to unfavorable economic and demographic trends. Top officials focused on improving economic performance and making better use of available physical and human resources in an "intensive" mode of development. Many educators seized on the reforms as an opportunity to advance more purely scholastic and even humanistic concerns, but these agendas were secondary to the economic and labor force needs driving Gorbachev's initial program.

The basic principles of higher education reform articulated in 1986-1987 included improving quality, in large measure by raising standards and eliminating weak students and institutions; adopting new, more carefully targeted admissions arrangements, including special arrangements for veterans and workers; introducing more accountability in the system of planning admissions and placing graduates; instituting revised and individualized curricula, with increased emphasis on student participation in scientific research; emphasizing "continuous" education, with retraining and recertification every five years; and devoting additional resources to education, to be provided mainly by the ministries and enterprises
employing graduates of the VUZy. The thrust of the reform was greater independence and
diversity within a context of more rational use of scarce human and material resources.¹

After 1988, most of the reform initiatives by the USSR government were bogged
down in the political struggles over economic reform and sovereignty. In many areas, such
as education, this opened the way for initiatives at the local and republic levels. One might
even speculate that education reformers working at "lower" levels of the system had the
luxury of proposing truly radical approaches, knowing that with the old USSR bureaucracy in
place there was little chance of these measures being implemented. Between August and
December, 1991 this situation changed drastically. Russian Republic education officials found
themselves fully in control of their system, with their only strategic plan being the documents
prepared by the reformers.

State Programs for Higher Education in the Russian Republic

The most complete outline of Russian Republic plans for higher education reform is
presented in two pamphlets issued by the RSFSR State Committee for Science and Higher
Schools (Gosudarstvennyi komitet po nauke i vysshemu obrazovaniu, GKNVSh) (GKNVSh
1991a, 1991b). While these materials were prepared specifically for the Russian Republic,
they are similar to the programs developed in Estonia and the other Baltic republics.² The
power vacuum in central authority following the failed August 1991 coup led to increased
importance for Russian Republic institutions. Even though these plans were adopted while the
USSR still existed, the higher education programs were the work of individuals who continue
to have responsibility for education in the Russian Federation. They have been refined but
not superseded by several subsequent official documents (Komitet po vysshei shkoly, 1992a,
1992b).

The Russian State Program begins with a harsh critique of defects in the existing
system, and it is worth noting which problems the authors emphasize. They divide their
major concerns/criticisms into the "social," "economic," and "administrative and financial"
shortcomings of the Soviet education system. In a marked departure from Soviet practice, the
"social" issues are treated first. The number one social issue they discuss is unsatisfied
demand for higher education: "Every year the need for continued education is not met for
some 400,000 citizens of Russia who present their documents at VUZy on the territory of the RSFSR, including almost 100,000 who successfully pass the entrance examinations" (GKNVSh 1991a, p. 3). The need for more educational opportunity is heightened by the absence of an adequate system for independent study (externat).

A second major topic of criticism involves "personality." The authors of the program assert that "in the majority of VUZy the conditions necessary for the multi-sided development of personality (lichnost') do not exist." The obstacles to personal development include both material conditions and the tendency to treat students as "passive objects." The familiar criticism of narrow specialization is articulated, but it is interesting to note that narrow specialization is criticized not for practical limitations on the capabilities of specialists, but rather for fostering a lack of broad culture and humanism--again invoking the need for well-rounded education focusing on the complete person.

A final "social" shortcoming the authors mention concerns more traditional technocratic issues. The "gigantic system of training and raising qualifications of specialists meets overall demands by 25% and satisfies only one percent of the demand for retraining in new directions of science and technology" [sic, my emphasis]. This is closer to traditional rhetoric, and was probably included to satisfy the industrial ministries. The statistics are not necessarily reflective of actual conditions.

The "economic" defects cited in the program encompass a well-known array of problems, including an inadequately educated labor force (an average of 9.8 years, compared to 14 years in the US and other "developed" nations); poor relations between the "economic mechanism" and higher schools, based on centralized ordering and placement of specialists by ministries bearing no responsibility for the consequences; the lack of an adequate system for projecting personnel needs; an excessively uniform approach to training specialists; lack of adequate incentives; obstacles to the most promising forms of integrating higher education with Academy and industrial research; and the divorce of Russian higher schools from the world system of higher education and division of labor.

The administrative and financing difficulties cited in the program are even more familiar, including the difficulty of elaborating a unified state program when higher schools are subordinate to 28 diverse ministries and departments; bureaucratic limitations on the
initiative of VUZ faculty; miserly financing, which has resulted in a pathetically inadequate infrastructure and poorly equipped schools; and abysmal levels of support for retraining and continuing education.

