

CREDENTIALING STANDARDS FOR TEACHING OUTDOOR ACTIVITIES: AN  
INTERNATIONAL COMPARISON

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## **ABSTRACT**

NATHAN D. TRAPPE: Credentialing Standards for Teaching Outdoor Activities: An International Comparison

There is little research on the process for credentialing teachers of outdoor recreation activities. This research used an explanatory mixed-method research design to understand the credentialing requirements for becoming an outdoor instructor. Following a census and constant comparative analysis of 155 credentials from 62 credentialing organizations in Australia, Canada, New Zealand, United Kingdom, and the United States, I explored the phenomenon of credentialing in outdoor education using a maximal variation sampling strategy. Results emphasized a prevalence of organizations in all countries and enormous variety in outdoor instructor credentialing requirements. As a result, a typology of the requirements for becoming an outdoor instructor was developed. A series of common themes emerged across all credentials; however most credentials utilized a unique set of standards for screening, training, and evaluating instructor candidates. Findings also demonstrated contradicting evidence for *human capital theory*, *credentialist theory*, and *signaling theory*, and the multiple rationales for the purpose of credentialing led to the exploration of a new theory of credentialing based on Bronfenbrenner's ecological systems theory. The similarities and differences between outdoor credentials were explained by multiple factors including: geography, activity, philosophy, culture, politics and industry. Implications include a need for better transparency of training and assessment strategies and increased sharing of information among organizations and educational disciplines.

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## **LIST OF ABBREVIATIONS**

AALA	Adventure Activities Licensing Authority
ABA	American Bar Association
AC	Australian Canoeing
ACA	American Canoe Association
ACC	Alpine Club of Canada
ACCT	Association of Challenge Course Technology
ACIA	Australian Climbing Instructors Association
ACMG	Association of Canadian Mountain Guides
ACUC	American Canadian Underwater Certifications
AEE	Association of Experiential Education
AHA	American Heart Association
AMBIA	Australia Mountain Bike Instructors Association
AMGA	American Mountain Guide Association
ANSI	American National Standards Institute
APSI	Australian Professional Snowsport Instruction
AQF	Australian National Qualification Framework
ASA	American Sailing Association
ASI	Australia Academy of Surf Instructors
AUSI	Associated Underwater Scuba Instructors
BASI	British Association of Snowsport Instructors
BC	British Cycling
BCA	British Caving Association

BCU	British Canoe Union
BKSA	British Kitesurfing Association
BMG	British Mountain Guides
BSAC	British Sub-Aqua Club
BSUPA	British Stand Up Paddle Board Association
CANSI	Canadian Association of Nordic Ski Instructors
CMAS	Confédération Mondiale des Activités Subaquatiques
CPRP	Certified Park and Recreation Professional
CTC	National Cycling Charity
CYA	Sail Canada
DEEWR	Australian Department of Education, Employment, and Workplace Relations
ENEQ	Ecole Nationale d’Escalade du Québec
GTC	General Theory Course
GUE	Global Underwater Explorers
ICE	Institute for Credentialing Excellence
IDEA	International Divers Education Association
IFMGA	International Federation of Mountain Guide Associations
IKO	International Kiteboarding Organization
IMBA	International Mountain Bicycling Association
IMIC	International Mountain Bike Instructor Certifications
ISA	International Surf Association
ISAF	International Sailing Federation

ISC	Industry Skills Council
ISIA	International Ski Instructor Association
ITO	Industry Training Organization
IYT	International Yacht Training
MIAS	Mountain Bike Instructor Award Scheme
MSC	Mountain Safety Council
MTA	Mountain Training Association
NASPE	National Association of Sport and Physical Education
NAUI	National Association of Underwater Instructors
NBPTS	National Board of Professional Teaching Standards
NCATE	National Council for Accreditation of Teacher Education
NCCA	National Commission for Certifying Agencies
NOLRS	National Outdoor Leader Registration Scheme
NOLS	National Outdoor Leadership School
NQF	National Qualifications Framework
NRPA	National Recreation and Park Association
NSSIA	National Surf School & Instructor Association
NZKI	New Zealand Kayaking Instructor
NZMGA	New Zealand Mountain Guides Association
NZOIA	New Zealand Outdoor Instructor Association
NZQA	New Zealand Qualifications Authority
NZZRP	New Zealand Registry of Recreation Professionals
Ofqual	Office of Qualifications and Examinations Regulation

PACI	Professional Association of Climbing Instructors
PADI	Professional Association of Dive Instructors
PASA	Professional Air Sports Association
PCGI	Professional Climbing Guide Institute
PCIA	Professional Climbing Instructor Association
PMBI	Professional Mountain Bike Instructors
PSAI	Professional Scuba Association International
PSIA	Professional Ski Instructors of America
RPL	Recognition of Prior Learning
RTO	Registered Training Organization
RYA	Royal Yachting Association
SAT	Scholastic Aptitude Test
SCQF	Scottish Credit and Qualifications Framework
SDI	Scuba Diving International
Skills Active	Skills Active Aotearoa Limited
SEI	Professional Diving Instructors Corporation / Scuba Education International
SHPPS	School Health Policy and Practices Study
SPA	Single Pitch Award
SPI	Single Pitch Instructor
SSI	Scuba Schools International
SUP	Stand-Up Paddleboard
Surfing NZ	Surfing New Zealand

SurfingGB	Surfing GB
TGA	Training.gov.au
TRoQ	Targeted Review of Qualifications
TRU	Thompson Rivers University
U.K	United Kingdom
U.S	United States of America
UIAA	International Mountaineering and Climbing Federation
UKCC	Sports Coach UK
USCA	United States Canoe Association
VET	Australia Vocational Education and Training
WEA	Wilderness Education Association
WMI	Wilderness Medical Institute
WNZ	Windsurfing New Zealand
WPA	World Paddle Association
WRSTC	World Recreational Scuba Training Council
WSUPA	World Stand Up Paddle Board Association
YA	Yachting Australia
YNZ	Yachting New Zealand

## **Chapter 1**

### **Introduction**

In the United States people are participating in outdoor activities in greater numbers than ever before. According to the 2011 *Outdoor Recreation Participation Report* nearly 50% of Americans, or about 137.9 million people, participated in outdoor recreation activities in 2010. In Cordell, Green, and Betz's (2009) long-term trend analysis of outdoor recreation participation, they noted that since 1983 participation in nearly every surveyed outdoor activity increased in quantity of participants and increased as a percentage of the United State's population. And, according to Bowker, English and Cordell's (1999) statistical modeling projections, the rate of increase in participation of outdoor activities will be greater than the rate of increase in population growth in the United States. This trend is not limited to the United States alone, around the world people are participating in outdoor activities for sport, exercise, physical education, adventure, fun, and many other reasons.

However, in relatively recent years the dynamic between outdoor participants and nature has been drastically changing. Originally outdoor activities were simple pursuits between humans and nature. At the turn of the 20<sup>th</sup> century, naturalist John Muir reflected this sentiment in his writing, "I only went out for a walk, and finally concluded to stay out until sundown, for going out, I found, I was really going in" (quoted in Wolfe, 1979, p. 439). Hiking, camping, and mountain climbing presented experiences that challenged physical strength and pushed the limits of the human spirit. These activities initially required limited specialty gear and relied on a near spiritual communion of personal skills to challenge the



entropy of the environment. In 1953, Sir Edmund Hillary and Tenzing Norgay's first confirmed ascent of Mt. Everest using leather boots and wool sweaters was a milestone in human history and a key event in bringing awareness of outdoor activities to a world stage.

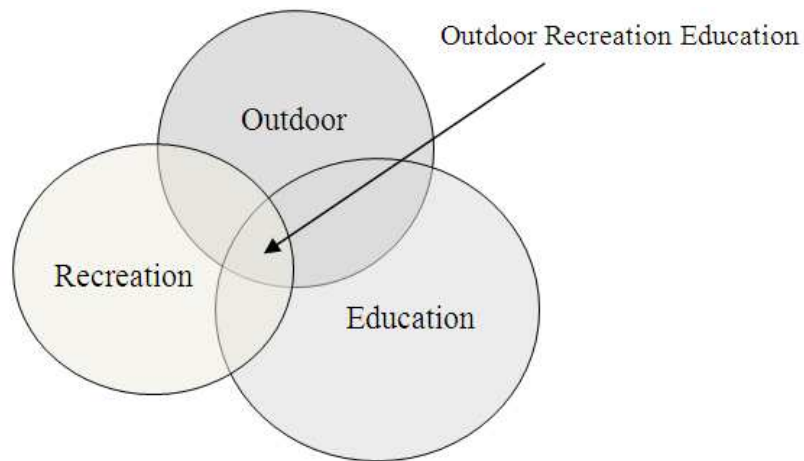
Climbing 29,000+ feet to the top of a snow covered mountain may not be everyone's idea of fun, but in the last 60 years the world has seen an explosion of new outdoor activities that have pushed the boundaries of adventure and made the outdoors more accessible for an increasing number of people. Beginning with the great expansion of the United States railway system connecting cities to the doorsteps of newly created National Parks, and then the proliferation of the automobiles, all-terrain vehicles, and now even the growing use of helicopters and planes, have increased the accessibility of the outdoors (Ewert & Shultis, 1999). In addition, continuous advances in technology have created better tools and helped the enthusiastic professional and the reluctant beginners go faster, farther, easier, and explore the outdoors in new creative ways. New locations and new activities have increased the amount, diversity, and quality of equipment and made most activities more accessible (Bengston & Xu, 1993). Phones, GPS, beacons, advanced clothing design, technical ropes and other safety gear, and information systems such as the internet, have made outdoor recreation activities more available to more people (Bengston & Xu, 1993; Ewert & Shultis, 1999). According to Ewert and Hollenhorst, "Ultimately what this implies is an overall lessening of the belief that adventure activities are only for the 'daredevil' and 'reckless.' Rather adventure recreation is increasingly seen as an alternative to the more traditional forms of leisure..." (2000, p. 23). Those authors went on to say that these advances in technology also help to increase the margins of safety in an activity; however reliance on technology can also reduce the perceived risk of a situation and create an illusion of safety.

Therefore, although new safety equipment has helped minimize the risk in some activities, technology has also simultaneously exposed more participants to activities with inherently more risk.

More involved and less experienced participants, more complicated equipment, and expanded use of natural environments have all helped to develop a greater need for outdoor recreation education. Accompanying increased participation rates, there has also been enormous growth among schools, non-profit and private organizations, and independent operators that conduct outdoor activities. Recent data from the United States Bureau of Labor Statistics (2012) has shown that hundreds of thousands of people are working in outdoor recreation jobs and job growth is expected to continue at a rate of about 19% per year. In 2013 the Association of Experiential Education (AEE) had over 1300 organizational members in the United States and was rapidly growing (AEE, 2013). The American Camping Association, a large organization that primarily accredits summer camps, has thousands of member camps that engage in outdoor activities (American Camping Association, n.d.). In higher education, as of 2008 there were 58 universities in the United States that offered degree granting programs in outdoor leadership (Attarian, Brezovec, & Piraino, 2008) in order to train students for careers in outdoor education. As outdoor recreation continues to rise in popularity it is important to consider how professionals and outdoor enthusiasts are learning the skills necessary to participate in and teach these activities.

### **Outdoor Recreation Education**

Increased participation, the growth of a supporting industry, and the attention of educational systems, have all synergistically worked to develop a relatively new field in



*Figure 1.1.* Outdoor recreation education diagram

education: outdoor education. The field of outdoor education is not easily defined and consists of many components including adventure, the outdoors, the environment, education, training, recreation, leisure, and the many combinations in which these terms can be combined. The focus of this research is outdoor activity instruction, also called outdoor recreation education, which is defined here as the practice of teaching skills to enhance participation in outdoor activities. This definition can also be conceptualized as the overlap between the education, recreation, and the outdoors (see Figure 1.1). Education is the transfer of knowledge. Outdoors is an environment outside the confines of man-made structures. Recreation is an act of purposefully participating in an activity for fun or sport. Recreation education does not require that activities take place in an outdoor environment and therefore was not the subject of this research. Outdoor education is a broad term that encompasses many different subjects and will be used to refer to general education in outdoor environments. Finally, outdoor recreation refers to participating in outdoor activities for the purpose of leisure without an educational component.

The evolution of outdoor education in academia and industry has fostered a growing debate over the professional nature of outdoor educators. The debate over professionalism is

not uncommon or specific to the field of outdoor education and is a natural process that new professions experience as they mature (Wilensky, 1964). The delineation and criteria for professional status are highly debated, but the most commonly cited model for exploring evaluation of a profession was presented by Greenwood (1957) who outlined five characteristics of a profession: 1) a systematic body of theory necessary for mastery of the profession; 2) the level of authority in making decisions within the profession; 3) a public sanctioning of a profession's ability to self-regulate and credential; 4) a clarity of a code of ethics; and 5) the nature of the professional culture. Greenwood's model of professionalism recognized that credentials are tools used to evaluate some aspects of competency and professionalism. This research explored the profession of outdoor recreation education to determine the standards and credentialing elements required for teaching outdoor recreation activities and the theoretical framework(s) that serve to explain the purpose of the credential and the rationale for why standards may differ. Another outcome of this research was to bring public recognition --an attribute of Greenwood's community sanctioning of a profession-- to the commonalities and differences in credentialing elements between different outdoor recreational activities and how teachers become qualified to teach these activities.

### **Research Questions**

This research reported here used a two-phase mixed method research approach to explore the standards and credentialing elements for outdoor activity instruction. Credentialing elements consisted of any requirements for becoming an outdoor education teacher. Credentialing standards were the definition of competency within each of the elements. During the first phase of research, quantitative data was collected from a large sample of 155 credentials from 62 outdoor credentialing organizations. The focus during this

phase of research was to develop a broad understanding of the standards and credentialing elements used by credentialing organizations in outdoor recreation education. The second phase of research focused on a smaller sample of organizations and used in-depth interviews to explore the theoretical framework(s) that explain why standards and credentialing elements vary among outdoor education credentialing organizations. The research questions addressed in this study were:

- 1 What are the elements required for a credential for teaching outdoor activities in selected countries?
  - 1.a How are these elements similar and different in selected countries?
- 2 What assessments are used to credential the teaching of outdoor activities in selected countries?
  2. a How are these assessments similar and different in selected countries?
- 3 What theoretical framework(s) provide an explanation for why standards and credentialing elements are similar (or different) within a country across outdoor activities?

### **Summary and Importance of the Study**

This research provides important insights into outdoor activity teaching credentials, and it informs employers, potential employees, organizations, government agencies, participants, parents, teachers, educational systems, and the general public about the requirements, standards, and elements used to credential teachers in the field of outdoor education. This information will help to enlighten hiring practices, share evaluation standards, address issues of safety and risk management, and connect themes across disciplines and provide perspectives from around the world. Readers interested in outdoor

education in the United States and other countries will also benefit from a clear presentation and comparison of credentialing elements required by credentialing organizations for teaching outdoor activities.

Understanding professional standards for teaching outdoor activities has many implications for education in outdoor environments. Bringing attention to the standards and credentialing elements in outdoor education encourages further professionalism of the field of outdoor education by highlighting the mastery requirements of the teaching profession and informing the public's acceptance of the credential by increasing understanding about the credential (Greenwood, 1957). This research will directly impact all types of outdoor educators in primary schools, universities, non-profit organizations, and for-profit organizations. Prior to this research there has been no comprehensive study of the credentials available in outdoor education. Presenting the credentials, explaining the required elements and standards, and exploring the theoretical frameworks that inspired the development of the credentials are critical and fundamental steps for understanding the field of outdoor education. Educators can now measure their own experience in relation to professional standards from around the world. By presenting a clear outline of the elements being used to define competency, and explaining the theoretical framework(s) that influenced the design of these standards, an employer's understanding and ability to value the credential, evaluate potential employee's ability, and to make informed hiring decisions will be improved.

Improving hiring and management practices is especially important when the students affected by those practices are children. Increasingly, schools are being challenged to incorporate alternative physical activity curriculums and cater to the evolving needs and

interests of students. Understanding the standards set by professional outdoor recreation organizations will encourage physical education teachers with limited exposure to these activities to seek further training and professional development for teaching outdoor activities. Alternatively, administrators and teachers wishing to incorporate outdoor based experiential education activities now have access to a broad analysis of the different skills needed to supervise and teach these activities and can choose to attend professional development opportunities or contract with professional outdoor educators to teach outdoor recreation activities.

Other key beneficiaries of this research are those who develop the standards for outdoor recreation education. Currently, there is very little sharing of information between credentialing organizations and even less communication between outdoor recreation education and traditional education environments. Sharing information about different credentials and the rationale behind the development of the standards will challenge standard setters in adjacent fields to think about how instructors are learning to teach experiential education activities and how teacher competence is being evaluated. Because there has never been an attempt to examine credentialing standards across multiple activities or countries, the process of sharing this information may encourage standard developers to re-evaluate current standards or re-affirm the validity of the credentialing process by observing consensus in standards from multiple organizations.

Finally, the consumers of outdoor recreation--the multiple millions of individuals participating in outdoor recreation across the United States and around the world-- will gain a better understanding of the qualifications of the guides and instructors leading and teaching these activities. Public recognition of a credential is a key step in Greenwood's (1957) model

of professionalism and is essential to legitimizing the difference between a trained professional and an outdoor enthusiast. The credentialing process for careers such as law, medicine, and engineering is perhaps familiar to the general public: the process involves the acquisition of an undergraduate degree, passing a challenging entrance exam for an advanced degree, successful completion of a certification examination, and usually a period of residency or apprenticeship. Greater understanding of the outdoor recreation credentialing process will help to establish faith and trust in the credential and the competency of the individuals who receive these credentials. Outdoor recreation credentials tend to have neither the familiarity nor inferred rigor (such as in the case of a licensure for doctors), nor the implicit competence that is incurred through federal credentialing (such as in the case of a pilot's license). Therefore, bringing attention to how competency is being assessed improves all stakeholders' ability to make informed decisions about the skill and abilities of those teaching outdoor recreation activities.

In summary, outdoor recreation is becoming more popular and the ability to differentiate the quality of experience and training between outdoor professionals is important for hiring decisions and for delivering consistent educational standards. Given that credentials are predicted to become more important in training and hiring outdoor professionals (Attarian, 2001; Priest, 2000), and more people are learning how to participate in outdoor recreation activities, it is important to understand the unique attributes of the credentialing process for different activities and also what measures and standards are being used to evaluate and signal teacher competence. After all, work and healthy living are two important aspects of life and outdoor recreation is poised to have an increasingly influential role in how people around the world find employment and live an active healthy lifestyle.



## **Chapter 2**

### **Literature Review**

The following literature review explores the topics of credentialing and outdoor recreation education and the interesting confluence of these topics. I first begin by explaining the common terminology used in credentialing. Building from a foundation of key terms I provide a brief historical overview of the development of credentialing in the United States. The next section of the literature review is focused on the different theories of credentialing and explores the divergent opinions about the purpose of credentialing. The focus of the literature review then narrows onto the subject of outdoor recreation education. Similar to credentialing, I begin by examining the historical development of the field of outdoor education. That history leads into current practice; I review how outdoor education has recently merged with traditional school curricula and I explore the challenges and the potential benefits of outdoor education in schools. One of the challenges facing the field of outdoor education is the continued debate about the role of credentials in outdoor education. The debate parallels the different theoretical perspectives on the purpose of credentialing found in other fields. I conclude this literature review with a summary of the opinions and research on role of credentialing in outdoor education.

#### **Key Credentialing Definitions**

Mahlman and Austin (2002) gave concise explanations and definitions of three main types of credentials: registration, certification, and licensure. For the purpose of this research I will use Mahlman and Austin's definition of credentialing to move beyond the three main

categories of credentialing and refer to credentialing as the entire domain of recognizing standards of competency. Due to the variety of language used by different fields, academia, the general public, and different countries, all variations and types of recognized qualifications are considered credentials. A qualification is an established requirement for knowledge, skill, or ability that corresponds to a specific task. For credentials such as diplomas, degrees, and accreditations, the knowledge, skill, and ability is generalized beyond a specific task.

There are numerous types of credentials; however, the most common terms in outdoor education are registration, certification, licensure and accreditation. *Registration* is the least restrictive of the three types of credentials, and usually consists of submitting an individual's name, address, and qualifications to a governmental agency. It is uncommon for registration to require the completion of an examination, and upon submission applicants receive a title. The other two types of credentialing approaches--certification and licensure--are more similar and often have overlapping issuance.

A *certification* implies that the title is controlled by the issuing government agencies or non-governmental organization. These certifying organizations will grant a title to persons that meet predetermined qualifications that are outlined by that agency. "A certification is a formal recognition of professional or technical competence" (Mahlman & Austin, 2002, p. 4). There are two different types of certifications and each type carries slightly different legal implications. The first type of certification, minimum competency, refers to the acceptable requirements for an entry level practitioner. Certification that requires advanced knowledge standards often corresponds to a specialization within an

occupation. For example, many health professions require specialized certification to perform specific non-routine tasks.

The most restrictive credentialing scheme is *licensure*. Usually licensure standards are enforced by a governmental organization and are designed to control the practice of an occupation. Licensure legally prohibits persons from performing the occupation without meeting the state or national standards for the license (Mahlman & Austin, 2002).

Finally, one type of credential that is especially prevalent in the field of outdoor education is *accreditation*. “Accreditation is a process whereby an evaluating body recognizes that a program has met standards of operation” (Priest, 2000, p.1). Priest also highlights that, “accreditation takes a multi-dimensional view of quality while certification takes a one dimensional view” (p. 1). One of the main differences between a certification scheme and accreditation is that accreditation usually refers to a program or organization, whereas certifications are related to an individual. For example, there are a number of regional accreditation agencies that accredit colleges and universities in the United States (U.S. Department of Education, 2012).

### **History of Credentialing in the United States**

The history of credentialing in the United States is a fascinating conglomeration of political, economic, and social factors. To understand the current complexity of credentialing in United States it is necessary to start at the very beginning: the signing of the U.S. Constitution. The founding fathers designed the United States federal government to have limited power and, by signing the 10<sup>th</sup> Amendment to the U.S. Constitution, they reserved all governmental powers that were not specifically assigned to the federal government to state governments, or to the people. Therefore, credentialing became the responsibility for state

and local governments and other non-governmental organizations, instead of becoming a federal mandate.

In the first 100 years following the signing of the Constitution, there was little need for formal credentialing programs. Most professions followed a model of apprenticeship that involved association with a person of greater skill and knowledge. However, with the advent of the industrial revolution, the need for different types of skilled workers increased and apprenticeship began to disappear (Hansen, 2011). Vocational schools that had taught traditional professions and the practice of apprenticeship became increasingly rare as high schools became important training grounds for teaching white-collar work skills such as typing, literacy, and numeracy that were generic across the newly developing industries. Because high schools were teaching generic skills, a certificate of completion from a high school was a reasonably reliable reflection of the skills that a graduate possessed (Hansen, 2011). In the 1830s state legislatures did away with “the undemocratic professional licensing laws,” (Hansen, 2011, p. 36) that accompanied many professions. However, simultaneously, there was a proliferation of universities, law schools and medical schools across the United States. As the new careers of the post-industrial society increased in status and wage, the university degrees that provided entrance into these professions became more important. For example, the University of Michigan, as all state schools, had the practice of accepting any graduate from a state high school. By the 1920s the University of Michigan began accrediting high schools from which it would be willing to accept students and many other universities soon followed Michigan’s example; together universities set common accreditation standards and school inspections for high schools (Hawkins, 1992). Accompanying the transition to a system of accreditation for high schools, in the 1930s the

National Education Association, with the help of teacher unions, lobbied state legislatures to create complex teacher certification and training laws that quickly became commonplace across the United States (Hansen, 2011).

**Medical and law credentialing.** For the medical profession, the transition from a loose association of well-connected professionals to a more formal system of standards followed a similar trajectory to that of the field of education. In the late eighteenth and early nineteenth centuries medical schools flourished. According to Young (1982), the first move to create a more professional standard for the medical profession came from the Illinois Board of Health in 1880. The Illinois Board of Health created a list of medical schools and then graded each school on the adequacy of its curriculum. In 1902 the American Medical Association Council of Education was established, and in 1910 Abraham Flexner pushed reforms in medical education toward a standard curriculum followed closely by Ernest Codman's 1914 proposed medical audit of hospitals (cited in Young, 1982). The next key event in the credentialing process of medical professionals, described by Lembeke (1967), was a Carnegie Foundation grant to survey hospital environments. The survey results about the condition of the hospital environments were so poor that all of the reports were destroyed, and minimum standards were gradually and privately implemented until a formal accreditation process for hospitals was established in 1952.

Following the Great Depression, the United States experienced huge growth in the health care field. Insurance companies and the United States government, as a result of amendments to the Social Security Act, had a vested interest in making sure that payment was being made for medical services that were necessary, and were of good quality. Thus, accreditation of hospitals and credentialing of hospital staff became vitally important

(Young, 1982). As can be observed on name tags in hospitals around the country, the initials that follow a doctor's or nurse's name indicate an astounding variety of credentials that include hundreds of possible degrees and specialty certifications.

The evolution of credentialing in the field of law mirrored credentialing developments in the medical field. As with medicine, the traditions of law arrived from the United Kingdom with most practitioners following an apprenticeship process of gaining experience. However, as early as the 1770s private law schools, like the Litchfield Law School in Connecticut, were established and began teaching the technical aspects of law (Roberts, 1983). Law courses were also integrated in to general undergraduate studies to help prepare students for careers in politics. According to Roberts, careers in law were generally unregulated, with some states requiring three years of apprenticeship before practice; however by the 1860s only a handful of jurisdictions required any period of apprenticeship and most allowed for formal schooling to suffice as appropriate training. In 1824 the state of New Hampshire permitted any citizen over 21 years of age to be admitted to the bar to practice law (Roberts, 1983). However, soon afterward, untrained lawyers were ostracized from the practice of law. The requirements for admission to a state bar association were, and continue to be, drastically different for each state. Many states, but not nearly all states, require mandatory participation in a state bar association in order to practice law within that state. These state bar associations are governed through a variety of methods including state supreme courts, state constitutions, or even dedicated government agencies. All the states that do not have a mandatory bar association offer a voluntary bar association. There is no federal bar association, but the American Bar Association (ABA) was established in 1878 by a consortium of lawyers from 21 States to establish the first national code of

ethics. It continues to have the largest membership and influence of any legal association in the United States (American Bar Association, 2012). Although the ABA is a voluntary organization, it currently has the very important function of accrediting law schools (Fossum, 1978). Most state jurisdictions require students to have graduated from an ABA accredited school before taking the bar examination. (For a more detailed account of the history and development of law credentials see Robert's 1983 book, *Law School: Legal Education in America from the 1850s to the 1980s.*)

Overall, by 1990, there were over 1,000 occupations that required licenses, and about 60 occupations such as ones in the medical and engineering fields that held similar requirements in all states (Impara, 1995). Surprisingly, most occupational credentials are not governed by state or federal mandates. Primarily, the process of credentialing and standards settings is conducted through two main non-government organizations that oversee most credentialing activities in the United States. The Institute for Credentialing Excellence (ICE) is the membership organization for the National Commission for Certifying Agencies (NCCA). The goal of NCCA is to assist organizations in the process of developing certification programs that meet specific standards and guidelines as outlined in the NCCA *Standards for Accreditation of Certification Programs*. NCCA accredits organizations that provide credentials for medical, culinary, business, and construction professions (ICE, 2012). Oddly ICE --an accrediting organization-- is accredited by the American National Standards Institute (ANSI) as a Standards Developer. ANSI was originally founded to develop engineering standards, and in the past 90 years has expanded to develop guidelines and standards for over 100,000 business and tens of millions of professionals in fields ranging from construction, to food, to energy, and personal safety (American National Standards

Institute, n.d.). Both ICE and ANSI are not-for-profit organizations that are independent from the United States government.

It is clear that credentials have influenced and shaped many aspects of American society. However, the process of developing credentials has not always been straightforward and has often been reactionary to the cultural climate. Nevertheless, as the ANSI website states, standards have an enormous role in promoting quality, conformity, and thereby strengthening economies and protecting the health and safety of people and the environment (ANSI, n.d.). Although everything from organic vegetables, pipe fittings, and automobile specifications can be standardized and certified, this research was focused on the occupational credentials in outdoor education. I now turn to the question: "What is the purpose of occupational credentials?"

### **The Purpose of Credentialing – A Theoretical Overview**

As seen in the examples of education, law, medicine, and in the brief overview of credentialing organizations, credentialing programs have been a formal or informal part of United States society for over 150 years. Although opinions about the theory and purpose behind these credentials are highly divided, occupational credentials have had an important role in society and have shaped the very nature of what it means to be employable. But the specific value and purpose of credentials are steeped in the metamorphic properties of culture and historical context. Research and literature on credentialing have predominately focused on the dynamic of how education influences employment. Perhaps the most ubiquitous independent variable used in research is the diploma from high school or college, but this research easily relates to all occupational credentials. The literature on credentialing can be divided into three major categories of credentialing theory that attempt to explain the purpose



and value of a credential. Generally, most theories fit under an umbrella of credentialist or control theory, human capital theory, or signal theory.

**Credentialist and control theory.** At the turn of the 20<sup>th</sup> century Max Weber, one of the premier developers of the field of social science, extrapolated his understanding of Confucian religious systems into one of the first theories on educational credentials; in the process, he suggested that credentials held little relevance to the technical skill requirements of most occupations (Weber, 1951). Weber suggested that education systems served as a tool of social stratification and created barriers to entry into organizations or occupations. Berg (1971) greatly expanded what came to be known as credentialist theory and highlighted the social stratification aspects of credentials. Socialist philosophers developed an extreme version of Weber's theory, called *control theory*, which condemned capitalist control of education systems which, they asserted, served to maintain elitism and social stratification (Sinclair, 1922). Although the focus of control theory was inequality and skewed power dynamics, both control and credentialist theories shared the belief that credentials serve to separate individuals into social strata or to segment the job market.

In Berg's (1971) landmark book *Education and Jobs; The Great Training Robbery*, he suggested that credentials are important as a tool for employee selection, but he also affirmed Weber's beliefs that credentials are not a valid reflection of skills or productivity. By examining worker's skills, Berg's theory of credentialism rebuked the educational necessity of credentials and maintained that credentials provide little to no support for increased productive capability or job performance. Berg offered evidence that less schooled workers perform at least as well as more educated workers in some occupations, and therefore employment selection based on credentials was irrational. Another of Berg's main

critiques of a credentialist society was the inflationary nature of credentials over time. Reflecting on United States in the late 1960s and current educational trends, Brown (2001) described the over education of society as being proliferated by the opinion of job seekers that vocational security could be obtained through the accumulation of credentials or what he called the “sheep skin effect” (p. 19). Brown (1995) suggested that the ethos supporting the need for credentials was in response to an education industry that was drastically expanding in the absence of regulation. However, Boylan (1993) had also previously described a self-perpetuating cycle in which credentials became more important as the levels of education increased and provided employers the opportunity to further segment potential employees based on credentials; the levels of education thereby increased to match the greater rewards of positions that were obtained through more advanced credentials. Boylan envisioned that the ever-expanding growth in credentials was linked to a societal push for greater status and rewards. Collin’s (1979) further claimed that the expansion of credentials far outpaced the changing technological demands of society and the need for skills had not increased as much as the demand for credentials. However, recent years of nearly unfathomable technological advancement, especially concerning the revolutionary development of mass computer systems and the internet, might necessitate a reconsideration of this theory according to the many new skills required in modern occupations, including outdoor education.

Cultural and control theorists have argued that the validity of credentials is far less important than the effects of credentials in society. Berg doubted that ever-increasing education requirements were necessary for increased societal prosperity and growth, and suggested that one of purposes of a credential was to control access to certain occupational positions. Collins (1971, 1979) expanded socialist approaches to Weber and Berg’s theory of

social stratification into a theory that explained the use of credentials as a societal mechanism of control. In the early 1970s the United States was experiencing renewed struggles for racial and gender equality. The Vietnam War, nuclear armament, and counter-culture movements fed a growing backlash against government control. Collins' (1971) theory was a reflection of a context in which power and access were controlled by few, and credentials and personal background information were tools used by those in positions of power to oppress and limit social advancement. According to Collins and others, the purpose of a credential was to keep social advancement in the hands of those with wealth and power and to exclude rather than promote technical skills or efficiency. Upon reflection on the elitism of universities, Collins (1979) observed that the growth in school enrollments did not match the need for increased skills and that schooling was more about social association than learning new skills. Even in today's society, editorials and online articles echo the same points emphasized by credentialist theorists over 40 years ago. Credentialist theorists view credentials as self-serving and financially inflating, and serving to promote carelessness instead of competence. However, the credentialist perspective is only one viewpoint competing against multiple other theories of credentialing.

Even within the framework of control theory, a slightly different perspective was first presented by Bowles and Ginitis' in a 1976 article (revised in 2002) entitled *Schooling in Capitalist America*. Bowles and Ginitis found that employers hired based on deeply held beliefs about the non-cognitive behavior benefits of schooling versus empirical achievements. Bowles and Ginitis' theory outlined a matrix of social stratification in which the socialization process of earning a credential prepared students for a particular type of work based on a hierarchically structured class environment. The examples provided by

Bowles and Ginitis described how low income students attended schools that fostered conformation and rule following behaviors, while higher income students participated in school cultures that developed independence and creativity. Therefore the enculturation of behavior during the credential earning process was the component most valued by employers.

