



Active
Learning

Active
listening

Instructing

Speaking

Critical
Thinking

TOMORROW'S WORKFORCE NEEDS

Learning
Strategies

2004-2014 Skill-Based Projections
Panhandle Region

Reading
comprehension

Monitoring

Writing

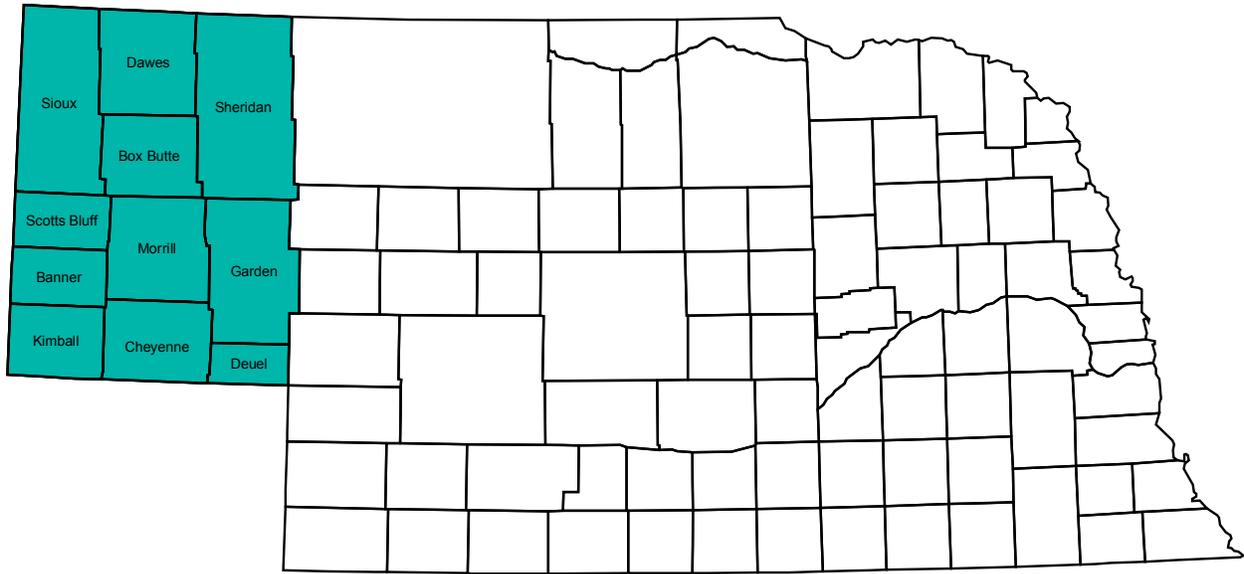
Coordination



Special Note:

The Panhandle Region of Nebraska includes the counties of:

- Banner
- Dawes
- Kimball
- Sheridan
- Box Butte
- Deuel
- Morrill
- Sioux
- Cheyenne
- Garden
- Scotts Bluff



Introduction and Methodology

Skills can be defined as developed aptitudes or abilities; critical to successful on-the-job performance. Furthermore, occupations require unique combinations of skills; making it a challenge to match an individual's skill 'set' with a specific job. Projected surges or declines in employment across all occupations correspond with the changing demand for specific skills.

The 21st century has introduced an increased interest in the relationship between skills and occupational supply and demand. Public officials, educators, economic developers, and employment specialists want to know which skills will be in demand and where they fall in terms of the future employment needs of our workforce. To assist in identifying these skills, the Projections Managing Partnership, sponsored by the U.S. Department of Labor and the Employment and Training Administration developed Skill-Based Projections (SBP) software.

The SBP system uses statewide and regional occupational employment projections in combination with a nationally standardized occupational database known as the Occupational Network (O*NET) database. Three components of this database, (**skills, knowledge, and work activities**), are applied to existing occupational projections data. Thirty-six uniquely identified skills and 33 knowledge elements describe workers; or those seeking employment. The third component, generalized work activities, can be performed by all workers across all types of occupations; and is therefore a descriptor of jobs.

