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ABSTRACT

The urbanization and industrialization of a society based on commercial competitiveness has resulted in the marginalization of rural communities and the disempowerment of rural people. An alternative view of the future is needed, and rural schools have a part to play in creating it. Four sets of forces are driving society toward a different future: (1) emerging realization that the concentrated economic power of multinational corporations has run amok, creating insecurity for many workers; (2) transition from an industrial to an information society, creating a need for information generalists and a shift in social values and tastes from standardization to diversity; (3) recognition of the ecological limits of the planet; and (4) yearning by many people to become a part of "community" and to reestablish control of their lives. Sustainable rural communities are a part of the alternative future. If rural schools are to contribute to community development, they must reconsider the purposes of schooling, shift the focus of curriculum to the local community context, provide students with the skills to create their own jobs, and maximize benefits to the community from investments in educational facilities and resources. Rural schools can function as information resources for community development, support economic development directly and indirectly, and make real contributions to the physical and cultural health of communities. Various examples are presented of student entrepreneurial projects and school activities supporting community development. (SV)

KEYNOTE ADDRESS

RURAL SCHOOLS, RURAL COMMUNITIES: AN ALTERNATIVE VIEW OF THE FUTURE

Paul M. Nachtigal - United States

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Rural schools and rural communities are tightly linked. Traditionally, the school is very much the center of small town activities It is a source of community identity as school patrons rally around athletic events Plays, musical events and sports represent a major source of the community's entertainment. School news, for better or for worse, provides the basis for much of the social dialog. For many rural communities, the school represents the single largest economic enterprise. It has the largest budget, often the best physical facilities and the school staff may be the largest cadre of well-educated individuals in towns. In the US, where education is a state and local responsibility, maintaining and operating the public school represents the major investment of the community's local tax dollars. In countries where education is a national responsibility, it may be the largest governmental expenditure in the local infrastructure.

One of the purposes of this Conference is to create opportunities for conversations about the future of rural communities and my charge is to stimulate that conversation by reporting to you what educators have been thinking about and doing in the rural United States. Beginning with an historical view, I'll remind you how the needs of the industrial age formed the schools we now have. Then we'll talk about four forces that are shaping the schools of the future: First, the convergence of economic and political power; second, our transition from an industrial to information economy; third, what we have learned from the study of ecology that impacts how we organize ourselves for action; and fourth, the yearning for community. Next, the principles of education that are sustainable rather than exploitive will be discussed and examples from work in the United States will be offered. I'll finish with lessons learned from this work, in the hope that your work might benefit from our successes and that you might be helped to avoid our mistakes.

When the function of schooling was first formalised, education's primary purpose was to provide young people with the skills needed to take their rightful place as productive members of the local village. The school's first responsibility was to nourish the human resources that further the development of the local community. With the industrialization of the society, the education agenda has shifted from a local focus to a state and national agenda, preparing individuals to participate in and contribute to a competitive commercial society. And now, in the United States, national goals have been established which call for the public schools to prepare the youth, rural and urban, to be competitive in the global economy American youth are to be first in the world in math and science by the year 2000.

Also, with the emergence of industrialization, rural communities were/are valued less and less for their own intrinsic merit, and instead have been viewed as headwaters for an extractive society. Timber, mining, agriculture and even the education of the young became resources for the urbanization and industrialization of society. Throughout many parts of the industrialized world, these forces have contributed to the decline and often the death of rural communities.

Public education, serving the need of an industrialized society, has adopted an industrial mass-production model of schooling, a model of schooling which requires large numbers of students and teachers to operate efficiently and effectively. Bigger has been equated with better. Rural communities have clearly been the loser in this construct. First, because rural schools can never be as large as urban schools, they are, by definition, considered to be second best And, secondly, with the onset of industrialization, what rural schools have done best is prepare students to leave rural communities, either to continue their education and/or find employment. Most never return. If one views rural schools from an economic development perspective, they represent one of the major economic drains on the local community Tax dollars and human resources reinvested; both then leave the community