In 1981, Kingston further justified aspects of the control theory by citing examples in which many employers especially valued the social and interpersonal skills that were formed from cultural associations and experiences in elite competitive environments. As recently as 2001, Brown maintained that credentials foster a culture of exclusion that link credentials to positions of power and that the increasingly complex demands of the workplace are overestimated. Credentials may be a result of an overinflated, unregulated education industry, or they may be due to the increased ratio of education to financial reward, or even socio-political method of engaging in social stratification. Regardless, the common theme among credentialist theories is that credentials are restrictive and limiting and the true value of a credential is status, not skills. One of the many critiques of credentialist theory was that credentialist approaches were too focused on market structures and exaggerated the capacity for control, especially in current society (Rosenbaum, 1990).

**Signaling theory.** In contrast to credentialist and control theory, *signaling theory* places a high value on the purpose of credentials in society. While credentialist theories mostly focus on the socio-political jockeying of those who have and do not have credentials, signaling theory is primarily concerned with an economic evaluation of credentials. Brown (2001) grouped signaling theory into two common primary economic variations: supply and demand. Supply-side signaling theory was developed by Spence (1973) and focused on the

individual importance of a credential. Spence's theory focused on the human ability to change personal characteristics through education, and he highlighted that the effort behind these changes have an associated value. By making changes, a person can signal priorities, abilities, and competence. Demand side signaling theory, also called *screening theory*, focused on the ability of signals to provide data points that others could use to evaluate competence (Riley, 1976; Stiglitz, 1975). In the job market, information about the abilities of a potential employee is valuable commodity. To rigorously evaluate a person's abilities is costly and timely, it was therefore viewed as efficient to use available information signals to interpret and make inferences about employability (Spence, 1974; Stiglitz, 1975). However, Thurow (1975) argued that signals about skills and abilities are crude at best, and provide poor information to employers. There are a number of other variations of signaling theory besides supply and demand theories.

Meyer's (1977) institutional theory shared both credentialist and signaling characteristics. Meyer argued that the content of the credential is less important than the accepted social value of the credential between the issuer of the credential and the evaluator of the credential. The value of the credential is signaled implicitly between institutions; thus, institutional respect signals the quality of candidates. Psacharopoulos' (1979) descriptions of strong and weak signaling theory were concerned with the relative importance of the signal, in which weak signaling theory accounted for an employer's ability to adjust perceptions of ability post-facto. Following similar logic, *queing theory* suggested that credentials were signals that provided a guideline about the general trainability of a person for a task instead of signaling specific knowledge (Thurow, 1975). Even more general was Arrow's (1973)

*filter theory* which asserted that credentials functioned as a simple sorting mechanism of individuals into broad categories of different abilities.

Among the more novel incarnations of signaling theory was the theory of *network signaling* developed by Rosenbaum in 1990. Rosenbaum's concept was that signals are more likely to be communicated, trusted, and effective when occurring in the context of a personal or institutional relationships. For example, in Japanese cultures there are strong connections between high schools and employers; and the personal connections between student, teacher, and employer are paramount in the hiring process (Rosenbaum, 1990). In the 21<sup>st</sup> century, the role of social networking sites in employment appear to have provided even further validation of the importance of personal and institutional validation of credentials, however more research is needed in this area.

A common critique of signaling theory is that signals rely on a shared understanding of the meaning of the credential. For example, Dore (1976) explored the different perceptions of the meaning of a high school diploma between “more and less developed countries” (p. 97). Dore suggested that despite a vague understanding of the specific skills signaled by attaining a high school diploma in less developed countries, a high school diploma assumed an even more important role in signaling employability than in more developed countries where the school graduation requirements were more standardized. In contrast, Jenks and Crouse (1982) studied the Scholastic Aptitude Test (SAT) in relation to vocational achievement in the United States and found that Americans generally distrust test scores and employers did not consider grades or test from schools to be valuable signals. Using network theory, Rosenbaum attempted to explain the different prioritizing of credentials in different cultures. In the United States, unlike in Japan, performance (e.g.

grades) during the process of earning a credential did not correlate to a higher reward despite shared acceptance of the credential (Kariya & Rosenbaum, 1988).

**Human capital theory.** Finally, *human capital theory* offers a completely different emphasis than either credentialist theory or signaling theory. For example, Bills and Wacker (2003) used the 1995 Adult Education Interview of the National Household Education Survey to understand the value of vocational training to employers. They concluded that employers value credentials beyond merely the signaling capacity of technical achievement. Because workers were often given time and encouragement to pursue further education, Bills and Wacker suggested that employers must value these credentials as actually enhancing job skills. The belief that credentials have value as a skill building enterprise is commonly called human capital theory. Contrary to the symbolic value of credentials presented in signaling theory, Becker (1964) noted that employers had clear perceptions of the meaning of credentials. Schooling and experience produce both general and specific skills that provide marketable abilities that in turn result in greater employability (Becker, 1964; Mincer, 1958). Kerkhoff and Bell (1998) also argued that the willingness of employers to support employee's advanced training and efforts to acquire additional certifications in effect validated the effectiveness of credentials in the workplace. If employers are willing to support employee's efforts to acquire credentials, then Berg's argument that credentials are unrelated to the demands of the workplace is greatly diminished (Bills & Wacker, 2003).

Human capital theory is a clear departure from both signaling theory and credentialist theory. The core tenet of human capital theory is that the process of earning a credential improves human capital; it improves the skill, ability, and competence of an individual. In contrast, signaling theory insists that credentials are representational and credentialist theory

maintains that credentials are instruments of social stratification. Human capital theory is only focused on the merit of the education. However, as discussed by Brown and Sessions (1999) the United States education system is contradictory to human capital theory because students completing high school obtain different skills and knowledge, and yet earn the identical credential of a high school diploma.

### **Summary of Credentialing Theory**

The socio-political and economic research on credentials reveal a variety of opinions that are as much shaped by personal ideology as distinctions between professional fields. When examining this research on the major theoretical perspectives, I found a limited discussion about the role of credentials in protecting human health and safety. Instead the primary focus of the research was access to employment. However, when reviewing membership directories of ANSI or ICE it is clear that a division exists between two different types of occupational credentials. There are occupational credentials for skills, education, and competency, and there are credentials that have the additional focus of protecting human health. In fact, a large percentage of ANSI and ICE member organizations provide credentials that are health related specialties and certifications. Nonetheless, the purpose of the research conducted for the present study is not to get bogged down in whether or not credentials have been shown to actually improve safety performance. Rather, the purpose is simply to elucidate a critical fourth purpose of credentialing; namely, that credentialing is often implemented to protect the public from harm. This fourth point also foreshadows an important component of the role of risk and safety in the debate about credentialing standards for teaching outdoor activities.



## **Outdoor Education**

According to Cockrell and Lafollete, “America’s wildland recreation tradition is based on freedom of choice, self-reliance, individual responsibility, exploration, and challenge” (1985, p. 41). Perhaps it is this fundamental characteristic of American society that has encouraged and prolonged the discussion about the role of credentials in outdoor education. Over 70 years ago, Wagar (1940) first proclaimed the need to develop programs to certify outdoorsmen in the United States. Nature and experience were the means by which outdoor enthusiasts learned the skills and knowledge to survive; however, Wagar anticipated that increased access to the wilderness would prompt a need for education to develop safe wilderness skills. Although 70 years might seem to be a long time, with respect the larger field of education, the concept of outdoor education is relatively new and professionalism and credentialing are in stages of relative infancy.

**History of outdoor education.** The history of modern outdoor education is most commonly traced back to the founding of Outward Bound (Allison, 2005; Attarian, 2001; Ewert, 1987; Priest, 2000). Outward Bound was founded by Kurt Hahn and Lawrence Holt in Wales in 1941 (Freeman, 2011). The first courses were four weeks long, and students were trained in athletics, seamanship, and land-based expeditions with the expressed focus of "character-training" and teamwork (Freeman, 2011, p. 25). According to Freeman, in 1946 Outward Bound began to establish new schools first a Sea School and then the Mountain School in 1951, and many others until finally establishing the first school in the United States in 1962. Although as Webb (2001) pointed out, there were many university outdoor programs operating in the United States as early as 1925, and the Boy Scouts of America and Sierra Club were also active leaders in outdoor recreation activities since the early 1900s.

Just before the arrival of Outward Bound in the United States, Morse (1957) published the first article in America on the therapeutic value of camping outdoors in the *Journal of Social Issues* and, by the 1960s, outdoor education began gaining popularity (Ewert, 1987a).

Paul Pedzolt, a legendary person in the field of outdoor education, established the National Outdoor Leadership School (NOLS) in 1965 and shortly thereafter founded the Wilderness Education Association (WEA) in 1976 (Attarian, 2001). As is noticeable in the use of "school" and "education" in the names of these organizations, the naming of those associations intentionally reflected an emphasis on teaching students' character-building, leadership, and outdoor skills. Starting in the 1960s, outdoor education grew and increased in professionalism and there was a noticeable shift from the view of outdoor activity as a purely recreational pursuit to the potential opportunity for education. Ewert (1987a) outlined the evolution of academic interest in outdoor education and noted phases in research and analysis during certain decades. In the 1960s --what Ewert referred to as the social benefit phase-- research mostly focused on the positive effects of participating in outdoor adventures. By the 1970s, research focused on more discrete benefits to the participant; in the 1980s, interest peaked in studying the effects of wilderness experiences on motivation. Despite growing attention and debate surrounding the benefits of outdoor activity participation, the legitimacy of the field of outdoor education was mostly relegated to presentations at conferences and in books by outdoor education practitioners (Ewert, 1987a).

Public attention to the field of outdoor education has, unfortunately, often been a result of tragedy. One example of a commonly cited incident that shaped credentialing standards in the United Kingdom was the Lyme Bay kayaking disaster in which four students drowned (Allison & Telford, 2005). Following the Lyme Bay disaster, the English

Parliament responded by creating the Adventure Activities Licensing Authority (AALA) which enforced credentialing requirements that drastically changed risk management systems for outdoor activities (Allison & Telford, 2005). Woollven, Allison, and Higgins' (2007) follow-up research noted that the new AALA regulations had an entirely positive effect on sea kayaking in the United Kingdom.

Although there is no database for cataloging outdoor education related fatalities, it is perhaps useful to note that fatalities, although tragic, are extremely rare. For example, a study by Brookes (2003) found that, in 42 years of Australian outdoor education, there were about 60 fatalities, or on average less than 1.5 per year, and this included driving and instances of pre-existing conditions. Despite the high perceived risk of many outdoor activities and heightened media attention that accompany occasional tragedies, advances in technology, access, training, and increased awareness of the benefits of outdoor recreation have slowly brought many outdoor activities into mainstream culture. In fact, outdoor recreation education is becoming more popular as component of school curricula around the world and has been included in many physical education programs as an alternative to traditional sporting activities.

### **Outdoor Recreation Education in Secondary Schools**

In 2006, a resurgence in research on outdoor play prompted England's Department of Education and Skills to push for more students to experience the outdoors. Since 1999, outdoor education in New Zealand has been incorporated into public education curricula as one of the seven key learning areas of Health and Physical Education (Zink & Boyes, 2006). In Australia, a leader in the field of outdoor education, outdoor education was added to Victoria's state curriculum in 1982 (Gough, 2007). The United States has been slower to

adopt similar policies; however, outdoor recreation in schools is beginning to gain some support in the U.S. Due to the growing popularity of outdoor recreation activities and the inclusion of outdoor recreation activities in curriculums across the world, more students from a wide variety of backgrounds are engaging in outdoor recreation. Therefore, the methods by which a person becomes qualified to teach outdoor activities is a critical topic that should not be overlooked in the process of adapting to the growing popularity outdoor recreation activities as leisure, exercise, or physical education opportunities. Specifically, examining the role of outdoor recreation in schools in the United States provides an interesting example that highlights the importance of this research and how building a foundational understanding of credentialing standards for teaching outdoor activities will influence school policy, teacher training, parental understanding, and student experiences.

Since the enactment of the *No Child Left Behind* legislation (2001) there has been an increased emphasis on high-stakes testing in core subjects such as math, reading and writing. Many school administrators continue to view outdoor recreation and all types of physical education as inconsequential leisure activities instead of an integrated and essential part of the education process (Hardman & Marshall, 2000). Even schools that do not marginalize physical education most often focus physical activity education on teaching athletic skills instead of skills for maintaining lifelong involvement in an activity (Macnamara, Collins, Bailey, Toms, Ford & Pearce, 2011). Holt-Hale, Ezell, and Mitchell (2000), offered that the traditional competitive and performance oriented approaches to physical education have had little impact on the goals of education and have contributed little to the development of healthy people. The National Association of Sport and Physical Education (NASPE) and the American Heart Association (AHA) (2010) have continued to argue that creating lifelong

healthy habits is among the most critically deficient but important areas of education for young adults. According to Ogden, Carroll, Brian, and Flegal (2012) 18.4% of youth between the ages of 12-19 are obese and obesity rates have been steadily increasing since 1999. Obesity and physical inactivity are two of the four largest preventable causes of deaths in the United States (Danaei, Ding, Mozaffarian, Taylor, Rehm, & Murray, 2009) and are major risk factors for deadly diseases including cardiovascular diseases, diabetes, and some cancers (U.S Department of Health and Human Services, 2000).

In support of outdoor recreation as a viable alternative to traditional physical education and exercise, Cale and Harris (2006) found that long-term exercise habits are cultivated more through non-competitive activities that can easily be transferred to recreation opportunities later in life. Brown (2006) and Dyson (2006) also provided evidence that students who participate in non-competitive outdoor recreation activities have not only improved physical ability but also have more positive attitudes towards physical education. Haug, Torsheim, Sallis and Samdal (2008) further suggested that students who participated in outdoor recreation activities were generally more active individuals.

**Outdoor recreation in school curricula.** Outdoor recreation is among the fastest growing sporting activities (Outdoor Foundation, 2011) and many youth are beginning to choose to participate more in outdoor sports over traditional team sports (Greene, 2002). Because of this, school administrators and teachers are being challenged to think differently about creating physical education curricula that reflect students' need and interests (Thorburn, Jess, & Atencio, 2011). The age of tedious calisthenics is long gone and the focus is now on personal challenges, fitness that supports good health, and exposure to a variety of activities (Burgeson, 2004). For example, one of the standards for physical

education teachers set forth by the National Board of Professional Teaching Standards (NBPTS) for physical education teachers, *Standard II: Knowledge of Subject Matter*, includes outdoor education and adventure activities as one of the key movement forms and concepts in the curriculum for early adolescents and young adults (NBPTS, 2001). Similarly the National Council for Accreditation of Teacher Education (NCATE), in cooperation with NASPE, has approved standards for physical education instruction that also list outdoor activities as one of the varieties of physical activities that constitute K-12 physical education (NASPE, 2008). Despite the inclusion of outdoor recreation in professional teaching standards, the 2006 Centers for Disease Control and Prevention's *School Health Policy and Practices Study* (SHPPS) included only a few different types of outdoor recreation activities and uncovered that only a small percentage of schools offer these activities (e.g. 12% climbing walls, 10.6% hiking/backpacking, 4.7% biking, and 4.4% skiing).

The discrepancy between the suggested standards for physical education curricula and actual teaching of outdoor recreation activities in schools could be a result of many different reasons. According to Pate, Davis, Robinson, Stone, McKenzie and Young (2006), "issues that must be addressed in planning and implementing physical activity-based programs include: transportation, qualified supervision, selection of activities to meet student needs and interests, and access to appropriate facilities" (p. 1221). For the purpose of this research I was mostly concerned with quality of supervision, which Pate et al., suggested was an important issue. The safety of children is a paramount concern for all adults. There are inherent risks associated with any type of activity and the potential liability of physical activities deters many schools from sponsoring alternative activities (Pate et al., 2006). Outdoor recreation activities contain unique movement forms, complex environments, and

technical equipment that may discourage schools from incorporating outdoor recreation activities, yet physical education teachers are increasingly being urged by standard setting organizations, such as NASPE, to teach outdoor activities. This is a complicated paradox for schools and teachers. In Australia, where outdoor recreation is widely practiced, schools have found that most physical education teachers do not have the professional experience to adequately teach outdoor recreation; thus, schools have turned to specialists and have outsourced these responsibilities to professional organizations with expertise in outdoor activities (Williams, Hay, & Macdonald, 2011).

One of the ways in which school administrators can reduce the liability of physical activities in schools is to hire qualified staff (CDC, 2001). But how can school administrators determine if a teacher is qualified to teach outdoor recreation, and what does “qualified” mean in across activity subjects and across different countries? Accordingly, one aspect of the importance of this research is not only to inform the general public about the abilities of outdoor activity instructors, but to provide parents and school administrators information about standards and credentialing elements used to measure the competency of teachers and signal their ability to appropriately teach these activities.

### **Occupational Credentials for Outdoor Recreation Education**

Many students are introduced to the field of outdoor recreation as a degree option at their college or university. Although students often spend time participating in outdoor recreation activities as a part of earning a degree in Outdoor Education, research has shown that relatively few schools offer opportunities for students to earn nationally recognized certifications such as: Wilderness First Responder (69%), Leave No Trace Trainer (46%), and American Canoe Association Canoe Instructor (35.8%) (Attarian et al., 2008). Although

many undergraduate students may learn outdoor recreation participation skills while attending a college or university, relatively few students are obtaining professional training for teaching outdoor recreation activities.

There is a surprising amount of research about the validity and importance of university level diploma in the field of outdoor education. However, none of the research reviewed from the last decade had any mention of credentialing theory. Although much debate has surrounded the necessity of an outdoor education degree, research on this subject corresponds to employability and the required credentials for teaching outdoor recreation activities. Also, a primary characteristic of an outdoor education degree involves technical skill training, and therefore is relevant to providing insight into the systems that credential the teaching of outdoor activities.

Proponents of an outdoor education degree would support Munge's (2009) three functions of a degree: 1) to develop knowledge that informs practice, 2) to legitimize the field and assist in explaining the field to others, and 3) to produce practitioners with theoretical foundations. These three functions also relate to Greenwood's model of the five characteristics of professionalism. However as Plaut (2001) eloquently phrased:

One does not need a degree in 'adventure education' or 'outdoor education' to get hired and work successfully in the adventure education field. Many competent adventure educators have degrees in fields ranging from biology, to philosophy; from English to Chinese. This makes sense. The world is full of writers without English degrees, and entrepreneurs without business degrees. (p. 1)

One reason for this sentiment is the unique nature of the outdoor education profession. For example, the outdoor activities that form the basis of this research are rarely taught in isolation. These activities and skills are often taught as components of a larger program that not only incorporate many of the same challenges of group relationships, timing, scheduling,



and materials that classroom teachers experience, but also include the added challenges of the environment, safety, and the psychologically taxing task of managing many other unknown variables. For these reasons, employers have indicated that they consider many things when hiring outdoor educators (Garvey & Gass, 1999; Maningas & Simpson, 2003; Munge, 2009; Plaut, 2001; Shooter, Sibthorp, & Paisley, 2009). Among the considerations indicated by employers are: an academic degree, personal experience, skills training, first aid training, work experience, outdoor course participation, and personal characteristics.

Another unique characteristic of the outdoor education field is the use of professional teams for teaching outdoor education. Shooter et al. (2009) suggested that, “many administrators find themselves in a position of hiring, training, and staffing courses that require careful selection of the most effective leadership teams. Although possible, it is rare to find an outdoor leader who excels in all areas” (p. 2).

In a pioneering study, Garvey and Gass (1999) conducted surveys using two imaginary outdoor educator resumes in 1983 and then again in 1997 and compared the results of these two candidates’ strengths and weaknesses based on evaluations completed by 100 randomly selected individuals responsible for hiring outdoor educators. The results indicated that employers required a mix of degree credentials and personal experiences, with the emphasis on a university degree dropping from the single most important characteristic in 1983 to the third most important characteristic in 1997. Yet, the more successful of the two candidates in 1983, was twice as less likely to be hired in 1997 (Garvey & Gass, 1999). Maningas and Simpson’s (2003) survey of 33 AEE accredited organizations found that 55% of employers placed a high priority on having a college degree and 44% valued outdoor school training from Outward Bound or the National Outdoor Leadership School (NOLS).

Results from employability surveys provide multiple insights into how credentialing theory might be explained using outdoor education. First, the diversity of employability requirements seems to invalidate credentialist and control theories because an applicant's credentials are not apparently limiting or stratifying entry into employment. In Garvey and Gass' 1997 evaluation, personal experience was rated as the second most important characteristic in a hiring decision. However, because employers appeared to be aware of the potential stratifying effect of credentials and recognized that many talented educators may lack credentials but have valuable personal experiences, employers also acknowledged the credentialist perspective and took steps to avoid limiting applicants based on credentials. There are also examples that support the signaling aspects of credentials in outdoor education hiring. For example "professionals in charge of hiring staff appear to have a strong and continued preference to hire staff who have been trained and acculturated by institutions" (Garvey & Gass, 1999, p. 4). Highlighting Meyer's institution theory, Garvey and Gass also remarked that "hiring professionals seemed to rely upon their experience with institutions with which the candidate may be associated" (p. 4). Examples of human capital theory can be inferred from the fact that a first aid certification was recorded as the most important individual characteristic in Garvey and Gass' research. Applicants who did not have a first aid certification or outdoor education degree were considered to lack the appropriate skills. Positive comments from employers about the value of skills training from specific organizations, such as NOLS, indicated that organizational courses improved an applicant's real skill ability. However Plaut (2001) and Munge (2009) also cited industry-wide concerns about the discrepancy between the skill levels of students graduating with diplomas in outdoor education. These concerns about the consistency of outdoor education diplomas

Table 2.1  
*Comparison of Outdoor Education Hiring Characteristics*

Ranking	Barnes (2004)	Munge (2009)
1	Outdoor activity skills	Personal attributes
2	Personal attributes	Previous experience in a broad range of outdoor skills
3	Experience	Interpersonal skills
4	Group working skills	First Aid
5	Communication skills	Skills, knowledge /qualifications in relevant activities
6	Knowledge and understanding	Enthusiasm and passion
7	Problem solving skills	Instructional skills (activity specific)
8	Project management skills	Professional attitude / confidence / judgment
9	Information technology skills	Formal qualifications in outdoor education
10	Academic awards / skills	Team work

echoed the research by Brown and Session (1999) that also questioned the signaling validity of a high school diploma.

Although Garvey and Gass' research was conducted nearly 30 and 15 years ago respectively, their research represents a profession in flux and evolving with different values and standards for professionalism over time. More recent research has been conducted in the United Kingdom (e.g., Barnes, 2004) and in Australia (e.g., Munge, 2009); that research has confirmed the discrepancy of perceptions regarding credentials in outdoor education. Not only does the culture of outdoor education change over time, but across countries there are different values and standards for hiring outdoor educators. Table 2.1 shows the rank ordering of characteristics identified in surveys by Barnes (U.K) and Munge (Australia). As can be seen in the table, the most important characteristic required of an outdoor educator in the U.K was outdoor skills, followed by personal attributes and experience, with diplomas ranked 10<sup>th</sup>. By contrast, Munge's research revealed that personal attributes ranked first most important, followed by previous experience and interpersonal skills; first aid certifications and activity specific skills ranked 4<sup>th</sup> and 5<sup>th</sup>; diplomas ranked 9<sup>th</sup> in importance. Upon inspection of Garvey and Gass', Barnes', and Munge's research it is clear that behavioral and

cognitive characteristics are important in outdoor education and that there is no obvious standard for predicting the potential performance of an outdoor educator.

**Accreditation vs. certification in outdoor education.** The differing perspectives on employability characteristics (Barnes, 2004; Garvey & Gass, 1999; Munge, 2009) are central to understanding the decades-old debate concerning accreditation versus certification of the outdoor professional. Outdoor recreation education is generally coalesced into one facet of an outdoor educator's job responsibility; therefore, an outdoor educator is often referred to more generally as an outdoor leader. Swiderski (1987) first introduced the outdoor industry to the three broad skills of an outdoor leader: hard skills, soft skills, and conceptual skills. Swiderski defined these three broad skills by subcategories of skills: hard skills were defined as instructional, technical, physiological, administrative, and environmental and safety skills; soft skills were defined as social, psychological, and communication skills; and conceptual skills were defined as skills such as judgment, and creativity (Shooter et al., 2009). The necessary skills of an outdoor leader have been redefined and expanded many times in recent years and a number of other guidelines for outdoor leaders have been developed. Two examples are the WEA's 18-point curriculum (WEA, 2012) and NOLS' 4-skill model (Gookin, 2006). The academic debates behind the different systems are not relevant to the purpose of this research; however, the diverse hiring preferences that are due to the complicated construct and requirements of an outdoor leader serve to outline the unusual demands of instructing outdoor skills. Similar to the more familiar role of teachers in schools, teachers are required to know more than just the subject matter. However unlike many classroom teachers, teachers of outdoor skills are also required to manage risk, changing and unpredictable natural environments, and to introduce physically unfamiliar and

consequential equipment. The many characteristics needed by an outdoor leader have fueled the debate over whether the best way educate, train, and maintain the skills of an outdoor educators is through accreditation or certification.

In 1992, Bassin, Breault, Fleming, Foell, Neufeld, and Priest conducted a survey of current members of AEE, an adventure programming accrediting organization, and found that about 60% of members favored industry accreditation over certification. Nevertheless, there are many organizations (e.g. WEA) that favor certification. Cockrell and Lafollete (1985) have argued that certification of outdoor instructors would help increase awareness about hazards and improve the prevention of accidents. For example, the United Kingdom's Mountain Training Board has been offering training and certification since 1964 and claimed improved safety records as a result (cited in Cockrell and Lafollete). Cockrell and Lafollete also asserted that certification would encourage better environmental practices, and lead to increased participation in activities. However, Priest (2000) and other proponents of accreditation have argued that certification implies a guarantee that standards of competence have been achieved by an outdoor leader, yet the role of an outdoor leader is too complicated to judge by a single standard. According to Priest, "accreditation recognizes that there is more to safety than just competent leadership, and so examines all aspects of programs" (2000, p. 2).

In their article "Accreditation for Adventure Programs," Gass and Williamson (1995) outlined four benefits of accreditation. According to Gass and Williamson, accreditation: (1) gives the ability to achieve standards and the flexibility to determine how standards are met; (2) takes a systematic view instead of an individualistic approach; (3) is focused on evaluation and improvement through internal and external review; and (4) improves public

awareness and confidence in quality. Although this model is highly applauded and has been incorporated into many organizational structures (Gass & Williamson, 1995; Priest, 2000), an accreditation model fails to take into account two important points: employment decisions and the technical skills of outdoor instructors. An accreditation model relies on organizations to hire, certify and train their own staff using internal standards (Attarian, 2001). However, Attarian predicted that the need for more accountability, better evaluation, increased regulation, and a greater emphasis on hiring and training staff will eventually require certification for leading certain activities. Although the outdoor education industry has remained largely unregulated, most agree that outdoor education is moving toward a model in which instructor certification and program accreditation are complimentary instead of conflicting aspects (Priest, 2000).

The Climbing Wall Committee (2009) constructed a parable about the benefits of credentialing using the history of swimming in the United States to outline the potential evolution of regulation in the outdoor industry. According to Wilte's (2007) historical narrative, the introduction of swimming pools introduced the public to a new form of recreation that expanded rapidly in popularity in unison with the greater accessibility of pools. Outdoor recreation appears to have followed a very similar trend. Branche and Stewart (2001) noted that an increase in injury and deaths corresponded with an increase in participation in swimming. Therefore, to avoid government regulation and future harm to participants, industry standards for lifeguards and swimming instructors were established (cited in the Climbing Wall Committee, 2009). The research questions addressed in this research serve to inform the current status of the evolution of standards and credentialing elements and provide data about how other countries have approached this same dilemma.

## Summary

There are many aspects of the field of outdoor education that are unique; however, the general trend toward professionalism has followed a similar path as other professions. Education, law, medicine, and many other professions have experienced a professionalization and the accompanying rigor of credentialing standards. Although the purpose of credentials in society remains debated, the field of outdoor education provides an interesting modern case study for exploring the role of credentials in an emerging occupation. In modern times, most businesses and professions recognize the many benefits of credentials. Credentials help employers make hiring decisions efficiently using minimal information. Occupations gain public esteem through standardizing practices and preventing less qualified persons from engaging in malpractice. Employees often experience increased skills and abilities through training and matching financial rewards. However, the field of outdoor education appears to be struggling with the sometimes competing desires for professionalism and against the potential for credential requirements to limit entry and participation in outdoor recreation activities. Although most researchers over the last 30 years in the United States have recognized that certifications are bound to play an increasingly important role in outdoor education, there is simultaneous resistance. Many of the reasons cited for doubting the importance of credentials align with historical opposition to credentials: the potential to limit experienced but non-credentialed professionals entry into occupations, the false or inflated signal of ability, and the unnecessary expensive and bureaucratic burden. Surprisingly little research has incorporated cross-disciplinary perspectives in outdoor education credentialing debate and empirical research within outdoor education is even more limited.

Regardless of theoretical acceptance or opposition to the credentialing of outdoor educators, what remains to be seen is how credentialing of outdoor recreation instruction has evolved in the United States and how it compares to other countries. A review of literature revealed that the most accepted model for credentialing in outdoor education is currently an accreditation process consisting of self imposed standards. However, surveys of employers have indicated a high amount of preference for key certifications. The difference between outdoor education and many other professions is the equally great or greater preference for individual experience. Given that credentials are predicted to play an increasingly important role in the training and hiring of outdoor professionals, it is not only necessary to determine what that status of credentialing is for different activities but also what measures and standards are being used to evaluate and signal competence of outdoor activity instructors.

Until recently, outdoor recreation education has existed on the margins of society and in education. However, outdoor recreation activities are growing in popularity as an education tool in school curricula and among a broad public audience. The growing popularity of outdoor recreation has many effects, but increased popularity has especially created a greater need for education and educators. Therefore the ability for a credential to provide a short-cut for understanding the skills and abilities of an outdoor recreation educator will become an increasingly important evaluation tool for employers and potential participants. However, a credential is only effective if it is trusted and considered a valid indicator of skill and experience. An important first step in trust is understanding, and this research provides a clear representation of the credentialing elements required for teaching outdoor activities and a glimpse into the rationale for the credentials for the benefit of all



stakeholders and brings recognition to outdoor education as a increasingly important teaching profession in the 21<sup>st</sup> century.

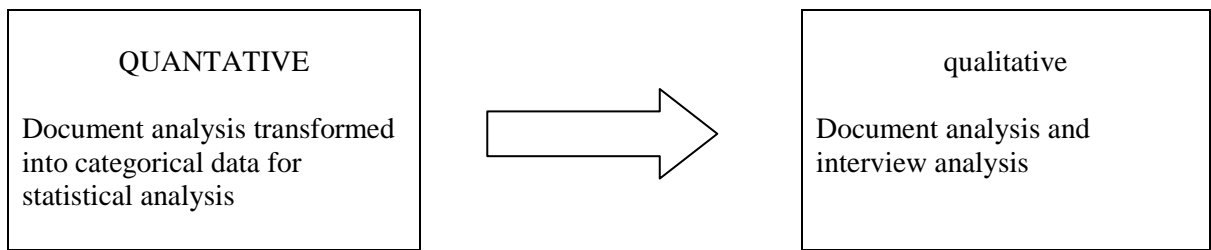
## **Chapter 3**

### **Methodology**

A mixed method research design was used to collect quantitative data and then explore a few select cases using qualitative data collection methods and analysis (see Figure 3.1). This research design is often called an explanatory mixed method design (Creswell, 2008). By first collecting quantitative data on credentialing elements and standards across multiple activities and countries, I produced an overview of the general status of credentialing for teaching 17 different selected outdoor activities in five different countries. During the second phase of research, I focused on collecting qualitative data from select cases that explored possible explanations for why credentialing elements and standards might be similar or different based on a common framework presented in credentialing theory.

#### **Phase 1 – A Quantitative Approach**

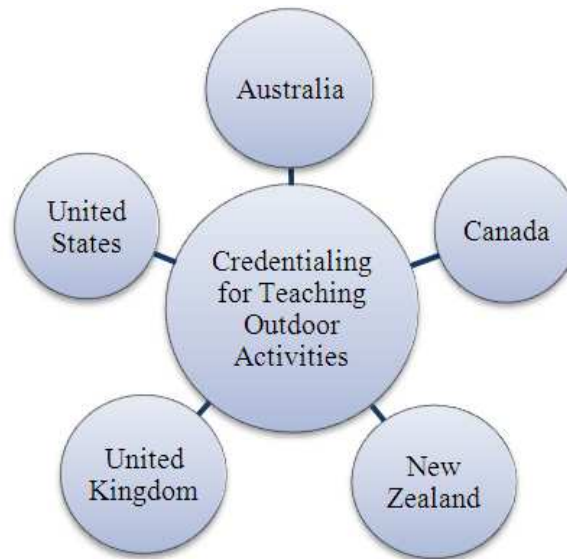
The first phase of research focused on collecting data from a large sample of outdoor recreation credentialing organizations. Using the criteria outlined in the following paragraphs, a sample was created that included 155 outdoor activity teaching credentials from 62 different organizations. The goal of the initial phase of the research was to generate a broad understanding of the current status of credentialing for teaching a variety of outdoor activities across multiple countries. Organizations were identified, documents were collected, and then documents were analyzed using qualitative data collection techniques to compare the similarities and differences between outdoor activity teaching credentials for all activities in the sample.



*Figure 3.1.* Explanatory mixed method design. The boxes represent data collection and results. Uppercase letters represent major emphasis and lower case letters represent minor emphasis. The arrow represents sequence. Adapted from Morse (1991) as cited in Creswell (2008).

**Quantitative sampling.** A multiple case study design and the research questions necessitated gathering data from multiple locations to compare the status of credentialing for teaching outdoor activities in different countries. Because there were specific cases of interest and the purpose of the research was to understand these cases and not to generalize findings to a larger population, purposeful sampling techniques were used (Stake, 1995). Specifically what Patton (2002) called homogenous purposeful sampling was used to provide information-rich cases for in depth analysis. Homogenous sampling is the process of selecting cases based on predetermined similar characteristics, such as the specific criteria for activity, country, and organizational selection. The main criteria for the selection of cases are outlined in detail for activity selection, country selection, and organization and credential selection in the following sections.