For example, the basic skill of Active Listening is of extreme importance to the Registered Nursing profession. To estimate the potential skill shortage of Active Listening, it is multiplied by the number of projected openings for Registered Nurses over the next ten years. This number is then ranked in comparison with the remaining identified skills so that we have an idea of which skills will be most needed in the coming years. This process is applied to each occupation in each region of Nebraska.

Skills, knowledge, and generalized work activities are then measured in terms of importance and level of aptitude required to perform the duties within each occupation. If a skill, element of knowledge, or specific work activity is of moderate importance and moderately required for successful job performance, the element is assigned to the occupation. It is important to note that the skills and knowledge of individuals who are unemployed or not seeking employment are not included in skills projections.

The SBP system also provides a list of potential 'critical skills' for a region. The Skills Gap Index is calculated to highlight potential for skill gaps between current worker supply and future demand by measuring the difference between the two. Demand refers to total projected openings; or openings due to growth plus net replacement openings. The result produces a ranking on a scale from 1-100, with the greater the score, the more likely a skills gap will occur. Skills found to have a high skills gap index score are expected to be 'critical' for the projected period.

What will be needed in Nebraska's Panhandle Region?

The needs of this region can be determined by matching worker traits, job-oriented descriptors, and 'critical skills' with the following components:

Current Supply is an employment count of workers across all occupations. Skills, knowledge elements, or work activities are listed for each occupation and multiplied by the number of individuals working in that occupation. Skills can also span a number of occupations, (i.e. active listening is an important skill for both registered nurses and customer service representatives.) so it is likely that occupations will be counted multiple times (i.e. customer service representatives will be counted under active listening as well as under the skill of speaking).

Projected Demand refers to total projected openings; calculated as the sum of openings due to growth and openings due to replacement. When employment change is negative across the projections period (2004-2014), growth is zero and the projected demand is comprised only of openings due to worker replacement.

Skills Gap Index for each job requirement is a standardized measure of the difference between the current supply and projected demand; the higher the index score, the more likely a skills gap will occur.

Replacement Index is the proportion of total openings due to net replacements rather than growth; the higher the value, the greater the proportion of openings that are replacements, not new jobs.

SKILLS

O*Net skills are broken down into separate domains including basic, complex problem solving, resource management, social, systems, and technical. Table 1 shows the current occupational skill supply in the Panhandle Region. Of these, eight are considered basic skills, or those that facilitate learning and knowledge acquisition, and two are social skills, used to work with people to achieve goals.

Table 1: Current Skill Supply

Skill Job Requirements	Current Supply 2004	
	Nebraska	Panhandle Region
Reading Comprehension	435,015	19,558
Active Listening	415,745	16,832
Speaking	355,921	14,297
Critical Thinking	302,141	12,382
Writing	301,273	11,462
Active Learning	272,849	10,336
Instructing	248,959	10,711
Coordination	248,019	10,829
Learning Strategies	245,606	9,775
Monitoring	239,394	8,872

The number of highlighted basic skills means that today's workers are aware of the environment around them as an avenue for continued growth and personal development. They recognize that there is much to be learned and go about their workplaces in search of ways to improve job performance.

The remaining skills, coordination and instructing, are social skills. These are the necessary competencies that help employees work together successfully. These specific social skills in the Panhandle Region suggest that workers can adjust their actions in relation to others' actions, are aware of and understand why coworkers react as they do and finally, are able to coach other coworkers.

It is expected that by 2014, 701 job openings requiring the basic skill of reading comprehension will need to be filled in the Panhandle Region. This means that the skill of reading comprehension is at least moderately important to have in order to do the job, and that this skill is required at least at a moderate level or higher. Active listening, speaking, and critical thinking are skills that will also be in demand for the occupational growth of this region.