The litany of these familiar shortcomings is worth reviewing for the tone and context of their presentation. Unlike the critique by Egor Ligachev in 1988 which emphasized a utilitarian (economic) rationale for reform, the emphasis in the Russian Republic documents is on humanism and personality. It represents a "human capital" approach in the best sense of that term—that investing in people by maximizing their opportunities for general education will ultimately pay off for all of society. But the goal of maximizing each individual’s potential is tempered by a serious dose of economic reality.

The humanistic and "personality" focus of the higher education reform program also emerges clearly from a listing of consequences that might be expected if the prevailing "ineffective" system of higher education were permitted to remain unchanged. These include losing the possibility of democratic development due to inadequate legal, economic and political education; a growing crisis among young people resulting from their defenselessness in a market economic system; the nation’s concomitant inability to compete effectively in the global economy; and growing loss of connectedness to Russia’s rich humanitarian culture.

In addition to avoiding as many of these dangers as possible, Russia’s new system of higher education is designed to achieve five quite general goals:

1) "Offer each citizen of the republic the maximum opportunity for intellectual, cultural and moral development; for obtaining higher education and qualifications corresponding to their abilities and knowledge."
2) Provide opportunities for improving knowledge and retraining.
3) Meet the social demand for specialists.
4) Guarantee the breadth and quality of education necessary for (occupational) mobility and "social defense" under market conditions.
5) Reach a new stage in development of education, science and culture.

In its initial formulation the program was to be realized in three stages. The language used to describe these stages did not inspire much confidence that the program had been carefully worked out:

1) 1991-1992: "The final result of this stage [will be] reform of the existing system of higher education, formation of the new system and the mechanism of its operation."
2) 1993-1995: Will see completion and stabilization of the new system, practical implementation of its mechanism, and the beginning of integration into the international system.

3) 1996-2005: Will result in augmenting the potential and quality of the system, and fully integrating into the international system of education and employment.

The basic principles determining the choice of means, forms and methods for realizing the program will be: decentralization and democracy (samorazvitie); quality; diversity; a unified system of uninterrupted education; attention to the needs of various regions and republics (effectiveness); and equality of opportunity. The new system will eventually eliminate the distinction between higher and specialized secondary education in favor of a "multilevel" system of higher education. The provision of "externat" opportunities would make higher education accessible to everyone regardless of age.

In a major departure from the Soviet approach, educational administration is to be decentralized, with authority vested in local, regional and republican bodies. The goal is to decentralize the process of decision-making and regulation, "introducing the international standards of UNESCO for reporting and for comparative evaluation of VUZ activity."

The VUZ is to be a juridical entity with an official seal (very important in the Central European context with its respect for notarized paper), its own financial assets and property, and its own Statutes. VUZy may determine their own admissions plans, the specialties to be taught, structure, and the content of educational programs based on "the provision of quality education and the requirements of agreements with sponsors" (zakazchiki). All internal administration, financing, staffing and other decisions are to be the prerogative of the VUZ. Each VUZ may allocate funds from sources other than the State Budget, including for salaries and stipends, but salaries and stipends may not be below the level of those paid from the state budget (cf Kossov and Kniazev, 1991).

Internal administration at each VUZ will be overseen by a Rector appointed by the GKNVSh on the recommendation of the institution’s Academic Council. The GKNVSh has responsibility for defining overall strategy, coordinating the activity of all educational and scientific institutions regardless of departmental affiliation, overseeing State Budget financing, representing Russian higher schools in international organizations, and organizing
a system of evaluating the quality of all types of activity of VUZy and scientific organizations.

Regional development strategies and labor resources, along with the determination of regional priority directions in science, are to be the responsibility of regional centers of science and higher education. Participation in these centers will be voluntary, and may include representatives of VUZy, scientific institutions, regional Soviets, Councils of factory directors, and social and professional organizations.

The ultimate goal of the reformers is a flexible system of preparing specialists in accord with the changing character of the Russian economy and labor market. Evaluating and forecasting personnel needs will be an important part of the Committees' job. According to 1991 projections, the share of specialists in economics, management, jurisprudence, sociology, psychology, biotechnology, informatics and microelectronics was to be increased to 60-70% of graduates. [Currently less than 40% of students study in these specialties in Russia.] The share of full-time students ("day" as opposed to evening and correspondence) should be increased to between 70% and 90%. [Currently about 42% of VUZ students in Russia study in part-time programs.]