RURAL VS URBAN

The urbanization and industrialization of society has brought with it the very logical consequence of putting urban interests against rural interests, a consequence which results whenever resources from one segment of society are used for the undue benefit of another segment of society. It is the logical consequence of a society which is based on commercial competitiveness. It is the logical consequence of representative government in which one person, one-vote gives urbanized centers control of political power and in which the centralization resulting from industrialization has concentrated economic power

Dale Jahr, a staff economist for the US Congress, documents the demise of rural political power in the United States in his paper *"The Rural Political Economy: Change and Challenge"*. He suggests that perhaps the only way rural interest will be protected in the future is to push for a *"Rural Rights Act"*. It is clear from his perspective that rural America is both "disadvantaged" and "discriminated against", the two conditions deemed necessary for "rights" legislative and legal action in this most litigious of countries. (Jahr, 1988: 22-24).

One need look no further in the US to find examples of the concentration of economic power than the public policy initiatives that have resulted in the displacement of agrarian farmers with corporate agriculture. In spite of the evidence which concludes that medium-sized farmers, those selling around $133,000 in crops annually, employing one or two people and using up-to-date equipment provide peak efficiency in food production, corporate farms continue to take over America's food production. Just coincidentally, these largest farms reap tremendous profits because of federal policy - from tax laws to subsidy programs - which favor these largest operations over the midsize and small producers. Just four firms account for 86% of the breakfast cereals sold in America; four companies sell 62% of the broiler chickens; three giants sell almost three-quarters of the nation's beef and the same three - IBP, ConAgra and Cargill - also control between 30 to 40% of the national hog market. Cargill, the largest of the agri-businesses, employs 42,000 people in 46 countries with an annual sales volume ($32.3 billion) equal to the combined gross national products of Chile and Ecuador. (Davidson, 1990: 162-164).

If the trends which have been inherent in industrialization and urbanization of society are to continue and if the bottom line continues to be driven only by commercial competitiveness, the future of rural communities around the world as places where the residents have any say over their quality of life is not very promising. What is clearly needed is an alternative view of the future, a different paradigm.

ALTERNATIVE VIEW OF THE FUTURE

There are four sets of forces at work which are driving society toward an alternative view of the future, a view which at least provides the opportunity for a more promising future for rural communities The first is the concentration of power in multinational corporations as a result of centralization run amok. The emerging global society is made possible by and exacerbates the concentration of economic wealth and power, and the growing chasm between the "haves" and "have nots" Distant decision-makers, in their unceasing search for efficiency and effectiveness, make their choices for the good of the corporation, regardless of the consequences for individuals or communities. Good paying jobs are being eliminated as corporations move their operations to countries with the cheapest labor replace people with sophisticated technology This is not only a problem for working-class laborers, even those in the "comfortable middle-class' are experiencing future uncertainty as middle management jobs are eliminated In the United States, mine is the first generation sure that our children will be less economically secure than their parents

The general populace of the country and certainly individuals in local communities, had little, if anything, to say about these decisions or, for that matter, any of the decisions made by the giant food processors. We have lost control of who produces our food the quality of what we eat and to a large extent how we live

our lives Moreover, this loss of control is masked in language that disempowers people, that blinds them to the intentions and impacts of these actions George Orwell was right about the prevalence and effectiveness of "Doublespeak" as a policy tool in 1984, he may have just been a decade too early Firing people from their jobs is called "downsizing" and even more objectionable "rightsizing", and truncating careers is disguised as "early retirement" GTE, one of America's larger telecommunications companies, announced January 13, 1994, that it would lay off 17,000 employees "to improve customer service" (Rocky Mountain News, January 14, 1994)

The second set of forces that is moving us to an alternative view of the future is society's transition from an industrial to an information society This transition brings with it a fundamental shift in what is valued and what is useful, and requires a re-examination of the assumptions by which we organise ourselves and our activities Three industrial-age assumptions appear particularly outmoded The first is centralization Industrialization, as we have seen, valued and found useful the notion of centralization, some of the consequences of which have been discussed above This centralization notion in public education in the US has resulted in the reduction of the number of school districts by a factor of 10, from 157,000 to just under 16,000 during the last century. Notions of centralization are now being replaced with decentralization, suggestion that the best decisions are made by people who are not in some distant place, but rather as close to the action as possible