**Country selection.** Comparison countries were selected based on a number of key factors and all countries provided unique insight into the issue of credentialing for outdoor activity instruction. The primary criterion for selecting a country was the national language. Due to language limitations, only articles, documents, and websites that were written in English were reviewed and analyzed. Second, countries were selected based on the availability of all outdoor activities. This limited many English speaking countries in the Caribbean, Africa, and Oceania from being included in the study. Therefore, Australia,



*Figure 3.2.* Multiple case study analysis diagram.

Canada, New Zealand, United Kingdom (U.K), and the United States (U.S) were selected as the countries of interest (see Figure 3.2). A secondary attribute of all these countries is the rich heritage of participation in outdoor activities.

**Activity selection.** Outdoor recreation activities are far too diverse to have considered each and every activity. Therefore, only a small sample of these activities was selected by using a narrow definition of what constitutes an outdoor recreation activity. For the purpose of this research, an outdoor recreation activity was defined as an activity that is performed in a non-urban environment, without animal interaction, and does not include any motorized vehicles or aviation equipment. This definition is elaborated in the following paragraphs.

A wilderness area, as defined by the United States Congress in 1964, is land that retains its primeval character without permanent signs of human alteration, it appears to be primarily affected by natural forces, and is managed to preserve its natural conditions. I have classified a non-urban environment as being similar to a wilderness environment, but allowing for some human alteration of the environment, such as trails, that do not specifically

change the natural character of the environment. Activities that are primarily conducted within the confines of man-made settings were excluded from the sample. A few examples of types of activities that were excluded are: bicycling, skateboarding, rollerblading, downhill skiing, challenge and ropes course participation, bungee-jumping, and zip-lining

Activities that involve animal interaction were also excluded from the sample. This excluded activities that rely on animals as a means of transportation such as horseback riding, dog sledding, and other animal powered vehicles, and also outdoor activities that pursue animals as the focus of the activity, or what Bowker, English and Cordell (2009) called “non-consumptive wildlife activities” (p.333). For example, bird watching, hunting, and fishing activities were all excluded from this research.

Finally, any activity that requires an engine was not included in this research. These activities include, but are not limited to: land based activities like off-road driving with cars, motorcycles, or quad-bikes; water based activities like wakeboarding, water skiing, jet-ski and boat racing; and aviation based activities such as paragliding and flying. Other non-motorized aerial activities like base jumping, hang-gliding, and gliding were not be considered outdoor activities for the purpose of this research.

Seventeen distinct outdoor activities met the criteria of not being commonly performed in an urban environment, not relying on animal interaction, and not involving the use of motorized or aviation equipment for participation (see Table 3.1). The following is a brief description of each activity. *Hiking* (also called trekking, backpacking, camping, and bush-walking) refers to the general activity of extended travel by foot in which participants carry everything they need for survival in a non-urban environment. *Canoeing* is the process of guiding a small, narrow, open-top watercraft with the use of a single-bladed paddle.

Table 3.1  
*Outdoor Activity List*

Activities				
Hiking	Canoeing	Caving	Kayaking (River)	Kayaking (Sea)
Kitesurfing	Ice Climbing	Mountain Biking	Mountaineering	Nordic Skiing
Paddleboarding	Rafting	Rock Climbing	Sailing	Scuba Diving
Surfing	Windsurfing			

Canoes can be operated on lakes and oceans, or in moving water, and in teams of two or by a single participant. *Caving* (also called spelunking in the U.S or canyoning) is a subterranean activity that can take place in semi-enclosed or fully enclosed spaces and usually involves aspects of climbing with technical rope equipment, crawling, squeezing, and occasional swimming through confined spaces. *Kayaking* is similar to canoeing, except that the type of boat used in kayaking is fully enclosed with a small hole where the participant/s sit, and propulsion is provided from a long paddle with a paddle blade on either end of the shaft. Kayaks are used in both moving water (often called white-water kayaking) and on lakes and oceans in specially designed boats called sea-kayaks. Kayaks are commonly paddled solo, but can also be paddled in teams of two. Kitesurfing and windsurfing are very different in practice; however they both involve an interaction between water, participant, a board, and a wind propulsion device. *Kitesurfing* uses a large parabolic kite that attaches to the participant and provides lift and enough force to propel a participant along the surface of water while standing on a small board. Windsurfing is very similar to sailing, except instead of a boat, participants use a sail that is attached to a large board. *Sailing* is the process of harnessing wind power to propel a boat. *Mountain biking* is a form of cycling that uses specifically designed bicycles to allow participants to travel off of paved paths and in rugged natural environments. *Surfing* is an activity that is typically performed in ocean environments and involves a participant using a board to balance on the surface of a peak of

moving water. *Scuba diving* is an activity in which participants swim underwater with the assistance of an underwater breathing device and tanks of air. *Rafting* (also called white-water rafting) is an outdoor activity that uses an open inflatable boat to navigate swiftly moving rivers. Although rafting can include boats with one or two participants, typically rafting refers to an activity in which a group of people carrying single-bladed paddles work together to guide a boat down a swiftly moving river. *Rock climbing* and *ice climbing* have been grouped into two separate outdoor activity types. The equipment, and practice of the two outdoor activities are inherently different however many of the underlying systems for both types of climbing are the same. Rock and ice climbing involve scaling a near vertical wall using arms, legs, and specialized equipment while being attached via rope, also called a belay, to another participant. For the purpose of this research free climbing and bouldering, which do not include belay systems, are excluded from consideration and specific types of rock climbing methods such as “top-rope,” “sport,” and “trad,” have been combined to form the generic term rock climbing. *Mountaineering* is the process of climbing steep, or nearly vertical, mountain summits. Mountaineering includes many of the same skills as hiking, but also usually incorporates high altitude and cold weather alpine conditions. Depending on the terrain, mountaineering may also require rock and/or ice climbing skills, but mostly involves walking up a mountain with limited sections of actual climbing. Finally, *Nordic skiing* (also called cross-country) is a type of skiing in which the heel of a ski boot is not attached to the ski. Cross-country skiing is also called backcountry ski touring or telemark skiing, and is performed on snow-covered flat or mountain environments. Cross-country skiing is similar to hiking except that participants travel by skies over snow in the backcountry away from

man-made environments. All of these 17 activities require specialty equipment, activity specific skills, and are commonly taught in countries around the world.

***Selection of credentialing organizations and credentials.*** A complete and purposefully designed sample was constructed that represented a specific homogeneous group of outdoor recreation activities. Organizations were selected by searching electronic databases for peer-reviewed journal articles for information on current research on credentialing organizations in outdoor education. There are limited peer-reviewed English language publications that consistently publish research on outdoor adventure activities and education. Examples of a few of the major journals are: *The Journal of Experiential Education, Australian Journal of Outdoor Education, Journal of Adventure Education and Outdoor Learning, Journal of Physical Education, Recreation, and Dance, Journal of Leisure Research, Leisure Sciences, and Leisure Studies*. These journals, and others, were searched for information that identified outdoor education credentialing organizations, prior research on specific credentials, and also helped to identify key associations that were used to find related organizations. In traditional educational research journals there are very limited references to outdoor activities except in regards to a substantial body of literature on outside play and early childhood development. Therefore, most of the research and data collection for the present study involved searching the internet for outdoor recreation training organizations. Government and non-government organizations were identified by reading academic journals, reviewing conference proceedings, and searching accreditation membership listings. Once credentialing organizations were identified a final set of sampling filters was used to screen potential organizational cases. Organizations that did not credential outdoor activity instruction for the public were excluded from the sample. An example of



this type of organization was the British Army which only provides the opportunity for enlisted person to earn a teaching credential to teach other enlisted persons. Other types of credentialing organizations that were not included in the sample were organizations that trained instructors for a localized environment --or, in other terms-- the credential was not nationally recognized and portable to different locations. Examples of these types of organizations were summer camps that have an internal system of certifying camp staff to teach outdoor activities at the camp, and regional organizations that provide a teaching credential that is only valid on a specific river or mountain or other another non-transferable location.

Finally, the last step of the sampling process was to examine a specific type of credential. There are many types of organizations that offer many different types of credentials; however, this research only concerned entry level teaching certification or an instructor certification in the field of outdoor recreation education. It is common for credentials to demonstrate graduated levels of proficiency; therefore, for clarity, only entry level teaching credentials for outdoor activities were used as the basis of comparison and additional levels of teaching credentials were noted as a category during data analysis. One of the limitations of this research was that the entry level credentials were not always equal within activities or across different organizations. For example, the American Mountain Guides Association (AMGA, 2013d) Ski guide credential was primarily based on alpine, mountainous, expeditionary type environment. In contrast, the Professional Association of Snowsport Instructors (PSIA, 2012) Level 1 cross-country ski instructor credential was designed for non-urban Nordic skiing, but did not prepare instructors to teach in the same environment as the AMGA Ski guide credential. Both credentials matched the sample

requirements, so regardless of these disparities the sample selection criteria were applied to all credentials; these limitations are discussed in more detail in the following section.

The distinction between a teacher/instructor and a guide or coach was also an important distinction. Often this distinction was not clear in the naming convention of the credential, so the inclusion of the credential into the sample was based on the focus/purpose of the credential. Guiding and coaching credentials are generally focused on supporting participants, but not necessarily preparing the guides and coaches with the skills to evaluate and certify the independent competency of participants. In contrast, an instructor has the ability to teach students skills and information and impart knowledge in a way that allows a student to participate in an activity in a new way without continued supervision. An instructor encourages students to master the skills needed for independent participation. Instructor credentials provide teachers the tools to educate students and transfer knowledge, instead of simply leading participants through a process. Competitive sports training credentials, such as Olympic coaching credentials, were not included in this sample because the goal was to examine only the instruction of outdoor recreation activities.

**Quantitative data collection.** A key aspect of exploratory research and data collection is to set boundaries to stay focused on the specific issue (Hays, 2004). The research questions and sampling design helped to focus data collection on finding organizations engaged in credentialing and then only extract the details of the credentialing elements and assessment tools and not get distracted by irrelevant data. However, one of the unique characteristics of this research was defining what a case was, or what Yin (2009) called the “unit of analysis” (p. 46). For this study, a training program that provided a

credential for teaching outdoor activities and the accompanying training manuals and website information, were all considered part of the unit of analysis.

Another unique characteristic of the research was that the quantitative data collection process required an extra step. Typical quantitative research designs use instruments such as surveys, assessments, or existing data records. However, there were no such resources available for teaching credentials for outdoor activities. Therefore, quantitative data were created by using qualitative document analysis techniques. Caracelli and Greene (1993) described the technique of data transformation as taking qualitative data and numerically coding it to be using statistical analysis. More details will be given in the following data analysis section, but essentially credentialing elements and standards were organized into common themes and categories while analyzing the documents. Then categorical data were generated based on the presence or absence of specific credentialing themes for each activity. If documents were not available publically, a letter explaining the purpose of the research study was sent to organizations requesting these documents (see Appendix A).

## **Phase 2 – A Qualitative Approach**

A multiple instrumental case study method was used to understand why organizations that credential the teaching of outdoor activities have developed consistent or different credentialing elements and standards. A case study design was appropriate because the focus was on a program or activity rather than an individual or group, and a collective approach uses multiple cases to describe and compare information on a single issue (Stake, 1995). Because this study focused on exploring systems bounded by different times and places, a case study design was more appropriate than ethnography (Creswell, 2007). Specifically, this research used a multiple instrumental case study design to explore the issue of

credentialing across multiple outdoor recreation activities instead of an intrinsic case study design which is focused on understanding each case separately (Creswell, 2008).

**Qualitative sampling.** A multiple case study design and the research questions necessitated gathering data from multiple organizations in order to compare credentialing elements and standards across activities and within countries. Qualitative research often uses purposeful sampling strategies in order to obtain focused and specific information about an issue. A maximal variation strategy has the advantage of exploring a central theme across diverse cases. As Patton (1990) explained, “any common patterns that emerge from great variation are of particular interest... and derive their significance from having emerged out of heterogeneity” (p. 172). Therefore the Phase 2 sample was constructed using a maximal variation sampling strategy in order to provide multiple perspectives on the phenomenon of credentialing for the instruction of outdoor activities across five different countries. Through the data collection and analysis procedure of Phase 1, key characteristics were identified from different outdoor education organizations. Credentialing organizations were then selected as specific cases of interest with the intent of creating a diverse sample of organizations that represented a variety of types of organizations that required different elements and standards for becoming a teacher.

The first phase of research provided insight into the variety of required elements and assessment tools used to credential the instruction of outdoor recreation activities. With over 150 credentials offered by 62 different credentialing organizations there was a great amount of diversity in the sample. Each organization, and even each credential, was unique and reflected different attributes and credentialing characteristics. However, when the credentials were examined in aggregate, a shared vision for the overall process of credentialing outdoor

recreation instructors emerged. The common requirements for becoming an outdoor instructor and the diversity of standards among credentials were precisely the characteristics that highlighted the value of the first phase of research and contribute to a greater understanding of the credentialing process for teachers of outdoor activities.

For the second phase of research, cases were selected within strata that represented fundamental differences between credentialing organizations. Generally, there were three types of outdoor recreation education organizations: (1) government organizations aligned with a national educational framework, (2) private organizations that were sanctioned national governing bodies, and (3) private organizations with no government affiliation. A further layer of complexity was involved because credentialing organizations could be national or international organizations, and could also be aligned with international standards. The following section outlines the typography of credentialing organizations for each of the selected countries in more depth and for a more detailed, visual description of the typography of credentialing organizations, see Appendix B.

Organizations also varied with respect to the scope of the different types of training and credentialing that they offered. For example, large, government-based organizations provided credentials for teaching multiple outdoor activities. However, depending on a multitude of factors, private organizations sometimes would credential a single activity and sometimes an organization would credential multiple similar activities. For example, paddlesports such as canoeing, river kayaking, sea kayaking, and paddleboarding were often overseen by a single organization. Therefore the type of organization was another characteristic used to distinguish between credentialing organizations for the second phase of research.

Table 3.2

*U.S Activity Participation Rates*

Ranking	All Ages	2010 in 000s	Ages 6 -17	2010 in 000s
#1	Canoeing	10,533	Canoeing	2,800
#2	Backpacking	8,349	Backpacking	2,228
#3	Mountain Biking	7,161	Mountain Biking	1,900
#4	Skiing (cross-country)	4,530	Skiing (cross-country)	966
#5	Rafting	4,460	Rafting	739
#6	Sailing	3,869	Sailing	580
#7	Scuba diving	3,153	Surfing	547
#8	Surfing	2,767	Kayaking (sea)	358
#9	Climbing	2,198	Climbing	354
#10	Kayaking (sea)	2,144	Scuba diving	306

*Note.* Adapted from the Outdoor Foundation (2011, pp. 66-67)

One of the goals of this research was to illuminate the requirements for becoming an outdoor recreation instructor in order to enhance public understanding and recognition of the credentials of these educators. Therefore, to have maximum impact, the second phase of research focused on organizations that credential instructors for the activities that were most popular among the general public (see Table 3.2). According to a U.S-based report on outdoor recreation participation, of the activities selected for this research, canoeing, backpacking, mountain biking, and skiing (cross-country) were the most popular activities in 2010 (Outdoor Foundation, 2011). Outdoor activities that were growing the fastest in popularity were kayaking, climbing (ice/rock/mountain), and scuba diving (see Table 3.3). Other studies from around the world use different methodology and questions to evaluate activity participation rates. However, similar studies such as the *Active NZ Survey* (Sport and Recreation New Zealand, 2009) in New Zealand, found similar activity trends with hiking, canoeing/kayaking, snowsports, and mountain biking being the most popular outdoor recreation activities.

A final factor that distinguished credentialing organizations from each other was the size of the organization. An organization's size could be determined by many things. Size

Table 3.3

*Popularity Growth of Outdoor Activities from 2009 to 2010*

Ranking	Outdoor activity	Rate of growth
#4	Kayaking (white water)	35%
#8	Kayaking (sea)	21%
#9	Climbing (traditional/ice/mountain)	20%
#10	Scuba	16%

*Note.* Adapted from the Outdoor Foundation (2011, p. 14)

was a relative factor and often depended on the country of origin and whether an organization was a national or international organization. Larger organizations supported more instructors and more students, and therefore had more influence in the industry surrounding that specific outdoor activity. To ensure that the research was not dominated by the opinions of larger organizations, smaller organizations that also credentialed popular activities were interviewed to allow for maximum variation of perspectives.

Using the distinctions of organizational affiliation, popularity of the activity, and the size of the organization, a maximal variation sample was created to provide a diverse cross-section of outdoor recreation credentialing organizations. This sample included organizations from a variety of countries (Canada, New Zealand, U.K, and the U.S), two of which were international organizations. Organizations that offered single activity instructor credentials as well as organizations that credentialed multiple types of outdoor activity instruction were represented in the sample. See Table 3.4 for an overview and description of each of the cases.

***Case 1 – Skills Active.*** Skills Active Aotearoa (Skills Active) was one of the unique cases of a government funded organization that oversees the credentialing process for outdoor activity instructors. Skills Active is an Industry Training Organization (ITO) whose responsibility is to facilitate qualifications for the recreation, sport, and fitness industry under the quality assurance of New Zealand’s Qualification Authority (NZQA)

Table 3.4  
*Phase 2 – Interview Sample*

Case No.	Organization	Abbreviation	Country	Activity/s	Organization type
1	Skills Active / New Zealand Qualifications Authority	Skills Active	NZ	Multiple	Large government
2	British Associational of Snowsport Instructors	BASI	U.K	Skiing	Small government
3	Professional Association of Dive Instructors	PADI	U.S/Int.	Scuba diving	Large private
4	Association of Canadian Mountain Guides	ACMG	CA	Multiple	Small private
5	Paddle Canada		CA	Multiple	Large private
6	International Mountain Bike Instructor Certification	IMIC	U.S/Int.	Mountain biking	Small private

(Skills Active, 2013a). Skills Active provided training curriculum and assessment for five of the outdoor recreation activities that were the subject of this research: hiking (bushwalking/tramping), river kayaking, mountaineering, rock climbing, and scuba diving. Therefore, Skills Active represented both a large government organization and an organization that credentialed instructors for many of the most popular activities.

I connected with Matt Cowie as my main and best contact person for Skills Active. Cowie's position at Skills Active was to serve as learning and development advisor for all outdoor recreation and snowsport activities. As project manager, he worked with industry stakeholders to design, develop, and implement the instructor qualifications. Another part of his job was managing the certification process for students to gain their qualifications. Cowie was a key stakeholder and important link in the credentialing process for the credentialing of instructors for New Zealand NZQA qualifications. As project manager for the outdoor recreation qualification he was the primary consolidator and designer of the credentials and therefore the most appropriate person to interview about the rationale of the design of the New Zealand NZQA credentials.



**Case 2 – British Association of Snowsport Instructors (BASI).** BASI is the national governing body for all snowsports in the U.K. BASI represented a unique case of private organization sanctioned by the government to develop the sport of skiing. The main purpose of BASI is to be “the national training and grading provider for professional Snowsport instructing and coaching qualifications” (BASI, n.d., “Homepage,” para. 1). BASI supervises the instructor credentials for multiple snowsports, but the focus of this research was only Nordic skiing.

To understand BASI’s philosophy on the credentialing of Nordic ski instructors, I interviewed Jim Davidson. Davidson has been the chief Nordic instructor for 20 years, and for the past few years he has been the Nordic ski director. Davidson was, “more or less responsible for all Nordic ski instruction with BASI.” He was directly connected to the oversight, design, and implementation of the Nordic ski program. BASI snowsport credentials are overseen by a team of educational directors; however, I was fortunate to gain access to Davidson whose specific job responsibilities were to design and implement the credentialing process for Nordic ski instructors. His role in designing credentialing requirements made him the best person to interview about the development of the credentialing requirements for Nordic ski instructors in the U.K.

**Case 3 – Professional Association of Dive Instructors (PADI).** PADI is one of the largest outdoor recreation credentialing organizations in the world. PADI is based in the U.S; however, they have home offices in at least seven other countries and conduct dive instructor certification courses around the world. As LeRoy Wickham explained, “about 75% of the time [dive] facilities are PADI facilities,” and the PADI tagline says it all, “The Way the World Learns to Dive.” PADI is a large private outdoor instructor credentialing organization

and was a great example of an organization that had a singular focus; PADI only credentialed instructors for scuba diving.

The subject of my interview with PADI was LeRoy Wickham. Wickham has been a PADI Scuba diving instructor since 1993, he was an instructor trainer, and he owned and operated a dive center. For the past 15 years he has been working with PADI as an educational consultant. Wickham's main responsibilities were to work with a team of educational consultants to revise curriculum, establish new programs, and improve existing programs. He also helped to interpret and enforce training standards. Wickham's tenure and leadership in the design of the educational credentials made him an ideal interview subject. There were other educational consultants who had a role in coordinating the credentialing process for scuba diving instructors, but many declined to be interviewed and suggested Wickham as a great resource.

***Case 4 – Association of Canadian Mountain Guides (ACMG).*** The homepage for the ACMG explained their mission:

The ACMG is a professional association of trained and certified mountain guides, hiking guides, and climbing instructors. We are dedicated to protecting the public interest in mountain travel and climbing instruction. We are the only internationally recognized professional association of trained and certified mountain guides and instructors in Canada. We set and maintain standards for admission to, and the practice of, the profession of mountain guiding and climbing instruction. (ACMG, 2013b, "Homepage," para. 1)

The ACMG was responsible for credentialing four of the activities that were of interest in this study: hiking, ice climbing, mountaineering, and rock climbing. Interestingly, the ACMG was one of only two organizations in the sample of selected countries to credential the instruction of hiking – the most popular recreational activity. Another reason why the

ACMG was selected as a case of interest was due to its affiliation to the standard setting organization the International Federation of Mountain Guides Association (IFMGA).

To fully understand the ACMG and their perspective on credentialing, I conducted two separate interviews. The first interview was with the Executive Director, Peter Tucker. Tucker has over 40 years of outdoor experience and for the past seven years he has been the executive director of ACMG. As the executive director of ACMG, Tucker managed the design of the credentialing scheme and worked to integrate IFMGA standards with the specific needs of Canadian industry and environment. The ACMG also had a unique relationship with Thompson Rivers University (TRU). The ACMG did not actually train or assess outdoor activity instructors; instead it set and maintained the standards for guides and instructors; TRU conducted the training and assessment of instructors. Therefore, after speaking with Tucker, I conducted a second follow-up interview with Dwayne Congdon at TRU. Congdon's responsibilities were to direct the Canadian Mountain and Ski Guide program at TRU which involved "organiz[ing] all aspects of five training programs for climbing instructors, ski guides, alpine guides, rock guides, and hiking guides and conducts all training and certification exams to the standards set by ACMG." Congdon provided an important compliment to Tucker's perspective on the credentialing process for Canadian outdoor instructors. Congdon and Tucker worked in partnership to organize, design and deliver training programs to credential instructors for guiding and teaching many popular outdoor activities.

***Case 5 – Paddle Canada.*** Paddle Canada was the second Canadian organization to be included in second phase of focused interviews. Paddle Canada is a large organization that provides standards for paddle instruction across Canada. Canada had a strong system of

regional and provincial clubs and organizations that provided paddlesport instruction, and Paddle Canada coordinated instructor resources and training for most of the organizations across Canada. Paddle Canada was similar to its U.S counterpart the American Canoe Association (ACA), in that both organizations were the dominant paddling organizations in North America and both had large memberships and robust instructor resources for canoe, paddleboard, river kayak, and sea kayak instruction. Paddle Canada was a private organization that credentialed instructors for multiple activities which were among the most popular outdoor recreation activities.

After reaching out to different people at Paddle Canada, I connected with David Johnston. Paddle Canada was designed as a consortium of industry experts who work as independent committees to oversee each activity. Each committee was led by a chairperson. Although I reached out to the chairperson for each committee, they declined to be interviewed or did not respond to my request. A few chairpersons did respond and suggested that I interview Johnston as my primary contact. Johnston was a paddle instructor for 15 years and has been working intermittently for the past 20 years for Paddle Canada's office. A few years ago he became more involved with program development and he was responsible for developing syllabus and maintaining the paddling programs across Canada. Johnston has been the chairperson of the sea kayak program development team for the past few years and his mission has been to "foster the pursuit of safe recreational paddling in Canada through the development and maintenance of program of skill, instructor and instructor training and certification that is seen as necessary, effective and fair" (Paddle Canada, 2012, "sea kayak pdc," para. 1).

*Case 6 – International Mountain Bike Instructor Certification (IMIC).* The IMIC was one of the more interesting case studies encountered during this research. Mountain biking is a relatively recent arrival to the options for outdoor recreation, especially when compared to the more popular activities of canoeing and hiking. However, mountain biking is rapidly growing in popularity. The IMIC was started in the U.S, but was one of two mountain biking organizations that had expanded to international locations. Although mountain biking is one of the more popular activities, the practice of credentialing instructors has only arisen within the past 10 years; therefore, the IMIC and other mountain biking instructor credentialing organizations are comparatively small. Another interesting aspect of the IMIC is that the IMIC recently merged with another organization, the International Mountain Bicycling Association (IMBA). Since 1988, IMBA has been an association for individuals, clubs, and shops working to promote mountain biking (IMBA, n.d.). The recent IMIC/IMBA merger now positions the two organizations to combine resources and improve mountain biking education for all. I conducted an interview with Shaums March, the founder and director of the IMIC. March was a world champion downhill racer and he has designed and led the training course for all three levels of instructor training. The opportunity to interview March was extremely fortunate. March was not only the director of the credentialing program for mountain bike instructors, but as the founder of the organization he provided unique insight into original intent and design of the instructor credential.

These cases provided a rich sampling of outdoor instructor credentialing organizations and by connecting with administrators who supervised the credentialing process I was able to gain a unique understanding of the credentials. By exploring perspectives from different types of organizations, with different characteristics, I was also

Table 3.5  
*Data Collection Sources*

Data Collection	Data Source	Sample Size
Quantitative Data	Factual information: Data transformed from the qualitative coding process of analyzing documents into categorical data	n = 62 organizations (155 credentials)
Qualitative Data	Document Analysis Open-ended interviews	n = 6 organizations n = 7 individuals

able to present a complex diverse perspective on the theoretical rationale for the differences and similarities in credentialing standards for outdoor recreation instructors.

**Qualitative data collection.** In case study research there are many different techniques for collecting data such as interviews, observations, and document analysis. In order to answer the research questions two main sources of information were used to corroborate and triangulate the data (see Table 3.5). During the first phase of research organizational documents were collected that outlined the credentialing elements and the standards for each organization's credential. As part of the Phase 2 qualitative data collection, these organizational documents were revisited and examined for information pertaining to the rationale for the credentialing elements and standards. Specific areas of interest during this phase of data collection were components of documents that explained the history of the organization, information about external requirements or standards, and descriptions that discussed the purpose of specific elements and standards or the rationale for the certification. These documents consisted of a variety of resources such as web pages, official published standards, teaching guides, and other written resources. These documents were downloaded from publically available sources or, when these resources were not available, documents were requested directly from organizations with a letter outlining the purpose of the research (see Appendix A).

The second source of data during Phase 2 of the research was interviews. The first step in the interview process was to identify the “gatekeepers” (Creswell, 2008, p. 219) who could provide access to people who were in the best positions to answer questions about the development of the credentialing standards. In cases in which the organization did not specifically employ a curriculum director then other administrative members in the organization were interviewed about the theoretical rationale for the credentialing elements and standards. The focus of the interviews were to explore the credentialing requirements for teaching outdoor activities in greater depth while also seeking to understand the design and purpose of the credentialing process. Because the interviewees had opinions and insights that explained the credentialing process from a slightly differently perspective, the interviewee’s insight provided a valuable juxtaposition of information. The primary objectives of the interviews were to understand administrators’ opinions about the theoretical rationale for the similarity or differences in credentialing elements and standards for teaching outdoor activities. The interview process involved speaking with people until data saturation was reached. Data saturation occurs when the data collection process uncovers the same responses and information from multiple sources or from repeated interviews with the same person. It is possible to know when data saturation is reached because in qualitative research, data collection and analysis is a simultaneous process in which data analysis informs the data collection process. Creswell (2008) called this process an iterative process and explained that an interviewer may need to speak with interviewees multiple times in order to obtain a complete understanding of the topic. Once no new information was being uncovered from repeated interviews, or from interviews with multiple people, data saturation has been reached.

Once select organizations were identified, data collection began with collecting and requesting all relevant documents from the organizations. Many of these documents were collected during the first phase of research; however, in some instances, more information needed to be gathered from the organizations. Following document collection and analysis, representative(s) from each organization were interviewed. Consent to be interviewed was gained through a written request explaining the purpose of the interview. Interviews were semi-structured, using open-ended questions that also allowed the interviewees to pursue relevant tangents (see Appendix C for a copy of the interview protocol and Appendix D for a copy of the consent form). Interviews were conducted by phone and the conversations were recorded using voice recording software that allowed for the conversations to be transcribed into text for analysis post-interview. After analyzing both written documents and telephone interview transcripts, it was important to return to the interviewees to confirm my interpretations of the conversation using a process called member checking.

The goal of Phase 2 of the research was to explore specific cases in depth. Therefore, by necessity, these organizations were readily identifiable and the public nature of the position of the interviewees made anonymity difficult and undesirable. Fortunately, most organizations employed persons whose public responsibility was to answer questions about the credentialing curriculum. The main risk to the organization was a diminished reputation if the credentialing process was found to be insufficient when compared to other organizations; however, this risk was no greater than the daily operation of the organization. There was equal potential benefit for the organization's reputation to be enhanced due to greater public understanding of the rigor of the credentialing process.



There was also minimal risk to the interviewees. Some of the questions required the interviewee to express an opinion, however ideally these opinions reflected the opinion of the organization as well. There may have been some instances in which the interviewee and the organization held different opinions. Nevertheless, there was a minimal chance that the interview would uncover any areas of contention. Interviewees were also able to choose the option to be quoted and whether or not to be recorded, and they could also choose to discontinue their participation at any time. If an interviewee chose not to be recorded, then notes were written by hand to capture the interviewee's perspective. All interview recordings and transcripts were secured on a password protected laptop. Due to time and financial constraints observational data were not collected.

### **Data Analysis**

A data analysis plan is important for any type of research, and case study research is no exception, especially when using a mixed-method, multiple case study design. Therefore each phase of research had a detailed data analysis plan. In reality, there was overlap in the data analysis techniques used in both phases. For example, document analysis techniques were used during both Phase 1 and Phase 2 of the research. Although the research design began with quantitative data collection and analysis and then moved to a more focused qualitative data collection and analysis phase, both phases of research informed the other phases of research and thus necessitated revisiting the data on multiple occasions.

**Phase 1 – quantitative document analysis.** During the initial quantitative phase of research two primary questions were addressed: 1) What elements are required for a credential for teaching outdoor activities; and 2) What assessments are used to credential the teaching of outdoor recreation activities in selected countries? To answer these questions

information was collected and coded from organizational documents. A code is a descriptive word or phrase that is used to label an idea. Because each organization has a unique language and terminology that is specific to the outdoor activity and the country of origin, it was necessary to synthesize and organize this terminology into similar themes. To achieve the research goals, the constant comparative method of analysis developed by Glaser (1965) was used to develop and connect categories from the data. According to Glaser the advantage of this method of joint coding and analysis is to, “generate theory more systematically... At the same time, it does not forestall the development of theory by adhering completely to the [code first and then analyze] approach which is designed for provisional testing, not discovering, of hypotheses” (1965, p. 437). The constant comparative method allows for the discovery of multiple hypotheses about a general phenomenon, such as credentialing for the instruction of outdoor activities. Glaser and Strauss (1967) first worked together to fully develop this grounded theory of analysis, however the two theorists have since diverged in their thinking about how data and theory should emerge. Glaser’s (1978) model of constant comparative analysis focused on relating new indicators, pieces of data, to previous indicators which are grouped into codes, and then are formed into categories. In Glaser’s vision of grounded theory, indicators, codes, and categories are constantly being compared as new data emerges throughout the data collection process and analysis. Strauss and Corbin (1990) developed a more linear model of coding that first requires collecting data and developing initial codes and categories from this data, or open coding. Then, in a secondary phase of coding commonly referred to as axial coding or the process of systematically relating categories, these categories are reduced and combined to form new categories (Straus & Corbin, 1998). Hays (2004) noted that, in many

cases, the process of open coding and axial coding are not necessarily sequential, and often the process of coding causes a researcher to re-examine and re-evaluate; therefore both processes of coding should be an ongoing interactive process. Despite the similarities and differences between Glaser's and Strauss' models, Glaser's model for analyzing organizational documents was selected as the most appropriate tool for analysis.

The first step of the data analysis process was to collect organizational documents. While reading through these documents, notes and memos were written and text was extracted using the process of in vivo coding to form initial indicators and categories of credentialing elements and standards. As new documents were read, new data were collected and indicators were compared to previous indicators. Codes were examined continuously with the advent of new data, and existing categories were altered on the basis of comparing new indicators to categories. As the data collection and analysis process evolved to include more data from different documents and types of organizations, more consistent categories of credentialing requirements began to emerge and major changes to the categories became less frequent. As the categories became more refined, category saturation was reached and the categories became fully developed and no new categories emerged. Eventually the diverse terminology consolidated into a series of common categories and themes that were relevant across all activities and countries. By analyzing multiple organizations across multiple countries, a broad understanding of credentialing requirements for teaching outdoor activities across the different countries was developed. The process of synthesizing credentialing documents also helped to inform the design of the second phase of research and provide a resource for developing probing questions for the interviews.