A basic principle of the Russian higher education program is that "higher education must be accessible to everyone, in accordance with their possibilities and talents." The government must increase the number of persons receiving higher education at the level of fundamental, humanitarian, general-professional preparation (basic higher education), and must maintain state standards for the quality of this education. The entire system is predicated on a widespread system of short-term (1-2 month) special courses providing on-the-job training for people with basic higher education. The implication is that specialists will refresh their knowledge and learn about new developments periodically throughout their careers.

The reorganized higher education system is to consist of four levels or stages, with broad access to the first level and competitive procedures for those wishing to study at more advanced levels. The first stage will last two years, and graduates will receive a certificate of "Incomplete Higher Education," conferring the right to continue their studies in any VUZ of a compatible profile.
The second level, "basic higher education," will provide professional training in one of the areas of science, technology or culture, based on the foundation provided in incomplete higher education. The course will be two years for those with incomplete higher education, and four years for those with secondary education. Graduates will receive a diploma and a baccalaureate degree. The diploma will permit them to work in any position requiring that type of higher education, and/or to continue their education at the third level.

A portion of those completing basic higher education will be selected by competition for admission to the third stage, "complete" or "specialized" higher education, based on a professional, educational and scientific research program in the area of future professional activity. The length of the program will be determined by each VUZ in consultation with sponsors (zakazchiki), but will not be less than two years. Most programs will include a period of internship (stazhirovka), normally at the future place of employment. Those completing the third level of higher education will receive a diploma certifying their status as a specialist with complete higher education. Those performing the requisite scientific research may be awarded the degree of Magister.

The fourth level of higher education—graduate study—is designed to prepare scientific and professorial cadres. Competitively selected students will participate in a program of study and research of three years duration, leading to the degree of kandidat. There is some ambiguity in the documents regarding this "fourth level." It is comparable to the existing "aspirantura," which leads to both kandidat and doctoral degrees. In some places, mention is made of "doktorantura" programs; in others, the kandidat degree is discussed. Obviously, these details have not been worked out.

Resolving the issue of advanced degrees will be particularly difficult due to the large number of credentialed specialists who have a very direct interest in any changes that are implemented. Will the existing "kandidat" degree retain its status? In a system of more flexible funding and a genuine labor market, will credentials retain their significance? There will be an immediate need for professional organizations to fill the vacuum created by dismantling the system of state control over accreditation.
It is possible that the degree of "doktor nauk" will be less and less important. There will be little demand for this credential in a market system, and what demand does remain can be satisfied by the rank of "Professor" (Torchinskii, 1991). As the nation strives for participation in the "international system of education" and degree equivalence, there is likely to be even more pressure from the tens of thousands of Candidates of Science to consider their degrees as equivalent to American PhDs.

The new system was introduced on a voluntary basis as of September 1, 1992, and is to function parallel to the presently existing system. Adoption of the new, multi-level system is at the discretion of each VUZ, and may be implemented wholesale or in individual "directions." Individual divisions, faculties or departments may adopt the new system at their discretion. This would seem to be an invitation to chaos, as students studying according to different programs will be attending the same schools, and in some cases might be in the same classrooms.

Some of the more specific goals for the period up to 2005 include:

- During 1991-1993 shift to a new system of admissions and graduations based on population growth and social-demographic projections, raising the potential contingent of students and the overall educational level of the population.

- During the period 1995-2000 change the structure of admissions and graduations in accord with population growth and new job openings so that the system meets 75% of the demand for the first level of higher education, and 90% of the demand for education in information and services.

- During 2000-2005 raise the training of specialists at the second and third levels of higher education to the level prevailing in developed countries.

During 1992 the Committee was supposed to work out an administrative system and develop criteria for evaluating quality; elaborate republic and territorial systems; and begin the process of accrediting VUZy. Accreditation was to be conducted with the participation of scholars from the Academy of Sciences, creative unions, engineering and other professional societies (Akimov, et. al., 1991; Saltychev et.al, 1991). Needless to say, the breakup of the USSR forced changes in these timetables. In many regions, accreditation was carried out during 1992-1993 with the assistance of local education communities.
The "central task" of the reform is to improve the quality of training specialists, eventually bringing that training into accord with "world levels." The VUZ student body will be constituted on the basis of a new system of guidance (proforientatsii). Graduates will be permitted to choose their place of work, and may negotiate contracts with enterprises, organizations and other sponsoring institutions.

