

The RETC: An Introduction

This document will serve as an introduction to the Rural Educational Teaching Center (RETC) at the University of Montana, Western. It consists of three parts:

- **The Vision Statement**—An introduction to the Center’s overarching purpose and long-term ambitions.
- **The Immediate Objectives**—Outlining the immediate goals and benefits
- **A Century of Service**—A History of Western’s Rural initiatives

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Preface: The Impact of Higher Education on K-12

In order to impact education at the primary and secondary levels there must exist a conduit to transport that change.

Reform efforts may well be legislative. Clearly there are, at the national level, significant initiatives to alter American schools. States carry the majority of the burden of financing these potential changes and often it is up to the individual community to find revenue for community-specific enhancement for schools. Another type of reform initiative may arise from the school and the communities themselves as with a site-based model for change. Certainly individual communities recognize the need for specific change in their districts and often begin transformations that may profoundly impact their students and teachers.

Both these methods for inculcating change have their potential shortcomings. Government mandates toward reform often tend two directions: sweeping directives that do not indicate where sustained funding will be provided¹; and/or vague generalizations that are not crafted with community or even a strong sense of pedagogy at the forefront. . In Montana, specifically, programs like the E Rate initiative have so much paperwork involved and are funded by pupil count, that the abundance of schools with so few students find themselves ill equipped to access those government funds. Not all reform efforts hinge on an influx of cash, but many do, and those that will affect a large region are most certainly hindered if not fully impeded by this lack of funding. Schools must change with the times and do so in an informed and intentional fashion. These efforts have a price tag and should not be driven solely by the ideology of whatever party happens to be in power

The other listed direction from which change in education may arise is the local level. Again the funding for these efforts is often hard fought and hard won, and in communities where property taxes and the local economy struggle, sustaining the status quo is almost impossible, much less the underwriting of significant change. Aside from cost, if a single community institutes necessary changes, these seldom ripple out to affect a larger community. Many successful reform efforts at the local level, are either not scaleable or not evangelical enough to transfer to a broader market.

Reform, change, or the simple evolution of schools is influenced by the same technology evolution that is altering our society. To remain relevant in this culture, schools *must change* to use these new technologies to an advantage. Alterations in school climate and culture to reflect society's evolution are critical. Yet of all the growth that change dictates, technology-based reform is often the most cost-based.

¹ The May 15th edition of the New York Times describes the shortfall of E Rate funding by almost 50%. <http://www.nytimes.com/2001/05/15/technology/16EDUCATION.html> .

Another Catalyst

Considering the catalyst for reform, the scale of that effort, and the cost of the same, it seems reasonable that the most effective place to begin the endeavor is someplace other than with government or the even the local school. Higher education, specifically the colleges of education, are uniquely positioned to have regional if not national impact. Although technology can be beyond the budgets of many schools, the first step is not to get computers or even wires into the schools. This is the classic cart-before-the-horse error. Schools have been wiring themselves with an abandon previously saved for the advent of the chalkboard. The difference is that schools knew what to do with chalkboards. Schools need trained professional who are aware of the strengths and weaknesses of technology in the classroom. Inasmuch as technology may be pricey, those costs are offset by intelligent and cost effective planning, administration and use.

Trained teachers and administrators who have cut their teeth on technology and its uses need to graduate into the ranks of those presently in-service. Although a common conception is that that one who has just graduated from college is naturally more aware of the benefits of technology in the schools. This is not necessarily so. The much-advertised discussion of the “disconnect” between higher education and the primary/secondary classroom can include this entire area of consideration. Students need to be prepared for real-world education **and** need to be prepared for a world that is influenced daily by the weight of technology in our lives. This weight can be either a benefit or distraction in the classroom. (*Schools exist on a continuum of cost-effective use of technology: with the idle Apple IIE--as solitaire provider--sitting in a remote corner of the class on one end of the spectrum--to the fully wired and fully active/interactive class that has tech use integrated with dynamic pedagogy on the other end.*) It is the preparation in colleges of education that will dictate the difference within these scenarios.

Regardless, of the budget of the school, or whether they were an early adopter or not, **the single most important factor in technology use in schools is the preparation of the faculty and administration for its implementation.** The systemic integration of technology within a district, invested in value-added fashion is not the duty of a lone information-services person. Schools must be staffed with individuals who can take this additional medium and use it to their great benefit. Colleges of education, then, are in an exciting place of looking for internal reformation as it applies to this ongoing revolution. As these schools alter their own outlook on the uses and applications that technology affords, they will simultaneously be training the next set of decision makers in the classrooms to make informed judgments and husband their budgets in a fashion that is more thoughtful and more valuable than just pulling bundles of wire from room to room in the schoolhouse.

As America's schools continue to change, one of the constant pressures for that transformation will be the technologies we have now, and those just on the horizon. The culture in which our children are living is infused with Gameboys and MTV and cel phones and wireless access to everything. Schools need not embrace each technology as an advantage. The educator's goal is to be aware of how these pressures and these new methods of interface help or distract their

clientele. This is a call for reform. It is no small task to consider all of the hardware and applications and myriad variations of use that this new door provides. But, as a country, we want our schools to continue to be relevant and improve. This is a mandate. The existence of this technological pressure is also a given. It then comes under the aegis of the colleges of education to become this conduit for change. As they take this charge and provide schools with excellent teachers who are prepared with content and methods and with the insights technology can provide then this next reform may begin.

As this Applies to Western

This preface is a call to action for colleges of education throughout the country. Western graduates roughly 75% of its student body with the ambition of going into education. The majority of teachers in the rural areas of Montana have come from these same rural communities. Western serves as a feeder to these rural districts: preparing students who best understand their communities to go back into them and influence change. As will be outlined later in some detail, Western serves a uniquely rural part of the United States, and has focused on rural education to an extent that very few schools have. For over a hundred years the school has prepared teachers to go into these rural communities and bring back the most relevant and most beneficial information, strategies, and changes that would profit these isolated communities.

The responsibility of Western is to prepare pre-service teachers to be technologically significant and culturally relevant in their pedagogy. However, the onus is also to continue a long tradition of in-service collaborations with schools and districts throughout the region. The reform efforts are not seen as top down, but precisely the opposite, as Western has been solicited for years to continue offering workshops and professional development opportunities to inform instructors and administrators of the most current best practices while receiving real-world feedback and insight from those in the field.