Another question addressed by this research was the similarity and differences between the elements and assessments required for an outdoor activity teaching credential. The coding process developed a framework of themes that was then used for comparative analysis. By incorporating a mixed method research design into the study both qualitative and quantitative analysis served to equally inform the research questions. Quantitative and qualitative analysis provided insight into what elements are required for teaching outdoor activities in different countries and what assessment tools are used to evaluate performance. The quantitative analysis component also provided a clear method of comparison and helped to explain how the data are related.

***Phase 1 – statistical analysis.*** To produce data that could be statistically analyzed I used a technique described by Caracelli and Greene (1993) as data transformation; taking qualitative data and numerically coding it for use in statistical analysis. This process is best explained using an example. Upon review of the themes created during the document analysis process each credentialing organization for each activity was evaluated on the basis of requiring or not requiring a specific credentialing element (nominal data). This meant that if the credentialing organization required potential teachers to fulfill a specific requirement then the organization received a “1” in for the corresponding category to signify that the credentialing organization required that specific element. If no evidence of the element could be found in the documents then the organization received a “0” to signify that the element was not a requirement to earn a teaching credential from the organization. This data transformation process was used to change all the qualitative data into categorical data for each element for every credentialing organization. In many instances the categories developed contained numerical data; in these instances, instead of simply recording a “1” or

“0”, the actual numerical value was recorded. For example, one category that emerged was a minimum age requirement. Instead of recording a “1” for a minimum age requirement, the actual minimum age requirement was recorded. The most common minimum age requirement was 18 years old but across all credentials sampled, I discovered minimum age requirements ranging from 15 to 22 years old.

These data allowed for important basic statistical analysis. Data was compiled into frequency tables based on country and activity and then evaluated based on the dichotomous categorical data of either requiring or not requiring a specific credentialing element determined in the coding process. This allowed for multiple strands of analyses and comparisons of the basic requirements between countries.

The document analysis stage of the research brought clarity to how the credentialing standards were similar and different across multiple activities. The results of the descriptive statistical analysis provided key measurable statistics that differentiated credentialing programs and provided evidence of trends in outdoor education credentialing. This comparison was critical to enhancing the understanding of credentialing programs for teaching outdoor recreation activities on a larger scale and providing key information about the design of outdoor educator credentials.

**Phase 2 – qualitative analysis.** The second phase of data collection and analysis used similar data collection techniques as the initial quantitative phase of research. The first step of the data analysis process was to review organizational documents for new meaning. Again, following Glaser’s (1978) method of constant comparative analysis, documents were analyzed for data that specifically addressed a theory or theories that explained the rationale for the credentialing requirements. Specific themes relating to the major theories in

credentialing were explored during the coding process and organized into major themes that aligned with the three major theoretical frameworks in credentialing theory. Each document was reviewed for sentences, phrases or ideas that indicated a new data point for understanding the broader phenomenon of credentialing for outdoor activities in the selected countries. Just as before, indicators were compared to indicators, which were used to form codes that were continuously compared to each other and to new indicators, which then helped to form new categories and themes. Each step in the data collection process and consequent analysis helped to inform the overall understanding of the theoretical frameworks that explained the similarities and differences in credentialing among outdoor training organizations. Information collected during the document analysis phase also informed the development of probing questions for the interviews and provided new insight into the first phase of research. As more information was collected it was important to return to data that was being collected throughout the research for new insights and information.

***The interview process.*** Following document analysis, interviews were conducted to provide another source of information. The interviews served multiple purposes. The primary purpose of the initial interviews was to understand the interviewees' personal perspectives about the development and purpose of the credential and the different components. The interviews provided key insights and opinions about the theoretical rationale for the establishment of the credentialing requirements that were often difficult to ascertain from the document analysis. Themes developed during document analysis were explored in greater detail during the interview process in order to triangulate among data sources. Inferences were made from the interviewees' responses and were aligned with characteristics of credentialing theory. Member checking was used in a follow-up

questioning to confirm with the interviewees that their opinions were accurately represented. Following the interviews, the audio files were converted into text format for ease of analysis. Once the interviews were in text format, the analysis process began again with a similar coding process of identifying, labeling, and synthesizing text into common themes. Indicators, codes, and categorical themes identified during the analysis of interview transcripts were constantly compared to concepts developed in document analysis. Both analyses served to inform each other and help theories emerge and create a more complete understanding of the rationale for credentialing requirements for organizations, outdoor activities, and countries.

***Qualitative validity.*** The purpose of this phase of research was to collect diverse perspectives on the phenomenon of the theoretical framework(s) that explained the similarities and differences between credentialing standards for teaching outdoor activities. To obtain a broader understanding of this phenomenon data were collected from multiple sources in which both factual statements and opinions were represented. These findings were interpreted through lens of my own personal experience and the research literature on credentialing theory. An important aspect of qualitative research is to address issues of validity and ensure readers that interpretations are trustworthy and accurate. Creswell and Miller (2000) outlined eight strategies for incorporating credibility into qualitative research. Due to the nature of this research, not all of these strategies were used; however, many of these strategies provide valuable insight into the qualitative research process.

Creswell and Miller (2000) suggested that “researcher reflexivity” (p. 127) is an important component of qualitative research because it allows readers to understand biases, or experiences that may shape interpretations of the researcher. For example, my experience

as professional outdoor educator may have influence my interpretation of the findings.

Although I tried to remain objective, there may have been instances where personal bias may have caused me to pursue certain research paths and overlook others. In the interest of full disclosure I am, or at one point have been, certified through: American Canoe Association (ACA), Association of Challenge Course Technology (ACCT), International Yacht Training (IYT), National Association of Underwater Instructors (NAUI), Professional Association of Dive Instructors (PADI), Red Cross, Rescue3, Wilderness Medical Institute (WMI), YMCA, and various Australian qualifications.

To protect against this bias I directly translated documents and information collected through interviews using in-vivo coding. However, I also used subjective discretion to decide when data saturation was reached and how codes were interrelated, thus introducing a potential bias. Another example of potential source of bias is rooted in my background. In my previous experiences hiring outdoor educators I faced the conundrum of a vague understanding of outdoor education teaching credentials. With a limited understanding of the qualifications that specific credentials represent, I found that unless I had participated in the same certification process it was difficult to understand the signal of the credential. Therefore my prior experiences motivated my inquiry into the phenomenon of credentialing requirements in outdoor education but I also acknowledge that my previous experiences may not have been illustrative throughout the field of outdoor education. However, by interviewing administrators who direct the credentialing process I gained access to perspectives and insights that were different from my experiences as a practitioner. Interviewees' opinions were expressed using quotations and narrative descriptions to explain their unique perspectives.



Although being clear about my position helps readers understand the lens through which I am filtering information, there are many other ways to balance the potential bias of my single perspective. As mentioned previously triangulation, or collecting multiple sources of data, is a strategy that relies on multiple perspective instead of a single data point. Triangulation in this study was achieved through collecting data from documents and interviews. Another method for increasing validity is purposefully searching for “disconfirming evidence”, or the process of searching for information that contradicts the major themes (Creswell & Miller, 2000, p. 127). *Human capital theory*, *signaling theory*, and *credentialing theory* have distinct attributes that are contradictory. Therefore interview transcripts and organizational documents were analyzed for evidence of all credentialing theories and possible new theories. Because these theories are contradictory, special attention was given to finding disconfirming evidence from a variety of theories. Diverse perspectives from multiple organizations provided a rich narrative about the complexity of credentialing in outdoor education instruction.

A major drawback to providing clarity about positionality, triangulation, and disconfirming evidence are that all of these strategies rely on a process of filtering information through the researcher. This is why Lincoln and Guba (1985) described member checking as “the most crucial technique for establishing credibility” (p. 137). Member checking is the process of returning to the interviewees and confirming the accuracy of the findings. Member checking was used to confirm that interviewees’ perspectives were accurately represented by following up the initial interview with additional questioning. Due to the constraints of phone interviews and inability to directly visit sites, the strategy of “prolonged engagement” (p. 127) and “collaboration” (p. 128) with the interview participants

was not possible. Although I tried to establish a sense of trust with the interviewees and work in partnership to represent their opinions, my inability to directly interact with the participants limited my ability to establish prolonged engagement and collaboration as sources of validity.

A final group of strategies involves using external sources. Using detailed descriptions and quotations that provide vivid details are methods that allow for complete transparency of the data and allow readers to understand the situation without the direct influence of the researcher. The process of providing what Creswell and Miller called “thick, rich descriptions” (2000, p. 128) is an integral component of a narrative presentation of the findings and efforts have been made to include quotations and rich descriptions throughout the presentation of the findings.

**Mixing quantitative and qualitative research.** This research followed the traditional explanatory mixed method design in which the first phase of research involved a larger quantitative study followed by a second phase of research which involved a smaller more focused qualitative study that examines select cases from the original quantitative research in more depth. The initial phase of research gathered a large sample of outdoor credentialing organizations to frame a general understanding of the status of credentialing in outdoor education. This research provided a base understanding of how many organizations provide teaching credentials for outdoor activities and what elements and standards are being used to determine competency for teaching.

Establishing a broad understanding of credentialing in outdoor education was useful for comparing activities and countries, but to explain the rationale behind credentialing requirements and to learn more about this phenomenon it was necessary to explore fewer

cases in more depth. The initial quantitative phase of research informed the selection of cases for second phase of analysis, provided a framework for inquiry, and helped to develop probing questions that targeted the key similarities and differences between credentialing elements and standards for different organizations. The qualitative phase of research not only produced an in-depth understanding of the credentialing process for selected organizations, but because a maximal variation sampling design using multiple cases was used, the research helped to illuminate the larger issue of credentialing requirements in outdoor recreation education. The findings from the qualitative phase of research also informed the larger quantitative research phase, by explaining through the framework of credentialing theory, a rationale for the differences in credentialing elements and standards. These credentialing elements emerged as the 38 different categories described previously and the standards included the specific competency requirement within each element. This research filled a large gap in existing research in the field of outdoor education and helped to bridge research across the fields of sociology, education, and outdoor education. These results could only be achieved by using a mixed-method research strategy that both collected a massive amount of data and then used qualitative case study analysis to gain insight into the larger phenomenon of theoretical foundations of credentialing in the field of outdoor recreation education. The mixing of data occurred throughout the data analysis process and results from each phase equally informed and altered the interpretation and analysis of data from the other phase. It was through the process of returning to the data from multiple research techniques and analyses that the mixed-method research approach provided a thorough understanding of credentialing in outdoor recreation education. In sum, mixed methods studies are by nature complex. Therefore Table 3.6 is provided to help illustrate and

Table 3.6  
*Research Questions and Data Analysis Chart*

Research Questions	Data Collection		Data Analysis	
	Document Analysis	Interviews	Coding & Relating	Descriptive Statistics
RQ#1: What are the elements required for a credential for teaching outdoor activities in selected countries?	X		X	
RQ#1a: How are these elements similar and different in selected countries?	X		X	X
RQ#2: What assessments are used to credential the teaching of outdoor activities in selected countries?	X		X	
RQ#2.a: How are these assessments similar and different in selected countries?	X		X	X
RQ#3: What theoretical framework(s) provide an explanation for why credentialing standards are similar or different within a country across outdoor activities?	X	X	X	

simplify the complexity of the data sources and the analysis plan. The table lists each research question, the method of data collection, and the data analysis techniques that were used to answer each research question.

### Summary

Participation in outdoor activities has been steadily increasing over the past 60 years. Outdoor play and experiential education have been pulled out of obscurity and become respected pedagogical tools. Play has been deemed so critically important to children that Article 7 of the United Nations' *Declaration of the Rights of a Child* included a right to play, citing that "the child shall have full opportunity for play and recreation, which should be directed to the same purposes as education..." (1959, "Declaration of the rights," para. 14). To paraphrase the United Nations, the purpose of education is to develop abilities, judgment, moral and social responsibility, and usefulness to society. In many countries around the world there has been a growing movement to get students out of classrooms and into nature

(Aasen, Grindheim, & Waters, 2009; Fjørtoft, 2001; Davis, Rea & Waite, 2006; O'Brien, 2009). In 2006, England's Department of Education and Skills published the *Learning Outside the Classroom Manifesto* that stated that every child should experience the world outside the classroom as an essential part of learning and development. Despite the growth and momentum towards more outdoor recreation, many people fear the risk and danger of participating in outdoor activities (Davis, et al., 2006; Maybard & Waters, 2007). To some degree, this trepidation may be a result of the mystery surrounding the risk of activities and question about the qualifications of teachers in charge of supervising students in these activities. This research provides a much needed synthesis of the different types of credentials and helps to illuminate a better understand the type and the rationale for the qualifications of the teacher providing outdoor activity instruction. "The bottom line is this: in highly specialized or dangerous (perceived or real) situations, we are accustomed to deferring to the experience and training of a professional" (Climbing Wall Committee, 2009, p. 2). It may be easier to defer to the training of a professional when there is a more clear understanding of the signal of the credential. This research fills an important gap in current knowledge about the required credentialing elements and standards for becoming an outdoor education professional for the public, organizations, and field of outdoor education.

After all, certification plays an essential role in the regulation of social life; it delineates the very meaning of education and skill (Hansen, 2011). This research provides a holistic approach to understanding the context for the discussion surrounding the role of credentialing in outdoor education. Perhaps the most important benefit of this research is the practicality of sharing information. Prior to this study there has been limited exploration of the credentials for being an outdoor leader, but no research into standards for credentialing

specific activity instruction. Due to the convoluted nature of multiple credentialing schemes, and a lack of communication between professionals within countries and across borders, there is little shared understanding about the elements used to select, train, and measure the capabilities of outdoor activity instructors. This research provides a critical first step in sharing information about credentialing practices and is a catalyst for further discussions about the theoretical foundations and development of credentials for outdoor instructors.

## **Chapter 4**

### **Results**

This research was conducted in two phases; therefore I will also present the results divided into two sections: Phase 1 and Phase 2. Although the research questions of each phase were distinct, data collected during the first phase influenced the data collection and analysis of the second phase. Data was continuously examined for new relationships and for details that would inform other aspects. The following sections outline the results from each phase. A more detailed discussion and summary will be presented in aggregate in the final chapter.

#### **Phase 1 – Quantitative Results**

To begin this section, it is necessary to first examine the coding process and explain the development of the categories by which credentials were analyzed. The coding and analysis process yielded 38 distinct categories. These 38 categories were developed from the dominant themes that emerged from analysis of organizational documents that explained the required elements and assessments used to credential outdoor recreation activity instructors. These categories represented the core requirements for becoming an outdoor recreation instructor in the selected countries, and essentially defined what it required to be an instructor for these activities. More details will be explained throughout this section, but it is helpful to begin with a broad understanding of the terms used to define the categories of analysis (see Figure 4.1).

<b>Affiliation</b>	<b>Pre-requisites</b>	<b>Training</b>
International	Minimum age	Required training
National	Reference	RPL
	First aid	Teaching theory
	Other certifications	Teaching skills
	Experience – time	Technical knowledge
	Experience – teaching	Technical skills
	Experience – skills	Safety and rescue
	Experience - prior certifications	Leadership and group mgmt.
	Interpersonal skills	
<b>Membership Requirements</b>	<b>Structure of the certification</b>	<b>Assessment process</b>
Insurance	Levels	Assessment
Dues	Environmental conditions	Written
Forms	Teaching experience	Practical
Code of conduct	Ability/skill	Teaching theory
Medical clearance		Teaching skills
Maintenance		Technical knowledge
		Technical skills
		Safety and rescue
		Leadership and group mgmt.

Figure 4.1. Themes and categories of analysis that emerged to describe the credentialing elements for outdoor recreation. Themes are highlighted in grey while categories within each theme are listed below each heading.

**Organizational affiliation.** The first theme was *organizational affiliation*. Within this theme, affiliations were divided into two categories: *international* and *national*. International affiliation referred to evidence of the credential being linked to a common international standard. For example, the World Recreational Scuba Training Council (WRSTC, 2004) was a collection of organizations that united and agreed on a common set of standards for recreational scuba diving. Another example was the International Federation of Mountain Guide Associations (IFMGA, 2013) and the International Mountaineering and Climbing Federation (UIAA) which collaborate to provide unified world standards and safe practice guidelines for mountain activities. The category of national affiliation related to any evidence of a connection to national standards for instructing a specific activity. Examples



that will be examined in more depth are: national qualification frameworks, national coaching schemes, national sporting organizations, or laws and regulations.

**Membership requirements.** The second theme was *membership requirements*. Although organizations have a wide variety of membership requirements, this research focused only on requirements that influenced the ability for a teacher of outdoor activities to gain access or maintain a credential. The specific categories that were analyzed were: *insurance, dues, forms, code of conduct, medical clearance, and maintenance requirements*. Insurance was an interesting and unique problem for many outdoor activity instructors. For many untrained persons, understanding insurance requirements could be confusing. Therefore, no attempt to understand local law and insurance requirements was made during this research. Instead, this category only reflected instances in which the attainment of a credential qualified an instructor to access insurance through the credentialing organization or by proxy through a third-party provider. In cases in which insurance was made available to instructors, it was usually a required element for the certification to remain valid. Dues included any membership fees associated with maintaining instructor status. The forms category was a broad label that applied when there were required documents that served to protect student safety. Examples of evidence for this category were child protection forms, background checks, and similar documents. Similar to the forms label, the code of conduct category was based on evidence that the credential required instructors to abide by a moral code and sign an agreement to uphold proper conduct. Forms were a third-party validation of instructors' employability for working with minors while the code of conduct was a personal statement of behavior for teaching students of all ages. Medical clearance included a doctor's validation that an instructor was physically fit and capable of teaching an outdoor

recreation activity. Medical clearance did not include generic statements of fitness or health or implied statements of health based on the rigorous nature of many educational training programs. An instance in which physician approval was required was the only type of medical clearance coded in this category. Finally, many outdoor activity teaching credentials required that instructors maintain their qualification in some way. Requirements such as paying membership dues, renewing first aid/CPR certifications, or completing a renewal form, were not considered evidence of maintenance requirements. Instead, maintenance requirements referred to actions required by the instructor to revalidate their ability to instruct the activity. Some examples of revalidation were professional development courses, recertification courses, active teaching requirements, or proof of competency.

**Prerequisites.** Another major theme was the concept of prerequisites for becoming an instructor. Similar to how a college or university might require specific test scores, teacher recommendations, or a grade point average to gain entry into a degree program, outdoor recreation instructors often had to fulfill entry requirements to gain access to an outdoor recreation instructor credentialing program. The major categories within the theme of prerequisites were: *minimum age*, *recommendations*, *first aid*, *other external certifications*, *experience – time*, *experience – teaching*, *experience – skill/ability*, *experience – prior certifications*, and *interpersonal skills*. Minimum age was the minimum age requirement for a person to earn a credential that allowed the instructor to independently teach the activity. Recommendations included both recommendations and references. The category of first aid referred to any type of required medical training. Other external certifications included other certifications requirements, excluding the previously mentioned first aid requirements. For

example, boating licenses and rescue certifications were the most common type of other external certifications.

While analyzing the different types of documents from many types of credentialing organizations, the category of prior experience developed into a series of sub-categories that were related but also distinctly different. Therefore, the broad category of prior experience evolved into four types of experience requirements. *Experience – time*, related specifically to required evidence of time spent participating in an activity. This could be qualified in hours, days, or even years of experience in an activity. The unifying characteristic of this category was a described amount of time spent in participation. *Experience – teaching* was an important variation of an amount of qualifying time. Instead of examining activity participation rates, this category emerged to reflect evidence of a requirement for a certain amount of time spent teaching. *Experience – skill/ability* is another variation of experience that was closely related to a time requirement. The differentiation to this category was the requirement of the candidate to have shown evidence of participating in the activity at a specific skill level. For example, rock climbing has very distinct grades, or levels of difficulty, associated with different environments. A common requirement for an instructor was to be able to perform the activity at a specific level of difficulty. Variation in prior experience requirements was extremely common due to the variety of environments in which instructors were expected to teach.

The category of *Experience – prior certifications* was similar to the category of other external certifications however the key distinguishing point was the “external” component to the former category. Prior certifications referred to internal certification requirements. Some examples of a prior certification requirement were progressions such as first becoming an

assistant instructor, or completing a skills or leadership course before becoming eligible for training. The last category in the theme of prerequisites was interpersonal skills. This category was different than the other categories and developed late in the coding process. The concept of interpersonal skills was an intangible requirement that many organizations had difficulty expressing. It was unique because many organizations may have an unofficial requirement for interpersonal skills, but only some organizations included a clear required element of interpersonal skills. Interpersonal skill was not a basic ability to communicate in a specific language; instead it represented and described a required passion or excitement for the subject and the ability to communicate with others in a dynamic way.

**Structure of the certification scheme.** The next theme, structure of the certification scheme, outlined a common dynamic of different levels of certification in outdoor recreation activity instruction. This research specifically focused on the requirements for becoming an entry level instructor in the selected activities. In many cases the initial instructor certification was the first step on a progressively more advanced credentialing scheme. Therefore, it was necessary to include an examination of the credentialing scheme as a whole in order to understand the context of the entry-level instructor credential. The first category within the theme of “structure of the certification scheme” was simply defined as *levels*. The levels category indicated the presence or absence of a progression within the certification scheme. If there was only one level for becoming an instructor for a credentialing organization, then no evidence of levels was recorded. The following three categories -- *environmental conditions*, *teaching ability*, *skill/ability*-- were all categories that distinguished the different levels of progression from one level to another. If the next level of instructor credential allowed an instructor to teach in a different environment, then it was

indicated in this category. Environmental conditions were a common restriction to an entry-level certification. Many credentialing schemes also required certain amounts of teaching experience for an instructor to progress to the next level of certification. Finally, the skill of an instructor was a common requirement for an instructor to obtain a more advanced certification.

**Training.** One of the most interesting themes focused on the concept of training. The theme of training was divided into two major types of categories: whether training was required and what topics were covered during training. If training was not required, then there were no topics covered during training. Therefore the first category was *required training*. Similar to this category there was the corollary category of recognition of prior learning (*RPL*). The RPL category contained evidence of organizational policies that allowed the prior experience of an instructor candidate to exempt that candidate from training. In some cases, documented prior experiences may have even exempted an instructor candidate from assessment, but no distinction of this was made in the final coding of the RPL category.

The other categories within this theme emerged from the process of trying to understand the design of training programs and specifically what training elements were required for instructors. The *teaching theory* category highlighted instances in which the training curriculum included training on pedagogy and instructional theory. For example developmental stages, instructional techniques, learning theory, assessment strategies, or any evidence that instructor candidates were prepared during training to understand teaching from a theoretical perspective was coded into this category. The *teaching skills* category focused on the technical instruction of subjects. This category predominately focused on

cataloging evidence that candidates were taught how to teach something in a specific way. This category focused on evidence of training designed to improve an instructor candidate's ability to teach that subject or skill in a practical way. *Technical knowledge* referred to evidence that the training course included background information and knowledge that aided the overall understanding of the context of the activity. Geology, biology, physiology, nutrition, ecology, conservation, physics, and a multitude of other subjects were all examples of topics that were covered during training and challenged instructors to understand the activity on a more fundamental level. *Technical skills* referred to evidence of a training curriculum specific to increasing an instructor candidate's ability to perform activity skills at a more advanced level. This could range from learning proper techniques and movement forms to how to tie a knot in proper way, in essence training instructor candidates to be better at the activity and perform at a higher level than a recreational level. The topic of *safety* could easily have fallen under the category of technical skills, however recurring evidence of the importance of this specific topic necessitated breaking it out into a separate category for analysis. Safety included evidence of instruction on specific safety awareness and techniques, rescue techniques, and understanding of potential hazards. The final category within the theme of training was *leadership and group management*. This category also shared some overlap with the teaching skills category however the main distinction was the emphasis on management. By separating group management into another category, I was not suggesting that teaching does not include group management; instead the data emphasized the importance of leadership and group management as a skill that instructors needed to learn. Examples of evidence of leadership and group management training included: managing multiple students, positioning as a role model, communication, and leadership.

**Assessment process.** The final major theme present among credentialing programs for outdoor recreation instructors was an assessment process. This theme also mirrored the second research question and an interest in the type of assessments that were used to credential the teaching of outdoor activities and how the assessments are similar or different in the selected countries. Therefore, the first type of category to emerge was evidence of different types of assessments. The *written* category outlined any evidence of a written component to the assessment process. Examples included tests, workbook assignments, and essays. When possible, data were collected on how these written assignments were graded and the minimum passing scores. A separate category of performance-based assessment also emerged. The *practical* category referred to all measures of performance-based assessment strategies, including methods such as skills checklist for demonstrations and presentations, peer evaluations, and pass/fail competency evaluations. A category entitled *assessment* signified the length of the assessment process regardless of the type. When possible, the length of the assessment process was recorded and analyzed. The remaining five categories followed the same pattern as the topic categories within the training theme. The topics for assessment categories were: *teaching theory*, *teaching skills*, *technical knowledge*, *technical skills*, *safety*, and *leadership and group management*. Evidence for these assessment categories were similar to the training categories and included unique assessment strategies from different organizations.

As analysis for each activity and each organization progressed, the categories became more refined and clear. New data emerged and contributed to a constantly evolving perspective. Each credential developed into an interesting case study full of rich complexity. However, the major benefit of this research was compiling all of this information together in

one place for evaluation and explanation. In the following sections the results for each country are highlighted in detail.

### **Australia Analysis and Results**

Research uncovered 40 outdoor recreation instructor credentials for 14 of the 17 selected outdoor recreation activities. For these 40 credentials, there were 21 organizations that provided an entry-level instructor certification. Of these organizations, 12 organizations were international organizations that were not specific to Australia and provided credentials to multiple countries around the world. See Appendix E through Appendix M for a list of categories for all outdoor activity credentialing organizations in Australia. Exceptions to this list included three activities that were not represented by instructor credentials. Neither hiking, ice climbing nor mountaineering had corresponding instructor certifications in Australia. There were no Australia specific kitesurfing instructor credentials. Instead kitesurfing was represented by two international organizations, the International Kiteboarding Organization (IKO) and British Kitesurfing Association (BKSA). Scuba diving was also over-represented by international organizations with six out of eight scuba diving credentialing organizations being international.

An interesting element to the outdoor recreation credentialing organizational typography of Australia was the Industry Skills Council (ISC), the Australian Department of Education, Employment, and Workplace Relations (DEEWR) and the Training.gov.au (TGA) website. The TGA maintained the national register of training, qualifications, and unit standards for vocational training (VET). These standards, set by the Australian Department of Education, Workplace, and Training were a part of the Australian Qualification Framework (AQF). The ISC did not specifically train or assess instructors;



however the ISC provides the training standards required for registered training organizations (RTO) to deliver training. The ISC organized national standards for 10 of the 17 activities (ISC, 2012c). These standards were organized into a training package aligned with the AQF, and existed as a Certificate IV in Outdoor Recreation (ISC, 2012c). There were 45 RTOs accredited to provide training to these standards (TGA, 2011). All RTOs follow the same national standards therefore separate RTOs were not included as a unit of analysis. Another unique component to the Australian outdoor recreation qualifications landscape was the National Outdoor Leader Registration Scheme (NOLRS). This organization is also not a training or assessment organization. However, NOLRS (n.d.) outlined standards and requirements to be listed as a registered instructor for five of 17 outdoor activities.

**Australia organization affiliations.** Of the 40 credentials 13 organizations had affiliations with international standard setting organizations that comprised six different activity types: scuba diving, skiing, sailing, surfing, paddleboarding, and windsurfing (see Table 4.1). Four scuba diving organizations that commonly credential the open water level scuba instructor were represented in Australia and are members of the WRSTC (2004). These organizations are the Professional Association of Diving Instructors (PADI), Scuba Schools International (SSI), Scuba Diving International (SDI), and Confédération Mondiale des Activités Subaquatiques (CMAS). The National Association of Underwater Instructors (NAUI) and the British Sub-Aqua Club (BSAC) were both independent international organizations. The Australia Vocational Education and Training (VET) program for the Certificate IV in Outdoor Recreation outlined by the Australian Department of Education and ISC recognized “industry technical and safety criteria” (ISC, 2012d, p. 9) from PADI, BSAC, and SSI, but this program was not affiliated with any dive organization directly. The

Table 4.1

*Number (Percentage) of International and National Affiliations for Australian Credentials (n=40)*

Affiliation type	Number (%)
International affiliation	13 (33)
National affiliation	24 (60)

Australian Underwater Scuba Instructor (AUSI, n.d.) was not affiliated with the WRSTC, however the training was directly aligned with the national standards set by the ISC.

Around the world there are two main surf training organizations that both claim authority over surfing standards; the International Surf Association (ISA) and Academy of Surf Instructors (ASI). ISA (2013) has been granted the title of the world governing body by the Olympic committee, but ASI also has a large influence around the world. Both ISA and ASI credential the instruction of surfing and paddleboarding, and both organizations have affiliated programs in Australia. The British Royal Yachting Association (RYA) is known around the world as one of the preeminent sail training organizations and has organizational affiliations in Australia to train both sailing instructors and windsurfing instructors. One independent partner of the RYA was Yachting Australia. Both Yachting Australia and RYA are also affiliated with the International Sailing Federation (ISAF) the world governing body for sailing. Finally, the Australian Professional Snowsport Instructors' (APSI, 2013) instructor training program was affiliated with the International Ski Instructor Association (ISIA). However, the APSI entry-level Nordic ski instructor certification is not sanctioned by the ISIA. The remaining 11 activities did not have any credentialing organizations that were affiliated with international standards.

All activities associated with the national training program through the Certificate IV in Outdoor Recreation complied with national standards. NOLRS (n.d.) also used the ISC standards as the basis for the registration scheme for instructors of canoeing, caving, river

kayaking, sea kayaking, and rafting. The Professional Association of Climbing Instructors (PACI, 2007) standards also align with and exceed the standards outlined by the ISC and the Australian Department of Education (DEEWR). Both surfing organizations the Australian Academy of Surf Instructors, an affiliate of ASI (n.d.), and Surfing Australia (2013) an affiliate of ISA, also coordinated their training to the Australian national standards.

Interestingly, paddleboarding through ISA or ASI has not been adopted into the regiment of the AQF. According to Australian Canoeing (AC, 2012) and the Australian Sports Commission, “Australian Canoeing is the peak national canoeing body recognized by the Federal government, and the Australian Canoeing Award Scheme (ACAS) is the national benchmark for canoeing” (p. 2). However, despite this link to national standards, the relationship was more complicated than it first seemed. This excerpt from the *Australian Canoe Award Scheme Handbook* partially explained the connection:

ACAS is administered through a network of National Training Providers (NTPs), which are required to adhere to a strict set of training and assessment criteria that meet national safety standards and exceed VET [Vocational Education Training] requirements. ACAS 2008 is no longer aligned with the VET Outdoor Recreation Package to ensure greater simplicity, transparency and quality of delivery, and to better serve the needs of the paddling industry, as well as those of AC-affiliated clubs. Safety, instruction and assessment standards are tied back to a single national benchmark and moderation process. Australian Canoeing is maintaining a pathway to VET recognition for Instructors in all contexts via the AC Education and Safety Technical Committee. (AC, 2012, p. 2)

This passage explained one of the unique characteristics of credentialing for outdoor activity instruction in Australia. Essentially AC, and also PACI (2007), maintained connections to the standards outlined by the Australian government; however, they have evolved their own credentialing standards, elements, training and assessment procedures in excess of the national requirements.

Table 4.2

*Number (Percentage) of Australian Credentials (n=40) with Various Membership Requirements*

Membership requirements	Number (%) required
Insurance	14 (35)
Dues	27 (68)
Forms	5 (13)
Code of conduct	19 (48)
Medical clearance	7 (18)
Maintenance	16 (40)

**Australia membership requirements.** Instructor access to liability insurance was available for less than half of the credentials (see Table 4.2). However, this was heavily influenced by a few key activities. Six of the scuba diving credentialing organizations provided instructors access to insurance. CMAS and the Certificate IV in Outdoor Recreation for scuba diving did not provide instructors with insurance. Likewise the international kitesurfing organizations, IKO (2013) and BKSA (2012) also provided instructors access to insurance. A few Australian organizations, AC (2103b), Yachting Australia (2013a), and PACI (n.d.), also offered access to insurance. Membership fees were much more common among Australian credentials, with most of credentials requiring yearly dues to the credentialing organization. The DEEWR and ICS Certificate IV was a degree from a vocational school and required tuition but not sustaining dues; therefore, by removing all of the ICS credentials from the total, nearly all credentialing organizations required membership dues. Background checks were less common with only five organizations requiring this element as part of the credentialing process. These credentials were mostly affiliated with the Australian Sports Commission National Coaching Accreditation Scheme such as: surfing, paddleboarding, sailing and windsurfing. Almost half of the credentials required a signed code of conduct for instructors. For example, the NOLRS (2013) *Code of Ethics and Practice* stated:

The Code of Ethics is designed to provide a fundamental guidance and may be widely interpreted. The spirit of these ethics should permeate the conduct of a NOLRS outdoor leader. The code of Practice is designed to provide more specific guidelines regarding acceptable standards of professional practice.... These Codes cover the following seven areas: Competence, Concern, Respect, Responsibility, Integrity, Recognition, Objectivity. (p. 1)

Another uncommon characteristic among Australia credentialing organizations was a requirement for medical clearance to instruct outdoor activities. Only the scuba instructors were required to complete a signed medical clearance. Only one scuba organization, BSAC, did not require medical clearance (Phil Clifton, personal communication, February, 2013). Many organizations had a statement requiring instructor candidates to maintain a level of fitness, but not a signed medical form. For example, PACI required instructors to be “fit and healthy for working at height within the chosen specialist activities” (PACI, 2007, p. 7).