International contacts are to be increased, and serious efforts will be made to meet world standards—particularly those of UNESCO. Special attention will be devoted to the UNESCO system of indicators of performance quality, and the GKNVSh will seek international cooperation on establishing degree equivalency.

The reform programs recognize that one of the major barriers to development at VUZy is the appallingly weak material base at most of these institutions (GKNVSh, 1991a, Appendix III). In the future, VUZy may be financed by the state budget, regional government, ministries and enterprises, as well as by private contributions. All VUZ income and all monies contributed to VUZy will be free of taxes. VUZy will have the right to conduct commercial activity in the areas of education, science, production, and culture, both within Russia and abroad, and may maintain accounts at banks in Russia and other states.

The GKNVSh developed grandiose plans to create a unified republican, regional and VUZ system of guidance, selection and enrollment based on early evaluation and support of gifted young people. In 1991-93 a republican system of identifying talented young people and getting them into special forms of study in priority disciplines was to be formulated and introduced. This has now been superseded.

Reflecting the emphasis on broad, humanistic education, universities are accorded a special role in the system of higher education. Universities will emphasize preparation of specialists with academic degrees (baccalaureate, magister); training of pedagogical cadres for all levels of education, in the first instance in fundamental natural science and humanities disciplines. The status of Russian universities has been explicitly stipulated, and this is facilitating creation of new types of universities (technical, humanities, etc.). Universities are supposed to receive priority financing.

The reform programs propose a new system of post-graduate education (poslediplomnoe obrazovanie). By 1995 professors and instructors in all important disciplines
are to be retrained, and by the year 2000 retraining should extend to the entire VUZ teaching staff. By the end of the century admission of candidates in doctoral programs should increase by six times and in the system of retraining and raising qualifications enrollments would rise by a factor of seven.

Reformers proposed creating a legal basis for a new system of doctoral study (doktorantura). They envisioned training doctoral students at all leading universities and VUZy, and beginning in 1991 at least 10% of doctoral students were to be trained abroad.

Some of the most intriguing and utopian proposals concerned developing a VUZ-based system of science in Russia. The reform plan includes very specific provisions regarding scientific research, designed to make VUZy the key institutions not only in training but also in the conduct of scientific research and development. Reformers proposed that the Russian Republic shift to a competitive contract system of financing scientific work. They further proposed amalgamating academic, branch and VUZ scientific structures on the basis of universities and leading VUZy. VUZy would become the major centers of scientific research, with priority financing from the state budget. The scientific and educational processes would be unified, raising the level of training and involving VUZ teachers and students in the research process.

Among the programmatic measures proposed to achieve a reorganization of science were: formulating a new organizational structure combining higher schools of the university type with academic institutions and branch scientific research institutes; active use of market mechanisms to increase competition among scientific collectives; introducing alternative forms of research and development, that would assist development of small innovation firms and other new forms of S&T activity; and raising state budget financing of scientific research at higher schools by 3 times by 1995 and by 4-5 times by the year 2000.

The proposals also include legal and tax stimuli for inventions, and the education system is to be geared to enhance the climate for innovation. Scientific organizations will be self-governing. Fundamental research will be supported by a system of grants administered by the Russian Science Fund. Efforts will be supported to finance parallel (competing) lines of research. Advantageous conditions are to be created for alternative small innovation firms.
Centers of Scientific-Technical Creativity for Youth (TsNTTM), cooperatives and other small, flexible initiatives.

Five concrete measures are proposed to foster innovation. 1) Immediately reallocate funds for financing research, putting up to 80% of the resources at the disposal of "group" programs. 2) Create a commercial bank to finance scientific-technical development. 3) Create under the GKNVSh RSFSR a Fund for financing fundamental and exploratory scientific research. 4) Work out a schema for establishing technology parks and technopolises in the RSFSR. (By 1995 no fewer than 12 technology parks and technopolises should be in operation). 5) In cooperation with the ministries, work out a system for forecasting and evaluating the main directions of science and a system for concrete and competitive financing of R&D.

A major program of material support and improvement of education and science was promised, designed to match the level of the best Western institutions. New equipment was to be procured at a cost of 23.1 billion rubles by 1995; and 32.3 billion by the year 2000.

In a bow to economic reality, two possible variants of funding were proposed in the 1991 programs. One envisioned bringing all 495 Russian VUZy up to the Western level of 1990 by somewhere between 1995 and 2000. The second variant would have provided major support for the 100 strongest VUZy, insuring a nucleus of high quality institutions. Given resource stringency, the more modest proposal will likely be more than enough of a challenge, particularly since a number of the specialized secondary schools (technicums) are being incorporated in the system of higher education as "First Level" institutions or as part of new technical universities. When I inquired about the status of proposals in meetings at the reorganized State Committee for Higher Education in 1992 and 1993, I was told that the question is "in a fog."