Table 2: Selected Skills Overview

Geography	Nebraska 2014			Panhandle Region 2014		
Projections Horizon	2004-2014					
Skill Job Requirements	Projected Demand	Skills Gap Index	Replacement Index	Projected Demand	Skills Gap Index	Replacement Index
Reading Comprehension	14,747	100	59	701	100	56
Active Listening	14,225	97	60	616	97	56
Speaking	12,397	94	58	539	94	53
Critical Thinking	10,539	91	56	458	91	54
Writing	10,598	89	57	436	86	54
Instructing	9,144	86	54	418	89	51
Social Perceptiveness	8,020	71	57	397	80	54
Coordination	8,617	77	55	395	77	53
Learning Strategies	8,993	80	55	383	83	52
Active Learning	9,607	83	56	382	74	54

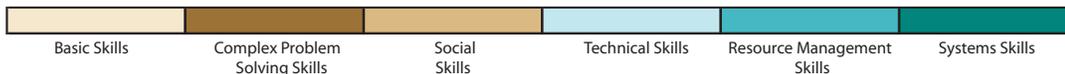
The skills gap index refers to the potential gap between the current supply and projected demand in occupations requiring these skills at a moderate level. A large skills gap does not mean that currently employed workers lack a particular skill. It is an index referring to the balance of employment size with projected demand for occupations requiring that skill. The skills gap index identifies the ranked order of anticipated training needs. Within the Panhandle Region, a skills gap index of 100 indicates a very high likelihood that training in reading comprehension will need to occur in order to meet future demand. One example of an occupation in which the skills appearing in table 2 could be considered ‘critical’ (i.e. reading comprehension, active listening, active learning, and instructing), is a pharmacy technician. In this region, this occupation is expected to grow from 107 in the year 2004 to 142 in 2014, a 32.7% change in employment. The skills gap indices for skills comprising a pharmacy technician are anticipated gaps, since qualified workers will be required to fill the vacancies.

Skill gap information should be closely examined in order to better compare the projected growth, the number of new openings, with the projected replacement, which shows the job openings expected to occur due to turnover or retirement, etc. For example, 56% of job openings in occupations with at least a moderate requirement for reading comprehension are projected to occur because of replacement. In other words, just over 392 openings in the Panhandle Region will be due to job turnover. The remaining 44%, or about 308 job openings, should be openings due to growth. This reveals a need to continue training programs that support the acquisition of these skills.

Table 3 shows the top 10 skills by education level in the Panhandle Region. The table indicates that higher educational level occupations have a greater need for additional training in the basic skills category. The other categories of skills appear more frequently in occupations requiring less education.

Table 3: Selected Skill Gap by Occupational Preparation in the Panhandle Region

First Professional Degree	Speaking	Reading Comprehension	Critical Thinking	Active Listening	Active Learning	Social Perceptiveness	Writing	Mathematics	Monitoring	Judgment and Decision Making
	100	97	94	91	89	86	83	80	77	74
PhD	Writing	Speaking	Reading Comprehension	Monitoring	Learning Strategies	Critical Thinking	Active Listening	Active Learning	Complex Problem Identification	Instructing
	100	97	94	91	89	86	83	80	77	74
Masters Degree	Writing	Speaking	Reading Comprehension	Active Listening	Active Learning	Critical Thinking	Monitoring	Learning Strategies	Instructing	Complex Problem Identification
	100	97	94	91	89	86	83	80	77	74
Bachelors Degree w/ Work Experience	Reading Comprehension	Coordination	Writing	Speaking	Active Learning	Critical Thinking	Judgment and Decision Making	Monitoring	Active Listening	Time Mgmt
	100	97	94	91	89	86	83	80	77	74
Bachelors Degree	Reading Comprehension	Speaking	Learning Strategies	Instructing	Active Listening	Social Perceptiveness	Writing	Active Learning	Monitoring	Critical Thinking
	100	97	94	91	89	86	83	80	77	74
Associates Degree	Reading Comprehension	Active Listening	Active Learning	Instructing	Critical Thinking	Writing	Learning Strategies	Coordination	Speaking	Social Perceptiveness
	100	97	94	91	89	86	83	80	77	74
Post-Secondary Training	Speaking	Active Listening	Reading Comprehension	Writing	Social Perceptiveness	Active Learning	Learning Strategies	Instructing	Coordination	Time Mgmt
	100	97	94	91	89	86	83	80	77	74
Long Term OJT	Reading Comprehension	Critical Thinking	Speaking	Writing	Active Listening	Coordination	Installation	Active Learning	Mathematics	Troubleshooting
	100	97	94	91	89	86	83	80	77	74
Moderate OJT	Active Listening	Reading Comprehension	Speaking	Writing	Critical Thinking	Social Perceptiveness	Instructing	Service Orientation	Coordination	Active Learning
	100	97	94	91	89	86	83	80	77	74
Short-Term OJT	Reading Comprehension	Active Listening	Speaking	Critical Thinking	Instructing	Social Perceptiveness	Monitoring	Time Mgmt	Coordination	Service Orientation
	100	97	94	91	89	86	83	80	77	74
Related Work Experience	Coordination	Reading Comprehension	Speaking	Monitoring	Active Listening	Writing	Time Mgmt	Mgmt of Personnel Resources	Critical Thinking	Learning Strategies
	100	97	94	91	89	86	83	80	77	74