The final member requirement analyzed was the process of maintaining instructor status for a credential for the selected activities. Of the 40 credentials, only 16 credentials required a fixed revalidation process that required more than simply completing a form and paying membership dues. Unlike some of the other prerequisites, there did not appear to be any pattern, or consolidation of practice among specific types of activities. Certifications remained valid for a range of one to five years with the average certification remaining valid for 2.1 years, and the median and modal length of time were both one year. Credentials from SDI, NAUI, AUSI, PACI, ACIA, NOLRS, AC, RYA, YA all required instructors to actively teach a set number of courses per year. However this was not the only maintenance requirement. Many programs required ongoing professional development or continuing education programs. AC’s (n.d.) requirements were especially thorough and used a 100-point system and re-registration table to log instructor activities and score credit toward recertification. Similarly, Yachting Australia (YA) had an interesting twist on the

recertification process and required instructors to submit proof of competency every five years by, “one of the following: be assessed by a Senior Instructor; attend the assessment day of an Instructors Course (in their specific qualification); provide video evidence of conducting a session...” (2013c, “revalidation,” para. 1).

**Australia prerequisites.** One would think that a minimum age would be one of the more basic and easily identifiable categories; however this requirement was surprisingly complicated to understand. At first glance, over two-thirds of organizations had a minimum age requirement. AC (2012) allowed for a minor aged 15 years old to become an instructor, but AC did not allow instructors to teach independently until they were a minimum age of 18 years old. BKSA (2013) had a similar arrangement; however the minimum age was 16 years old to attend the instructor training course and 18 years old to teach. Vocational training through a Certificate IV training program did not have a specific age requirement. State by state there seemed to be different rules and general agreement that a minor at age 15 or 16 can participate in a Certificate IV course if a parent or guardian gives consent, however that child is unemployable until age 18. YA (2013d) windsurfing, RYA (2013c), APSI (2011), Australian Mountain Bike Instructors Association (AMBIA, n.d.) all allowed for instructors to become certified to teach at age 16. All scuba diving qualifications required instructors to be a minimum of 18 years old.

Not a single organization required instructors to submit a reference or recommendation. Conversely, nearly all of the credentials required instructors to have and maintain a first aid certification. The only exception was the scuba diving organization BSAC, which required instructors to initially have had first aid training but not maintain this certification. Phil Clifton, the coaching coordinator for BSAC, noted that there is not a

specific requirement however, “our instructors will have learned and often taught first aid and related skills” (Personal communication, February 2013). The ubiquitous first aid requirement, *HLTFA301B Apply first aid* unit competency, was a requirement for the Certificate IV in Outdoor Recreation (ICS, 2012c). This course is generally two days long and is described as, “the skills and knowledge required to provide first aid response, life support, management of casualty(s), the incident and other first aiders, until the arrival of medical or other assistance” (ICS, 2012a). Only PMBI (2006) recommended wilderness specific first aid training.

Only a few organizations also required external certifications other than first aid training. This data analysis was somewhat misleading because the Certificate IV programs included many skills as part of the training program, but were not considered external certification requirements from other organizations. Credentials that required external certifications were almost exclusively based around water. An exception was the NOLRS (2011b) caving qualification which required a vertical rescue certification. Aquatic, surf, and swiftwater rescue certifications were required in some cases and dependent on the environment of water based activities. Kitesurfing, sailing, and windsurfing organizations required a powerboat handling certification.

The prerequisite of experience evolved into four distinct categories (see Table 4.3). The first category of prior experience was time. There was an enormous difference in the amount of time that organizations expected instructor candidates to have spent in participating in the chosen activity. Nearly half of all organizations had a specific time requirement for experience. For example the NOLRS cave instructor qualification required new instructors to have a minimum of 18 hours of experience guiding in caves (NOLRS,

Table 4.3

*Number (Percentage) of Australian Credentials (n=40) Requiring Various Prerequisites*

Prerequisites	Number (%) required
Minimum age	27 (68)
Reference	0 (00)
First Aid	39 (98)
Other external certifications	13 (33)
Experience - time	16 (40)
Experience - teaching	11 (28)
Experience - skills	34 (85)
Experience - prior certifications	22 (55)
Interpersonal skills	15 (38)

2011b). At the other end of the spectrum the Australia Climbing Instructors Association (ACIA) required that candidates for the Climbing Instructor training course have “a minimum of five years of experience climbing at least 2000 meters a year” (ACIA, n.d., “Climbing Instructor,” para. 1). Five organizations had a minimum of two years, a couple organizations had the requirement of one year of experience; and most of the dive organizations followed the WRSTC (2004) standards of a minimum of six months experience. Teaching experience was a less common requirement for instructors. Of the 10 organizations for which specific details were available, the average number of required teaching sessions was 3.7, and the median and mode were both three sessions.

Even though it would be possible to go into great depth about the requirements that different organizations have for personal abilities and skills, to compare the specific requirements between organizations would be incredibly challenging. The levels, grading systems, environments, and equipment make each activity unique and therefore the requirement for an instructor’s skills to be equally specific. That being said, most of the credentials described skill or ability requirements for instructors. These requirements ranged from intermediate surfing skills for an ASI (n.d.) instructor, to being able to perform at a Level 3 skill ability for an IKO (2013) instructor. AC (2012) described the expectations for a



river kayaking instructor in great detail such as: 15 days of paddling grade 2, and five river trips on at least three grade 3 rivers for the whitewater instructor award.

Less common was the requirement for a prior certification. About half of Australian outdoor recreation instructor credentials required instructor candidates to follow a progression of certifications. The most common requirements were an assistant instructor training, or guide/leader training from the issuing organization. The natural entry into the Certificate IV in Outdoor Recreation was from the progression Certificate II and then Certificate III in outdoor recreation. Notable exceptions were that both Surfing Australia (2013b) surfing instructors and the Certification IV (2012c) with specialization in sailing required prior training in sport coaching.

The final prerequisite was interpersonal skills. This prerequisite was especially well highlighted by the employability skills qualification summary as part of the ISC (2012c) Certificate IV in Outdoor Recreation which described effective communication skills, such as effective body language, ensuring a “positive recreation experience” (p. 5), and teamwork and collaboration. APSI (2012) even had a 25-page document on professionalism and requirements for appropriate interaction. Although these topics were often discussed as part of instructor training, many of these qualities would be hard to train and instead were characteristics that were expected of professional instructors of outdoor recreation activities.

**Australia structure of the certification scheme.** Progression to more advanced levels of instructor credentials was extremely common. Nearly all organizations had a system of levels for instructors that allowed instructors to teach more advanced skills or operate in different environments (see Table 4.4). Often these levels are linked to an instructor’s ability to perform at a higher level. Only a few organizations did not have a

Table 4.4

*Number (Percentage) of Australia Credentials (n=40) That Segment Instructors by Various Characteristics*

Credentialing scheme characteristics	Number (%) required
Level	37 (93)
Environmental conditions	31 (78)
Teaching experience	32 (80)
Ability and skills	36 (90)

tiered level of instruction. BKSA (2013), AMBIA (n.d.), and the Certificate IV, with specialization in cross-country skiing instruction, only had one level of certification.

Environmental conditions, the teaching experience, and the required skills needed to instruct the activity all commonly determined the certification level of an outdoor recreation instructor.

**Australia training.** For most organizations, training was an important component of the credentialing process. Notable exceptions were the NOLRS, which was a registration type credentialing organization, and the training for AC's canoeing, kayaking and paddleboarding instructor credentials were optional. All other Australian credentialing organizations required some element of training. The length of training ranged from a few hours to months-long training. Using the specific requirements available for 28 organizations, the average length of training was 52 days, and the most common and median length of training were each three days. The vocational training for the Certificate IV (ICS, 2012c) was stated to take between six months to nearly two years (the six month minimum for training was used for analysis) which skewed the average for the length of training. The majority of trainings lasted between two days and one week. The training requirement to become a scuba diving instructor tended to take about a week, while most of the other trainings were conducted in a span of two to three days. One outlier was the PACI rock

Table 4.5

*Number (Percentage) of Australian Credentials (n=40) with Various Training Elements*

Training elements	Number (%) required
Required training	31 (78)
RPL	24 (60)
Teaching theory	24 (60)
Teaching skills	31 (78)
Technical knowledge	28 (70)
Safety and rescue	31 (78)
Leadership and group management	28 (70)

climbing training that could take between 14 to over 19 days (PACI, 2007). Many organizations had a system for recognizing prior experience or learning (RPL) that allowed experienced outdoor professionals to qualify directly to assessment. The exceptions to RPL were clustered mostly among kitesurfing, mountain biking, and scuba diving instruction. Many of the scuba organizations allowed for instructors who trained with other organizations to cross-over and gain a credential through their organization; however these organizations did not allow for a person with years of scuba experience to simply become an instructor without training.

Examining training courses was one of the most interesting components of this research; however, it was not the primary focus. Therefore, only minimal differences between different organizations' approaches to training are discussed. Researching the different approaches to training would be a fruitful area of future research.

Topics in training were analyzed based on all organizations, but because NOLRS and AC credentials did not have a required training the number of Australian credentials that incorporated specific topics in training were reduced by nine credentials (see Table 4.5). For example, over half of credentials from organizations discussed the theoretical foundations of teaching during training. Information collected from training syllabi revealed a surprising amount of dedication to helping teachers understand the fundamentals of teaching. Examples

of common topic descriptions were “teaching psychology” (IKO, 2103, “a solid training program,” para. 1), “understanding learning styles” (AMBIA, n.d., “mountain bike instructor courses,” para. 2), and “a study of the acquisition of skill process” (YA, 2013b, “course overview,” para. 3). Another example was that one of the six modules during the two-day instructor course with ISA (2008) surfing or paddleboarding covered instructor teaching methods including, “teaching methods, effective teaching and learning, inclusive instruction, presenting the lesson, the essence of instruction...” (pp. 30-35). Organizations connected with the ICS Certificate IV and the VET system also contained many references to training instructors in teaching theory.

Not surprisingly for an instructor training course, all organizations that required training incorporated sessions on teaching skills and technical knowledge on the activity. Overall, about three-quarters of credentials included training on teaching skills and technical knowledge. A majority of credentials provided training on the technical skills of the activity. The exceptions were the surf instructor credentialing organizations Surfing Australia (2013) and ASI (n.d.), the focus of their training courses were concerned with the instruction of the activity. According to ISA (2008) and ASI (n.d.), surf instructors were expected to have all relevant technical ability prior to training. The APSI Nordic skiing training course description simply highlighted a basic approach to instructor training: “the two day course includes the skills to teach children and adults the basic skills outlined below as well as class handling & safety, basic technical information, skiing & demonstrating ability” (APSI, 2011, p. 21). The APSI *Nordic Redbook 2011* manual then described 10 basic technical Nordic skiing skills that instructors were required to master and be able to instruct.

The PACI rock climbing instructor training program was a prime example of an outdoor credentialing organization's approach to safety training. During the PACI instructor training, four days were spent in rescue training on topics such as "equipment skills, rigging skills, mobility skills, patient skills, and belay skills" (PACI, 2007, p. 3). Another phase of the PACI (2007) training course was "concerned with the application of skills to ensure that the planned activity is safely and consistently achieved" (p. 6) and learning "how to implement and monitor OH&S procedures in consideration of identified hazards and risks in the workplace – the activity site in effect is a *workplace*" (p. 6). These examples provide only a brief selection of safety training from Australian outdoor education credentials. All credentialing organizations with training programs focused on safety training during the instructor course.

Most of the instructor trainings also incorporated leadership and group management training. For example, *Module 25* of AUSI dive training included topics such as "environment, positioning, efficiency, learning rates, and enthusiasm" (AUSI, 2009, p. 47) for understanding how to best manage a group of students learning to dive. The instruction unit competency for each specialization in the Certificate IV program also covers topics of leadership and group management. For example, in the *Instruct Canoeing Skills on Flat and Undemanding Water* (ICS, 2012b) unit competency, expected learned skills were "organize participants into manageable groups for canoeing" (p. 5), understand "group management hazards" (p. 10) and issues in "group objectives and group size" (p. 11), and how to respond to "group management in emergency situations" (p. 12). These are just a few examples of the types of training that instructors received in group management.

Table 4.6

*Number (Percentage) of Australia Credentials (n=40) with Various Assessment Elements*

Assessment elements	Number (%) required
Required assessment	32 (80)
Written	29 (73)
Practical	40 (100)
Teaching theory	28 (70)
Teaching skills	39 (98)
Technical knowledge	34 (85)
Technical skills	38 (95)
Safety and rescue	37 (93)
Leadership and group management	35 (85)

**Australia assessment process.** The assessment process was essential to most organization's credentialing programs. By removing the six NOLRS registration credentials it was clear that all of the credentials require some variation of a performance based assessment. The NOLRS required proof of certain competencies but did not describe how this assessment process should happen. In the majority of cases, a separate assessment process from the instructor training course was required (see Table 4.6). Each RTO that was authorized to deliver training for the Certificate IV in Outdoor Recreation (ISC, 2012c) was responsible for managing the assessment practices. I was unable to determine the exact assessment process for each of these of the activities; however, an assessment was required according to the standards. The two exceptions to a separate assessment process for instructors were PMBI (2006) and YA (2013d). Each of these credentials utilized a performance-based assessment during the training process. Determining requirements for written assessments was more difficult. Including the Certificate IV activities which allowed possible written assessments, 29 of the credentials required a written assessment. For each of the activities in the Certificate IV, a possible method of assessment was written questioning (ICS, 2012c). However, it was up to individual RTOs to determine the appropriate assessment method. There were a wide variety of assessment tools used by credentialing

organizations to determine competency: multiple choice test, short answer, essays, and workbooks. One innovative assessment process was AC's strategy for assessing canoeing, river kayaking, and sea kayaking. AC used an assessment project that included requiring instructor candidates to write a trip plan that included "a timetable that covers [key topics] allocating sufficient time, appropriate resources and venue, a basic theory lesson plan for [selected topics], a basic lesson plan for [practical lesson]" (AC, 2008, p. 1). Some organizations provided clear passing guidelines for written exams, and the average minimum score for five credentials with available data was 76%, with a range of passing scores from 70% to 80%. As previously stated, performance-based assessments were standard across all credentialing organizations. These assessments were mostly pass/fail assessments based on competency in a specific task. For example, common assessment tasks were teaching an example class or performing a specific skill. Many credentialing organizations used a skills checklist to evaluate competency. The Certificate IV in Outdoor Recreation (ISC, 2012c) recommended a holistic approach to assessment, such as observing a candidate for the entire process of planning and delivering a program in a real environment. Both the Surfing Australia (2013) and ASI (n.d.) surfing and paddleboarding credentials required that candidates shadow and assist a more experienced instructor for 10 to 25 hours of instructional lessons. The mentor then decided if an instructor candidate was competent to teach independently.

Candidates were assessed on teaching theory by most credentials. It was clear that BKSA (2012) kitesurfing, APSI (2011) Nordic skiing, and BSAC (2013) scuba diving used a written test to assess an instructor's knowledge of teaching theory. For other organizations it was unclear how an understanding of teaching theory was evaluated. Requirements such as

the ability to demonstrate “instructional techniques to adapt sessions to meet a variety of learning abilities” (NOLRS, 2011a, p. 10) was a typical example of the type of performance requirements for the assessment of an instructor’s knowledge of teaching theory.

Teaching skills were evaluated almost entirely by performance based assessments and were assessed by 98% of organizations. Only NOLRS (2012) hiking did not require an instructor to show proof of teaching skills. A demonstration of a candidate’s teaching ability was standard across all organizations. An instructor candidate’s technical knowledge was assessed by most of the credentials. Written and performance-based assessments were commonly used across all activities. For example, scuba diving credentialing organizations tested candidates with exams on dive physics, math, the scientific properties of water, environmental and conservation issues, and biology. Many credentialing organizations also used a lesson demonstration format to test background knowledge and a candidate’s understanding of key concepts. The technical ability of instructors was also assessed for nearly all credentials. The exception to this assessment was ISA (2008) surfing and paddleboarding instructor candidates who were expected to prove technical ability prior to the course and therefore assessments were solely based on instructional requirements. An instructor candidate’s knowledge of safety and rescues was assessed by 93% of the credentials; however, this meant that three credentials did not require assessment of an instructor’s knowledge or performance of safety/rescues. IKO (2013), ASI (n.d.), and ACIA (n.d.) each required that a candidate be assessed on teaching and technical skills but no evidence was found that these assessments covered issues of safety or rescue scenarios.

The final category of the assessment process for instructors was leadership and group management. Again, most outdoor activity instructor credentials required candidates to be



assessed on leadership and group management. This paralleled the instructor training process and candidates were often asked to demonstrate the group management skills that were learned during training. Assessment usually involved a candidate conducting a lesson with an actual group for final evaluation.

The Certificate IV in Outdoor Recreation (ISC, 2012c) provided a broad outline for the responsibilities and requirements of and outdoor recreation instructor in Australia:

An instructor has the skills, knowledge and experience to facilitate skill transfer or development to clients in order that they may participate independently (or with minimal supervision) in outdoor activities. This requires the instructor to be able to:

- transfer required technical skills and knowledge to participants
- apply a variety of appropriate instructional strategies
- critique participants technique
- assess participants skill and knowledge acquisition during and at the end of a program or session
- In all cases those with this qualification would be managing expected and unexpected situations with considerable autonomy. Leadership, guidance and supervision are involved when organizing activities of self and others, as well as contributing to technical solutions of a non-routine or contingency nature. Work would be performed in field locations with varied contexts requiring contingency planning and in differing environments such as water-based, dry land and mountainous terrains, using a diverse range of equipment. (p. 3)

A similar declaration of expectations for outdoor educators permeated most credentialing organizations in Australia, regardless of the credential's affiliation with national standards.

Australia is a model for clarity and transparency of credentialing standards for outdoor education.

### **Canada Analysis and Results**

Canada had the fewest number of credentials of the selected sample countries.

Canada had 24 credentials that were offered by 13 different organizations. Of the 13 credentialing organizations seven of the organizations were international organizations with operations based in other countries. Only 14 of the 17 activities were represented by national

credentialing organizations. No instructor credentialing requirements were found for caving. Both rafting and surfing credentials were available for the west coast of Canada but these regional credentialing programs were not included in the final sample of credentialing organizations. The mountaineering organization FQME was also excluded from the sample because all available information was in French. Scuba diving instructor credentials were 21% (5 of 24) of the total credentialing organizations and four international scuba organizations (NAUI, PADI, SSI, SDI) were commonly accepted and actively credentialed instructors. Four primary Canadian organizations credentialed instructors for most outdoor recreation activities. Paddle Canada represented all four of the paddlesports: canoeing, river and sea kayaking, and paddleboarding. Again a number of regional paddling organizations, such as the Ontario Recreational Canoe and Kayaking Association (ORKA), were not included due to their regionality. The Association of Canadian Mountain Guides (ACMG) and the partnership between the Alpine Club of Canada (ACC) and Ecole Nationale d'Escalade du Québec (ENEQ) provided credentials for most of the mountain activities, hiking, ice climbing, mountaineering, Nordic skiing, and rock climbing. Sail Canada (CYA) supervised the credentials for sailing and windsurfing. There were no Canadian credentialing organizations for kitesurfing or mountain biking and instead these credentials were offered by IKO for kitesurfing, and by PMBI and IMIC for mountain biking. For a complete list of credentialing organizations and categories see Appendix N through Appendix V.

**Canada organizational affiliations.** International affiliations were associated with mountain activities and scuba diving. In total, 38% of credentialing organizations were affiliated with international standard setting organizations (see Table 4.7). The WRSTC

Table 4.7

*Number (Percentage) of International and National Affiliations for Canadian Credentials (n=24)*

Affiliation type	Number (%)
International affiliation	9 (38)
National affiliation	4 (17)

(2004) was represented by PADI, SSI, SDI, and American Canadian Underwater

Certifications (ACUC) in Canada. The ENEQ (2013e) was affiliated with the International Mountain and Climbing Federation (UIAA) and incorporated UIAA international standards into the ENEQ instructor training programs. The ACMG (2013c) mountaineering program was the Canadian affiliate of the IFMGA. However the ACMG rock climbing, Nordic skiing, and ice climbing programs were not related to this international standard. The national affiliations with the selected outdoor recreation activities are slightly more complicated. Unlike Australia, there was no national educational framework for outdoor recreation activities in Canada. Canada does have a National Coaching Certificate Program (NCCP), however the only outdoor recreation activities affiliated with this national program were Sail Canada (2013b) and the recent partnership between Paddle Canada (2013c) and CanoeKayak Canada (CKC) – the competitive sporting association for paddlesports – for the river kayaking instructor credential. At the time of writing it appeared that Sail Canada and Paddle Canada were moving towards a more formal association with Transport Canada regulations. All told, only four out of 24 credentialing organizations were affiliated with national standards.

**Canada membership requirements.** Nearly all of credentialing organizations in Canada provided credentialed instructors access to liability insurance (see Table 4.8). The exception was PMBI mountain biking. All but two credentialing organizations also charged yearly membership dues. IKO kitesurfing and PMBI mountain biking did not appear to have

Table 4.8

*Number (Percentage) of Canadian Credentials (n=24) with Various Membership Requirements*

Membership requirements	Number (%) required
Insurance	23 (96)
Dues	22 (92)
Forms	0 (00)
Code of conduct	17 (71)
Medical clearance	5 (21)
Maintenance	17 (71)

any yearly membership fees. None of the organizations required a background check as a component of the certification process. However, nearly three-quarters of outdoor recreation instructor credentials required that instructors sign and adhere to a code of ethics/conduct. For example, Paddle Canada's standards of conduct included responsibilities to students, environmental stewardship, and responsibilities to Paddle Canada (Paddle Canada, 2011). The code of conduct forms were primarily grouped among the credentials in paddlesports, mountain activities, and sailing/windsurfing. Medical clearance to become an instructor was only required for scuba diving credentials, however this element was required for all five scuba diving organizations. Other organizations, like ACMG, had health and fitness requirements but only required doctor's approval for abnormal conditions. The final membership requirement was the process of maintaining the instructor credential for each activity. Most credentials required instructors to maintain their credentials with professional development courses or a minimum amount of teaching activity during a specific time frame. Paddle Canada, IKO, PMBI, PADI, and ACUC scuba diving required only yearly renewal. Credentials remained valid between one to three years, with the average renewal period being every two years. The median amount of time a credential was valid for was two years, and the most common validation periods (mode) were one and three years. The most common process for revalidation among credentials was a one day professional development class

(during a one year or three year validation period), however the ENEQ (2013a) mountaineering credential required a three day recertification course every three years. Another variation was the Sail Canada requirement of maintaining instructor status by teaching a “minimum average of 12 days per year” (CYA 2010, p. 26) every two and a half years.

**Canada prerequisites.** The average minimum age for instructor credentials was just under 18 years old, with the median and mode also being 18 years old. The minimum age requirement ranged from 16 to 19 years old. The paddlesports, sailing, windsurfing, and Nordic skiing minimum age requirement was 16, whereas the credentials for mountaineering, ice climbing, and rock climbing tended to be 19 years old. Only 21% of credentials required a reference or recommendation to be eligible for instructor training, and this requirement was from only one organization, the ACMG (2013a,b,c,d,e). Almost all credentials for instructing outdoor recreation activities required instructors to maintain a first aid certification. The two exceptions that did not require first aid were Paddle Canada (2013a) canoe instructor and Canadian Association of Nordic Ski Instructors (CANSI, 2011) X-country Level 1 instructor. Many of the first aid requirements were dependent on the environment in which instructors would be teaching. ACMG (2013a,c,d) required an 80-hour wilderness first aid certification for mountaineering, ice climbing, and Nordic skiing. While many other courses required the standard one day CPR/first aid certification. A number of other certifications were required by about 42% (10 of 24) of credentials. Powerboat licenses were required for sailing/windsurfing (CYA, 2013, b) and kitesurfing (IKO, 2013) credentials. Avalanche certifications were required by ACMG (2013a,c,d) for mountain activities. Navigation and survival certifications were required by ENEQ

Table 4.9

*Number (Percentage) of Canadian Credentials (n=24) Requiring Various Prerequisites*

Prerequisite	Number (%) required
Minimum age	23 (96)
Reference	5 (21)
First aid	22 (92)
Other certifications	10 (42)
Experience – time	17 (71)
Experience – teaching	7 (29)
Experience – skills	21 (88)
Experience – prior certifications	18 (75)
Interpersonal skills	4 (17)

(2013a,d,f). Swiftwater rescue was a required certification for Paddle Canada (2013c ) river kayaking.

Four categories of experience emerged for the theme of prerequisites (see Table 4.9). For the first category, experience – time, over 70% of credentials required instructors to have participated in an activity for a stated amount of time. It is difficult to compare the varying definitions of time (seasons, hours, trips, etc.), but estimating a “season” as 4 months, the average amount of experience required was 15 months. The amount of experience ranged from 20 days to 5 years, the median amount was 8 months, and the modal amount of experience required was 6 months. Less than one-third of credentials required prior teaching experience. This credentials were predominately associated with just a few organization, five of these credentials were with the ACMG (2013a,b,c,d,e) while the other two credentials were Paddle Canada (2013c) river kayaking and ACUC (2003) scuba diving.

The other two categories of prerequisites could be combined together in the context of prior abilities. Again, almost all credentials had a stipulation of performance ability in the activity. The variety of ability requirement ranged from “confident on intermediate terrain” (PMBI, 2006, “PMBI level 1,” para. 2) to a required experience level outlined by the ACMG (2013a) for an alpine guide as:

Experience - you must show that you are capable of guiding clients, demonstrating smooth, confident, efficient movement while climbing, protecting, anchoring, and belaying. On alpine routes involving glaciers, snow, ice, rock, and mixed terrain at 5.10b/c wearing rock shoes and 5.8 in mountain boots. On Grade 4 Waterfall Ice Personal Climbing Standard - you must demonstrate a personal climbing standard of 5.11 in rock shoes, 5.8 in mountain boots and Waterfall Ice Grade V. (“prerequisites,” para. 1)

Many of the credentials also had prior certification requirements. These prior certifications ranged from prior experience as an assistant instructor, to skill level certifications within the credentialing scheme. Sail Canada (2013b) required a theory and fundamental courses entitled “CANsail Fundamentals” (“CanSail instructor programming,” para 3). The final category of prerequisites was interpersonal skills. An example from this category was a prerequisite from the IMIC (2013) mountain bike instructor credential, “strong written and verbal communication skills [and] passionate about riding and a strong desire to help others have more fun and progress safely” (“IMIC instructor,” para. 2). NAUI and Sail Canada also outlined similar requirement for instructors to complete the group of only four credentials that had evidence of a requirement for interpersonal skills.

**Canada structure of the credentialing scheme.** Many of the credentials had levels of qualifications for instructors. About 75% of credentials had different qualification levels, with the notable exceptions of mountaineering credentials (ACMG, 2013c; ENEQ, 2013a) that did not have different certification levels. Of the 18 credentials with different levels, 15 programs differentiated the credential levels based on environmental conditions. For example, one of the distinguishing factors between the different paddleboarding instructor credential levels for Paddle Canada was the water conditions such as: flatwater, coastal, coastal surf, or river (Paddle Canada, 2012f). About half of the outdoor recreation instructor

Table 4.10

*Number (Percentage) of Canadian Credentials (n=24) That Segment Instructors by Various Characteristics*

Credentialing scheme characteristics	Number (%) required
Level	18 (75)
Environmental conditions	15 (63)
Teaching experience	10 (42)
Ability and skills	16 (67)

credentials segmented instructor credentials in part due to an instructor's teaching experience (see Table 4.10). To reach Level 3 instructor status with PMBI (2006), mountain biking instructor candidates had to have a minimum of three seasons of teaching experience. The most common characteristic that differentiated one level of credential from another was an instructor's personal ability. In total 16 of the credentials used an instructor's skill level as criteria for more advanced credentials. Using another example from Paddle Canada (2012d), Level 2 sea kayak instructors were required to be able to paddle at a Level 3 Paddle Canada skill level.

**Canada training.** Training was required for all of the Canadian outdoor recreation instructor credentials. Using estimates for converting hours to days (eight hours being equal to one day), the average instructor course was 7.3 days. The median length of the instructor course was five days, and the most frequent length was also five days. The ACMG (2013c) mountaineering course was approximately 32 days long, and many of the other alpine certifications were much longer than average, ranging from 11 to 19 days. Although instructor training was required for all credentials, Paddle Canada (2013a,c,d,e,f) and ACMG (2013a,b,c,d,e) both had systems for accepting prior learning (see Table 4.11).

The curricula for training courses were varied and were closely aligned with both the activity and the length of the course. The following information highlights some of the key examples topics covered during instructor training. Teaching theory was covered in about



Table 4.11

*Number (Percentage) of Canadian Credentials (n=24) with Various Training Elements*

Training element	Number (%) required
Required training	24 (100)
RPL	10 (42)
Teaching theory	11 (46)
Teaching skills	24 (100)
Technical knowledge	24 (100)
Technical skills	24 (100)
Safety and rescue	24 (100)
Leadership and group management	23 (96)

half of the credentials. Sail Canada (2013a), specifically had a course called *CANsail*

*Fundamentals* that was a two-day course covering teaching theory topics such as: coaching

theory, skill development, teaching methods, and planning instruction. A typical Paddle

Canada course covered teaching methods such as the “IDEAS

(introduce/demo/explain/activity/summary) and TELL Me” methods and also discussed

different learning styles (Paddle Canada, 2013a, “lake canoe instructor,” para. 7). ENEQ

(2013c) also had a three day specifically designed General Theory Course (GTC) that

focused on “technical and pedagogical training” (“GTC,” para. 6) and covered topics such as

“sociological, psychological and organizational aspects of teaching” (“GTC,” para. 6). In a

strong show of consistency among credentialing requirements, all outdoor recreation

teaching credentials incorporated teaching skills, technical knowledge, and technical skills

training into their respective training courses. The ACMG ski guide application through

Thompson Rivers University (TRU) listed the goal of the training course was “to develop the

guiding and instructional skills needed to work in a backcountry ski and snowboard

environment “(2013, p. 2) and teach “wilderness ski teaching methodology” (2013, p. 2).

Another example of the technical knowledge needed by instructors was outlined by ACUC

and the WRSTC (2004) minimum dive standards:

6) Professional and ethical responsibility of a recreational scuba instructor; (7) Instructor-level knowledge of equipment, physics of diving, physiology of diving, medical problems related to diving, decompression theory, use of dive tables, dive computers and dive environment; (8) Local laws and regulations affecting scuba diving services; (9) Dive site selection. (p. 7)

An example of technical level skills were discussed in ENEQ's requirements for rock climbing instructors to have mastered "top-rope station installation on fixed and natural anchors; single-pitch rappel; fixed line installation; disengagement of the belay system; climbing techniques; self-rescue techniques on single-pitch routes" (2013b., "rock-top rope site manager," p. 5).

As mentioned in the last example, safety training was an important consideration for training outdoor recreation instructors and all of credentials included training on safety. For example, Sail Canada (2010) *Learn to Windsurf* instructors were asked to "swim while towing a student for 100 meters wearing a PFD; demonstrate a high-wind board tow upwind for 50 meters; demonstrate a rescue tow over a 100 meters upwind and downwind course; practice a self-rescue paddle for 100 meters" (p. 48). Safety skills that were included in all Paddle Canada courses included "safety procedures, hazard recognition, waterfront regulations and safety equipment" (2012b, p. 3). Topics on group management and leadership were prevalent on almost all credentialing instructor courses. There were many example of this throughout the different training courses, but to use one final example, the ENEQ (2013c) General Theory Course covered topics such as the "roles and responsibilities of the climbing teacher" ("GTC," para. 6) and "four different ways of taking charge of a group" (GTC," para. 6).

**Canada assessment.** Almost all of credentials utilized some variation of an assessment process (see Table 4.12). For some organizations it was a performance task at the

Table 4.12

*Number (Percentage) of Canadian Credentials (n=24)) with Various Assessment Elements*

Assessment elements	Number (%) required
Required assessment	23 (96)
Written	21 (88)
Practical	24 (100)
Teaching theory	11 (46)
Teaching skills	24 (100)
Technical knowledge	20 (83)
Technical skills	24 (100)
Safety and rescue	23 (96)
Leadership and group management	24 (100)

end of instructor training course, whereas for other credentials, like the ACMG (2013d) ski guide, the assessment process was conducted over 17 days of continuous assessment.

Surprisingly, almost all of the credentials incorporated a written exam into the assessment process. The types of written assessments were extremely varied, even within some credentialing organizations. For example ENEQ assessment procedures highlighted the two most popular types of written assignments: lesson plan creation and a theory exam (ENEQ, 2013b). Minimum passing scores for written exams, where data was available for 14 of the 21 credentials with written assessments, was on average 76% with the median 75%, and the mode 70% and 80%. As an aside, the minimum passing score for the ACMG (2013e) rock climbing exam was 90%. Performance based exams were used for all of the credentials. The most common assessments were observation of teaching or technical skills or a formal presentation of knowledge. These performance exams were generally pass/fail. Some organizations used a variation of a pass/fail grading system. CANSI (2011, p. 1) Nordic skiing assessment used a 4-point marking system (Excellent, Satisfactory, Marginal, Unsatisfactory) to evaluate performance and all marks had to be satisfactory or above, except for one marginal score, to pass the assessment. Paddle Canada (2012b) assessed performance scores based on Pass, Weak, or Fail. Instructor candidates were required to

score a ‘pass’ on all assessments, with the exception of one ‘weak’ score at the discretion of the assessor (p. 52).