Officially, the programs worked out in 1989-91 and published in 1991 still represent the intentions of Russian higher education administrators. But the administrative system itself has changed, and emendations are inevitable. Most importantly, the effort to combine the administration of science and education in a single agency did not work. The Ministry of Science, Higher Education and Technology Policy, headed by Boris Saltykov, was reorganized in spring 1993. Vladimir Kinelev, who had made no secret of his dissatisfaction
at presiding over a "mere" State Committee for Higher Schools within Saltykov's ministry, became Chairman of a new State Committee for Higher Education with the rank of Minister. This rearrangement will diminish the likelihood of rapid integration of science and higher education. At the same time, it may have some positive effect, allowing higher education officials to focus more of their attention on educational matters rather than a campaign for independent ministerial status.

Evaluating the Prospects

The latest Russian higher education reform program retains a number of the principles articulated during perestroika, while departing significantly from others. The most important departure underlying all the new proposals is a humanistic and pedagogical motivation, in place of the previous emphasis on demographic, economic and labor force priorities. For the first time since the USSR’s First Five Year Plan, the major emphasis in Russian education is on maximizing human potential rather than meeting specific economic and personnel needs.

Emphasis on human potential is reflected in the proposed increase in the number of students to be admitted to higher education. In place of Soviet attempts to plan admissions, the new system is designed to be much more sensitive to student demand—indeed indications are that the demand for higher education remains high (Balzer 1989, pp. 20-28; Lenshin 1993, p. 10; Table I, below). Under the "command-administrative system," there was an artificial labor shortage in the Soviet economy, making time spent in education a serious problem for the planners. During the transition to a market economy the most serious labor force problem is likely to be unemployment, and we should expect young people to react as they do in other market societies during tough economic times—by seeking to delay their entry into the labor force, through enrollment in advanced education. These economic pressures, along with strong intelligentsia traditions favoring education, will at least partly compensate for a perceived decline in the prestige and economic utility of higher education.

Increased demand for education does not preclude a major shift in students' choice of specialties. The USSR trained a massive and indeed superfluous number of engineers. A far smaller number of engineers should be trained in the future, and they will need a much broader curriculum emphasizing economic and social factors in production. Many of the
engineering and technical specialists trained in the Soviet period will be replaced by students studying business, marketing, economics, public relations and other skills related to a market economy and service sector. (Engineering often served the purpose of providing social mobility for families where no one had previously received a higher education. Children of parents with a higher education were more likely to choose a non-engineering specialty.)

The emphasis on quality in the 1986-1987 higher education reforms included an implicit threat to reduce the number of students and close weak VUZy. While it was possible to eliminate some of the "dead wood" in the student body, it proved extremely difficult to close institutions (Balzer 1992). Under the new conditions of increased local control, the number of institutions claiming the status of VUZy is increasing. Opportunities to convert "strong" specialized secondary schools to first-level VUZy will encourage the process, as will the option of including technicums in new specialized universities. Leaving admissions to the discretion of individual VUZy will almost certainly result in an increase in the number of students, at least initially.

Yet despite changes in emphasis in the Russian higher education reform program, a number of themes have been retained from the era of perestroika. Education is to be uninterrupted, with programs for retraining available throughout an individual's working life. Individualized programs of study are to replace the rigidly stipulated curricula common at Soviet VUZy. Resources are to be increased, with some of the funds coming from the state budget, but much attention to contributions from the "private sector." A growing proportion of students are to study either as stipendiaries of their place of work, or under contract arrangements obligating them to work for their "sponsor" following graduation.

The sponsorship arrangements can be made to sound like a form of indentured servitude, differing little from the now-discredited system of raspredelenie. However, at least some enterprises have taken the enlightened view that the entire society benefits from improved education, and that if some of the students they support eventually work for the enterprise, that is enough of a return.7

The Russian Republic program not only envisions VUZy playing a greater role in science and encouraging student involvement in R&D activity, but it portrays the VUZy and particularly the universities becoming major centers of scientific research. Little was done to
realize these aspirations in the short period during which science and higher education were combined under a single Minister. Movement toward a university-based system is likely to be even more difficult with separate administrative systems.