Troubleshooting and installation are technical skills that appear in occupations such as general maintenance & repair workers, home appliance repairers, and security & fire alarm systems installers. Jobs requiring on-the-job training have a greater need for resource management skills, although these skills play a large role in occupations throughout all training levels. Within the higher educational levels, complex problem identification appears more frequently among the top 10 skills.

Generally speaking, it is important to note, that the most highly projected skill deficiencies from all educational preparation levels center on the basic skills (i.e. reading comprehension, speaking, and writing). Data indicates the lower preparation levels have greater technical skill gaps than do the upper job preparation levels. In contrast, those at the upper levels need training in systems and complex problem solving skills.

Table 4: Suggested Critical Skills for the Panhandle Region

Skill Job Requirements	2004-2014				
	Projected Demand	Skills Gap Index	Replacement Index	Replacement Openings	Growth Openings
Reading Comprehension	701	100	56	396	305
Active Listening	616	97	56	348	268
Speaking	539	94	53	285	254
Critical Thinking	458	91	54	246	212
Writing	436	86	54	235	201
Instructing	418	89	51	212	206
Social Perceptiveness	397	80	54	216	181
Coordination	395	77	53	211	184
Learning Strategies	383	83	52	199	184
Active Learning	382	74	54	206	176

To qualify as a critical skill, the skills gap index along with the replacement index must be analyzed. Replacement and growth openings are calculated using the projected demand and replacement index.

Across all education levels, Table 4 lists critical skills that are comprised of 7 basic skills and 3 social skills. The following is a partial list of growing occupations in the Panhandle Region that require all 10 of the critical skills: psychiatric aides; lodging managers; registered nurses; fire inspectors; health educators; and kindergarten teachers. It is crucial to remember that labor turnover is grounded in cause and effect relationships within the larger economy, and as such, the type of turnover can be an excellent indicator of economic health. Growth openings confirm a vibrant labor market with an increased need for trained workers, while a large number of replacement openings may indicate a mix of jobs that do not have a clear-cut career path, are low skilled, low paying, or have less than favorable working conditions.

Remember that the higher the skills gap index, the greater likelihood of experiencing a future gap in skill availability. The replacement index indicates the percent of projected demand that is due to labor turnover rather than business growth.

KNOWLEDGE

Most work situations require a specific set of learned facts and standard requirements. Knowledge job requirements, like skills, are found in occupations as a 'set' that help to define an occupation, or occupational group. This section describes knowledge job requirements using the same units of analysis as the skills and later on in this report, the work activities sections; projected demand, skills gap index, and replacement index.