Teaching theory was assessed by nearly half of the credentials using written theory exams and also in assessments of teaching presentations. Teaching skills were assessed by all of the credentialing organizations. The evaluation criteria for the classroom teaching assessment for Paddle Canada (2012b) sea kayaking instructor credential included: “opening comments clear and concise, topic clearly stated and presented in context, started and ended on time, voice clear and deliberate, speak with authority, pacing purposeful and appropriate, use of lesson aids, student participation encouraged, coverage of topic, concluding comments clear and concise” (p. 56).

Technical knowledge was assessed by the vast majority of credentials. CANSI, PMBI, and IKO did not focus on technical knowledge and instead focused training on technical and teaching skills. An example of a technical knowledge assessment would be the ACUC (2003) scuba diving instructor exam that covered dive physics, marine environments, and other topics. Or the ACMG (2013a) required example lesson covering “compass and map orientation, and equipment preparation” (“alpine guide training,” para. 5). Similar to teaching skills, technical skills were universally assessed across Canadian instructor credentials. Technical skills were assessed through lesson plans but most often through performance based scenarios. The ACMG (2013a) apprentice alpine guide exam (ice climbing) included a two week exam that covered “principle based learning giving the candidates the strategies for problem solving through coaching and practical application in simulated guide/client scenarios. Participants are marked in categories indicating their

decisions, terrain choices, and technical skills demonstrated” (“apprentice guide alpine exam,” para. 2).

The final categories of the assessment process were safety and group management. Assessment of an instructor’s ability to safely manage the outdoor activity was readily apparent in all credentials except for IKO’s instructor credential. Likewise, assessment of an instructor’s ability to lead and manage a group was required by all of credentials. The intensity of the assessment varied greatly. PMBI (2006) mountain biking only incorporated a single point about client safety. Paddle Canada’s (2012f) paddleboarding credential included a constant evaluation of “the candidate’s performance in the areas of safety, care of equipment, group dynamics, and leadership” (“SUP-FWI,” para. 6). To highlight one last example, ENEQ’s (2013a) training and assessment process covered not only an assessment of technical safety skills such as “self-rescue systems” (“alpine instructor,” para. 7) and “crevasse rescue techniques” (“alpine instructor,” para. 7) but also formative assessments throughout the course on an instructor candidate’s leadership skills.

### **New Zealand Analysis and Results**

Similar to Australia, New Zealand developed a national qualification framework that covered many types of educational subjects included outdoor recreation. However, New Zealand’s qualification framework was under review at the time of research. Beginning in March of 2012 the New Zealand Qualification Authority (NZQA) began a Targeted Review of Qualifications (TROQ) (NZQA, 2012b). This review process included national certificates and diplomas in the Recreation, Sport and Fitness qualifications which included many of the activities that were the subject of this research. The purpose and scope of the review was “to focus on reducing the duplication and proliferation of Level 1 - 6

qualifications. The aim is to ensure the system is easy to understand, particularly for learners and employers. The reviews are scheduled to take three to four years to complete and will take place between 2011 and 2014” (NZQA, 2012b, p. 1).

Although there is an initiative to consolidate and evaluate educational qualifications, research uncovered a large variety of credentials available for outdoor recreation educators. At the time of writing, there were 32 credentials available from 16 different credentialing organizations for 15 of the 17 selected outdoor activities. There were no instructor credentials available for mountain biking or rafting. That being said, both mountain biking and rafting had graduated proficiency levels of qualifications for guiding these activities, but not instructor qualifications. Of the 16 credentialing organizations, 10 organizations were international organizations that were not specifically New Zealand qualifications. Kitesurfing, paddleboarding, and surfing were each represented by only international organizations. For a complete list of credentialing organizations and evaluation categories please see Appendix W through Appendix AE.

Three main organizations account for half of the credentials in New Zealand. The New Zealand Outdoor Instructor Association (NZOIA) provided seven different teaching credentials, the NZQA offered five instructor credentials, and New Zealand Mountain Guides Association (NZMGA) credentialed instructors for another four activities. NZOIA and NZMGA are both private organizations and the NZQA reported directly the New Zealand Department of Education. The history, development, and consolidation of multiple large credentialing organizations was purposefully not addressed in this section and instead this research focused on the status of outdoor recreation instructor credentials in 2012/2013. The NZQA qualification is a unique case similar to the Certificate IV in Outdoor Recreation in

Australia. The NZQA Certificate 4/5 in New Zealand is the national training level for an outdoor recreation instructor. A Certificate 4/5 in outdoor recreation is a 45 to 86 credit hour program that can take up to 17 months to complete and was offered across New Zealand at schools, private organizations, and even as workplace training (NZQA, 2012a). The standards setting body and supervisor for the Certificate 4/5 in Outdoor Recreation was Skills Active Aotearoa Limited (Skills Active) (NZQA, 2012a). Skills Active did not directly train instructors; which was comparable to Australia with ISC and the VET system. Instead registered training organizations (RTOs) conduct training based on the competency standards outlined by NZQA and Skills Active. An important distinction in the process in New Zealand was that Skills Active trained and supervised assessors, who then conducted assessments on instructor candidates who were attempting to obtain valid NZQA qualifications (Matt Cowie, personnel communication, February, 2013).

On another note, scuba diving instructor credentials were again over-represented with eight credentials that were commonly recognized throughout New Zealand. Five different organizations also offered mountaineering instructor credentials, and rock climbing, river kayaking, and hiking were also each represented by three different credentialing organizations. New Zealand also had a national registry of outdoor instructors, the New Zealand Registry of Recreation Professionals (NZRRP). However this organization did not require specific competencies outside the scope of the Certificate 4/5, as was the case of NOLRS in Australia. Therefore NZRRP was not included in the review of New Zealand outdoor instructor qualifications.

**New Zealand organization affiliations.** Affiliations with international standard setting organizations were common with almost half of outdoor recreation teaching

Table 4.13

*Number (Percentage) of International and National Affiliations for New Zealand Credentials (n=32)*

Affiliation type	Number (%)
International affiliation	14 (44)
National affiliation	8 (25)

credentials connected to international standards (see Table 4.13). The WRSTC scuba diving standards were well represented by six out of eight scuba instructor credentialing organizations. The NZMGA (2013f) credentialed instructors for four activities and was an affiliated member of the IFMGA, the international standard setting organization for mountain activities. Surfing NZ (2013), an affiliate of ISA, provided credentials for surfing and paddleboarding, and IKO was again the national standard for kitesurfing. National affiliations were primarily associated with the NZQA, and these credentials consisted only of the Skills Active credentials and the credentials of the Mountain Safety Council (MSC). Both the sailing instructor credential through Yachting New Zealand (n.d.) and the surf instructor credential through Surfing NZ (2013) were also affiliated with the New Zealand Sports Commission.

**New Zealand membership requirements.** Access to insurance for instructors was limited to about one-quarter of credential organizations, with most of these organizations associated with the field of diving. IKO kitesurfing and the MSC hiking/mountaineering also provided access to insurance for certified instructors. The MSC is a volunteer based organization that does not collect dues, yet still manages to negotiate insurance coverage for instructors (Leonce Jones, personal communication, January 2013). Most New Zealand credentialing organizations required some form of yearly dues (see Table 4.14). The primary exceptions to this requirement were the NZQA credentials, which were similar to a diploma from a school, and did not require yearly ongoing dues. The only evidence of required forms



Table 4.14

*Number (Percentage) of New Zealand Credentials (n=32) Requiring Various Membership Requirements*

Membership requirements	Number (%) required
Insurance	8 (25)
Dues	22 (69)
Forms	1 (3)
Code of conduct	14 (44)
Medical clearance	11 (34)
Maintenance	24 (75)

such as a background check or a working with minors clearance was the BSAC instructor credential (Phil Clifton, personal communication, February 2013). A code of conduct was far more prevalent among outdoor credentials. Medical clearance from a doctor was required by about a third of the credentials. The NZMGA and all the scuba instructor credentialing organizations, except for BSAC, required a doctor's approval to become an instructor. The final membership requirement evaluated was the maintenance requirements for instructors to renew their instructor credentials. Excluding organizations that only required paying dues or renewing a first aid certification, about 75% of credentials required some form of maintenance. The NZQA was in the process of reviewing revalidation requirements; however in the near future NZQA will be requiring instructors to achieve continuing education requirements (Matt Cowie, personal communication, January 2013). The length of time that credentials were valid for ranged from one year to five years. Using data that was available for 17 credentials, the average length was 2.35 years and median and mode validation period was three years. Most of these organizations required some element of continuing education or professional development. In some cases the requirement was an instructor workshop, and in other cases instructors could revalidate their credential by attending a higher level training course. Some organizations, such as NAUI (n.d.) required instructors to teach at least one course during the validation period. As an interesting note,

NAUI also required instructors to participate in at least 12 recreational dives per year to remain a valid instructor. Windsurfing New Zealand (2013) and Yachting NZ (n.d.) also had additional requirements for instructors such as shadowing another instructor's course or providing a teaching reference.

**New Zealand prerequisites.** Most organizations had clear minimum age requirements for instructors. The median age requirement and the most common age requirements for instructors were 18 years old. The average minimum age requirement was slightly higher due to NZOIA's (2012a) minimum age requirement of 20 years old to become a certified outdoor activity instructor. Hiking instructors with the MSC could become instructors at the age of 16 (Leonce Jones, personal communication, January 2013). The NZQA qualifications did not have a specific age requirement, but in most areas instructor candidates could begin training at 16 years old, but were not employable until the age of 18. Likewise, Surfing NZ (2013) surf instructors could become instructors at age 16; however, they could not independently teach students until the age of 18. The New Zealand Kayak Instructors (NZKI) and ISA paddleboard instructors did not have a minimum age requirement.

Five credentials required instructors to submit references or recommendations from other instructors. The NZMGA (2013e,g,d) ice climbing, skiing, and rock climbing certifications, as well as the Surfing NZ (2013) surf instructor credential and the Yachting NZ (n.d.) sailing instructor certification all required a recommendation. Again, first aid requirements were pervasive across activity types and credentials. Most credentials required first aid certifications (see Table 4.15). Requirements ranged from a basic six to

Table 4.15

*Number (Percentage) of New Zealand Credentials (n=32) Requiring Various Prerequisites*

Prerequisites	Number (%) required
Minimum age	29 (91)
References	5 (16)
First aid	28 (88)
Other external certifications	7 (22)
Experience – time	22 (69)
Experience – teaching	13 (40)
Experience – skills	29 (91)
Experience – prior certifications	16 (50)
Interpersonal skills	1 (3)

eight hour CPR/First aid course to an advanced pre-hospital care 40 hour first aid requirement. In many cases, the level of first aid certification depended on the intended environment in which the instructor would be instructing, with more advanced first aid certification requirements for more technical environments. The NZMGA (2013a,d,e,g) required a 24 to 40 hour first aid certification depending on the activity. The minimum standard for many other activities was the 16 hour outdoor first aid requirement. Three different types of non-first aid external certifications were required by seven outdoor recreation teaching credentials. NZOIA (2007a) and IKO (2013) required instructor candidates to have powerboat handling licenses. Neither YachtingNZ (n.d.) or WindsurfingNZ (2013) required a power boating license, however each credential did require candidates to have powerboat handling experience. Surf rescue certifications were required by ISA surfing and paddleboarding instructor credentials. The NZMGA (2013a,g,e) required instructor candidates for mountaineering, Nordic skiing, and rock climbing to have avalanche preparedness certifications.

A major group of categories that evolved in the theme of prerequisites was the area of prior experience (see Table 4.15). Logbooks that demonstrated experience were common requirements among credentialing requirements. The amount of experience required to be

eligible for instructor credentials was amazingly disparate. The range of required experience extended from a couple of days, to months, seasons, or even years of experience. For New Zealand credentials, it was not possible to analyze a specific time requirement due to the variety of terminology that was used. For example, I was unable to determine if 40 days was more or less than a season spent participating in an activity. Requirements for instructors to have spent a minimum amount of time teaching were slightly more consistent. About 40% of credentials required instructors to have prior teaching experience. Some scuba instructor certifications required instructors to have assisted as an instructor prior to becoming a full instructor. The number of required teaching days ranged from five to 30 days of experience, with the NZOIA (2012a) credentials requiring a minimum of 10 days instructional experience. The NZOIA river kayaking credential also provided a detailed example of an instructional requirement, “the minimum Instructional Experience (above and beyond 1.1.1) [was] 20 sessions teaching rolling, 10 flat-water teaching sessions, 10 moving water teaching sessions, 20 river trip sessions, a further 10 skills teaching sessions on either flat-water or moving water” (NZOIA, 2007b, p. 1).

Almost all of the credentials required instructors to have a certain level of ability in the activity. Ability levels were described using many different terms. Descriptions such as basic or intermediate skill levels were examples of vague requirements. Or as another example, WindsurfingNZ’s requirement for instructors was “competent longboard handling skills” (WindsurfingNZ, 2013, “instructor training,” para. 4). On the contrary, many activities required experience and ability levels in specific environments. The NZMGA ski guide prerequisites outlined very specific ability requirements:

Of the 30 quality ski tour days have logged 10 days of winter ski mountaineering of Grade 1 (Logan) peaks which demonstrate competency in the use of crampons, rope

and ice axe and have logged minimum two ski mountaineering ascents of minimum Grade 2 (Logan) peaks in winter. e.g. Lendenfield, Eli du Beaumont, Minarets, Brewster, Edgar Thompson, Bannie etc. Of the 30 quality days, 15 must have been on glaciated terrain. (2013g., “ski guide prerequisites,” para. 3)

Other organizations, like CMAS also require experience in specific environments. CMAS standard 5.1.3 stated that instructors must “submit proof of at least one hundred (100) logged open water dives that shall include night dives, limited visibility dives, deeper dives (between thirty (30) to forty (40) meters), drift dives, dives in colder water and navigation dives” (CMAS, n.d., p. 2).

Prior certifications were required by 16 credentials. This requirement was most consistent among scuba diving credentials, but many of the NZQA and NZOIA also required a prior leader level of certification or proof of prior learning. The final element explored in the theme of prerequisites was interpersonal skills. Only the international dive instructor credentialing organization of NAUI (n.d.) had a specific mention of required interpersonal skills. Interpersonal abilities might have been implied and reinforced as part of the training process, but no evidence was found in the available information.

**New Zealand structure of certification scheme.** Most credentials involved a separation of instructors into instructor levels (see Table 4.16). Notable exceptions were NZOIA (2012c) canoe instructor, NZMGA (2013e) ice climbing guide, and the WindsurfingNZ (2013) instructor credentials. Twenty-two credentials distinguished instructor certification credentials in part due to environmental conditions. For example one of the main differences between a two star NZKI sea kayak instructor and a three star NZKI sea kayak instructor was that a NZKI three star instructor was “based on exposed water. (15 knot to 25 knot wind and or 1 meter to 1.5 meter surf)” (2006, “2-star award,” para.1); while

Table 4.16

*Number (Percentage) of New Zealand Credentials (n=32) That Segment Instructors by Various Characteristics*

Credentialing scheme characteristics	Number (%) required
Level	26 (81)
Environmental conditions	22 (69)
Teaching experience	18 (56)
Ability and skills	25 (78)

the NZKI two star award was “based on flat sheltered water (under 10 knots)” (2006a, “2-star award,” para.1). Only about half of the credentials segmented instructor levels by teaching experience. For example, the NZOIA (2012f) senior instructor level required candidates to progress to a more advance environment and a more advanced technical skill ability, but also required instructors to have gained experience teaching new outdoor leaders. Finally, most of the New Zealand outdoor recreation instructor credentials organized instructor levels in part by the abilities and skills of the instructor. The exception to this requirement was IKO (2013) kitesurfing which required all instructors to have the same skill/ability level and instead differenced instructors by teaching experience.

**New Zealand training.** Training was a prominent required element of the instructor credentialing process in New Zealand. Almost all credentials offered a training component for becoming an outdoor activity instructor (see Table 4.17). NZOIA training was optional and instructor candidates were only required to attend training if they did not have the required amount of prior experience. NZOIA provided an explanation for the rationale of it’s training philosophy on it’s website:

Training courses are for instructors already working under supervision – they aren’t introductory courses. Your technical skills and experience should be close to the minimum requirements for assessment. The requirements are detailed in each qualification syllabus. The training course will go through the major elements required on assessment. They should help you identify any gaps before you attend the assessment. You should aim to complete your assessment within 6 to 12 months of a training course. (NZOIA, 2012f, “training,” para. 2-3)

Table 4.17

*Number (Percentage) of New Zealand Credentials (n=32) with Various Training Elements*

Training elements	Number (%) required
Required training	23 (72)
RPL	14 (44)
Teaching theory	9 (28)
Teaching skills	23 (72)
Technical knowledge	23 (72)
Technical skills	21 (66)
Safety and rescue	23 (72)
Leadership and group management	22 (69)

If an instructor candidate was confident and could demonstrate experience covering all the topics covered in the NZOIA training course with a logbook, instructor candidates did not have to attend training. Therefore, removing the optional training requirement for the seven NZOIA credentials reduced the number of credentials with required training to 72% (23 of 32 instead of 30 of 32). The length of training ranged from two days to up to 17 months for the Certificate 4/5 in Outdoor Recreation (Skills Active, 2013). By using available data, and removing NZQA qualifications, optional NZOIA credentials, and estimating ideal completion times, the average training course was 125.12 days. The median length of training was six days and the modal length of training was 510 days, based on the estimated completion time of the Certificate 4/5 in Outdoor Recreation.

Many of the New Zealand credentials for outdoor instructions allowed for recognition of prior experience to exempt instructor candidates from training. Training courses covered many topics and the specific structure was highly dependent on the credential and the activity. However, training syllabi were analyzed and coded into five different categories or themes in training. One category that emerged was a focus on training instructors in instructional theory. Only nine of the credentials provided instructor training on the theoretical foundations of teaching. For example *Unit Standard 20145: Demonstrate*

*knowledge of theories and processes associated with instructing in the outdoors*, was a fundamental requirement for the NZQA (2012c) Certificate 4/5 in Outdoor Recreation. This NZQA training unit covered topics such as, “demonstrate knowledge of learning theories” (2012c, p. 1), and required candidates to produce an instructional plan in which “the instructional objectives and the skills requiring instruction are based on the profiled group. A group profile may include but is not limited to – age, culture, gender, health, ability, confidence, experience, emotional and intellectual needs, group size, learning styles“(2012c, p. 3). IKO kitesurfing, SurfingNZ, BSAC, CMAS, and SDI also incorporated teaching theory into the instructor training course.

For both the categories of teaching skills and technical knowledge, all of the credentials that had a training course included training on these topics. Overall, nearly three-quarters of the credentials provided training on teaching skills and technical knowledge. There was a number of quality examples that highlighted the range and topics covered in each category. A focus of the MSC bushcraft instructor (hiking) training was “presentation skills” (MSC, 2012a, “outdoor leader,” para. 3). The NZMGA hard ice guide training and assessment covered five teaching skills topics, “speech and contact with students, structure of the lesson, site selection, support materials & documentation, and the ability to motivate” (NZMGA, 2013e, “hard ice guide,” para. 13). Technical knowledge covered many different areas, but was also a key part of all training programs. Yachting NZ training course included example technical knowledge topics such as, communication (short and long distance), terminology, and hypothermia (Yachting NZ, n.d.). The course description for Windsurfing NZ (2013) included even more details of training on equipment (components, type and care), sailing theory (steering, points of sail), and sailing conditions (tides, winds, and weather).



The NZQA qualification for a mountaineering instructor covered a huge variety of knowledge on technical topics including but not limited to: food, clothing, weather, landowner rights, alpine grading system, environmental care, equipment, and many more (NZQA, 2006).

In conjunction with the topics of teaching skills and technical knowledge, two-thirds of credentials included technical skills training as part of the training programs. The exceptions were again ISA surfing and paddleboarding instructor training. Skills training included training to improve the ability of instructors to perform the technical skill requirements of the activity at a higher, more professional level. Without going into too much detail about the specifics of each credential, a typical example of skills taught during an instructor training included a range of topics. The NZMGA rock guide training course provided an simple example of the diverse technical skills topics covered during training: “short pitching on rock – one and two clients, pitching on rock – one and two clients, moving together on runners/threading a ridge, abseiling with clients, anchor set-ups for clients, belay hitches, devices, mountain/terrain belays for guiding, lowering-hitches, devices, systems, passing a knot, general rope management” (2013d, “rock guide training course,” para. 3).

The final two categories in the theme of training courses covered safety and rescues, and leadership and group management. Both of these categories were represented in nearly all of the outdoor recreation instructor credentials with training. Excluding NZOIA’s optional training, 69% (22 of 32) of credentials provided training on leadership and group management. The only other exceptions were the lack of evidence for leadership and group management training were in the IKO kitesurfing instructor training course and the NZKI kayaking credentials. Topics such as risk and crisis management, leadership, group

management, and safety requirements were constant across all other credentials. The NZQA (2012a) Certificate 4/5 in Outdoor Recreation had an entire four credit course on managing risk for an outdoor recreation activity. The NZMGA described the training and assessment key points for group management and leadership and decision making as:

9. Group management: Key skills - Safe terrain and site selection, spacing and pacing the group as appropriate for the task and conditions. Demonstration - During specific guiding assignments and instructional tasks. Evaluation - Suitability of the site to the task, placing of people so that they are in touch with the lesson. Safety of the group. 18. Leadership and decision making: Key skills - Coping with responsibility; formulating and communicating plans; decisions; inspiring confidence. Demonstration - During guiding assignments, rescue exercises, and instruction tasks. Evaluation - The participant is to be competent at taking care in group situations and making and communicating rational responses to circumstances. S/he must show a firm commitment to responsible leadership and be able to delegate tasks and adequately supervise them.” (NZMGA, 2013b., “analysis of topics,” para. 9)

The entanglement of training and assessment is a perfect segue into the last category of analysis, assessment.

**New Zealand assessment process.** Some credentials required a pre-training assessment while other credentials required a shadowing phase post-assessment and a few credentials even incorporated the assessment process into the training; however all credentials had a separate assessment process. The length of the assessment varied from a brief written assessment up to a six day assessment course. There were 18 credentials that had a clearly defined separate assessment process. Within these credentials, there were many ways that an assessor for the NZQA credentials could evaluate a candidate’s ability and a few credentials that considered specific assessment information to be proprietary. Therefore, the assessment strategies for all credentials could not be evaluated. Obviously there are many limitations to this analysis, but of these credentials the average length of the assessment process was 2.41 days, the median and modal length of the assessment process was two days.

Table 4.18

*Number (Percentage) of New Zealand Credentials (n=32)) with Various Assessment Elements*

Assessment elements	Number (%) required
Required assessment	32 (100)
Written	18 (56)
Practical	32 (100)
Teaching theory	12 (38)
Teaching skills	30 (94)
Technical knowledge	31 (97)
Technical skills	30 (94)
Safety and rescue	31 (97)
Leadership and group management	31 (97)

Interestingly, there was no evidence of a single written test that determined if an instructor was competent at teaching an outdoor activity. All credentials used a multiple step assessment process that sometimes included both written and performance based assessments or included multiple performance based assessments. These assessments included both formative and summative assessments and included many different types of assessment tools. About half of the credentials contained evidence of using a written element as an assessment tool. As an example of one of the more complex written evaluation processes; PADI (2013) used a five-part theory exam to test instructor's knowledge. Instructor candidates had to score above 75% on each test to pass the instructor assessment as well as completing written assignments and workbook knowledge reviews (PADI, 2013). On the other end of the spectrum NZKI (2006b) river kayaking instructors only had to complete a 30-minute written exam, and Yachting NZ (n.d.) used an open book exam for the sailing instructor credentials, and Surfing NZ (ISA, 2008) used an assessment workbook.

All credentials required a performance based assessment (see Table 4.18). As previously mentioned this assessment process could take place in a finite testing session or candidates could be assessed over the course of nearly a week. Often credentials utilized a

practical demonstration-style assessment process to evaluate teaching and technical skills, combined with an observation based assessment of a simulated trip that required an instructor candidate to demonstrate performance over a long period of time in a real-world scenario. The NZOIA assessment grading scale included a 5-point grading scale system with a three being a passing score and each point being described as, “(1) Well below the specified standard of competence; (2) Slightly below the specified standard of competence; (3) Competent performance of the specified standard; (4) Slightly above the specified standard of competence; (5) Well above the specified standard of competence” (2012a, “assessment,” para. 8). The NZMGA (2013c) credentials used a system of self and peer performance based assessment supervised by an assessor. Each NZMGA credential has a checklist of skills with defined competencies. Instructor candidates performed the skill and then evaluated themselves, followed by a peer evaluation, followed by an assessor evaluation and recording of the score. Each performance item was weighted with a certain number of points and candidates must score a 50% for each topic and either 65% or 75% overall (depending on the credential) to pass the assessment (NZMGA, 2013c). The majority of other credentials utilized a competency based performance task, or lesson delivery, that was assessed on a pass/fail basis at the subjective discretion of the expert assessor.

Assessment topics mirrored the topics that were covered during training courses. Only 12 credentials assessed an instructor candidate’s understanding of teaching theory. The credentials that assessed teaching theory primarily consisted of the NZQA qualifications and international organizations such as ISA, BSAC, CMAS, and SDI. Two New Zealand credentialing organizations, Yachting NZ (n.d.) and Windsurfing NZ (2013) also assessed teaching theory using written and performance based test. On the contrary, an instructor’s

ability to teach was assessed by nearly all of the credentials. This assessment commonly took the form of a teaching scenario. For example according to the *NZOIA Assessment Guide for Bush Instructor-Level 1* (2012b), candidates were required to prepare and deliver a teaching session that demonstrated, “A range of teaching skills e.g. introduction, appropriate voice, language and body language, teaching/visual aids, demonstrations, teachable moments, evaluation of learning. A wide knowledge of the topic. Engaging students in a positive learning experience which encourages enthusiasm and interest” (p. 6).

Nearly all of the credentials for teaching an outdoor activity included an assessment of an instructor’s technical knowledge. The exception was again the credential for teaching kitesurfing (IKO). An instructor’s knowledge of a technical subject was often covered in the written exam or as part of a prepared lesson given as a teaching demonstration. Also, there was nearly universal testing of an instructor’s technical skill level. For example, the NZKI (2006a) sea kayak assessment process outlined key paddling techniques such as Eskimo rolls and landing skills that were part of the skills assessment. Often the assessment topics described for the technical skills evaluation were the skills that an instructor would be teaching students.

Safety and group management and leadership were routinely assessed by almost all credentialing organizations. IKO did not appear to have any direct assessment of an instructor’s ability to perform rescues or understanding of safety issues. The IKO assessment process focused on the teaching skills and technical abilities of the instructor. However, all other organizations incorporated an assessment of an instructor’s understanding of safety and/or rescue scenarios. The Windsurfing NZ (2013) assessment process included a written exam that covered safety and group control, choosing a safe sailing area, seven common

safety precautions, self-rescues, first-aid, hypothermia, and emergency action and distress signals. One method used to assess safety awareness for the NZQA (2012a) credentials required candidates to write or present a risk management plan for a location. Another example of the safety assessment process was the NZOIA (2012e) rock instructor assessment process which required instructor candidates to demonstrate: construction of a safe anchor system, the use of personal safety systems, safe climbing and belaying techniques, rescue skills, and apply effective safety management. Group management and safety are closely related in non-predictable environments. Similar to safety assessment, nearly all of the credentials required instructors to be assessed on their capacity for group management and leadership.

A distinguishing factor among the outdoor recreation instructor credentials in New Zealand was that almost all of the credentials related back to an international standard setting organization or the national education qualifications framework. BSAC, NAUI, NZKI, and NZOIA were all independent organizations with no national or international affiliation. However, NZOIA's entry-level leadership qualifications are aligned with Skills Active framework (NZOIA,2012d) and NZKI was in the process of aligning their credentialing scheme with national standards (Peter Townend, personal communication, March 2013). Credentialing for outdoor recreation instruction is evolving at a rapid pace in New Zealand, and the Target Review of Qualifications (TROQ) will probably bring more change to the system of credentialing outdoor recreation instructors. However, the existing system is robust and provided many guideposts for understanding the requirements for becoming an instructor.

## **United Kingdom Results and Analysis**

The United Kingdom (U.K) has 26 outdoor recreation instructor credentials for 15 of the 17 outdoor recreation activities selected for this sample. The credential for rafting instructor was eliminated based on a lack of information from regional sub-committees of the British Canoe Union (BCU) that predominantly focused on coaching and competitive events. Despite having one of the oldest training organizations in the world for hiking and mountaineering, no evidence was found of an instructor credential for hiking in non-technical non-alpine terrain. The Mountain Training Association (MTA), which is affiliated with the British Mountaineering Council (BMC) and multiple regional councils, offered numerous guiding qualifications, however an option for a hiking instructor credential was not available at an entry-level. Instructor credentials for alpine/mountaineering environments were available, however the required skills for these credentials were more advanced than the defined hiking activity guidelines. As an aside, for readers wading into the miasma of overlapping organizations in the U.K for the first time, there are a points of clarification: a) the Association of Mountain Instructors (AMI), British Association of International Mountain Leaders (BIML), and the BMC are membership organizations not credentialing organizations; b) the British Mountain Guides (BMG) is a separate member association as well; c) the BMG also represents and trains IFMGA qualified guides in the U.K.

The 26 instructor credentials were managed by 19 credentialing organizations. Please see Appendix AF through Appendix AN for a list of all credentials, credentialing organizations, and the categories of analysis. Of the 19 credentialing organizations, six organizations were international non-U.K based organizations. All activity instruction, except hiking and rafting, was represented by a U.K credentialing organization. The British Stand-

Table 4.19

*Number (Percentage) of International and National Affiliations for U.K Credentials (n=26)*

Affiliation type	Number (%)
International affiliation	13 (50)
National affiliation	11 (42)

up Paddleboard Association (BSUPA, n.d.) and SurfingGB (n.d) were two independent governing bodies for their respective sports in the U.K, however both organizations were also affiliated with ISA. These two organizations are not included in the six international organizations listed above. The U.K had a national certificate and diploma program in outdoor recreation management that is aligned with national educational qualifications. However a distinction between the vocational and tertiary educational schemes for outdoor education in the U.K, versus Australia or New Zealand, was the absence of training and assessment on specific activities (Skills Active, 2011). The Skills Active (2011) Level 3 NVQ Diploma in Outdoor Recreation/Education/Development was focused on broader topics in the administration of outdoor programs and not on specific activity skill development and credentialing.

**United Kingdom organizational affiliations.** Many of the credentialing organizations in the U.K were affiliated with international organizations (see Table 4.19). Already mentioned were the connections between ISA and BSUPA and SurfingGB. In total, half of the credentials were affiliated with international partners. The WRSTC (2004) represented three scuba diving organizations, and the BMG (2008b) was the U.K based affiliate of the IFMGA. National affiliations were more complicated. Most of the U.K based credentialing organizations were the representative and governing body for that activity. However there are a few exceptions. The MTA and the BMG overlap in some respects, but the MTA is the standards board for MTUK which oversees the four nation organizations in



England, Wales, Scotland, and Northern Ireland (MTA, n.d.). There are also three mountain bike instructor certification schemes: Mountain Bike Instructor Awards Scheme (MIAS), the National Cycling Charity (CTC), and British Cycling (BC). However, British Cycling (BC) is the sanctioned governing body for biking in the U.K (BC, 2013). Besides having governing organizations for each activity, it was possible for activities to also be connected to national coaching (UKCC) schemes, U.K Sport, the Adventure Activity Licensing Authority (AALA), or the National Qualifications Framework (NQF) also called the Office of Qualifications and Examinations Regulation (Ofqual). The BCU (2008), BC (2013a), MIAS (n.d.) and the RYA (2013a,d) credentials were all affiliated with standards from Ofqual. The BASI instructor course also recently became accredited through the Scottish Credit and Qualifications Framework (SCQF) (Jim Davidson, personal communication, February, 2013). The BCU (2008) and MTA (n.d.) Single Pitch Award are also affiliated with the UKCC coaching scheme. Finally, the AALA, which oversees licensing of providers of caving, climbing, trekking, and watersports (canoeing, kayaking, rafting, sailing, windsurfing, and kitesurfing) provided licenses for programs that deliver the adventure activities but did not influence the credentialing requirements for becoming an outdoor recreation instructor (AALA, 2010). However, some of the credentialing organizations that train instructors also provide adventure services to clients and students and therefore may also be licensed by the AALA.

**United Kingdom membership requirements.** Most of the U.K credentials provided access to insurance for instructors and nearly all credentials also required instructors to pay yearly membership dues (see Table 4.20). It was much more common for credentialing organizations in the U.K to require background check or child protection forms than in any

Table 4.20

*Number (Percentage) of U.K Credentials (n=26) Requiring Various Membership Requirements*

Membership requirements	Number (%) required
Insurance	19 (73)
Dues	25 (96)
Forms	10 (39)
Code of conduct	10 (39)
Medical clearance	6 (23)
Maintenance	17 (65)

other country. Just as many credentials also required instructors to adhere to a code of conduct. A common requirement among dive instructor credentials in the U.K was medical clearance (except for BSAC), and the BMC (2008c) also required medical clearance from a doctor to become an instructor.

Finally the last major membership requirement was the renewal process for an instructor to remain a valid teacher. Outdoor teaching credentials in the U.K remained valid for as little as one year to as long as indefinite. Of the 26 credentials, 17 had a fixed expiration date. The average length of time an instructor's credential remained valid for was a little over three years. The median and most common validation period for credentials was also three years. Nearly two-thirds of credentials had a requirement for professional development or a minimum number of hours of instructional time. The BCU (2008, 2012) canoe and kayaking credentialing requirements required instructors to maintain active in teaching and also attend an update or professional development course. Other credentials like the BMG, British Caving Association (BCA), NAUI, SSI, and CTC also required professional development courses. Another example of a maintenance requirement was the RYA (2013b) requirement for instructors to teach a minimum of 30 hours over a five-year period.