The economic crisis affecting all public institutions has had a devastating impact on both education and science. While economic stringency might provide an impetus for reform, with economic necessity forcing changes that policy choice alone might not achieve, this has not been the result. Rather, virtually every institutional actor has taken the stance that the economic crisis requires devoting all their attention to basic survival, and that it could be disastrous to "experiment" at a time of such financial peril. The result is likely to be that any chance for planned, rational reductions will be missed. The inevitable weeding out will occur on a haphazard basis, with luck and connections playing at least as great a role as merit and judgements of priorities.

Some observers, including many in the West, have assumed that some type of "commercial" solution to the economic difficulties can be found. VUZy in Russia and other areas have begun to experiment with charging tuition. But foreign students, who were numerous when the USSR provided free tuition and paid stipends for purposes of propaganda, prestige and "Communist internationalism," have not proved to be willing consumers—especially at a time when the quality of life in Russia is perceived to be declining. There have been experiments with charging tuition for students who score less than outstanding grades on VUZ entrance exams, particularly in such popular specialties as foreign languages. This has provoked concerns about quality that would sound familiar to many American college administrators. But thus far those able to pay VUZ tuition constitute a small portion of the student body, and their payments amount to a tiny fraction of the institutions' budgets.

Another potential source of revenue might be from commercial activity and selling the products of research conducted at VUZy. But here, too, the problems are enormous. Production by students at educational institutions is notoriously uneconomical—though the provision of tax exemptions in some cases makes it attractive, and in other cases encourages various varieties of subterfuge. It is difficult to overestimate the problems stemming from economic illiteracy, lack of management skills and other kinds of knowledge and training.
Commercializing the products of VUZ research through invention and innovation represents a more promising long-term strategy, and again one that has been adopted by many American universities. Specialists long argued that the major obstacles to applying technical processes developed in the USSR were structural and systemic. If the economic problems can be overcome and the systemic inhibitions and irrationalities can be reduced, many of the scientific and technical people are qualified to handle the creative aspects of innovation—indeed, their complaint has long been that "no one needed" their innovations in a socialist system (Fedorov, 1990).

If the obstacles to reaping the rewards of scientific research in terms of innovation have been economic and systemic, the crucial need is for entrepreneurial skills. These may be the sort of skills that can be acquired only in the marketplace, but the basis for them constitutes the core of economics and business programs. To the extent that Russian VUZy, and especially technical VUZy, now intend to broaden their approach to education, including economic and sociological components in virtually every specialty, the schools could make a significant contribution to unblocking the innovation and technical development processes.8

But first the schools must survive. Education has been a clear priority of the Eltsin government—Eltsin's first decree following his election was on education, promising VUZ faculty salaries at a level double that of the average wage. However the resources to fulfill the promises have not been available. (And the process has been repeated several times, most recently in promises of assistance before the April 1993 referendum, followed by renewed concern for structural economic stability and inflation after the votes were counted.) Budgets have decreased in real terms over the past two years, and the trend is likely to continue for at least another year.

Along with economic woes, the VUZy are experiencing a loss of prestige. Graduate study is no longer avidly sought, and the number of students enrolling in graduate programs has dropped by a factor of more than two. Many of these individuals might have been potential members of the "scientific proletariat," but the reductions are so great as to make some fear the loss of science as a viable career option. Much of the contract research financed by industry is no longer being funded, and few students now have the opportunity to participate in scientific work.
Even some of the initial success stories in higher education are turning out to be built on shaky foundations. Economics and business programs enjoyed a major boom for several years, but now many are finding that Western business programs and market economics do not prepare individuals to function in conditions of "bizness po-Russkiy."

For the first time since the late 1920s, the dynamic creative potential of the population may now be given free rein. No one expects miracles, but it is not unreasonable to expect positive results within the next decade. However, these positive results are likely to be seen only at a limited number of institutions, particularly in the elite VUZy that have already been involved in experiments and reforms. During the transition it will be important to remember that all nations have a range of higher educational institutions. The Russian problem has been twofold: The human and intellectual contributions from the best VUZy were poorly used, and the drop-off below the level of the elite institutions was quite steep. If the elite institutions are given the conditions to make a larger contribution, the longer-term impact might be an economy that could better support a broader range of schools.