Rural America, and specifically Montana, do not have the luxury of remaining isolated and out of contact with the broader world. The economic revolution that led in the communications age is defining the economic have and have-nots. Montana has struggled to shake off its old identity and grasp one that will complement its hard working, largely rural lifestyle. Consequently, as described later in this paper, Montana's economy has languished. The most recent edition of *Education Week* shares the assessment that is outlined in some detail in this document: that one of the most significant places where there exists a "digital divide" is between the urban and rural communities². It is this very issue that we seek to address. This document describes in detail how Western intends to use its soon-to-be-completed technology center as a fulcrum through which it can begin to leverage the intelligent and effective use of technology to break down some of the isolation that is partly to blame for Montana's slow economy and institute educational recovery as well.

² <http://www.edweek.org/sreports/tc01/tc01article.cfm?slug=35rural.h20>

Rural Education Technology Center

Vision Statement

The RETC

The University of Montana, Western is in the final stages of erecting the Rural Educational Technology Center (RETC). This structure will serve as a catalyst and focal point for educational transition efforts that are triggered, if not mandated, by the ongoing technology revolution. This revolution began with the advent of the personal computer and has expanded to include so much more: from how we do our banking, to how we connect with our loved ones. The building itself is designed to complement the valid educational evolution brought on by technology's profound impact on society and pedagogy. As a state-of-the-art information hub for the campus, it will also serve as a vital link for learners, on campus and off, in personal and professional development. The goal of the Center is to create avenues for educational reform and growth that will ripple out of this modest building to the rest of the state and rocky mountain region while creating models for instruction that can be used locally, regionally, and nationally.

Unlike previous expansion efforts on campuses around the country, the completion of the building by no means signifies the end of the project. The vision is not to create a space for desks and chairs and lecterns. The ambition of this endeavor is to generate a place not static, but fluid. The Center is a laboratory for change that is fully flexible, that is devoted to being a conduit for the information and the resources from the vast store of digital information that grows exponentially each passing day. This model is one that is dedicated to endorsing best practices as well as conceptions of *best resources*, and *best delivery method*. The goal is to use current research and experience and arrive at a mature evaluation of the most effective applications of technology-enhanced teaching and learning.

The personal computer's impact on education has been felt for over two decades. After the initial excitement and untold efforts, which have both succeeded and failed it is now time to approach the subject with less entry-level optimism and more result-oriented pragmatism. Technology may well serve as another important tool in the repertoire of dedicated instructors, but we know that its offerings are not a panacea. The changes that this evolution have visited upon educational practice are profound, although we see that its effect has been more global than specific and its impact incremental rather than immediate. The Center is situated to take the lessons that we have learned and formulate new models and new variations on theme using these advances to full advantage.

The Human Element

We learn interactively. From the first days looking at our mother's smile, to the academically bracing discourse of a college classroom, we learn interactively. Each word we speak elicits a facial gesture from the listener; from smiling and nodding, to a furrowed brow, to complete distraction. Each attempted goodnight kiss is its own success or failure. The examples of this physical give-and-take are endless and the point is simple: The human element in our lives is not ancillary to our being, in our learning or in our living. It is critical. Much of technology's tide may add methods of interaction, but it is imperative that it is not seen as replacement to this most effective type of communication.

While automated tellers and answering machines serve their purpose, it is also true that the **disconnect** felt may be profound when people are unable to reach the party who is "away from their desk". The term "disconnect" refers to more than being *physically* disconnected. This refers to the cognitive dissonance that exists when what we would **naturally** expect in interaction, is subverted by technology rather than helped. This disconnect is the frustration that some technology can bring instead of assistance. Western does not envision the Center as a faceless arbiter or archive of information. It is not designed to be another humanless, technology-centered warehouse of data. The Center will serve as a laboratory with creativity and interactivity at the forefront. Learners may need to access data exclusively on occasion. However, the learning cycle and good instruction hinges on much more than this.

Place In Community

While the Rural Education Technology Center should not be place bound, the specific outside audience that it is designed to serve often is. Rural in the West is almost synonymous with isolation. Though the last century saw significant changes via a variety of technologies: automobiles, regular mail service, electricity, telephones and finally the Internet, the very lack of people is what often draws new residents. However, they expect modern services, including quality schools. Western has always recognized this and provided specialized teaching programs and services to make up for the lack of resources for these rural educators. Now as the program moves into the new facility and merges two aspects of long established programs on the campus: rural education and technology, it is imperative that the initial audience of the original rural education center be kept at its forefront of outreach and services.

The school in most rural areas is the center of the community, so by reaching out to the schools, the RETC can also provide programs to the communities. Technology and economic development are but the first offerings.

Place and Structure

The *sense of place* and dedication to the lively and dynamic exchanges of ideas are crucial foundations to the philosophy behind the structure of the Center and Western itself. The objective in this *more seasoned view* of the uses of technology is to supplement and complement the educator's objectives and the

student's point of need. The difference here may be seen as subtle, but it is vital that the *human goals* and the *creative dynamic* that is central to the teaching philosophy of Western not be thrown out with the proverbial bath water. In the day-to-day operation the physical space, the human presence, the sensorial interaction will not be discounted to advance some model of learning at quiet keyboards. The advocacy of technology in education and in the classroom is not an endorsement of its preeminence. These *human goals*, and creativity itself are not subject to technology. They should be addressed in concert with it.

The laboratory model of the Center includes as a primary plank the flexibility of physical space. Cutting-edge presentation technology should be available but is not the sole emphasis in class or lab design considerations. The learning place is also not necessarily thirty desks and thirty CPU's. It may be thirty students, an instructor and a single PDA. Students learning to work with assistive technologies will need space to interact with special-needs students. Science data-collection tools create their own environmental needs. The interface that will complement a class focusing on technology literacy will vary greatly from a group of students trying to learn a foreign language, or musical composition, or even administrative applications. The list of the different uses of the space is as long as the types of content areas that may be covered in a class. Because of the great variety in potential use, the classes and laboratories in the Center are designed with maximum flexibility in mind.