Table 4.21

*Number (Percentage) of U.K Credentials (n=26) Requiring Various Prerequisites*

Prerequisites	Number (%) required
Minimum age	22 (85)
References	4 (15)
First Aid	25 (95)
Other external certifications	10 (39)
Experience – time	12 (46)
Experience – teaching	13 (50)
Experience – skills	26 (100)
Experience – prior certifications	16 (62)
Interpersonal skills	3 (12)

**United Kingdom prerequisites.** As might be expected a minimum age requirement for becoming a credentialed instructor was common in the U.K, with most of the credentials having a required age (see Table 4.21). The average age for an instructor credential was slightly over 18 years old. The median and mode for the minimum age was also 18 years old. However the required minimum age requirement ranged from 16 years old up to a minimum age of 22 years old for the BMG (2008) credential. BSUPA (n.d.) and BKSA (2012) allowed for a junior certification at 16 but an instructor “will not be a fully licensed instructor until the age of 18. [Junior instructors] can assist on courses under the supervision of a fully licensed instructor” (Andy Gratwick, personal communication, February 2013).

Instructor candidates for mountaineering and ice climbing (BMG, 2008c; MLTUK, 2006) each required references to become an instructor for these activities. Therefore references were required for only a small fraction of the credentials. Again, a first aid certification requirement continued to be one of the most common credentialing requirements for instructors in the U.K. Nearly all of the credentials required a first aid certification. Six credentials required a two-day first aid course; another 12 credentials required a one-day first aid course, and the seven activities conducted in the mountains required a 16-hour first aid course with a mountain focus. In addition to the first aid requirements, about 40% of

credentials required other certifications. Kitesurfing (BKSA, 2012; IKO, 2013), paddleboarding (BSUPA, n.d.), sailing and windsurfing (RYA, 2013a,d) all required the RYA powerboat Level 2 certification. Water rescue certifications were required for canoeing (BCU, 2008), ASI (n.d.), and SurfingGB (n.d.) credentials.

The analysis of the experience prerequisites for credentials in the U.K yielded some interesting results. A required amount of experience based on a measure of time was present for about half of the credentials. Converting the required amount of time into months, the average experience required for the 12 credentials was a little over 13 months. The median and mode for required amount of experience was six months. The BMG (2008c) required four years of prior experience for the alpine credentials and therefore skewed the sample towards a longer experience requirement. Required teaching experience was only slightly more common with 13 of the credentials requiring prior teaching experience. Again the amount of time greatly varied from three hours of assisting another instructor (BSUPA, n.d.) to over 20 days of teaching groups for the MTA (MLTUK, 2006) credentials. The credentialing requirement of a specific ability level to instruct an activity was universal. Over half of the credentials had a prior certification requirement. All of the scuba diving credentials required instructors to pass through a series of certifications such as rescue diver and dive leader certifications. The MTA Mountaineering Instructor Course (MLTUK, 2006), CTC (n.d.), BMG (2008c), and the BCA (2011) also required instructor candidates to first pass through a certification level known as guide or leader. The final category of prerequisites was the elusive interpersonal skills requirements. Only three of the 26 credentials clearly required a specific attitude and ability to interact with students in a positive way. NAUI (n.d., “instructor course”), BC (2013b), and the British Association of

Table 4.22

*Number (Percentage) of U.K Credentials (n=26) That Segment Instructors by Various Characteristics*

Credentialing scheme characteristics	Number (%)
Level	23 (89)
Environmental conditions	19 (73)
Teaching experience	18 (69)
Ability and skills	22 (85)

Snowsport Instructors (BASI, n.d.) were the only credentialing organizations in the U.K that outlined this prerequisite. BASI's (n.d.) not only required instructor candidates have, "a great attitude" ("prerequisites," para. 1); but also outlined a very detailed professionalism requirement for instructors. NAUI framed their requirement more as a statement, "If you believe your work should be enjoyable and exciting, if you are eager to share your knowledge with others, if you believe that to train the best you must be among the best trained, join the finest" (NAUI, n.d., "instructor course," para. 7)

**United Kingdom structure of the credentialing scheme.** Most credentials incorporated different instructor qualification levels. BKSA (2012) and BMG (2008) were the exceptions and each had only one level of qualification for instructors. The rationale behind the different levels of the credentials emerged as three category types: environment, teaching, and ability (see Table 4.22). A different environmental condition required a different instructor level for most of the credentials. Exceptions to this were primarily water based credentials for kitesurfing (IKO, 2013), surfing (ASI, n.d.; SurfingGB, n.d.), and windsurfing (RYA, 2013d). A level of teaching experience differentiated instructor levels for almost as many of the credentials as environmental conditions. There was no common pattern of exceptions for this category among the different types of activities. Most qualification levels were also based on an instructor's ability. An example of a hierarchical

training scheme based on the type of activity and the abilities of the instructors was the BCU training scheme:

The BCU Coaching Pathway is structured so that coaches can access training and become qualified in a variety of different paddlesport disciplines. This range of awards helps us to ensure that coaching excellence is available to participants whichever discipline they feel inspired to get involved in. From Level 3 onwards, coaches will specialize in one or more of the disciplines or environments listed below...” (BCU, 2012, p. 5)

This structure required all instructors, or what the BCU called coaches, to progress through basic paddlesport training before specializing in a more advanced set of skills including river kayaking and sea kayaking.

**United Kingdom training.** All outdoor recreation instructor credentials required instructor candidates to attend training. The length of training varied from one day for the Mountain Bike Instructor Award Scheme (MIAS) instructor credential all the way up to a minimum of 32 days of training that could take three years to complete for the BMG (2008) credentials. The average length for training was about six days, the median length of training was four days, and the most common length for training was a five-day, 40 to 50 hour training course. Recognition of prior learning (RPL) allowed instructor candidates with proven experience to be exempt from training for about one-third of the credentials. The BCU (2008, 2012), BCA (2011), SurfingGB (n.d.), and ASI (n.d.) all allowed for RPL.

Topics covered during training were consistent across many credentialing organizations (see Table 4.23). As was common in other countries, training programs that focused on providing instructors with training on teaching theory were limited. To use another example from the BCU (2008), the training program for becoming an instructor was focused on coaching and preparing candidates to teach the necessary skills to participate in the activity. However at all levels, the BCU training system focused on “looking at the

Table 4.23

*Number (Percentage) of U.K Credentials (n=26) with Various Training Elements*

Training elements	Number (%) required
Required training	26 (100)
RPL	9 (35)
Teaching theory	11 (42)
Teaching skills	26 (100)
Technical knowledge	26 (100)
Technical skills	20 (77)
Safety and rescue	25 (96)
Leadership and group management	23 (89)

‘what’ and ‘how’ of the coaching process” (BCU, 2008, p. 7), but not necessarily training instructors to understand why students learn in different ways. In personal communication with Warby (February, 2013) from the CTC, he described the CTC’s approach to training as including “client assessment, teaching theory, learning styles, and teaching essentials – a psychological approach... in relation to their importance when understanding how to develop riders, overall understanding of why their skills will improve, what they will need to do and how they will do it.” As another example, BASI (n.d.) training included topics such as: teaching models, understanding learner types and their associated needs, theory, and teaching principles.

With respect to the topics of teaching skills and technical knowledge, all of credentials trained instructor candidates on these topics. The RYA *Start Windsurfing Teaching System* (2006) provided a detailed outline of the expected training syllabus for how instructors should teach windsurfing. RYA (2006) windsurfing instructor candidates were taught a series of step-by-step modules including “(1) introduction to kit, (2) getting started, (3) steering the board, (4) tacking, (5) safety,” (p. 2) and each module included descriptions of key teaching points, teaching sequence, and coaching points. Other credentials had similar structured teaching systems. The BSUPA training process included instructors being “shown

how to deliver the BSUPA lesson plan” (BSUPA, n.d.). Some credentials had more informal teaching skills training, however these credentials still included skill-based teacher training as an important component of the training curriculum. Instructors uniformly received training on background technical knowledge as part of the instructor training course. For example the MTA Single Pitch Award (rock climbing) training had an entire section of training devoted to the environment and understanding access, conservation, etiquette and ethics; equipment; and background knowledge (history and traditions) (MLTUK, 2008).

Technical skills training was incorporated into instructor training for almost all credentials except for surfing and paddleboarding (ASI, n.d.; SurfingGB, n.d.) and the credentials offered through the BCU (2008, 2012). The focus of these training courses was almost exclusively on teaching and coaching skills. Quite differently, the BCA’s 35-hour training course focused predominately on “training up-to-date skills and techniques for progression through vertical and horizontal cave systems” (BCA, 2011, p. 17). Courses based in the mountains, such as MTA and BMG credentials, also heavily incorporated skill training into the instructor training course with multi-day expedition training. Shorter training courses tended to describe training technical skills more directly using scenario based examples than expedition format.

Safety training was prevalent in almost all training curriculums. One exception was the BASI (n.d.) Nordic ski instructor training program which did not explicitly list safety training. For many credentials, the training description listed safety as a simple item on an outline. However, when the training curriculum was explored in more depth, research revealed a strong commitment to safety training at many levels. To use the example of the MTA (2008) Single Pitch Guide (rock climbing) training program, safety was a component



of each of the elements of the training course from selecting proper equipment, to safe techniques, to overall safety and group management. Safety issues were constantly addressed and were a uniting theme across all training elements. As previously mentioned, safety and group management are subjects that are closely intertwined in outdoor recreation. Nearly all of the U.K credentials incorporated group management or leadership training as part of the instructor course. BACI (n.d.), IKO (2013), and ASI (n.d., “surf instructor”) were the exceptions for group management training and there was no pattern to these exceptions based on type of activity. ASI paddleboarding instructor training did include an element of group management, “identify how to manage groups of students safely in a range of enclosed flat water locations” (ASI, n.d., “stand-up paddle instructor,” para. 3).

**United Kingdom assessment.** An assessment period of an instructor’s ability was almost always a critical piece to the overall credentialing process. Of the 26 credentials, all credentials required formal assessment (see Table 4.24). The credentialing assessment process for ASI (surfing and paddleboarding) instructors was very different than other credentials, but was included in the aggregated total. ASI instructors were required to submit a logbook and workbook assignments, and then upon completion of training candidates were required to shadow a more experienced instructor as part of the evaluation process (ASI, n.d., “stand-up paddle instructor,” para. 6). The length of the assessment process and the type of assessments used to credential outdoor activity instructors was extremely varied. The range in the length of the assessment process varied from ongoing assessment throughout the training course, to an eight-hour written exam and presentations schedule (BSAC, 2013); to a series of assessments covering 24 days followed by a 45-day apprenticeship (BMG, 2008a). An interesting approach that some credentials used was a mandatory break between an

Table 4.24

*Number (Percentage) of U.K Credentials (n=26)) with Various Assessment Elements*

Assessment elements	Number (%) required
Required assessment	26 (100)
Written	25 (96)
Practical	26 (100)
Teaching theory	11 (42)
Teaching skills	25 (96)
Technical knowledge	23 (89)
Technical skills	25 (96)
Safety and rescue	24 (92)
Leadership and group management	23 (89)

instructor training course and an assessment. For example, BSAC (2013), BCA (2011), BMG (2008a,b), and the MTA (n.d.) credentials all required that instructor candidates take a break to allow the new knowledge to be assimilated and applied to real situations before attempting the assessment. This wait ranged from a couple of days to up to 6 months.

In general U.K credentialing organizations commonly used written assessments as a testing tool. The CTC (n.d.) was the only credential that did not have a written assessment component. The type of written assessments included: multiple-choice test, theory papers, portfolios, presentation outlines, short answer tests, and workbook assignments. For many credentials, minimum passing scores were considered proprietary; however, of the data that was available, the range for a minimum passing score was between 50% and 80%. Many organizations used multiple written assessments in the process of evaluating instructors. For example the BCU canoe instructor credential required instructors to be assessed on five tasks: a multiple choice paper, rescue skills, workbook evaluation, coaching skills, and verbal questioning (BCU, 2008, p. 15). Two of these assessments were written task. Although written assignments are a popular assessment tool, even greater emphasis was placed on performance-based assessments. All credentials required performance based assessments. These assessments tested candidates on all the categories and included assessment types such

as: scenarios, practical demonstrations, an extended practicum, and apprenticeships. Grading was done by the instructor trainer, independent assessors, peers, mentors, and was primarily pass/fail. Organizations such as the BCA (2011), MTA (n.d.), and the BMG (2008) used a system of pass/fail/defer. A deferred grade, defined by the BCA (2011), was “awarded where the candidate has generally performed at the required standard and shown most of the necessary experience and attributes, but where complete proficiency has not been attained. A detailed action plan giving succinct recommendations for further experience will be given, along with details of the proposed reassessment” (pp. 13-14). The BCA (2011) used a 1-5 point grading scale for each performance task and an award of a three to five was considered a pass, two deferment, and a score of one was a fail. Another interesting assessment rubric was the BSAC grading system. Essential grading criteria for the teaching scenarios were the STEP and PAVE guidance which were acronyms for: Safe, Technically correct, Effective teaching, Progressive; and Progressive, Accurate, Visual, Effective (BSAC, 2012).

Teaching theory was assessed by less than half of the U.K credentialing programs. A way in which the BCU (2008) assessed this category was by evaluating an instructor candidate’s understanding of syllabus design and an assessment of teaching skills. Written exams were another common way to test a candidate’s knowledge of teaching theory. Evaluating teaching skills was commonly a performance based assessment. Evidence was found of a teaching skills evaluation for almost all credentials. For example the British Cycling (2013b) award focused mostly on technical skill and group management assessment. It was common for credentials to have a set of prepared lesson topics and the instructor would have the opportunity to teach and be evaluated on the presentation of a given topic. Another category that was often assessed during a presentation was the category of technical

knowledge. About 89% of credentials assessed an instructor's theoretical and background knowledge. Besides teaching a knowledge-based presentation, some credentials required candidates to submit a theory paper. The MTA (2006) mountaineering assessment syllabus outlined this paper as, "a written theory paper which will attempt to cover the syllabus areas not readily assessed in a practical way, e.g. the history of climbing" (p. 33).

Technical skills were assessed by all of the U.K credentials that had assessments and 96% of all credentials. These skills were tested in both written and performance based exams. Technical skills were often tested in conjunction with teaching skills when instructor candidates were asked to demonstrate a specific skill. For example for the Practical Instructor Exam (PIE) for BSAC (2013), instructor candidates must teach a dive skill to their peers for assessment. Or instead of instructing a skill, an instructor could be required to demonstrate a holistic group of skills. For example, part of the BMG (2008b) mountaineering assessment involved a six-day assessment of a variety of technical skills ranging from roping systems, travel, and accents on a variety of terrain types. Safety was assessed by almost all of the credentials again in both written format and practical scenarios and demonstrations. Detailed expectations for safety briefings were outlined throughout the different performance tasks across the different credentials.

The final element of the assessment process was leadership and group management. Most organizations included group management as an assessment criterion in teaching scenarios. The BCU (2012) kayaking assessment process (both river and sea kayaking) included three primary tasks on the final assessment. The first task described in the *BCU (UKCC) Level 3 Course Guide* (2012) was an instructor assessment which included "incorporating safety management and leadership" (p. 14). As another example, guidelines

for the assessor from the MTA *SPA Handbook* (MLTUK, 2008) outlined criteria for assessment of management and supervision abilities of an instructor candidate using a scenario based holistic approach that was integrated throughout the assessment course.

### **United States Results and Analysis**

Of the countries selected for this research, the United States (U.S) had the second largest amount of outdoor recreation instructor credentials with a total of 33 different credentials. The U.S had 20 different credentialing organizations that provided these 33 credentials, which was more than any other selected country. See Appendix AO through Appendix AW for a list of all credentials, credentialing organizations, and the categories of analysis. These organizations represented 14 of the 17 outdoor recreation activities in the selected sample. At the time of research, there was no instructor credentialing organization for caving in the U.S. Rafting and hiking were also not included in the sample of instructor credentials; however, both activities had instructor certifications in development at the time of the research. The Wilderness Education Association (WEA, 2013b) was developing an Outdoor Leader instructor credential for leading hiking activities and the American Canoe Association (ACA, 2013) was developing a rafting instructor credential. There were many more instructor credentials that were not included in analysis because these organizations were regional and provided instructor certifications limited to specific areas or environments.

Ten of the 20 outdoor recreation instructor credentialing organizations were international organizations. These organizations predominately credentialed scuba diving instructors (PADI, NAUI, SSI, SDI, IDEA), and mountain bike instructors (PMBI, IMIC). However all the scuba instructor credentialing organizations and the IMIC were based in the U.S. Scuba diving credentialing organizations again dominated the credentialing landscape

with eight separate scuba instructor certifying organizations. Paddleboarding was represented by five different credentialing organizations, and most other activities were represented by two competing instructor credentialing organizations. Two organizations, the ACA and the American Mountain Guides Association (AMGA), represented multiple activity types of credentialing organizations. The ACA (2013) provided credentialing schemes for instructors of canoeing, river kayaking, sea kayaking, and paddleboarding (with rafting credentials also being under development). The AMGA (2013a,c,d,g) provided instructor credentials for many of the mountain-based activities: mountaineering, ice climbing, rock climbing, and backcountry skiing. There was no evidence of a vocational training scheme for outdoor recreation education or national educational qualification standards for training outdoor recreation instructors. The closest example of a national credentialing program for outdoor instructors was a Certified Park and Recreation Professional (CPRP) credential from the National Recreation and Park Association (NRPA). However this qualification focused only on management, not the actual instruction of outdoor recreation activities, and certified a candidate's knowledge in subject areas such as finance, human resources, operations, and programming (NRPA, 2012).

**United States organizational affiliation.** There were no national standards for outdoor activity instructor training or competencies, therefore none of organizations had any national affiliation. International affiliations were more common (see Table 4.25). Over one-third of credentials were affiliated with an international standards setting organization. The AMGA (2013b) was affiliated with the IFMGA and UIAA. Five of the scuba diving instructor credentials were affiliated with the WRSTC (2004). These scuba training organizations were: the Professional Diving Instructors Corporation (PDIC)/Scuba Education

Table 4.25

*Number (Percentage) of International and National Affiliations for U.S Credentials (n=33)*

Affiliation type	Number (%)
International affiliation	13 (39)
National affiliation	0 (00)

International (SEI) [which was in the process of merging organizations at the time of writing and therefore for the purpose of this research will be referred to as SEI], IDEA, PADI, SSI, and SDI (WRSTC, 2004). ISA surfing and paddleboarding instructor credentials were also represented in the U.S. International ASI paddleboarding credentials were offered through an affiliate organization the World Stand-Up Paddleboard Association (WSUPA, 2013).

**United States membership requirements.** Only about 70% of credentials provided instructors access to insurance. Although there were many exceptions, credentials that did not provide insurance tended to be prevalent among paddleboarding instructor certifications. Membership dues were a much more common membership requirement, and nearly all of the U.S credentials required yearly dues (see Table 4.26). American Sailing Association (ASA, 2013a) sailing instructor credential was the only credential that required a background check, however this only included a question on the application asking candidates if they had ever been convicted of a felony. All other organizations did not require a background check or a working with minors clearance. The majority of credentials required instructors to sign a code of ethics to be a member of the organization. The National Surf Schools & Instructors Association (NSSIA, 2008a) *Code of Ethics* was a simple set of “rules of the road” (para. 10) that included basic surf etiquette. The AMGA (2007) had a more formal 8-point description of ethical conduct that described a way for “all of its members to be ethical and professional in the conduct of their business and personal lives” (p. 1).

Table 4.26

*Number (Percentage) of U.S Credentials (n=33) Requiring Various Membership Requirements*

Membership requirements	Number (%) required
Insurance	23 (70)
Dues	29 (88)
Forms	1 (3)
Code of conduct	20 (61)
Medical clearance	8 (24)
Maintenance	20 (61)

As part of the certification process, many organizations required candidates to complete a medical form, however only the scuba diving instructor credentialing organizations (24%; 8 of 33) required medical approval from a doctor to become a certified instructor. It is interesting to note that once an instructor progressed past a dingy sailing instructor certification to larger boats, ASA required instructors to have the U.S Masters Coast Guard License, which required medical clearance (Duncan Hood, personal communications, February, 2013).

Requirements for instructors to maintain their teaching status beyond simply renewing a credential by paying a membership fee were evident for the majority of credentials. The average validation length of these credentials was 2.4 years, the median amount of time was 2.5 years, and the range was between one and four years with the most common validation length being both one and three years. Within these revalidation periods there was a lot of variety in what was required to maintain the credential. The ACA (2012c) paddlesports had similar maintenance requirements for instructors across disciplines such as, “teach at least two courses that meet ACA standards within the four-year certification period and report the results to the National Office; [and] complete an Instructor Update, at the highest level of certification, during the four-year certification period” (p. 2). The Professional Climbing Instructor Association (PCIA, 2012) required eight hours of continued



professional development every three years, or attending a higher level certification course, whereas the ASA (2013a) required instructors to teach a minimum of three classes each year to remain current instructors.

**United States prerequisites.** Most organizations required instructors to be a minimum age. A few of the organizations, like NSSIA (2008c), required a certain number of years of experience. Only two of the credentials, Global Underwater Explorers (GUE) and the Professional Ski Instructors Association (PSIA), did not require instructors to be 18 years old. GUE (2011) required instructors to be a minimum of 21 years old and PSIA (PSIA-E, 2011) allowed minors to become instructors at age 16. U.S Sailing (2013c) allowed for instructor candidates to attend instructor training at age 16, however these candidates were not allowed to be full instructors until the age of 18. Recommendations were required for very few of the credentials and only required by NSSIA (2008c) surfing and paddleboarding credentials and AMGA (2013d) ski guide credentials.

Almost all credentials required instructors to have a first aid certification (see Table 4.27). The only two credentials where it was not evident that a first aid certification was required were PCIA rock climbing and PSIA Nordic skiing. Most credentials required basic CPR and first aid, NSSIA (2008a) surf/paddleboarding only required CPR; however AMGA (2013a,c,d,g) (ice climbing, mountaineering, skiing, rock climbing) required an 80-hour wilderness first aid certification. A few of the credentials required co-requisite certifications such as boater safety/powerboat licenses (IKO, 2013; U.S Sailing, 2013a,b; Professional Air Sports Association [PASA], 2013a), avalanche rescue (AMGA, 2013a,d), and surf rescue (ISA, 2008).

Table 4.27

*Number (Percentage) of U.S Credentials (n=33) Requiring Various Prerequisites*

Prerequisites	Number (%) required
Minimum age	26 (79)
References	3 (9)
First Aid	31 (94)
Other external certifications	7 (21)
Experience – time	19 (58)
Experience – teaching	8 (24)
Experience – skills	33 (100)
Experience – prior certifications	15 (46)
Interpersonal skills	7 (21)

Experience requirements were a common theme among outdoor recreation credentials. In the U.S over half of the credentials specified a specific amount of time spent participating in the activity to be eligible for credentialing. The range for the time requirements was 25 hours for Nordic instructors (PSIA, 2011) to 10 years for the surfing instructor credential through NSSIA (2008c). The average amount of experience required was 2.5 years, the median was one year, and the mode was six months. Eight of the credentials outlined teaching experience as a requirement and all of organizations required instructor candidates to have at least a basic performance ability in the activity. Many organizations required a logbook or resume of experiences, and some even outlined very specific skills levels. For example the Professional Climbing Guides Institute (PCGI, 2012) required instructor candidates to be comfortable climbing a rating of 5.7 on top-rope, an ability to build anchors, and knowledge of a list of knots. Prior certifications were not widely utilized across credentials and less than half of the U.S credentials required instructor candidates to have completed a previous level of certification. The scuba diving credentials commonly required instructors to first have been certified as dive leaders (also called a divemaster) and/or an assistant instructor. GUE required a unique prerequisite for instructor candidates. GUE (2011) standard 3.6.7 *Fulfillment of Internship Requirements* stated,

Table 4.28

*Number (Percentage) of U.S Credentials (n=33) That Segment Instructors by Various Characteristics*

Credentialing scheme characteristics	Number (%) required
Level	25 (76)
Environmental conditions	19 (56)
Teaching experience	21 (64)
Ability and skills	24 (73)

“to fulfill GUE's training prerequisite, internships must be conducted under the supervision of GUE instructors who have taught at least three classes in the given curriculum” (p. 79).

Finally, two other organizations, the ACA (2012a,b,c,d) and U.S Sailing (2013a,b), joined IMIC (2013) and NAUI (n.d.) in outlying a prerequisite for interpersonal skills. The ACA requirements for canoe, kayak, and paddleboard instructors was a slightly different case than IMIC and NAUI. Instead of being a prerequisite, ACA (2012d) instructors were required to demonstrate “positive interpersonal skills” (p. 2) during training and assessment.

**United States structure of the certification scheme.** Most of the credentials incorporated levels into the design of the credentialing scheme (see Table 4.28). About two-thirds of credentials had progressive instructor levels. The exceptions spanned across all types of activities and including windsurfing, scuba diving, paddleboarding, Nordic skiing, ice climbing, and canoeing. Environment was a distinguishing attribute of credential levels for over half of the credentials. The ACA (2012a,b,c,d) canoeing, kayaking, and paddleboarding were a excellent example of segmented instructor certification levels by environment. For the ACA (2012c) costal kayaking strand, instructors were expected to perform at a basic flatwater ability for Level 1. Then for Level 2, instructors had to demonstrate experience in “protected water near shore with winds up to 10 knots, waves up to one foot, and current up to one knot” (ACA, 2011a, p. 1). Level 3 instructors had to demonstrate skills in, “10-15 knot winds, 1-2 foot seas, 1-2 foot breaking waves, 1-2 knots of

current” (ACA, 2011b, p. 1), and on up through harsher environments until a Level 5 credential. A majority of the credentialing levels also segmented instructors on their teaching experience. For example the World Paddle Association (2013) required instructors to gain five years of teaching experience before progressing to the Level 2 paddleboard instructor credential. Finally, most of the U.S outdoor instructor credentials required more advanced personal skills and abilities to progress to a more advanced instructor certification level. An example that highlighted the technical differences between instructor certification levels was Scuba Diving International (SDI, 2013) which had an entire branch of technical diving instructor credentials beyond basic recreational scuba diving for teaching students how to use different types of equipment and develop more advanced skills.

**United States training.** An element of training was incorporated into all of the credentials for teaching outdoor recreation activities in the U.S (see Table 4.29). Of the 33 training programs for which information was available, and not considered proprietary, 29 of the credentials had information about the instructor training process. The range for the length of the training course for these 29 credentials was four hours to 21 days. The average length of the training course was 4.4 days and the median length was three days, the modal length was two days. A five-day, 40 hour, training course was almost as popular as the two-day course length. There did not appear to be a pattern to how activities corresponded to a specific length of training, except for the AMGA (2013a,d) alpine and skiing credentials were clear outliers at 21 and 19 days respectively. The shortest training programs were United States Canoeing Association (USCA, 2013), WPA (2013) and NSSIA (2008b). Even though all organizations required training, a few credentials allowed for prior learning to

Table 4.29

*Number (Percentage) of U.S Credentials (n=33) with Various Training Elements*

Training element	Number (%) required
Required training	33 (100)
RPL	10 (30)
Teaching theory	22 (67)
Teaching skills	30 (91)
Technical knowledge	31 (94)
Technical skills	29 (88)
Safety and rescue	31 (94)
Leadership and group management	24 (73)

challenge out of the instructor requirements. For example, PCIA (2012) allowed instructor candidates to challenge the exam requirement if instructors had:

Previous completion of the AMGA Top Rope Site Manager Course but certification has lapsed or exam was not taken, or Greater than 3 years experience of working at least 40 days per year of managing rock or ice climbing sites. These sites should include a diversity of areas that include both natural and artificial anchors, or An individual may petition the PCIA to be allowed to challenge the exam based on a resume showing significant experience and evidence of formalized instruction (“exam challenges,” para. 1)

As another example, NSSIA (2008c) surfing and paddleboarding instructor candidate’s prior experience and learning were exactly the mechanisms that determined what the certification level the instructor candidate could attain.

Instructor training programs covered a diverse amount of topics. Two categories emerged that related specifically to teaching; teaching theory and teaching skills (see Table 4.29). About 67% of credentials trained instructors on different theories of learning and instruction. Also nearly all of credentials included training on teaching skills. The ACA (2012b,c,d) river kayak, sea kayak, and paddleboard instructor criteria all incorporated “teaching theory, learning theory, and effective methods of providing feedback” (p. 2). The ACA (2012a) canoe instructor criteria also included a similar but slightly different set of learning requirements, “characteristics of different types of learners, effective teaching

methods, effectively prepared and impromptu presentations, evaluate and provide feedback, effectively make documented skill assessments” (p. 2). Other credentialing organizations incorporated similar elements into their trainings. The AMGA (2013a) ice climbing instructor course material included a description of skills taught and developed during the instructor course that included, “lesson plan[ning], pedagogy, and coaching tips and effective communication” (“ice instructor course,” para. 1). The majority of U.S Sailing’s (2013c) four-day Level 1 Small Boat Instructor training course focused on instructional techniques. This training covered teaching skills topics such as, “teaching from and using a safety boat, use of land and on-the-water drills, sports psychology and physiology, lesson planning, classroom teaching techniques for eye-hand coordination skills... [and] rainy day activities” (U.S Sailing, 2013c, “level 1 instructor,” para.1). And finally, PASA’s (2012) instructor program included a variety of interesting information on teaching technique and knowledge, “psychological principles, basis of learning... teaching to learn, learning to teach... use of instructional aids, develop[ing] a lesson plan... identifying with the student position... skills progression... live teaching exercises... dealing with barriers [of learning]... learning zones, mental states, curve of remembering, laws of learning” (p. 1).

Technical background knowledge was a component of almost all outdoor recreation instructor credential training programs. This type of information was especially thorough for scuba diving instructor credentials. GUE (2011) dive standards included the instruction of typical topics such as physics, decompression tables, equipment, etc., but also had an increased emphasis on conservation and the environment when compared to other scuba dive instructor training credentials. A typical technical knowledge component to ISA (2008) surf instructor training was instruction on the ocean environment, weather, and marine creatures.

The AMGA (2013a,c,d,g) training programs focused heavily on providing instructor candidates with technical knowledge about the selected activity and the environment. To list just a few subjects covered in the AMGA Ski Guide Instructor course: “professionalism, Leave No Trace, guiding history, guide meeting process, gear and equipment selection, orientation and preparation, and field book methodology” (2013f, “ski guide course,” para. 3).

Technical skills training were fundamental to most of the credentialing training programs. One of the main course objectives of the WSUPA (2013), ASI paddleboarding instructor training was to teach instructor candidates “advanced stroke technique and skills” (n.d., “paddleboard instructor”). And the IMIC (2013) mountain biking instructor training covered subjects such as trail side repairs, and bike set-up and adjustment training. Longer training courses such as the AMGA (2013e) alpine guide course for mountaineering covered technical skills training in much more depth. Just a few example topics in the AMGA alpine guide course were, “efficient travel through 3<sup>rd</sup> and 4<sup>th</sup> class terrain, short-rope and short-pitch techniques on snow and rock... track setting and navigation skills, macro and micro-rout find skills...” (“alpine guide course,” para. 1). The ACA (2012a,b,c,d) did a great job of outlining specific technical skills expectations for instructor candidates including a variety of paddling skills and other techniques for each type of instructor training course.

The last categories of safety and rescue and leadership and group management were equally relevant across almost all outdoor recreation instructor credentials. The exception to the instruction of these topics was NSSIA surfing and paddleboarding instruction however this may have been due to the limited available information about the training course. Repeated request for more information went unanswered. Therefore, evidence was available

that 31 out of 33 credentials included safety and rescue training. Many fewer credentials included leadership and group management training (see Table 4.29). The PSIA (2012) *Cross country certification standards* provided a rich description of group management training that included, “class handling and organization: (a) recognize the impact and importance of developing trust in the learning environment; (b) manage risk present in the winter environment in a responsible manner; (c) demonstrate an ability to provide individual attention to students in a class...” (p. 2). The U.S Sailing (2013b) small boat instructor certification course covered the use of a safety boat and also general “risk management and other legal issues, and safety consideration” (para. 2). For a final example, the ACA (2012a) canoe Level 1 instructor criteria included preparing instructor candidates for assessment in their ability to “(7) demonstrate the ability to teach and appropriately model these rescue techniques [...list]” (p. 3) and “(8) demonstrate the ability to teach the following safety concepts...” (p. 3).

**United States assessment process.** As can be interpreted from the previous section on training, assessment and training were very closely aligned. Almost all of the credentials required some form of assessment, however not all credentials required the assessment process to be separate from the training (see Table 4.30). For example, the training process for ACA credential used a formative assessment process in which an assessor evaluated an instructor’s skills and ability throughout the training course. IKO (2013), PASA (2012), USCA (2013), and many other credentials utilized this process as well. The only exception was the AMGA (2013a) ice climbing instructor credential which only required the training component and did not required an assessment. Instead of traditional assessment component, ISA (2008) integrated an apprenticeship model of assessment in which the mentor was also



Table 4.30

*Number (Percentage) of U.S Credentials (n=33) with Various Assessment Elements*

Assessment elements	Number (%) required
Required assessment	28 (85)
Written	21 (63)
Practical	30 (91)
Teaching theory	17 (52)
Teaching skills	28 (85)
Technical knowledge	28 (85)
Technical skills	27 (82)
Safety and rescue	27 (82)
Leadership and group management	26 (79)

constantly assessing a candidate's performance. For credentials with a fixed assessment period, the length of time for assessment ranged from a take-home exam (NSSIA, 2008a) to a 19-day expedition based performance assessment (AMGA, 2013a,d).