A second fundamental tenant of industrialization is specialization Specialization, a legacy of the Enlightenment, seeks knowledge by compartmentalizing life into narrower and narrower slices, each with its own language and culture As a result, doctors not only have difficulty communicating with those outside of the field of medicine, but across the specialties within the field Contractors no longer build houses, but do concrete work or framing or plumbing .. In education, content area specialists teach just biology or physics rather than science. Multi-grade groupings, once the 'norm' in one- or two-teacher schools, have been replaced with age-level teachers, along with teachers for the gifted and an array of specialists for students with "special needs". We now see, however, that it is the connections that give form to the web of life. We sense, in every field, a growing need for generalists who can see the big picture, who can work across the artificial barriers created by specialization

The third value shift is from standardization to diversity. Whether it is public policy, taste in cars or ways of learning, one size does not fit all In fact, the lesson to be learned from the ecology is that there is strength in diversity Monocultures are the most difficult to keep healthy, monolithic organizations the most difficult to keep flexible and responsive to the changing requirements of their environments

These shifts in fundamental values being brought on by the information society are much more congruent with traditional rural values. Local control, generalists and diversity, in the sense that rural is different from urban and there are great differences across communities, are values much more friendly to non-urban places than the values of industrialization.

There are direct economic benefits as well. In an information society, what one does for a living and where one lives are no longer as tightly connected. When information rather than raw materials moves, physical geography is no longer a barrier. With the proper skills and access to the information network, there will be a growing number of careers open to individuals wishing to live in rural places because they prefer the scale or location An international gem exchange operates out of a mountain home in the Colorado Rockies A resident of a small town in North East Kansas earns his livelihood by working in the French stock exchange The Center for the New West, a 'think-tank' concerned with life in the Western United States has labelled these folks and others who have given up corporate life in the cities, the "lone eagles". They bring their skills and their financial resources to rural places, contributing to the local economy and make few additional demands on the rural infrastructure

Third, a set of forces helping create an alternative future for rural areas is the growing recognition of the ecological limits of the planet The extractive practices which characterized industrialization must give way to practices of sustainability The "bottom line" can no longer be concerned only with financial profit. Cost benefit calculations must include all costs. Responsible leadership must now include being stewards of the world's physical and human resources David Orr in his book *"Ecological Literacy: Education and the Transition to a Postmodern World"* makes a persuasive case for the necessity of creating a society based on constructs of sustainability and offers practical steps that must be taken to move in that direction. Orr argues that, because of the small scale and the immediacy of the environment, rural places are where this transition is most feasible. Rural communities and rural education, to the extent that we can create rural schools and institutions of higher education that will truly serve those communities, will have both the opportunity and the obligation to lead the way. Redesigning rural education to support development of sustainable communities is then at the heart of systemic reform at the center of a new paradigm for how we might live together.

Which brings me to the final force pushing for change, how we might live together. There is a yearning on the part of a growing number of individuals to become a part of "community" and thereby to re-establish a sense of control of their lives. Wendell Berry, in an essay *"The Work of Local Cultures"* speaking to this yearning to re-create community, writes:

> My feeling is that, if improvement is going to begin anywhere, it will have to begin out in the country and in the country towns. This is not because of any intrinsic virtue that can be ascribed to rural people but because of their circumstances. Rural people are living, and have lived for a long time, at the site of the trouble They see all around them every day the marks and scars of an exploitive national economy. They have much reason, by now, to know how little help is to be expected from somewhere else. They still have, moreover, the remnants of local memory and local community And, in rural communities, there are still farms and small businesses that can be changed according to the will and the desire of individual people. (1988)

RURAL EDUCATION AND SUSTAINABLE RURAL COMMUNITIES

So what needs to change in rural education if the process of schooling is to support the creation of more sustainable communities? Is it possible to find ways whereby the financial resources, the facilities, the teachers and administrators and, yes, even the students themselves, become central players in assuring the continued viability of rural communities? Our work with, and observation of, schools in South Dakota and Alabama over the last six years suggests that, by making certain changes in the way education takes place, this is indeed possible. Not only can schools become players in rural development, but by doing so, the education experienced by the participating students becomes more powerful.