The physical space may serve as a symbol for the interaction that occurs within it. Creating spaces that will *naturally* complement new models of technology use and technology-enhanced learning is another fundamental objective in the Center's design strategy. As we move forward with what is already known about *technology and learning* we can, in this center, experiment with new relationships between learner, environment, technology, and educator. Tech is not **the fix**. The status quo is neither right nor wrong. The discussion is not flanked by the *either/or* mentality. It is, rather, the intelligent combination of the affordances that technology provides, **with** the lessons that we have already learned about the human condition, which frame a more informed objective for this discussion.

Place in Montana

In some ways it is paradoxical, that as the facility and the technology program hopes to move beyond being thought of as a place, it is critical that everyone connected to the Rural Education Center understand the role of place to the schools and communities in the Rocky Mountain West. It is the place that shapes its people and draws newcomers to it. It is partly the unforgiving climate and the grandeur of the place that molds its people into the ranchers, business entrepreneurs, artists, educators and other professionals who are citizens of this region. Students and educators working in the schools need to understand this impact for both the quality of life it provides and the limitations it may cause on one's education. This is where the center can play a vital role.

While the idea of rural education may sound to most people like something out of the nineteenth century, it is a significant segment of America's primary and secondary public education system today. In a state like Montana, only two

communities are big enough to be considered by the U. S. Census to be metropolitan areas: Billings and Missoula. The same is true of our neighboring states of Idaho and Wyoming. All three are sparsely populated with only one or two truly metropolitan areas. This is also true of eastern Washington and Oregon and Northeast Nevada. In fact, the Northwest Regional Educational Laboratory, which serves the states of Alaska, Idaho, Montana, Oregon and Washington, states that 65 percent of the school districts in these states are rural. Surprisingly, Montana with 76 percent of its school districts rural has the most in the region out-ranking Idaho with 66 percent and Alaska with 64 percent of its school districts rural.

In the high plains and mountains of the American West, local control remains strong in the minds of the citizens and in their school districts. The schools in these Rocky Mountain States are rooted in the local control concept. There is little or no bureaucracy. Increasingly, however, these schools function in an atmosphere of transition between traditional values and new global realities. In the high plains and mountains of the American west, local control remains strong in the minds of the citizens. But it is faced with expanding centralization of authority. New breeds of settlers are confronting historically established interests. The resulting mix creates very diverse definitions of appropriateness with regard to instruction, financial support and other policy facets under control of the local school board. There can be, however, striking similarities among schools, particularly as centralized statewide governance plays a role. This is the case in Montana where Student Content and Performance Standards have been mandated in all K-12 academic programs as well as a State Test.

The service area of the Rural Education Technology Center includes a blend of small commercial centers, farm villages, retirement communities, tourist destinations, seasonal recreation centers, bedroom communities, and primarily, vast tracts of land in between them all. The open space is a combination of federal/state land, several Indian reservations, private holdings of tiny “ranchettes” and very large commercial or family-owned agricultural operations.

Some parts of this mixture are demographically static, others are growing rapidly with an influx of newcomers, and still others are dying. Homogeneous agricultural population basis for schools are still found, but increasingly they are being interspersed with professionals, transients, commuters and retirees with weaker ties to the land, communities and schools.

The Space

The Center

This is a three-story structure coupled to the renovated campus library by a breezeway and belowground walkway. The entire structure is designed to allow wireless access to the LAN and Internet. The structure has two large piazzas or “information commons” areas; corridors with multiple offsets for individual and small group interaction; coffee bar area; and many places for performing and visual artists to demonstrate their craft. The Center is marked by its open areas,

dramatic multi-floor look-throughs; skylight and natural light throughout; and its large windows showing Montana's beautiful vistas. The physical space continuously connects the students, and their perspectives, with the outside community and context.

Great Room

The upper level is dominated by a single auditorium that is outfitted to provide seating, meeting, eating and movement space for large groups. The Great Room will be equipped with wireless access, lighting, sound, and presentation amenities for all types of groups and configurations.

Class Space

The building has three classroom areas in the lower level, which serve as models for different types of instructional styles: traditional lecture, group-based work, discovery based interaction, or individualized study. These are medium-sized spaces with alternate availability to distance applications, state-of-the-art presentation accouterment and user-friendly technology interface. Two of these areas are separated by a technical assistance space, which is manned by technologists from the Center to make the simple or most taxing presentations seamless. The third space is adjacent to the media control area—designed to facilitate distance-learning applications or video recording and production for archival, self-assessment, or additional production value possibilities.

Imaging, Duplication and Transmission

Also on the lower level is the imaging area. This section is an ongoing service that Western offers its faculty, students and guests for all their graphics and reproductive needs. It is also next to the multi-media control room. As the full-motion video and high-quality audio worlds continue to converge with the digital graphics and the text-domain of print, the efforts of these two areas will also combine. Insofar as it applies to *physical product* the vision for this area is to do more than store and duplicate on paper. The logical extension is a service with tape, disc and DVD writing and distribution as well.

Computer Space

The main floor houses three major laboratory areas dedicated to a variety of interface possibilities. Initially, traditional computer stations will dominate the laboratories in different configurations. The Center's emphases are designed to migrate with the major points of technological relevance as touch screens, kiosks, white-board applications, and voice and sight interface become more prevalent and cost effective. Currently the major operating systems will be represented in three spaces. Two spaces will be primarily for PC/ Windows based machines, with one area for Motorola/Apple based machines. The goal in these areas, as stated earlier, is to anticipate changes in interface, processing, and hardware, then to

predict and experiment with the most *educationally relevant* and *technically significant* applications available. By doing this, while providing a space to do it in an intentional fashion, we are allowing students and instructors to be prepared for what is presently important and what is expected for tomorrow. The lab areas will continue to reflect that evolving physical dynamic and should be in meaningful transition for the existence of the site.

Breakout Rooms and Study Spaces

The Center has four small study suites located at the far end of the lower corridor, in the renovated section of the Lucy Carson Library. These are fully wired for different technical needs, and are intimate settings for small group work and reflection. These are adjacent to the larger breakout area in the original structure, which is suited to the needs of a medium-size group for less formal meetings. This space is envisioned as a secondary meeting space as it has a lower ceiling and a more secluded feel to it.