Table 5 describes the projected 2014 demand in the Panhandle region, across all educational levels, in which the top 10 knowledge job requirements occur in occupations. Occupations that require two or more of these knowledge elements are: managers (general & operations, sales, purchasing, food service, lodging, medical & health service), wholesale & retail buyers, training & development specialists, loan officers, market research analysts, clinical & school psychologists, social & human service assistants, lawyers, elementary school teachers, and middle school teachers. Each of these occupations are considered 'hot jobs' in this region.

Table 5: Selected Knowledge Requirements for the Panhandle Region Compared to the State

Geography	Nebraska 2014			Panhandle Region 2014		
Projections Horizon	2004-2014					
Knowledge Job Requirement	Projected Demand	Skills Gap Index	Replacement Index	Projected Demand	Skills Gap Index	Replacement Index
Customer and Personal Service	13,109	100	60	639	100	58
English Language	5,379	97	57	215	97	54
Education and Training	4,400	94	55	207	94	53
Clerical	3,856	85	68	202	91	62
Sales and Marketing	3,113	76	70	159	82	65
Mathematics	3,651	91	59	155	88	57
Psychology	3,014	88	51	142	85	51
Administration and Management	2,313	73	63	112	76	59
Mechanical	2,258	70	64	109	73	64
Medicine and Dentistry	1,865	79	45	87	79	45

Both skills gap and replacement index values are similar when comparing the Panhandle Region to Nebraska Statewide. In this region, replacement indices across knowledge elements compared to the state indicate that the openings will likely be due to job turnover rather than growth (Remember that if the replacement index = 100, all openings are due to job turnover. A score of 0 indicates total growth openings.). Knowledge of psychology has an identical replacement index of 51 for the Panhandle Region and the State. Child, family, & school social workers rely heavily on this particular knowledge element, and in the Panhandle Region, this occupation should experience an average growth rate of 8.9% by 2014 compared to the state rate of 15.0%; therefore it is probable that child, family, & school social workers will experience fewer job opportunities in comparison with other Nebraska regions.

Notice also in Table 5 that clerical knowledge has a substantially larger skills gap in the Panhandle Region than in the state, with 91 and 85 respectively. Although the replacement rate for this knowledge element is 62 in this region, the skills gap indicates that there will likely be a need for training in this area due to demand. Education administrators and special education teachers are two occupations which require knowledge in both clerical and psychology knowledge elements, and these occupations are expected to be in demand through 2014.

WORK ACTIVITIES

Work activities are job behaviors in the work environment. Establishing and maintaining interpersonal relationships at the workplace over time, is the work activity projected to be in highest demand through 2014 in the Panhandle Region. Getting information to do the job and communicating with supervisors, peers, or subordinates round out the top three work activities expected to be in highest demand. Table 6 compares this information for the area to the state.

Establishing and maintaining interpersonal relationships is the required work activity projected to have the highest demand, with just over 17,000 job openings in Nebraska and over 750 openings in the Panhandle Region by 2014. This requirement is found in high-demand occupations, such as counseling psychologists, public relations managers, coaches & scouts, and occupational therapists.

Two activities, getting information to do the job and communicating with supervisors, peers, or subordinates, are projected to produce a demand of nearly 1,800 in just the Panhandle Region, however, both requirements may appear within the same occupation. For example, tellers, human resource managers, power plant operators, sheriffs & deputy sheriffs, and training & development specialists are a few occupations that require both work activities on the job. According to the skill gap indices, training to accommodate these work activities will be necessary not only for workers replacing those lost due to replacement, but also for new entrants due to employment growth.