If rural schools are to become important players in community development, we need to: (1) reconsider how we think about the purposes of schooling; (2) shift the focus of the curriculum, at least in part from a generic, national-focused curriculum to one that focuses on the local community context; (3) educate students so that they have the skills to create their own jobs rather than being prepared only to find jobs and (4) use the investments in facilities and other resources available in the school to support entrepreneurship and community development

The Purposes of Schooling - The purposes of schooling will need to be expanded from one of only educating students to be successful as individuals to preparing those individuals to be productive citizens living in community. Thomas Jefferson talked about the need for an educated society that could engage in face-to-face, hands-on approach to problem-solving, a process that we firmly rooted in civic virtue. Students need opportunities to learn and practise such problem solving skills in real life situations The existing curriculum focuses on generic, abstract content that has little relevancy to rural students.

Refocussing the Curriculum - Focusing more of the curriculum in rural schools on the local context allows students to connect learning with their own experience to real world objects, events and situations. One of the chapters in David Orr's book referred to earlier is entitled "Place and Pedagogy". The integration of place into education is important, according to Orr, for four reasons. First, it requires the combination of intellect with experience. It involves direct observation, investigation, experimentation, and skill in the application of knowledge. Second, the study of place is relevant to the problem of overspecialization, which has been called a terminal disease of contemporary civilization. Places are laboratories of diversity and complexity, mixing social functions and natural processes, thus promoting diversity of thought and a wider understanding of interrelatedness. Third, the study of place provides the opportunity of re-educating people in the art of living well, where they are, thus mediating the instability, disintegrations and restlessness that have contributed to the decline of rural communities. Finally, Orr suggests, "...the knowledge of place - where you are and where you come from - is intertwined with knowledge of who you are. Landscape, in other words, shapes mindscape". So, if education is to contribute to the ongoing viability of rural communities, it must pay more attention to helping young people understand the place in which they live.

Creating New Employment Opportunities - In the future, employment opportunities are more and more likely to result from small entrepreneurial developments than the expansion of large corporations. Moreover, if young people are to remain in rural communities, there are few employers from whom to seek jobs. As students better understand the workings of their community, they are more likely to be able to identify the niches which they might fill to create their own livelihood.

School Facilities and Community Development - School facilities, with their computers, laboratories, shops, kitchens, classrooms, ... could well serve as incubators for assisting new entrepreneurial enterprises. Too often this community investment in facilities is under-utilized before and after school hours, on weekends and during the summer months. As the curriculum of the school is refocussed on issues important to the local community, these facilities, as we will see later, can become the staging area for students to become involved in community development activities.

The following examples show how schools that have begun implementing these changes can in fact become important contributors to community development.

The School As An Information Resource For Community Development:

Custer, South Dakota - Dave Versteig, an economics teacher in Custer, South Dakota wanted to find a better way for his students to understand such concepts of "sales leakage" and "balance of payments". He also wanted to help students become skilled in collecting, analyzing and making sense out of raw data. As a class project, the students developed a survey instrument to determine how much discretionary money the student body of the high school had at their disposal each year, how they acquired it and how it was spent. To everyone's surprise, the students had over a quarter of a million dollars in discretionary money in a year's time, a little less than a thousand dollars per student. With this information, meaningful discussion began. Economics became real. Student and teachers talked about whether or not the students had any obligation to spend this money locally so that it would continue to circulate in the local economy .. or, was it okay to continue to drive to Rapid City (approximately an hour away) to buy their clothes, CDs and all the other purchases that seem essential to high school life. Next , the information was provided to the Chamber of Commerce. They too were more than a little interested. A quarter of a million dollars is a rather significant slice of a small town economy. Perhaps, they began to think, teenagers should be courted and seen as the potential market that they represent to a small town economy rather than as a nuisance, as is too often the case.