The Conference Room and Information Central

The two architectural signatures of the building are its cupola tower, reminiscent of the bell towers of early rural schools, which divides the original structure from the Center's main edifice; and the curved lines of the leading segment of the westward wall. From within, this forms a brilliantly illuminated area on the main and upper floors with a gently curved wall to accent the boardroom's purpose of giving small to medium sized groups a place to have conference-table face-to-face interaction. While the boardroom enjoys the upper level, the heart of the Center is in the main floor's treatment of the same space. The primary workshop area for staff is located in this central locale allowing them to create and serve while being accessible to all who are utilizing the Center. Here the staff of the Center can interact physically and virtually with those on site and those across the country. This is a critical facet of the Center's user-friendly philosophy. When technology serves, it can improve our teaching, our productivity, and our disposition. When "control-alt-delete" begins to dominate one's activity, most people want a human interface. The Center is devoted to just-in-time service for users who are in house and those who are far away. This hub will be staffed by full-time and student workers who enjoy the client-friendly atmosphere we hope to engender.

Atelier or Studio Space

The Center is committed to having a creative, healthy human element throughout. We borrow a term from the Reggio group for a creative and artistic workshop. Many technologies are used in a *stand-alone capacity*. Individual pieces of equipment from digital e-books, to PDA's, to MP3 players are often best researched in a creative environment with headphones (as in language studies) or in independent stations for experimentation as with new presentation software, etc. This allows experimentation without disruption of the more formal areas. The paints and clay that exist in a preschool Atelier are replaced by the creative and newest

brush that technology has to offer. This area is devoted to the most experimental and the most innovative. Students are encouraged to consider new dynamics for change in an open, creative, experimental environment.

Office Space

Buildings on campuses are often dominated by office space. Although these spaces serve an important function, the static and non-demanding nature of them seem to be in contrast to the mission of the Center. Consequently, there are only two offices resident in the structure. These will be shared by the Instructional Technologist, the Rural Education Director, the Technology Assistant, and the Rural Education Assistant. The balance of the Center's workforce and staff will be housed elsewhere so that the use of space will be conserved and applied to the Center's primary goals.

Digital Presence

The Center's presence will not be confined to the actual edifice, as the very nature of a digitally based environment dictates that the impact of the facility will include, but not be limited to, the digital domain. The myriad web sites and interactive distance-learning venues the University offers represent the tip of the iceberg when it comes to having a presence on the web. The Center's objectives will continue to expand and offer specific interactive support services for rural populations: ancillary communication tools for individuals on site; two-way streaming video for just-in-time training for all individuals who need interactivity when time and distance serve as impediment.

The fact that the volume of digital data available (in text, image, audio, and video) is so vast, necessitates that the emphases become filtering and intelligent discrimination. The centers for research on campuses nationwide are shifting from the traditional library to the digital portal. The information flow transitions from *learner consumption* to *learner interaction*. The richness and diversity in student populations is now matched by a richness and diversity in data, interface, and method of delivery. Students of varied backgrounds with different sensorial or motor skill abilities each have a place in this new Center. The isolation that has been experienced by individual learners at remote locales; by communities lying far from the cosmopolitan centers; and by campuses not on *the big campus circuit* is beginning to become less and less evident. Not only may a student at Salish Kootenai College receive news and resources from around the world, but that same student can have his or her voice heard in places from a regional campus to a listserv in China. The Center's mission then, in part, is to facilitate this withering of isolation and make full use of this evolving environment.

Service Industry Models

All of the possibilities and opportunities that the Center now offers and will offer in the future hinge on the best measures adopted in the service industry: Customer Service. Often campuses may become self-preserving and faculty centered. The traditions that characterize the user-friendly size of Western have been about putting student needs first. This model, being put to use with great vigor in the

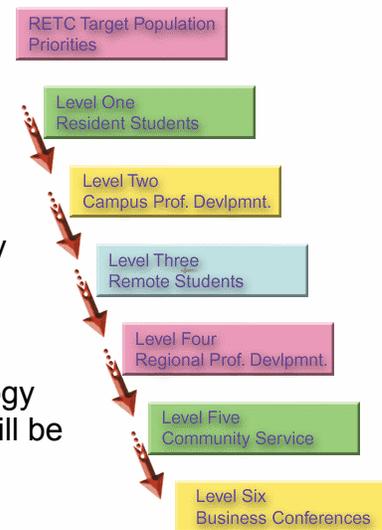
service sector, has long been the standard at Western. This philosophy will be central to the driving principles behind the management and training at the Center. Ultimately, the *heart* of any institution serves as the primary indicator of its ambition, purpose and sustainability. We believe that Western’s demeanor and cordial spirit are some of the most convincing reasons why we will continue to succeed in providing both content and service.

Target Audiences

The broadcast industry has long used the concept of target audience and demographic target to focus on the interests of specific populations. This model seems to fit well a time when campuses may provide education to high school graduates in their own hometown or provide information about Lewis and Clark or local Indian folklore and customs to individuals worldwide. Western must arrive at which services it provides well, which content it provides uniquely and which group of consumer should be accommodated. However, the school is not a private sector entity and its priorities are not that of a television station. The groups that Western serves and the logical hierarchy in terms of service focus are shown in the attached flow chart.

Resident Students

The primary group the Center means to facilitate are those students whose tenure on campus will be invigorated and heightened by this cutting-edge facility and the promise that it offers. As stated, the site revolves around customer service, and views the students attending at this time as “job one.” While Western offers many types of majors, those whose interest is education are benefited by the NCATE accreditation the University enjoys. The rigorous standards in place include an understanding and emphasis in technology as it relates to education. These important efforts will be greatly enhanced by the Center.



Campus Professional Development

The challenge is daunting to remain aware of all of the technical advances altering one’s content area and instruction methodology. To be able to describe it and then use it with any confidence is virtually impossible for instructors whose days are already filled with more than they can find time to do well. Within each domain software is being developed at a remarkable pace. As much as this is a possible benefit to instructors at all levels, making critical judgments and discriminating between that which is “fluff” and that which is both cost effective and adds true benefits is impossibly time consuming. The Center is committed to assisting motivated faculty members at Western to become proficient with presentation software and devices that will enhance effective teaching. Another directive of the facility and its staff is to operate as a “test bed” for upcoming

hardware and applications that will impact instruction, either in methods or domain.