The magnitude of the changes in Russia also constitutes a challenge to the West. Despite all its shortcomings, the education system in Russia was a unique and valuable resource. Its destruction would represent a serious loss, and not only to Russia. If the education (and science) system is allowed to atrophy, recreating it later will cost many times what would be required to preserve it now. But serious Western help will depend on Russia itself producing a rational program to confront the crisis, and such an approach is not yet in evidence.
1. Draft guidelines for the reform of general education were published in the central press January 4, 1984. Following three months of public discussion, a revised version was published April 14, 1984. "Basic Directions" for the restructuring of higher and specialized and secondary education appeared in the central press June 1, 1986. There was again a public discussion, but the issues proved difficult to resolve. The Politburo approved the Basic Directions "in principle" August 28, 1986, but instructed MinVuz to continue working on the legislation. On Jan. 6, 1987 the Politburo again referred the project back to their specialists for additional work. In February Mr. Gorbachev acknowledged that there were sharp differences of opinion about the reform. On March 21, 1987 the central press published a revised version of the "Basic Directions," followed by five major decrees implementing portions of the reform (March 25-29, 1987). Despite, or more likely because of the prolonged deliberations, these documents were less specific than the general education reform materials.

The combining of the two reforms and their extension was first articulated at the Central Committee Plenum February 17-19, 1988. See Egor Ligachev's speech at the Plenum, Komsomol'skaiia pravda February 18, 1988.; and the Decree of the Central Committee "O khode perestroiki srednee i vysshee shkoly i zadachakh partii po ee osushchestvleniiu" Sovetskaia Rossiia February 20, 1988.

2. The Estonian plans for higher education reform were outlined to a delegation from the US National Science Foundation during meetings in Tallinn June 5-7, 1991. These plans include Universities becoming the major agencies of scientific research; a system with at least two "choke points" to separate out practitioners from researchers; and an "American style" system of higher degrees (MA and PhD).

3. According to 1991 data, 50% of specialists with higher education did not work in their specialty, and 20% were employed in positions not requiring higher education.

4. The use of the words "diversity" and "unified" here do not represent a contradiction. In the Russian context unified does not mean standardized, but rather refers to a system in which each level of education may lead to the next higher level--a system where no type of school represents a "dead end" precluding further study. The issue is particularly sensitive in
the history of Russian pedagogy, due to the tsarist government's effort to maintain two separate systems of education, one for the nobility and one for the lower classes. "Liberal" Russian educators consistently fought for a "unified" school system that would allow all qualified students the opportunity to attain a higher education.

5. Priority in financing universities may help explain the current rush among VUZy to redefine themselves as universities. Iurii Afanas'ev's Historical-Archives Institute has become the "Humanities University;" the Bauman Moscow Higher Technical School is now a "Technical University;" and several pedagogical institutes have dubbed themselves "Pedagogical universities." In St. Petersburg, eleven of the 43 VUZy are now officially universities, certified by a regional committee of higher school personnel. The trend is likely to continue if universities manage to consolidate their privileged place in the new system.

6. The experience in the years following the 1917 revolutions, when local authorities sought to establish their "own" VUZy despite the forbidding economic conditions, may well be repeated. See Fitzpatrick, Education and Social Mobility in the Soviet Union, 1921-1934, (Cambridge U. Press, 1979) pp. 48-49.

7. This was the view articulated to a delegation from the US National Science Foundation during a visit to the Leningrad NPO for Scientific Instruments in June 1991.

8. For comments on the potential VUZ contribution to innovation see V. Ezhkov, "O mekhanismakh podderzhki i prodvizhenii naukoemkikh inovatsii," Alma mater No. 2, February 1991, pp. 17-23, which focuses on creating a better climate to attract venture capital; and V. Poliakov, "V poiskakh mekhanisma obucheniia innovatsiiam," Alma mater No. 3, March 1991, pp. 10-12, where the author stresses the role of consulting arrangements as a way to break out of the "vicious circle" of poor education and poor industrial performance.
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GKNVSh RSFSR, 1991a. Gosudarstvennaia programma razvitiia vyssheho obrazovaniia v RSFSR (Proekt)

GKNVSh RSFSR, 1991b. Vremennoe polozhenie o mnogourovennnoi sisteme vyssheho obrazovaniia v RSFSR (Proekt)