Because they were given the opportunity to gain insights into the working of the local economy, the economics class requested membership in the Chamber of Commerce. The Chamber responded with enthusiasm and began holding some of their meetings in the school, it being easier for adults to go to the school than the students to get to the business community.

The class also became a partner with the Chamber in application for FmHA funding to provide additional low-cost senior citizen housing in the community. Custer is an attractive destination for retired people. And, since retired people bring their pensions and personal assets with them, providing attractive housing represents an important economic development strategy. Students interviewed senior citizens, providing much of the necessary information for the funding proposal. An unanticipated benefit was the bridging of the inter-generational gap, which too often separates the young and the elderly, as a result of the interview process. Here again, the perceptions too often held about teenagers began to change as they were seen as contributors to real community development efforts.

Belle Fourche, South Dakota - During the last trimester of the 1991 school year, Belle Fourche High School offered a two hour, team taught, demographic research class. The purpose of the class was to assemble information about the Belle Fourche schools, the community and Butte County. Students taking the class received two credits, one in English and one in Social Studies. As a product, the class published a 68 page book *"An Internal Audit of Belle Fourche, Butte County and the Surrounding Area"*

According to an article in the Belle Fourche Daily Post, June 21, 1991, the 17 students learned interviewing skills, telephone skills, tact, letter writing and working with the adult society. They also learned a lot about the place in which they live. How many students understand the organizational structure and financial workings of a school district? Or, the median age of the population in Butte County. Or the percentage of residents with a college education? Because they collected and analyzed the data and then prepared the narrative and graphic representations for the book, Belle Fourche students now have an understanding of their school and community that they did not have before. Furthermore, it is in a format available to town planners and others who have a need for such information. The students and the school have become a resource for community development. The students have experienced a "real world" learning experience.

The Journalism Class in Belle Fourche represents another example of how the curriculum can be focussed on the local community and learning experiences become more authentic. Students taking journalism were assigned the task of selecting a local business for the purpose of writing a brief case study of that business. Questions they created included when and how the business was started, what goods or services are provided, what are the advantages and disadvantages of running a business in a small town. Once the case study was drafted, edited and polished, arrangements were made with the local paper to publish the stories. Students soon learned that creating the right questions to elicit the needed information took some time and thought. They also discovered that writing for the public was a very different and more difficult task than writing only for the teacher. In addition to learning the technical skill needed to create a story, the students also learned about some of the pros and cons of being an entrepreneur in a small town, e.g. the need to work long hours and take risks with one's own resources, balanced with the advantage of being your own boss and being independent.

Other benefits resulted from this activity. Once the first group of stories appeared in the paper, other businesses began calling the school to see if they could have their stories written and published. They, too, would like to get some free publicity. The local paper now had stories to print that staff did not have to write. The success of the activity was further validated when the school decided to discontinue publishing a school newspaper. Now students taking journalism became stringers for the community newspaper.

Seven schools in Alabama - Coffee Springs, Beatrice, Collinsville, Gaylesville, Mellow Valley, Oakman and Parrish - all members of a rural school coperative, PACERS, organised and supported by the

Program for Rural Services and Research, University of Alabama, have been conducting health inventories for their communities. The inventory, designed by students provides a way to inform the communities of health problems in the area and, as a result, help those communities gain access to better health information. According to Athena Perex, student in Coffee Springs, "Students today often feel that their education is of no real value. The health inventory project helps students gain self-confidence, express their creativity, and come closer to the community. It makes education real. We create useful information, serve our communities, and apply our skills and hopes by doing and learning." As a result of the inventories, newspaper articles have been written, planning is under way for community-wide health fairs and blood pressure screening for the elderly is now available. In one community, a high incidence of learning disabilities is thought to be connected with lead poisoning. Local high school students, with the help of neighboring college students, are undertaking a study to identify the possible sources of lead

Community development, to be successful, must be based on an understanding and appreciation of the local community, its past, its current strengths and weaknesses and its possibilities for the future. There are many ways that one can learn to know the local community all of which can enrich the learning experience for students. The above examples are ways that students can understand their communities from an economic perspective, a demographic perspective and a health perspective. Other schools involve their students in understanding their communities through documenting local history, studying local architecture, photography or studying the local environment What seems clear is that, as students learn to understand their community and become engaged in the life of the community in a real way, they develop a new appreciation for that community. They become both interested in the community and willing to consider the option of staying, of creating a future for themselves locally, rather than believing that the only option available to them is to move to a larger metropolitan area.