Distance Learning

The third target group listed is the remote student. Journals throughout higher education document the rise of distance learning. The need is there for students isolated by both distance and circumstance. Whether a learner is miles away and can seldom travel in to a larger community, or is incarcerated, there is a pace for them to learn more. Western offers numerous courses now online and will continue to arrive at decisions for which areas and which audiences can best be served by our institution. Again, this is being done systematically and with some reserve. The goal is not to offer something because it can be offered. The goal is to establish a need and then meet that need.

Regional Professional Development

The fourth plank in the mission of the Center is state and regional. We are in an excellent position to continue to serve the rural areas of Montana and the Rocky Mountain West. Because the distances are so great, and the need is as well, there is a natural fit to the extension of the service area statewide and throughout the West to our neighboring states: the service region the Rural Education Center once served as part of Western Montana College. As we enter a new era as The University of Montana, Western, the Technology Center will provide enhancements and new opportunities of outreach to the isolated instructor in ways previously seen as Science Fiction. One of the primary tasks of this element will be to establish and re-establish ongoing, high quality, professional development relationships with rural educators, teachers, administrators, and trustees, throughout Montana. The Center and support staff have as mandate to contact and assist teachers throughout the region in finding funding for workshops and professional development. The digital presence and the actual physical site will both function with this critical mission.

Often there is valid criticism of the separation of higher education and the actual classroom teacher. It is not enough to know constructivist tenets and Maslow's Hierarchy of Needs. Pre-service instructors desperately need a foundation in reality education. The school of education is not merely a research institute considering education philosophy. It is a connected, vital preparatory institution for young teachers ready to take the field. As Western serves the community of educators in the field with professional development offerings that have previously been impossible to deliver, it also benefits greatly from the real-world insight these professionals have to share.

Community Service

The campus of Western is nestled right in the heart of the community of Dillon. The amicable spirit of the town translates well into the cordial and

warm spirit of the institution. It is not enough for a campus to share space with the residents who offer so much to the University. Another tenet of the institution that is to be modeled is a civic sensibility. Western faculty and students are part of Dillon and providing ongoing service to the town through course offerings and clinics and even technical help is part of the Center's mission. Public relations should not be an afterthought but a way of doing business.

Business Conference Center

Finally, as a matter of further establishing ties to the professional community and as a method of offsetting some the cost inherent in this type of facility, the Center is afforded with the amenities of a conference center. This was not a decision made after the fact. In the design and construction it was clear that often the best considerations to accommodate a business presentation/conference environment also complement an educational facility. Often, as it applies to technology, business applications lead the way while educational use brings up the rear. Not so with this facility. This final group of consumers that we intend to serve has needs that have often exceeded what a campus can reasonably provide.

The Target Audience and Western

Schools echo the region's pattern of history and transition. Individualism, land economics and extended family backgrounds are still a dominant force in shaping school experiences, at least in the perception of much of the public. In reality, some of this frontier and agriculturally driven perception is a myth. Geographical distance and population sparsity can no longer insulate children from the realities of changing family, economic and social structures. The expectations and motivations of learners show traditional values in some places, but are increasingly driven by short-term value shifts that reflect changing regional and local cultural definitions.

And while the small schools in these rural areas don't always trust state and federal bureaucrats, through the years the rural education center developed a reputation of no-nonsense, practical assistance and information, just as the college developed a reputation for educating teachers who could function successfully in these often isolated, independent situations. At the same time that the Rural Education Center was developing this down-to-earth approach within the field, it was gaining a national reputation in the field of rural education research.

Current Needs and Opportunities

Outside funds, endowments, grants and other entitlements will necessarily have the greatest impact on areas or regions that are themselves lacking the ability to generate those same resources. As Montana struggles as a state to arrive at its new economic identity this once thriving area is looking for new models to stimulate growth and rejuvenation. Speaking generally, if a state or region is

having an economic turndown (Specifically, populations shift to more cosmopolitan locales with greater job opportunities--which heretofore were predominantly supported by ranching and mining.) then these places, that are in the most dire need of new models for economic development, are the least able to begin that evolution.

Western is situated to take outside resources and funnel them directly to the area of immediate concern or impact. With the multiple areas of emphasis that Center is dedicated to serve, it is prepared with local infrastructure and site design to apply additional emphasis to any of these domains. Its presence and ongoing connection with the rural communities of this region, this state and the neighboring states makes its relevance immediate and significant. As Western already serves as an agent for the Office of Public Instruction for Montana, an official NASA Teacher Resource Center, and as one of five national Rural Education Research Sites it is positioned to serve a larger community than the students presently in attendance. Initiatives already in place, such as the Teachers in Residence Program, which focuses on the synergy of education faculty working hand-in-hand with teachers in field, also bodes well for the types of exciting and relevant possibilities that the Center promises.

Across the board, Western is looking at an exciting era of change and growth. The Center will serve as a catalyst for changes we already envision. It will also serve as a tool for facilitating programs that are little more than dreams today. As the field of technology in education matures the Center is positioned to make full use of the tools and ideas that are materializing in schoolrooms and boardrooms across the country. The informed and practiced commission of the Center is to find the best uses of technology and their best interface with modern pedagogy and then disseminate this in as efficient and effective a manner as possible.

With all of the possibilities outlined thus far and all of those not even mentioned it is clear that the potential for the Center is wide open. We are presently using our resources to advance the programs to which we are already committed. At the same time we are always looking for additional partnerships and methods of addressing those visions that are still on our horizon.

I qualify the previous with this disclaimer: So often in education the "next best thing" is advertised as the only thing to consider. This "next thing" has been everything from the film projector to site-based management. Over the years the response has created a hesitance in some educators and outright cynicism in others. This document and the vision of the Center itself is about finding real-world needs in education and addressing those instead of advertising another gimmick du jour which will go the way of the eight-track tape deck.

Immediate Objectives for the RETC

The RETC is a catalyst for Western to reinvent itself in this new century. Along with the more detailed vision statement earlier in this document, this section outlines some immediate and practical goals and tasks that are to be approached. The Center is designed to assist the college in changing the way we do business. Western intends to build a learning network with the RETC as a focal point. Western wishes to become an organization skilled at creating, acquiring and transferring knowledge, and at modifying its own behavior to reflect new knowledge and insights. Western will accomplish this through the RETC while using web-based instruction, multimedia, information technology, and distributed learning technologies and the latest constructivist thinking.