### TABLE I

**COMPETITION TO ENTER SELECTED VUZy, SUMMER 1991**

<table>
<thead>
<tr>
<th>VUZ or Group of VUZy</th>
<th>No. of Applications</th>
<th>Planned Places</th>
<th>Competition Per Opening</th>
</tr>
</thead>
<tbody>
<tr>
<td>VUZy GKNVSh RSFSR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rostov University</td>
<td>2,606</td>
<td>1,175</td>
<td>2.2</td>
</tr>
<tr>
<td>Leningrad Engineering-Economics Institute</td>
<td>1,325</td>
<td>375</td>
<td>3.5</td>
</tr>
<tr>
<td>Iaroslavl' University</td>
<td>1,470</td>
<td>560</td>
<td>2.6</td>
</tr>
<tr>
<td>Moscow Humanities University (former Historical-Archives Institute)</td>
<td>2,100</td>
<td>340</td>
<td>6.2</td>
</tr>
<tr>
<td>Pedagogical VUZy in City of Shui</td>
<td>1,000</td>
<td>500</td>
<td>2.0</td>
</tr>
<tr>
<td>VUZy of RSFSR Education Ministry</td>
<td>46,500</td>
<td>18,000</td>
<td>2.5</td>
</tr>
<tr>
<td>VUZy of Uzbek SSR Eduction Ministry</td>
<td>42,324</td>
<td>18,500</td>
<td>2.3</td>
</tr>
<tr>
<td>VUZy of Agriculture Ministry (11)</td>
<td>14,823</td>
<td>5,800</td>
<td>2.5</td>
</tr>
<tr>
<td>VUZy of USSR Ministry of Transportation (data for 10 of 14 institutions)</td>
<td>17,796</td>
<td>8,475</td>
<td>2.1</td>
</tr>
<tr>
<td>VUZy of Ukrainian Ministry of Higher Ed.</td>
<td>111,372</td>
<td>52,325</td>
<td>2.1</td>
</tr>
<tr>
<td>VUZy of USSR Ministry of Culture</td>
<td>4,880</td>
<td>440</td>
<td>11.09</td>
</tr>
<tr>
<td>Leningrad VUZy (40)</td>
<td>68,116</td>
<td>25,584</td>
<td>2.6</td>
</tr>
<tr>
<td>MGIMO</td>
<td>1,870</td>
<td>390</td>
<td>4.8</td>
</tr>
</tbody>
</table>

### TABLE II
**PROJECTED ADMISSIONS TO HIGHER EDUCATION, RSFSR**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total admissions to Higher Education</strong></td>
<td>1415</td>
<td>1510</td>
<td>1900</td>
<td>2420</td>
</tr>
<tr>
<td><strong>Admissions to First Level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>813</td>
<td>870</td>
<td>1100</td>
<td>1100</td>
</tr>
<tr>
<td>Evening and Correspondence</td>
<td>523</td>
<td>610</td>
<td>710</td>
<td>740</td>
</tr>
<tr>
<td><strong>Admissions to Second Level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>-</td>
<td>470</td>
<td>600</td>
<td>850</td>
</tr>
<tr>
<td>Evening and Correspondence</td>
<td>-</td>
<td>280</td>
<td>420</td>
<td>600</td>
</tr>
<tr>
<td><strong>Admissions to Third Level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>602</td>
<td>165</td>
<td>200</td>
<td>290</td>
</tr>
<tr>
<td>Evening and Correspondence</td>
<td>366</td>
<td>150</td>
<td>180</td>
<td>260</td>
</tr>
</tbody>
</table>

["Base year" data represent admissions to RSFSR Higher and Specialized Secondary institutions.]


### TABLE III
**PROJECTED GRADUATIONS FROM HIGHER EDUCATION, RSFSR**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total number of specialists graduated</strong></td>
<td>1073</td>
<td>1055</td>
<td>1190</td>
<td>1400</td>
</tr>
<tr>
<td><strong>Graduates from First Level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>640</td>
<td>610</td>
<td>710</td>
<td>710</td>
</tr>
<tr>
<td>Evening and Correspondence</td>
<td>407</td>
<td>425</td>
<td>440</td>
<td>490</td>
</tr>
<tr>
<td><strong>Graduations from Second Level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>-</td>
<td>330</td>
<td>355</td>
<td>410</td>
</tr>
<tr>
<td>Evening and Correspondence</td>
<td>-</td>
<td>200</td>
<td>250</td>
<td>360</td>
</tr>
<tr>
<td><strong>Graduations from Third Level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>433</td>
<td>116</td>
<td>125</td>
<td>180</td>
</tr>
<tr>
<td>Evening and Correspondence</td>
<td>238</td>
<td>104</td>
<td>110</td>
<td>160</td>
</tr>
<tr>
<td><strong>Evening and Correspondence</strong></td>
<td>195</td>
<td>12</td>
<td>13</td>
<td>18</td>
</tr>
</tbody>
</table>

["Base year" data represent admissions to RSFSR Higher and Specialized Secondary institutions.]