The School and Entrepreneurship

If rural communities are to continue to exist as more than a staging area for moves to larger places, more-than bedroom room communities as people commute outside for jobs, that is if rural communities are to be sustainable as communities they must provide the opportunity for their inhabitants to live well. First, that means gainful employment. As indicated earlier, finding employment in rural communities often seems difficult. There are few employers. Therefore it may be necessary to "create one's own job" rather than "finding a job". Part of a good education is helping students learn the skills and nourish the attitudes required to be a successful entrepreneur. They must learn to exhibit creativity, persistence, reasoned risk-taking and adapt an analytic stance towards defining and arriving at logical solutions to day-to-day problems. Unfortunately, traditional education is more likely to inhibit such skills rather than fostering these skills. Students are rewarded for right answers rather than for taking risks or pursuing creative solutions to problem-solving.

There are, however, examples where students have been encouraged and assisted in becoming entrepreneurs. Some examples are real success stories, others have allowed students to try and learn from experiences that were less than successful Some entrepreneurial activities have involved students as individuals, others have been school efforts with broad institutional support

Old World Breads - A young woman in Belle Fourche, South Dakota who was then an eleventh-grader, was a member of the Rural Development class. A student who was not particularly challenged by the traditional curriculum, she suddenly became interested in school when her class work included the opportunity to plan for the creation of her own busness. First, she learned to research what kind of a business she might be interested in and might have a chance of being a success in. Baking came to mind, but what unique niche would make her product special?

Many early settlers of the area had migrated from various European countries so, she reasoned, perhaps baking "old world" breads could be her special niche. The next step included finding old recipe books and identifying those particular recipes that would give her the product that she wanted. Then came develop a business plan, including laying out the kinds of equipment and supplies that would be needed to get the business under way. Clearly, the mixers, the ovens, the utensils required to establish a bakery would require a major investment of funds, an investment which most high school students would not be able to make. However, in the community, she found a facility that was not in use full-time that did have all of the equipment needed. The facility was the kitchen for the hot-lunch program, right there in the high school She then developed a proposal which could be taken to the school administration and the school board to see if it was possible to contract for the space, the equipment and arrange to reimburse the school for electricity, gas and any other additional expenses that might be incurred as the result of the business operation

Obviously, determining the costs of such items as the additional gas and electric used was a good problem-solving exercise related to math and science. Preparing a persuasive proposal for the administration and the board took some careful writing. Establishing the potential viability of the business required knowledge of economics and business management. With the assistance of the teacher and others in the community that she had sought out for help, she developed the proposal, presented to the board and rejoiced as it was approved.

The bakery business became a reality. The product produced was sold in local stores. One minor glitch was experienced in marketing. The regional manager of one of the markets, which was a part of a grocery chain, did not want products in the store that were not the chain's own brand Since he made regular weekly rounds, on the day of the week during which he made his visits to this store, Old World products were not available at this location. The other days of the week, they were on the shelves.

This is an excellent example of the use of existing facilities which have already been paid for by the community to support the creation of a new business, which then contributes to the local economy. As long as policies and practices are in place to assure that taxpayer money is not promoting unfair competition, schools can serve as incubators for new businesses while expanding and enriching the learning opportunities for students Businesses such as this can be spun off when the student graduates or when it is strong enough to purchase its own facility Or, perhaps other students might be interested in running the business as a school-based enterprise. Other possibilities are that the person starting the business does not wish to continue it, or, after a period of time, finds that the business is not viable. Whatever the case, important learnings have taken place with relatively low risk and, for the time it operated, unique products were available that were not otherwise on the market.