The Montana Rural Education Center of The University of Montana-Western will regain its prominent position in the Rocky Mountain West by enhancing the quality of education for students in rural settings in the region through collaboration of campus faculty and elementary and secondary school professionals. The direction of the Center is determined by applied and basic research, the rural context particular to the region and the resources available. The purpose of the Center is to address the needs and problems that are unique or at least at different levels of importance when compared to larger and more urban-oriented school systems. The three major functions of the Center are:

1. **Teacher Preparation**
2. **Service to the Field**
3. **Research**

Three Objectives of the RETC:

To Infuse the Campus with Technology

This infusion will impact the faculty, staff and students of the college. A faculty support system will be created to assist faculty in integrating technology into their curriculum. Through this integration, students will become more technologically literate. Courses at Western will become more technologically enhanced, but they will also move to a student-centered paradigm. Students will be assisted to think for themselves and study in an information-rich environment where individual differences and learning styles will be given much more attention. Students will also be aided to become more technologically and information literate through the Center's seminars, workshops and one-on-one assistance. Through Western's commitment to service learning we will use technology as a way for our students to give back to the community and the state by sharing their knowledge and expertise with others and through business internships. The staff will also be able to learn and apply new technological skills through various educational offerings that the center puts on specifically for that population twice a month.

Import Curricular, Cultural, and Additional Learning Opportunities

The center will act as a clearinghouse and will sift through and offer—by way of the technological aspects of the facility—courses and other educational offerings that will enhance the Western community and the surrounding area. These could be course offerings such as foreign language or enrichment opportunities that our own limited resources could not stretch to cover. These offerings will also bring to Western *virtually* many cultural opportunities that are extremely rare in our rural and isolated area of the state.

Deliver Course Content, Workshops, Economic Development, and Cultural Programming to other Areas of the Region

Through the center, we will affect institutions beyond our school alone. We will be able to assist our primary partners, K-12 schools in the state, with staff development and library information resource sharing. In addition to other opportunities to share, this will be Western's way of thanking them for the many years of assistance in helping train our preservice teachers through student teaching placements. These educational, cultural and informational offerings will not be limited to Montana schools. It is Western's mission to enhance the educational and cultural development of the state. We will offer economic development workshops as well as *training and retraining* opportunities for Montana residents. We will also offer institutes, and symposia on current topics pertinent to our state and its residences.

A Century of Service

The Rural Educational Technology Center (RETC) is just the most recent project to continue a long tradition at Western of reaching out to isolated communities and preparing educators for the task of educating in one of the most remote and scarcely populated sections of the United States. It is the past century of efforts by this institution to reach out to the rural populations that prepares Western uniquely to take these new tools and succeed in an experienced and intentional fashion. This section of the paper will trace that history in some detail and will refer to the organization of the Montana Rural Education Center (MREC). This is also referred to as the "Center" in this document, but does not refer to the RETC, which is only the most recent initiative taken on by the Campus. This history is added to allow individuals with no familiarity with the University to understand the breadth and national scale of Western's ongoing commitment to this important facet of the RETC's mission.

History of Rural Education at Western

The University of Montana-Western is a component of the Montana University System established in 1893 as the State Normal School. Its location in an especially rural section of a highly rural state, and its primary mission of educating teachers for Montana, has meant that rural education has always been a significant component of its mission. Western's Montana Rural Education Center was formally recognized by the Montana University System Board of Regents as a regental center and the only rural education center for the Montana University System on April 21, 1980. The current center director was on the original planning committee for the Rural Education Technology Center facility and helped create the original vision and goals for it.

In the winter of 1890 the MREC received a five-year grant from the Northwest Area Foundation. The grant provided for a variety of resources including a rural education coordinator and his transportation expenses so that he could visit all the rural schools in Montana. From these firsthand visits, a rapport between the center and the rural schools was developed and knowledge was gained as to the schools' specific needs. During these first three years the primary purpose of the Montana Rural Education Center was to help small schools compensate for resource deficiencies and take advantage of their small size. It was during this time that many of the programs that became hallmarks of the center were developed.

MREC Summary

Field Research:

- The Annual Class "C" Survey which provides a set of comparative statistics to show small school districts (utilizing an administrator) their relative standing and financial effort.
- The Rural Teacher Salary Survey, which was conducted every five years to provide comparative statistics on salaries and working conditions for independent elementary districts without administrators.
- Special survey of library needs was conducted.

Curriculum:

- The Montana Rural Education Curriculum Guide was published in 1983. It was the first published in Montana since 1943. Written in cooperation with a Title IV-C grant and the Montana Office of Public Instruction.
- Rural Library Handbook was published in 1983 and disseminated to rural schools the following school year.
- In order to compensate for a lack of resources for art and music, the center was able to provide an art and music mobile using an itinerate format for eastern Montana. This was done with cooperation from the Office of Public Instruction using Title funding.
- Numerous requests from individual teachers in various curricular areas, notably reading and Montana history, were filled.

In-Service:

- Approximately thirty-five (35) teacher workshops
- Two annual county superintendents' trainings
- Nine trustee workshops
- An annual Rural Education Conference

Direct Services to Pupils and Teachers and Trustees:

- Numerous School Visitations
- A School Repair program that the center arranged with the college industrial arts club to perform repairs on an area elementary rural school for minimal cost to the district.
- Grant writing assistance with approximately \$35,000 generated Arts in Education videotape project completed in cooperation with the University of Montana and Phi Delta Kappa grants.
- Teacher and administrator evaluation procedures completed for the White Sulphur Springs school district.
- The creation of the first Rural School Board of Trustees Policy Manual.

Promotion of Small Schools In-State and Nationally:

- The creation of a brochure called Small Schools in a Big Land used as part of the 1983 legislature funding effort and mailings.