Table 6: Selected Work Activities for the Panhandle Region Compared to the State

Geography	Nebraska 2014			Panhandle Region 2014		
Projections Horizon	2004-2014					
Work Activity Job Requirement	Projected Demand	Skills Gap Index	Replacement Index	Projected Demand	Skills Gap Index	Replacement Index
Establishing and maintaining interpersonal relationships	17,008	100	62	778	100	60
Getting information needed to do the job	11,166	98	56	496	98	53
Communicating with supervisors, peers or subordinates	10,066	90	58	439	95	56
Organizing, planning and prioritizing work	9,934	93	55	407	93	54
Working directly with the public	8,201	76	65	405	80	61
Handling and moving objects	9,491	80	64	392	78	63
Updating and using job-relevant knowledge	9,954	95	55	392	90	52
Identifying objects, actions, and events	7,838	85	51	357	88	51
Monitoring processes, materials or surroundings	7,393	83	50	320	85	50
Making decisions and solving problems	8,201	88	51	307	83	48

Of the top work activity elements listed in Table 6, making decisions & solving problems is predicted to account for the greatest amount of hiring due to growth, with 52% (or 160 projected openings). This means that occupations requiring this work activity are projected to experience growth in excess of the projected replacement need in the Panhandle Region. The remaining 48% (or 147 projected openings) will be due to turnover.

Trends for statewide work activities are similar to those shown in the Panhandle Region, although one work activity from those appearing in Table 6 (monitoring processes, materials, or surroundings) is predicted to provide as many job opportunities due to growth as openings due to replacement or turnover. High-demand and fast-growing jobs in which monitoring processes, materials, or surroundings is at least moderately important are home health aides, carpenters, and welders, cutters, solderers, and brazers.

SUMMARY

Each of the selected occupations in Table 7 corresponds with one or more of the identified “critical skills” listed on page 3 at the 80th percentile for importance to this job and at an equally high level of ability. These occupations can also be found in the “Hot Jobs” list as identified in the 2004-2014 Nebraska Occupation Projections (NebraskaWorkforce.com) and are anticipated to have a minimum of five average annual job openings in this time period. These occupations may also experience above average growth rate, rate of pay, or

Table 7: ‘Hot Jobs’ for Nebraska Requiring Critical Skills

Occupations	2004-2014 Occupational Projections				Most Commonly Required Education Level
	2004 Estimates	2014 Projected Demand	Percent Change	Average Annual Job Openings	
Education Administrators, Elementary & Secondary School	118	135	14.40	5	Master's Degree
Education Administrators, Postsecondary	101	124	22.80	5	Master's Degree
Computer Software Engineers, Applications	120	157	30.10	5	Bachelor's Degree
Elementary School Teachers	962	1136	18.10	38	Bachelor's Degree
Middle School Teachers	248	280	12.90	9	Bachelor's Degree
Secondary School Teachers	368	424	15.20	16	Bachelor's Degree
Special Education Teachers, Preschool, Kindergarten, & Elementary School	91	117	28.60	5	Bachelor's Degree
Pharmacists	108	150	38.90	5	Master's Degree
Licensed Practical & Licensed Vocational Nurses	537	613	14.20	20	Associate's Degree / Postsecondary Certificate

a combination of these factors.

Between 2004 and 2014, the Panhandle Region is expected to maintain an occupational growth rate of 11.3%. This growth depends on the economic health of the industries in the area as well as the consistent supply of qualified workers needed to fill job openings. A comprehensive list of occupational employment estimates and the education and/or training requirements are provided in the above-referenced Occupational Projections.

The Panhandle Region can expect slower industrial growth than is projected for the state. The largest growth within this region should occur within wholesale trade industry, with 32.5% growth followed by administrative & waste remediation services industries at 32.3% by 2014. When combined, these two industries are expected to contribute 1,132 new jobs to the region. The third largest growth sector is accommodation & food services, reporting a projected growth rate of 23.5%, or approximately 737 additional jobs over the ten year period. These figures point out the need for preparing workers to meet the occupational demands brought on by this industry growth, as well as to communicate and train local industry to successfully compete with and maintain efforts for continued and diversified growth in related industry fields. This will help offset losses in agriculture, forestry, fishing & hunting industries, (which are expected to decline by 3.8% by 2014), and assist in providing flexible employment situations for presently skilled workers being forced out of their present manufacturing jobs.



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