Tiger Computers - Cedar Bluff High School, also a member of the Alabama PACERS cooperative of rural schools, has created Tiger Computers, a school-based, student-operated corporation Notepads advertising the corporation are complete with logo and their slogan, "Building quality computers for students by students" Started with a small grant from the Lyndhurst Foundation, the corporation has its own corporate student organizational structure complete with quality control provisions. The high quality computers and related communications equipment are being built at low cost and many are being sold to other members of the Co-op Here is a school-based entrepreneurial activity that is (1) helping this school and other schools in the co-op overcome isolation and distance by providing affordable equipment for electronic networking, (2) providing students with the tools to become functioning members of a technological society and (3) providing students with marketable skills and an entrepreneurial disposition

Consistent with the principles of cooperation which characterize the PACERS program, a neighboring school, Red Level, has also initiated a school-based business, a print shop, which is working with Cedar Bluff's computer operation printing the manuals, warranties and other materials which accompany the finished

product. (Special education students play a central role in the operation of Red Level's print shop.) Still a third school in the cooperative, Meek High School has developed a marketing project which will help market Tiger Computer products beyond the schools in the Cooperative.

Aquaculture - Aquaculture is the fastest growing sector in US agriculture. Rural schools in Alabama are discovering that it can be an effective tool in secondary education for linking academics with vocational agriculture. Since basic principles of biology, chemistry, physics and math are all applied in aquaculture, along with the principles of production agriculture, a hands-on aquaculture facility can make school much more interesting for students and teachers alike and open up science education to all students.

Two custom designed aquaculture recirculating systems are presently being installed, one at Meek High School in Arkley, Alabama, and one at Florala High School, Florala, Alabama, by the Fresh Water Institute of Shepherdstown, West Virginia The system's five components allow the students to bring fish from egg hatching to 1,000 lbs of marketable tilapia fry a year. (Tilapia is a freshwater fish which is appearing on the menu of some of the fanciest restaurants.) In each case, the tanks of the aquaculture system are located in green houses and offer potential for integration with plant production. The first harvest is scheduled for next September/October when the schools plan to have fund-raising dinners featuring their own fresh fish

SO WHAT HAVE WE LEARNED?

Need for a new world view of rural communities - The notion of having schools involved in community development is a harbinger of a larger conversation concerning the future of rural areas. This conversation grows out of the realization that rural communities have not been well served by the urbanization and industrialization As indicated earlier in this paper, rural communities have served as the head water for an extractive society. Rural communities have become disempowered both politically and economically. Unless rural people begin to make some decisions on their own behalf, the future of rural communities is dim indeed. At the same time, there is a growing realization in the larger society that all things are connected - there is no "away". We can't throw things "away" and believe we have no further responsibility for what happens to them. No longer can rural unemployment problems be solved by moving to the city. And, no longer is it possible to escape drug and crime by moving to the country. Healthy urban communities will exist only if there are healthy rural communities. Healthy rural communities cannot exist without healthy urban centers. The viability of both will require finding common ground which exploits neither. So, involving schools in community development represents an effort to make use of a major community resource to contribute to the on-going viability of that community rather than serving only to drain resources from that community.

Successfully involving schools in community development as described in the above examples is dependent on this larger conversation taking place at the community level, a broad-based conversation that results in a new world view about the nature of rural communities. Books such as *"The Broken Heartland: The Rise of America's Rural Ghetto"* by Osha Grey Davidson, *"Ecological Literacy: Education and the Transition to a Postmodern World"* by David W. Orr and *"Community and the Politics of Place"* by Daniel Kemmis can help focus this conversation While schooling that primarily prepared students to leave local communities was good enough for the last generation, it is nt good enough for this generation if fundamental community development is to take place. Successful efforts to involve school in rural development are not just "school" activities, but activities which integrated efforts with the community that address fundamental community needs.