- Cooperation and Support from ERIC/CRESS.
- The creation of a rural education library as part of the college library (Under guidance from ERIC/CRESS, the center has built and maintains the most comprehensive collection of books and documents on rural education available in the region).
- Staff of the center serve as editors for the Small School Forum magazine and The Rural Educator, the research journal of the National Rural Education Association.
- Presentations at Kansas State University and the Northwest Association of Teacher Educators (Spokane).
- Assisted Beaverhead County in its annual spelling bee.
- Created a Rural Education Newsletter.
- Assisted by providing pictures for a Weekly Reader article and assisted the producers on a rural school segment for the television news program 20/20. One faculty member was in the segment.

Input into Rural Education Teacher Training

- Western had a unique option available in Rural Education starting with the 1983-85 Catalog. Perhaps more significantly, the total teacher education program was altered to include elements found necessary during the rural option investigation. As part of the investigation, Western faculty spent one week in rural schools in Garfield County. Formal aspects of the rural strategy were conducted by ERIC/CRESS. From the full investigation came a new conceptual basis for the teacher education program.

Cooperative Ventures with other Agencies

- The Rural Education Center was one of nine Montana locations on direct computer hookup to Special Net, a national special education information network.
- The center had a faculty member who was an officer in the state Montana Special Education Cooperatives and one of the satellite centers for a multi-county region was housed on campus.
- Center personnel were appointed to the Northwest Regional Education Laboratory's Rural Education Advisory Board.
- One of the steering committee board members was appointed to the American Association of School Administrators Small Schools Project. Personnel from AASA contacted the center for information through its work on the project.
- College/University Contacts
- Brigham Young University
- Colorado State University
- Murray State (Kentucky)
- Drake University
- Eastern Oregon State College
- Montana State University (had an intern from them one semester.)
- Center Director was elected to the Executive Board of the National Rural Education Association and personnel of the center were Montana delegates.

- The anthropology professor from Western who was working with the center made a presentation at the American Anthropological Association on the rural teacher training option because of its reliance on ethnographic field techniques in 1983 and 1984.

These things all happened during the first five years of the Montana Rural Education Center's life. Several of the programs continued on for some years and a few are in existence today.

In November of 1994 the MREC received national recognition when it was designated one of five National Rural Education Association endorsed Rural Education Research Centers. That same year, the center received the Howard A. Dawson award from NREA for an organization or group that provides outstanding service to rural schools and educators.

The MREC was originally conceived as a component of a plan to concentrate the college's teacher training efforts on the special needs of teachers in rural schools. In 1979 Western made the decision that its pre-service teacher-training program would include special training for those wishing to teach in rural schools. A teacher education program was initiated that included continuous and close interaction between college faculty and rural school districts; taught students the concepts of rural culture; gave students an anthropological perspective to their future careers; provided early field experiences in their training emphasis (rural or regular); and provided rural student teaching experiences for those students selecting the rural option. In addition faculty from the center taught specific rural education classes at both the undergraduate and graduate level.

Continuous funding for the MREC ran out in 1984-85. While small grants were obtained for special projects no major source of funding was obtained again until 1989. This was a two-year major grant to the Center from the U.S. Department of Education's Drug Free Schools Program. The grant was renewed in 1991 for three more years. During this time, the center trained 20 coordinators to work in different parts of Montana to help small schools develop drug education policies and programs. Then model sites were chosen and the center worked with these fifty school districts throughout Montana. In addition during those years, the center contracted with two Western faculty to produce the Montana Kindergarten Handbook: Self Concept through Developmentally Appropriate Practices. This document has been used by most of the schools in Montana, big and small, and throughout the region. Another document that was produced at the time was VISIONS: Drug Education for Healthy 21st Living: An Infused K-12 Curriculum. This document was shared with Montana schools and at least 17 other states. Many Western faculty and Montana teachers contributed to this document.

In the early nineties the center also housed the regional computer network server for METNET, the Office of Public Instruction's computer network for schools. Thus, the Montana Rural Education Center had two ways of electronic networking with rural schools, Big Sky Telegraph and METNET, long before there were many national connections.

The center also received a two-year grant from the Steele-Reese Foundation to develop an Itinerant Library Network for the nine smallest, rural schools in Southwest Montana. Two library students actually wrote and ran the grant under the center's supervision. After it ended the county superintendent of Beaverhead County was able to keep the federal "Reading is Fundamental" program alive. Even today, this program ships left over books from publishers to these small schools in southwest Montana.

From the late 1980s through June of 1996, the center's newsletter, The Country Connection, was published four times a year with a distribution of over 1000. The Class "C" Survey continued to be conducted each year. In 1992-93, another rural teacher salary and benefits survey was conducted and published. The third edition of PATCHWORK: Handbook for Montana's Small School Libraries was published in 1996. The rural education collection continued to be built at Western's Lucy Carson Library with several items published by the center and accepted by ERIC. The annual Rural Education Conferences continued until 1995. Not only did rural Montana educators come but those as far away as Alaska and California. Perhaps the highlight of these conferences was the one in 1993 when Dr. Terrel H. Bell, former U.S. Secretary of Education, was the Keynoter.

In 1993 the center was host to the Director of Primary Education and eight staff members from the Northwest Frontier Province of Pakistan. In 1994 the center helped sponsor a rural Chinese teacher to Western, and in 1996 the center director was invited to go to Northern College in Aberdeen Scotland and advise on a rural education conference for developing nations. The center continued to have a state and national presence.

The center was commissioned by the School Administrators of Montana and the Montana School Boards Association to conduct research on the impact of legislative cuts on public education in 1994. In addition, the center was also asked to do a study of activities in Montana's high schools. Center personnel served on a variety of committees and boards at the state level and at the Northwest Regional Education Laboratory in Portland, Oregon.