Rural school/communities cannot do it alone - Schools and communities that pursue an alternative view of the future cannot go it alone. They need the moral support and the energy which comes from working collaboratively with their neighbors We have found that three to seven neighboring communities sharing ideas, celebrating successes and learning from each others failures facilitates the difficult but rewarding effort of taking action on their own behalf. Such efforts can also benefit from assistance from the outside. However, this assistance must be given on the local's own terms, when they are ready and adapted to their particular needs.

Not a packaged program - Successful efforts to involve schools in community development represent an organic process growing out of the unique conditions of that community, it is not a technical solution based on a pre-packaged program developed elsewhere. Successful efforts require a different view of teaching and learning. Rather than focusing only on textbooks and standards which have been developed "out there", the curriculum grows out of real issues important to students and the local community. Involving students in activities that connect with their own experience that require the use of skills from various disciplines, that are carried out in cooperation with others, that result in a useful product, are the most powerful kinds of learning experiences. A different kind of teaching is needed, one that goes beyond the controlled lecture and text books, teaching and learning and one which involves students in designing the day to day activities of schooling.

Establishing different community expectations for schools - As indicated earlier, successfully involving schools in community development requires expanding the mission of the school beyond traditional definitions with the curriculum including a focus on the local community. There are other, more mundane issues to be faced if programs are to be successful. The first is convincing the public that the community and its environs are laboratories for learning and that students will be out working in the community during school time, not hidden away in classrooms. There are also issues about liability when students are not always physically under the direct supervision of the teacher Experience has suggested that these issues are not insurmountable and can be resolved by working closely with the community.

Fundamental community development is more than job creation - living well in community is more than economics. It is also appreciating the history, the art, the literature, the music of the region, the place which one inhabits. As rural schools have become a part of the industrial model of education, the local culture has lost its currency We've not examined assumptions that is not real history if it is not history of some place away, or that literature is not of value unless it is part of the small canon of Shakespeare, Shelley or Keats. Folk music which grows out of the pain and celebration of everyday life is perceived as not only inferior to the symphony, but silenced by it. Emphasizing the genius of place does not suggest a parochial education. It expands the notion of what is good and beautiful, of what makes a well-educated, well-prepared person, to include intimate and deep knowledge of who one is by way of knowing where one comes from. It is a vehicle learning how to live-in-community in the most humane way. If one learns to live well in a local community, the possibility of living well in the larger global community is more likely.

Involving schools in community development represents the best of school reform - Finally, providing students the opportunity to become engaged in real learning represents a level of school reform that goes far beyond the national goals or higher standards. Integrating schooling with the day-to-day life of the community, providing students the opportunity to be apart of society now rather than some time in the distant future, involving students in the struggle of solving complex issues which are important to them and their community would not only provide much more powerful learning, but it would go far in reducing the growing alienation of youth. School can become real life, not something one endures until real life begins. School reform which does not relate to community development in its broadest sense will be of little consequence

SUMMARY

Consequential school reform takes advantage of the tight links that exist between rural schools and rural communities to benefit both the individual student attending rural schools and the community in which that student lives While the needs of the Industrial age dictated schools when the standards were centralization, specialization and standardization, the Information Age values

decisions made closest to the action, generalists with broad vision who understand connections among things, and the strength that comes from diversity. Rural education in the United States is reforming, transforming itself to be more useful to its clients and its communities by reconsidering its purposes, focusing on local community context, providing students the skills to create jobs, and maximizing benefits to the community from investments in education facilities and faculties. Rural schools can function as information resources for community development, directly and indirectly support economic development, and make real contributions to the physical and cultural health of communities.

Successful efforts share some common principles. They begin from a belief that the urban/rural rivalry is outmoded, that a healthy nation needs a vibrant rural and urban sector. Rejecting a deficit model, they assume that rural areas have strengths which are identified, acknowledged and built upon, in concert with others Each project, each effort involves people acting outside their traditional roles and responsibilities, taking risks and making changes for the greater good The greater good, the development of the community, includes but goes well beyond economic development to encompass improving public physical and mental health, increasing appreciation for the participation in cultural activities, and improving education fundamentally. Reforming education by developing students prepared and practised at living in community will transform the way we live together.