Montana Small Schools Alliance

Recognizing that the college no longer had the funds to support the level of activities that the center had carried on but wanting to serve its rural mission, in 1996 Western joined with three other entities, the Montana Association of County School Superintendents, the College of Education, Health and Human Development at MSU-Bozeman and the Montana School Boards Association to create the Montana Small Schools Alliance. Since that time the Alliance has kept the Rural Education Center's name visible and carried on some of its programs. It has revised The Montana Rural School Policy Handbook: Guidelines for Local Trustees in K-8 Multi-grade Elementary Districts, 1997 and 1999 editions and conducted another Montana Rural Teacher Salary and Benefits Survey in 1998-99. In 1998, the alliance received a grant from the ARCO foundation and with assistance from the Montana Association of County Schools Superintendents and the Montana Office of Public Instruction printed and distributed to all

Montana schools Technology Planning for Montana's Schools. This document provided schools with a guide to write their technology plans and apply for the "E" Rate. With the help of the Office of Public Instruction the alliance published and shared with all small schools in Montana The Montana Small Schools Self-Evaluation Guide, 2000. This document provides schools with a format and strategies to meet one of the new accreditation standards. The alliance has begun a revision of the Montana Rural Curriculum Guide to meet the new state student content and performance standards with four subject areas completed by summer of 2001, and it has contributed a column to the Montana School Boards Bulletin monthly since January 1997. In addition the alliance has conducted other rural research and produced a variety of documents available on ERIC. The alliance also conducts a variety of workshops for small and rural schools throughout Montana.

Alliance personnel were the in-state researcher and author of Montana Commission on Teaching Policy Inventory and Quality Teaching, Quality Schools: Strengthening Montana's Most Important Profession for the Governor's Commission on Teaching. They have also served on a variety of state and national committees on teacher preparation, professional development, standards, curriculum, instruction and assessment representing the rural education voice. Thus, the Montana Small Schools Alliance, with a minimum of financial support from Western, has been able to carry on and expand many of the Montana Rural Education Center's programs and has kept the Center's name in all that it does.

On January 1, 1988 Western received grant funding from the M. J. Murdock Charitable Trust and U. S. West to initiate Big Sky Telegraph. The purpose of Big Sky Telegraph was to demonstrate the potential for teacher support and to offer distance-learning instruction through computer communications. These grants funds were used to facilitate communications between rural teachers and between rural teachers and faculty at Western. They were also used to prepare and pilot-teach the first internet courses at Western during academic year 1988-89.

In 1993 Big Sky Telegraph was funded by the Annenberg/CPB and U. S. West Foundations to develop its "Reach for the Sky" program for science and math reform for rural teachers through telecomputing. This program developed a network of mentor teachers who were trained in compiling resources available over the internet and using those resources to develop math and science curriculum and support materials. When this program ended in 1995, support for maintenance of Big Sky Telegraph and MREC communication with and support of rural teachers declined.

The Rural Education Technology Center Beginnings

Largely through its affiliation with the Montana Small Schools Alliance and associated with its construction of a new Rural Education Technology Center building, Western over the past few years has taken steps to reinvigorate its rural education functions.

In 1999, the Montana Small Schools Alliance (MSSA) was granted \$169,000 for a capacity-building grant through the Preparing Tomorrow's Teachers to use Technology (PT3) program of the U.S. Department of Education. This initiative developed a replicable standards-based (state and NCATE) model of professional development practice that will serve as the basis for reforming the entire teacher education program to produce technologically proficient beginning teachers for Montana's rural schools. The Project Director for the grant was Dr. Claudette Morton, Executive Director of MSSA and former Director of the MREC. There were four Western methods faculty and four teachers-in-residence involved in this successful pilot project.

The success of the capacity-building grant led the MSSA with the cooperation of Western and its MREC to apply for an implementation grant in 2000. This three-year grant for \$1.06 million was awarded in 2000 with funding beginning on June 1, 2000 and ending on May 30, 2003. Most of this funding will be applied towards activities of the college and its MREC towards strengthening the training of teachers headed for careers in rural education. The new grant will allow the college and its partners in the MSSA to provide preservice teachers with valuable technology experiences that will become a basic component of their education; build a learning community of preservice teachers, education faculty, outstanding practitioners in Montana's rural schools, and a variety of institutions and businesses; infuse Montana's new state student content and performance standards in technology and other content and NCATE technology standards into the teacher education program; provide specific assistance to Western's two-plus-two elementary education program with Salish-Kootenai College to bridge the cultural and digital divide; and institutionalize systemic change.

In 1995, Western convened a campus committee to discuss Western's technological readiness. Out of the committee's discussion grew the concept for the Rural Education Technology Center (RETC). Over the next two years, the University secured a planning grant of \$75,000 from the 1997 Montana Legislature that allowed for the hiring of architectural and technological consultants. The consultants developed conceptual blueprints for the building. The 1999 state legislature funded the building project at \$4.6 million. The building is currently under construction and is expected to be fully operational by January 1, 2002

While the state provided sufficient appropriated funds for construction and maintenance of the building, it did not supply enough funds to equip the facility, develop programming, and provide services envisioned for the building. Thus, the college has been aggressively pursuing other funding options for these purposes. The two PT3 grants described above provide funds for hiring an instructional technologist and assistant, some equipment, and some program development funds.

Western has also been successful in procuring funding via federal appropriations secured through the U.S. Congress. In 1999 Congress allocated \$350,000 to Western for distribution through the Star Schools Program of the U. S. Department of Education. This money is being used for a demonstration project geared towards the dissemination of K-12 curriculum and providing education

technology assistance to rural schools in Montana using distance education technologies.

In 2000 Congress allocated an additional \$461,000 to Western for distribution through the Fund for Improvement of Postsecondary Education (FIPSE) program. The population defined as directly benefiting from this project included rural Montana teachers and students. The project funds will support consultation with rural schools, in-service training for rural teachers, and enhancement of the technology infrastructure of the RETC.

The grants described above should go a long way towards enhancing the rural education functions of the College and satisfying the mission goals of the MREC. However, there has been a history of intermittent funding for all such programs on the Western campus. The state funds allocated by the campus to rural education functions have tended to be greatly diminished when overall state budgets have been reduced. This is due to the fact that the legislature funds the campuses largely on the basis of student FTE generation. Since the rural education functions do not directly generate significant student FTE, in times of scarce resources funds have been shifted to costs of instruction. Overall, the Montana University System and The University of Montana-Western rank near the bottom of the country in expenditures per student.

Western, the RETC and the Future

The dichotomy is clear: Western has a facility, ambition, and experience to indicate great success, while its regional funding and economic environment rather signify an uphill climb. As the RETC comes on line it stands in a position ready to impact the campus, the region and serve as a model for educational transition and reform. As additional resources become available it will allow Western to continue that which it has done so well for so long: serve the student, serve the community and lead the way in showing how to provide resources for isolated educators nationwide.