The use of written assessments as an evaluation tool was a common technique among U.S outdoor recreation instructor credentials. The types of assessments ranged from pre-training exams and essays, workbook assignments, lesson plan construction, theory essays, to summative formal exams. For credentials that required a final exam, both short answer and multiple choice exams were used, and the average passing score requirement was 81%, and the median and mode test score was 80%. A notable exception was Professional Scuba Association International (PSAI) which required a minimum passing score of 96% on both the written and performance exams (Gary Taylor, personal communication, February 2013).

Performance-based assessments were an extremely common assessment tool. All the credentials, except AMGA (2013a) ice climbing and the NSSIA (2008a) credentials used a performance exam to test the competence of instructor candidates. The type of performance assessment methods was nearly as varied as the types of written assessments. For example, the PCGI (Zach Schneider, personal communication, February, 2013) used a 10-category checklist of skills and candidates had to score a minimum of 85% competency in each

category. PSIA (2012) also used a skills check-list but their grading system was based on competent/not competent, pass/fail. The ACA (2012d) *Level 2: Essentials of River Kayaking Instructor Criteria* included a check-list of five skill requirements in the category of, “the ability to teach and model the basic kayak strokes and maneuvers effectively” (p. 2) and candidates were judged pass/fail for each skill. For a final example, the AMGA (2013c) used the same nine categories of assessment across all instructor credentials. These nine assessment categories include, “risk management, client care, technical systems, application, terrain assessment, movement skills, mountain sense, professionalism, and instructional technique” (“assessment,” para. 2). The AMGA (2013c) SPI assessment overview page of the AMGA website also went on to described a holistic approach to the performance assessment process in greater detail:

The assessment will examine all aspects of institutional single pitch climbing that the Single Pitch Instructor may encounter. Day one will look at climbing movement and all aspects of technical systems from anchoring to assistance skills and general climbing competence. On day two the examiner may arrange for volunteer novice clients (non-paying) for the candidates to instruct in a group setting. This is not required but is a great benefit to the assessment process as the examiner can see candidates interact with real novice climbers and the examinees do not have to ‘pretend’ to teach novice climbers who are actually other examinees on the assessment.

The examiners job is to bring out the best in the candidate, and give the candidate a comfortable and stress-free assessment. The candidate must show the examiner they have the technical and instructional skills to pass the AMGA Single Pitch Instructor Assessment. (para. 7-8)

Many of the training courses included instructional theory as a topic of training, and therefore many of the credentials also assessed candidates on their understanding of teaching theory. This knowledge was most often assessed in the form of a written test. The PSIA (2011) cross country ski exam assessed teaching theory with both written and performance assessments. Descriptions of the examination process from the PSIA Cross Country Exam

Guide (2011) included assessment of, “appropriate lesson content/progression” (p. 18), and “methodology: awareness and use of different learning styles is necessary. An understanding of goal-setting during the lesson and specific teaching tactics to reach these goals is also important” (p. 19), and “child-centered ski teaching” (p. 19). Another common form of assessment of instructional theory was the evaluation of an instructor candidate’s lesson plan design.

Almost all of the credentials assessed a candidate’s teaching ability. This category of skills was almost universally tested through demonstration scenarios. This requirement was often stated simply such as, “in order for candidates to successfully gain a PMBI Level 1 certification, they must pass both a riding and teaching evaluation during the course” (PMBI, 2103, “courses,” para. 1). Other credentials described the assessment process in more detail and outlined specific teaching outlines. For example, PADI (2013) required instructor candidates to present “two confined water teaching presentations, two knowledge development presentations, and one open water teaching presentation integrating two skills” (“what you learn,” para. 1). These presentations were evaluated on content, skill, and teaching ability by an independent assessor (LeRoy Wickham, personal communication, February 2013). As seen in the previous example from PADI, a candidate’s technical knowledge was often integrated into an assessment of an instructor candidate’s teaching ability. About 85% of credentials assessed candidates knowledge and understanding of technical knowledge related to the activity. Knowledge assessments were performance based, and also evaluated using written test. In the example above, PADI tested an instructor candidate’s technical knowledge through two knowledge development presentations; however, PADI (2013) also tested candidates technical and theoretical knowledge through a

series of five multiple choice exams. For another example, U.S Sailing used a written exam to test a candidate's "seamanship knowledge" (U.S Sailing, 2013, "passing all practical exams," para. 5).

The technical skill and ability of instructors were predominately tested using performance-based assessments. Most credentials tested a candidate's ability to perform the outdoor recreation activity. Exceptions to this category of assessment were centered on the activities of paddleboarding and surfing. On the other hand, the PCIA required candidates to demonstrate their climbing ability, knot tying, rope coiling, belaying, placement of protection, building anchors, and a multitude of other skills in great detail (2013, "technical understanding," para. 1). On the longer expeditionary based assessment courses such as the AMGA (2013a,d) for mountaineering and skiing, technical skills were assessed throughout an assessment period with a focus on formative assessments that allowed candidates to improve during the assessment period. Assessment of an instructor's ability to perform technical tasks was often either a check-list style rubric or a pass/fail competency requirement. Occasionally, assessment was subjective and based on a holistic assessment of a candidate's overall performance throughout the assessment course.

The final categories of assessment for U.S based outdoor recreation instructor credentials were safety and rescue and leadership/group management. Active assessment of a candidate's knowledge of safety and rescue was assessed by most of the credentials. An understanding of safety considerations was evaluated as part of a written exam or during the presentation of a safety briefing. Practical rescue techniques were assessed during skill demonstrations. One example of a written assessment of safety was PASA's (2012) requirement for candidates to submit a written emergency action plan for evaluation. The

ACA (2012a) outlined practical safety and rescue demonstration requirements for instructor candidates such as, deep water exits, controlled capsize, self rescue, towing, swimming a canoe, T-rescues, universal signals, PFD regulations, and many more.

Group management and leadership were assessed by the majority of credentials. U.S Sailing (2013) instructor training courses covered over 600 pages of text, written exams, and practical exams and one of the six practical exams was a “land drill and water drill teaching practical skills” (“passing all practical exams,” para. 6) in which instructor candidates were required to demonstrate good class positioning and group control. Terminology such as demonstrate “lead[ing] a small group” (SEI, 2008 p. 48) was pervasive across credentials. However, the method by which credentials assessed a candidate’s proficiency at these skills was less clear. The ACA (2012c) *level 1: introduction to paddleboarding instructor criteria* outlined the skills required to demonstrate group management such as, “planning a trip, put-in briefing, group (3 person minimum) – consider sea kayak accompaniment of group for emergency supplies, group management (lead/sweep, safety, spacing), demonstrate leadership, group management skills, experience, and judgment necessary to be a safe and effective instructor” (p. 4). To assess these skills verbal questioning and observation were used to determine an instructor’s competency. In many cases, credentials assessed group management on the basis over an overall interaction among the group. It was often less about specific skills and more about understanding the subtle intricacies of interpersonal relationships and presenting a consistent and unified voice. The AMGA (2013a) alpine guide exam used a final 10-day exam to evaluate an instructor’s ability to guide a group and this intense and lengthy process highlighted the challenge of assessing leadership and group management skills:

During the exam candidates will be expected to carry out guiding assignments given by the examiners. Candidates will serve as guides to the examiners and to the other candidates on routes chosen for their complex guiding challenges. Candidates acting as a guide will be responsible for: route planning, client orientation, camp craft, risk management and normal guiding practices. Route or tour assignments will usually be given the night before. Client profiles will also be explained... The final day of the exam will include a personal debrief and exam evaluation (“alpine guide exam,” para. 1).

Whether it was a short presentation/demonstration or an expedition length evaluation, group management appeared to be one of the harder things to assess and often provided credentialing organizations an opportunity to be creative with their assessment design.

### **Phase 1 – Summary**

Analyzing thousands of pages of documents from 155 credentials yielded an astounding amount of results about the credentialing requirements and standards for outdoor recreation instructors. For ease of reading, the preceding results were organized by selected countries and then further subdivided into major themes with the intent of providing descriptive analysis of requirements within each category and rich descriptions and examples from different credentials that demonstrated the similarities and differences between credentials within each country. This first phase of research yielded a census of credentialing requirements for 17 outdoor recreation activities across the five selected countries and answered the first and second research questions. However, an important component of this research was to not only understand the similarities and differences between credentialing elements and requirements within a country, but across different countries.

There were many similarities and differences between credentialing requirements for outdoor recreation instruction in the selected countries. To begin with, there many commonalities in credentialing requirements that stretched across national borders that applied to most every credential regardless of the activity or country. For example, many of

the prerequisite requirements were consistently designed as part of the credentialing process. A minimum age, first aid, and a minimum level of skill were almost always required across all credentials. Most credentials were also organized into a system of levels within an organizational credentialing scheme, and an entry-level certification was most commonly differentiated from other levels of certifications based on the skill and ability of the outdoor instructor.

There was also consistency in not requiring certain elements. Few outdoor instructor credentials required background checks or references. Other areas of consistency that appeared across all credentials were the themes of training and assessment. Except for a few notable exceptions in Australia and New Zealand, all credentials required training and assessment. More specifically, training on teaching skills, technical knowledge, technical skills, and safety were ubiquitous across credentials that required training; and practical performance-based assessments were nearly universal.

There were also a few cases in which all the credentials shared a common requirement within a selected country; however, this requirement was not consistent across all countries. In Canada, 96% of credentials gave instructors access to insurance; while in Australia (35%) and New Zealand (25%) the access to insurance element was much less common. Another interesting deviation was the requirement for written assessment. In the U.K and Canada, most (96% and 88% respectively) credentials required a written assessment. However, only about 56% of New Zealand credentials required a written assessment.

In the previously mentioned cases I have described a few examples that show consistency within a country and a few cases in which that consistency is not found across all

countries. Despite these many similarities, and a few differences, there were many requirements that reflected ambiguous conclusions about the consistency within countries and between different countries. These inconsistencies and differences were not only reflected in the categories of credentialing requirements but also in the standards used to determine competence within these categories. Some of these inconsistencies could be attributed to organizational differences. One of the most interesting differences between credentials and countries were the organizational affiliations. In all countries, a substantial number of credentials were affiliated with international standards. In each of the selected countries, between 33% and 50% of credentials were associated with: IFMGA, UIAA, ISA, ISAF, ISIA, or the WRSTC. This meant that across countries the affiliated organizations in each country shared similar requirements and standards aligned with the international standard setting organizations' guidelines. However, even if there was an international affiliation available, not all activities within each country were affiliated with that organization. A prime example of this disparity is the case of mountaineering in New Zealand. The NZMGA was the IFMGA affiliate in New Zealand; however, the MSC, NZOIA, and NZQA also provided mountaineering instructor credentials. None of these organizations except the NZMGA were affiliated with the IFMGA. Therefore, each of these credentials shared some similarities but each organization also had slightly different requirements and standards for credentialing instructors that varied based on the organization.

Another interesting finding from the study was the difference in affiliation with national standards. No credentials in the United States were affiliated with any national standards, yet in Australia about 60% of credentials were affiliated with a national standard.



These national standards often dictated the inclusion of requirements and the standards for evaluating competence across different types of activities. In many cases there were also large organizations that managed the credentialing process for multiple activities. Although these organizations may, or may not, have been affiliated with an international or national standard, the structure and scope of the organization influenced the analysis of credentialing requirements. For example, ACMG organized instructor credentials for five different outdoor activities thus accounting for over 20% of the outdoor instructor credentials in Canada. However, it is also interesting to note that even within credentialing organizations the credentialing elements, assessments, and standards were not generic across all activity credentials.

In the second phase of research, I used the organizational type as a characteristic to help explore and understand the credentialing of outdoor activity instructors from different perspectives. These perspectives were important to understand because it was clear that there were many broad similarities among credentials within countries and across countries; however, there were also many differences in requirements and standards among individual credentials. For example, the percentage of credentials that required instructors to sign a code of conduct ranged from 39% to 71%, with a majority of credentials in Canada and the U.S., and less than a majority of credentials in Australia, New Zealand, and the U.K., required instructors to sign a code of conduct. Another excellent example of the differences between credentials within a country and across countries was the category of prior experience – teaching. Credentials across all countries were routinely inconsistent about requiring prior teaching experience. Depending on the country, between 24% and 50% of credentials required prior teaching experience and there was no pattern between activity types within

countries or across countries. The standards also varied dramatically between credentials and ranged from a requirement to have taught a couple of sessions to a couple of years worth of teaching experience. The percentage of credentials within a country that required a specific element or assessment often ranged between 25% and 75% and represented diverse approaches to credentialing outdoor instructors for different activities. These diverse results were found across many different categories. A much more thorough discussion of these similarities and differences are explored in the following Discussion section of this paper. These results are highlighted with the results from Phase 2 and explained by the accompanying perspectives from key managers and stakeholders from selected organizations about the rationale for these similarities and differences.

## **Phase 2 – Qualitative Results**

The purpose of the second phase of research was to explore possible explanations for the phenomenon of why standards and credentialing elements might be similar or different for outdoor activity instruction. To search for these answers, I first completed Phase 1 of the research, a census of outdoor instructor credentials for the selected countries. The initial phase of research uncovered a number of surprising characteristics of the certification process that have been discussed in the previous section. These findings were critical to understanding the landscape of outdoor recreation instructor credentials. Then, to create a more in depth understanding of the unique attributes of credentialing in the field of outdoor education, I returned to the data collected during the first phase with a new focus. Using the criteria explained previously, I narrowed my research onto a smaller sample of select diverse cases of credentialing organizations in order to examine the theoretical perspectives that

might explain the rationale for the similarities and differences among credentialing organizations.

Six organizations were selected for more in depth analysis and interviews. Organizational documents were reexamined and interviews were conducted using open ended questions (such as “What do you think is the purpose of credentialing for outdoor instructors?” “Why do you think credentialing has developed different standards for different activities and organizations?” “What is the value of a credential for an outdoor instructor?” etc.). These responses were analyzed for common perspectives and themes, while also searching for new and unique characteristics of individual organizations. The following section outlines the results from the second phase of analysis. The implications and interconnectedness of these themes will be discussed in more depth in the final chapter.

**Why Credential?** The interviews mirrored the findings from the first phase of research. Though there were many different perspectives, fundamentally there was a lot of agreement among the interviewees about the different topics of credentialing. Through the process of trying to understand each person’s unique perspective and opinions, it quickly became clear that any notion of a single dominant theory of credentialing in outdoor education was unrealistic. A variety of opinions were presented that often covered the gamut of theoretical frameworks of credentialing in a single response. However, these complex and contradictory opinions highlighted the unique nature of outdoor recreation instruction and therefore was perhaps the most unique theme developed over the course of the interviews. The theme of contradiction and complexity, and “all of the above” responses, make outdoor instruction a rich case for exploring the common theories of credentialing and brings a new perspective to existing research on credentialing.

“I mean... you don’t need to get certified to be a good instructor...as you know there can be a lot of crappy credentialed instructors, it kind of goes both ways,” Johnston proclaimed. I feel as though this sentiment could have been echoed with respect to any credentialed profession, teacher or other field. However, in the case of outdoor recreation instruction, this opinion was in the minority. A more common approach to the necessity of credentialing outdoor instruction was a little more diplomatic. Generally if asked if a credential should be required to teach outdoor activities the response was more along the lines of, “well I don’t think that a certification should be required for all outdoor activities.” Or, “well, I guess that depends on what level of activity you are requiring. If it is a pretty low level activity, one could argue that there is not much need to have a certification.” These were typical initial responses. Yet after these initial disclaimers about the process of credentialing as a whole, these digressions quickly faded when concentration turned towards the specific value of a credential from their organization. When asked why there should be a credential for instructing their respective activities, two common themes emerged that were consistent across all organizations. These themes were safety and consistency. Granted, these concepts are often related but they also diverge into slightly different viewpoints.

**Safety.** Tucker noted that, “anytime there is an activity and there is [potential] harm to the public then it’s crucial for there to be some minimum level of training and assessment. If there isn’t...well then for members of the public... it’s a crapshoot.” Wickham explained more about why a standard was an important strategy for safety,

There are rules in diving and that's why we have certifications. [These rules] are just not common sense...you wouldn't think that when you go diving you don't hold your breath because that could cause issues...these [rules] are not intuitive to people without giving them that training... so safety is foremost throughout all of our training.

The theme of the unknowing recreationalist needing to be protected from harming themselves was not uncommon. The inherent danger of an activity was often perceived as unknown to new participants in an activity. Therefore many interviewees expressed that one of the main values of having credentials for instructors was having a better system for educating the public. March suggested that, “the main reason why it needs to be structured and it needs to be taught is because it is a dangerous sport and there needs to be some standards in place.” Wickham also highlighted this opinion with another example from scuba diving:

[Credentialing] helps with keeping it safe, if people all just got [scuba] gear and ran out and jumped in the water I guarantee that we would be back in the days when there were a lot more fatalities for newbie divers... statistically diver incidents and accidents have gone down over the years and we are certifying a lot more divers then in the early days when it was a little more survival than it is now.

This is an amazing achievement for an organization and for the field or outdoor education in general. It supports the perception that improved safety is an important benefit and rationale for an outdoor instructor credential.

Many organizations, such as the ACMG, include protection of the public as one of the primary goals of the credentialing process, or the “prime directive,” as Tucker called it. The first item in the ACMG mission statement was “Protect the public interest by advocating the highest standards of risk management for mountain guiding and climbing instruction” (ACMG 2013, “about,” para. 1). Wickham expressed that this need to protect the public was one of the reasons “why we have the WRSTC [World Recreational Scuba Training Council] and originally the RSTC... that is why the organizations that do most of the certifications got together and agreed upon some minimum standards.” By uniting and agreeing upon minimum standards, organizations can use the power of training and credentialing educators

to protect the maximum number of students. According to Cowie, not only does “having a qual[ification] protect [the public] it helps protect the industry as well.” The idea that a credential is good for the field of outdoor education foreshadows another theme that appeared in many interviews.

***Consistency.*** Not all interviewees placed the same gravitas on safety and some interviewees suggested other reasons for the purpose of credentialing in outdoor recreation education. Some opinions even valued the credentialing process more along the lines of a recreational purpose, “it's not like we are doing anything important. You know when you really get down to it we are not doing surgery or anything.” This by no means implied that safety was devalued; instead this opinion highlighted an alternative perspective on the purpose of credentialing. For some, the reason why there should be a credential for instructing outdoor activities was a broader perspective of incorporating a consistent baseline in “competence and knowledge.”

Davidson commented, “to be honest you don't need any certification to teach Nordic skiing, what you do need certification for is to teach Nordic skiing to a specific standard.” For some organizations the baseline for that specific standard was safety, while for other organizations the concept of a consistent and specific minimum standard included safety, background knowledge, technique, and “a minimum level of professionalism.” Cowie liked to refer to this series of standards as, “best practice.” The benefits of having a clear system of best practice was perceived as really good for managing risk and safety, and “besides measuring people's competence it also shows that the industry is working to a standard and that it is a measurable standard.” A credential helps promote a system of minimum standards that are transparent across the organization and visible to the public. To summarize the two

major themes into one overview; the perception was that credentialing in outdoor instruction provides a consistent minimum standard for safety, instruction, and professionalism for the maximum benefit and protection of the public.

**Why are credentials different?** To understand why credentials are similar or different is a much more challenging pursuit. Although the concept of safety seemed to permeate the rationale for the general purpose of having an outdoor activity instructor credential, the design of individual credentialing programs was less consistent. Generally, all programs aimed to develop teachers and programs that would provide a safe experience for students. Despite having this common goal, as one would expect, not all credentials followed the same regimen to credential instructors. And as one interviewee phrased it, “and in the end I don't think it is a big deal... different programs have a different emphasis for sure.” Therefore, to understand why programs might have evolved different processes and standards is really an exploration into the characteristics that have shaped the development of different credentialing organizations. It was a challenging question, but I asked each interviewee directly, “why do you think credentials have developed differently for other organizations or activities?” Often it was not an easy answer for the interviewees and their responses to this question developed over the course of related questions. However, five main themes about the rationale for differences between credentials emerged from these discussions. These themes were: geographic/environmental, activity type, personal/philosophical, political/legislation, and industry related reasons. No person expressed a single dominant reason for the differences and instead consensus among everyone was that there were “many different reasons.”

***Geographic/environmental.*** According to Tucker, “there are a variety of reasons, and some of those are geographic,” for why credentials have developed differently. From the tops of mountains to the bottom of the ocean these instructors teach in a huge variety of environments. For example from the ACMG’s perspective in Canada was, “there is a huge amount of terrain, it is a very challenging risk management environment, and it requires a high degree of training to be able to do that as safely as possible.” Whereas another geographic reason that influenced the design of the credentialing process was the simple logistics involved with training instructors in a large country. In the beginning, “there were very few instructors and people travel[ed] great distances so we didn't want to make an extra hoop for them. [We didn’t want them] to have to make an extra trip to go get their training and assessment. So it was a conscious decision...” to design the course differently from other paddling programs. Johnston went on to say,

Originally our program was modeled very similar to theirs [the BCU], or it was much more similar 13 years ago when it was put together. And part of the difference was, it was easy for them to split the two [sessions] because they didn't have as far to travel regionally. So I think it was easy for them to do [it that way]. Geographically you only had to drive two hours, or four hours at the most. But for us, people were flying across the country and it just wasn't practical to do it that way.

Besides the technical scale of the environment, or the logistical challenges of designing a training program, another reason that emerged was the “regional interest,” in an area.

Credentials were often adapted to meet the specific needs of the community and the instructors. For example, expeditionary based programs tended to have a longer credentialing process to train and assess instructors, while instructors who were operating in “day access” types of environments had a shorter training period to prepare them for a less extreme environment.



***The type of activity.*** Similar to the environment, the type of activity also influenced the design of the credential. Wickham expressed this sentiment specifically for scuba diving,

I don't know how it works in other industries, diving is kind of strange in that you know most industries, skiing... biking... you don't have to be certified to start out. You can get a bike and jump on a trail and go to town. You can go to a ski slope rent your skis they don't ask for a certification to jump on a ski lift. So we're unique in that. I think a lot of that has to do with if you don't follow the rules and you are not training properly it is an alien environment that you could easily put yourself in a situation where it becomes a fatality. So I think we are a little bit unique compared to some of the other [activities].

Wickham was suggesting that the underwater environment presented unique challenges, and because of these unusual circumstances a certification process evolved to train instructors who could then train students to safely participate in the activity. In his opinion, the nature of scuba diving is very different than many other types of activities.

I think we fall more along the lines of industries such as pilots, you have to be certified to fly a plane, you have to be certified to teach others to fly a plane...But beyond that, a lot of activities you don't have to be certified to do that activity. You can grab some skis or go climb a mountain, so it is a little unique.

Perhaps one of the reasons why scuba diving developed differently than other activities was that equipment evolved more rapidly than dive industry training and the public had access to tools without training. To re-quote Wickham, “back in the [old] days... there were a lot more fatalities for newbie divers” and now the scuba diving industry is “certifying a lot more divers then in the early days when it was a little more [about] survival.”

Among organizations that credentialed multiple activities (ACMG, Paddle Canada, Skills Active) it was obvious that different activities should have different credentialing requirements. The skills required and the amount of background knowledge greatly varied based on the type of activity. For example, Skills Active provided credentials for both hiking

instruction and river kayaking instruction. There is little to no overlap in the basic equipment or skill requirements for these activities.

***Personal/Philosophical.*** The opposite of technical equipment and environmental factors were the personal and philosophical reasons for different credentialing processes. Nearly every person remarked that philosophical differences between the founders of different organizations were a major influence in the design of the credential. For becoming a mountain instructor in Canada, Tucker thought that one of the reasons that,

[Other credentials] developed was in part due to personality and political issues. And by political I mean personal-political, personality issues that developed between guides twenty years ago that created a separate credentialing opportunity.

Similarly, the personal backgrounds of the founders of PADI shaped the design and goals of scuba diving training.

One of our founders was a professor and he also was a coach of the swim team. He taught academia and he also taught motor skills, as the swim coach. That was Ralph Erickson; he was one of our founders. Our other founder came via sales, that was John Cronin. He came up through sales he was the sales president of US divers. Those two collaborated and started PADI in about 1966. So again it didn't come from a military background it came from an educational background and scuba diving industry background... it is a little different from something like NAUI which came from military [background]... Again it is just different starting points, any time they start differently they will take a different route to where they finally end up.

Wickham went on to say that these different backgrounds diverged into a truly different philosophical basis for training:

I just know in the history of diving it came up from the military ranks so a lot of the training was very militaristic. One of the first things the founders of PADI did was look at it more from an educational viewpoint. The military is looking for the cream of the crop and looking to get rid of those that can't cut mustard and just move on with the best of the best. That doesn't work in the civilian world very well. It doesn't work in growing an industry. We are not trying to weed people out, we are trying to get everybody to a minimum level of competency and mastery so that they can dive.

PADI's educational focus influenced the design of their training program, how they teach and assess instructors, and how they hope instructors will educate students.

We work off of performance based system where once a student has shown mastery of knowledge they move on. Once they have shown mastery of skills they move on. It is what we call a performance based system. Instead of credit hours or hours sitting in a seat in a classroom which are meaningless.

Other interviewees shared a similar passion for philosophical roots of the credentialing process. March, who founded IMIC, explained that one of the reasons his program was designed differently was,

There is just a lot more knowledge with our program versus others. It is more in depth you know, not just more, but more in depth. We do a lot of teaching of physics and we like to explain to our instructors is the 'why,' not just because. Well I think mountain biking is very personal first of all. You can do things for different reasons and you can do things a lot of different ways. I think some people put in more emotion and more of their personal thoughts and feelings into teaching and that's what their selling. Versus us, ours is more of a scientific background... the physics and the why and the reasons things do happen in the real physical world.

Johnston from Paddle Canada shared an interesting philosophical perspective that was based on the size of the organizations, the history, and the personal attributes of curriculum developers:

Well I think there are a bunch of factors that make them different. Certainly culture is a big one. How long the organization has been around is another big factor. As organizations age they tend to get more bureaucratic and if you look at older organizations they tend to have become more dogmatic and much more bureaucratic. Until there is a program review and then the program gets redesigned and all that scaled back and then it gets built back up again over time. So in our case...when the program was first developed and as time has gone on we have actively tried to figure out how can we make this as least dogmatic as we can. It's tricky because we are constantly trying to fight against that. People are always trying to [enforce that] you have to paddle a certain way, or do so many strokes to get around a turn. Well no, [our focus] is on, what the student needs.

Although each person expressed their opinions slightly differently, there was consensus among the representatives from different organizations that personal and

philosophical backgrounds greatly influenced the design of the credential. These opinions ranged from an educational justification or philosophical mandate to a more informal rational of “they sit outside the framework... because that is where they want to sit.” Regardless, these characteristics had a role in shaping credentials for different activities in different countries.

*Politics and legislation.* One of the reasons why personal philosophies seemed to influence the design of the credentials was a surprising lack of political or legislative control. For example, in Canada, they are “not bound by any rules, and we can teach what and how we want.” In New Zealand, “there is not a lot of legislation around that at the moment, whether it is coming in the future, I don't know, but at the moment there doesn't seem to be any boundaries.” An exception to norm is the case of whitewater rafting. In New Zealand, raft guides fall under a different set of regulations that are based on adventure guiding rather than instruction and therefore is governed by Maritime NZ ruling and licensing laws. Wickham noted that, “in the European Union there are requirements and we meet or surpass those requirements because there is that kind of regulation,” but “currently in the US we don't have any direct regulation.” And the overall feeling I interpreted from these interviews was that everyone appreciated that independence. This independence had a role in also explaining another important rationale for the purpose of credentialing;

One of the reasons that we want to have instructors certified and validated is so the government doesn't come in and start those types of controls. But as a self regulated industry this helps us maintain and improve our safety in our industry so that we don't have government intervention.

Although most of the countries did not have any direct regulation over the outdoor instructor credentialing process, this was not a universal attribute in the field of outdoor education. In some areas like Australia, specifically states such as Queensland, “[have] very

regimented and strict regulations when it comes to the certification of divers and instructors who are conducting that training.” Davidson, from BASI, also represented a different perspective based on the complicated governance structure of sports in the U.K. I was somewhat confused about the bureaucratic structure of licenses and regulation in the U.K, but Davidson did his best to explain,

You see, there are amateurs [instructors] at a club or organizations. Then there are professionals with vocational qualifications, [like BASI instructors] and they all just work under a different regime. Then there people with teaching qualifications who do a different qualification, and they all have different rules.

Essentially, there are three different routes to becoming a snowsport instructor in the U.K. There are regional club instructors, professional instructors, and teachers who can teach snowsport activities. Each of these types of instructors have different regulations that limit where these instructors can teach, if or how they can get paid, and what skill levels they of student instructors are licensed to teach.

New Zealand was another area in which political and legislative factors influenced the design of the credentialing process for outdoor activity instructors. Many of the outdoor activities selected for these research were under the authority of Skills Active, a government funded organization responsible for overseeing the design and implementation of national standards. Skills Active was authorized to independently create and connect required credentialing elements to match national educational standards. My preconception about the structure of national qualifications was that it was a bureaucratic top-down structure similar to the U.K. However, I was surprised to learn that credentialing process for Skills Active qualifications was quite different. The political and legislative process that influenced the design of the different credentials was a process of empowering the outdoor education industry to create its own system of credentialing requirements.

When the national qualifications framework came on board, people could see that if they built qualifications that they could actually gain funding from the government to deliver the qualification. So that was the big push behind getting all these different qualifications up on the framework.

New Zealand has recently recognized that this process allowed for “a lot of different quals on the framework and some of them are very similar, but have very slight differences.”

Therefore these qualifications (outdoor instructor credentials) are currently under review (TRoQ, 2012) in order to, “identify right now where those commonalities fit so that we can bring [them] together. Then each activity will then have its differences of course, but then there is a base that sits there and goes right across the board.” The goal going forward is that, “everyone will work from the same qualification.” Because, “when you look at a pathway or an industry standard there can be lots of commonalities right across the board” and Skills Active is turning to the outdoor recreation industry to help define a common set of standards for the process of becoming an outdoor activity instructor.

***Industry and historical influence.*** The final theme that permeated the discussion surrounding the rationale for why credentialing programs might be similar or different was industry. Currently, and historically, there has been a lot of discussion about how education prepares students for the workforce and if students are receiving the skills needed to perform in the real world. One of the more interesting discoveries was how closely education and professional practice was connected in the field of outdoor education. From the perspective of those interviewed, outdoor recreation instructor training organizations work closely with organizations and business to respond to the needs of the industry. Tucker explained that the ACMG, “work[s] closely with industry when it appears that their needs aren’t being met.”

Sometimes industry needs require organizations to respond to tragedies. These events can have an impact on the design of the credentialing process and often both industry and

organizations need to re-evaluate and adapt to new circumstances. According to Tucker, a key role of a credentialing organization is to respond to tragic events in industry and improve practice.

Industry has helped to shape... the requirements for guides on the ground, as well as certain historical tragedies. For example in 2003 there were two separate significant avalanches that claimed the lives to seven students up in Rogers Pass and then there was a separate one that took the lives of seven [others]. Those kinds of events certainly shaped how the public looks at guiding [and have shaped] the requirements for how an association is required to protect the public interest as well as the requirements that the ACMG would have of its members for protecting the public.

Organizations do not only react to events, organizations also proactively seek out industry relationships. One of Cowie's main job responsibilities was, "working with industry to look at what qualifications need to be developed." Skills Active in particular "[doesn't] drive [the development] at all, it is actually the industry that is suppose to drive the need for the qualification." It can be a delicate balance to accommodate industry feedback and also maintain consistent high standards. However, credentialing organizations seemed to have taken an approach that blends listening to the needs of those out in the field teaching while also supporting industry by maintaining a high standard of training requirements that prepare teachers to perform at an advanced level. Congdon explained that "industry here operates at quite a high level" and the certifications are designed to prepare instructors to meet and exceed industry requirements. March concurred, "I think in general the mountain bike industry has demanded a high standard;" therefore he designed the mountain bike instructor program to meet these high standards.

A final component to the industry driven perspective was the connection to international industry standards for some organizations. In contrast to other organizations, PADI and the ACMG were affiliated with international standards. Wickham mentioned the

industry wide collaboration to design a set of minimum standards organized by the WRSTC. These standards don't directly influence the design of the credentialing process; however the standards do delineate a minimum standard to which PADI scuba diving instruction must adhere. A slightly different perspective was uncovered from Tucker at the ACMG. For mountain activities there are two common international standards, "there are UIAA standards, these are recreational standards not an international commercial standard," such as the IFMGA. Therefore, for mountain based activities in Canada one of the factors that influenced the credentialing process was the organization's affiliation to a specific set of international industry standards. This difference is especially highlighted between the ENEQ, a UIAA affiliate, and the ACMG, an IFMGA affiliate. Both organizations credential many of the same activities; however, their affiliations influence the design of the credentialing program.

**Credentials and access to employment.** One of the major frameworks in credentialing theory is the credentialist perspective which is concerned with the segmentation and stratification effects of credentials on society. Credentialist theories are mainly interested in access to employment and the potential for credentials to unjustly restrict access to employment. For example Weber (1951) and Berg (1971) both suggested that credentials were not based on the technical requirements of most occupation and instead were social tools to prevent access certain occupations. As one could imagine, a credentialing organization was unlikely to share this perspective. However, all organizations readily acknowledged the ability of a credential to increase access to employment while also limiting access to employment for those without a credential. An important distinction that will become clearer in following sections is that, unlike Weber and Berg, the interviewees



resoundingly agreed that the credentialing process for outdoor instructors did improve the skills and competence of an individual to safely and effectively provide instruction.

***Gain access to employment.*** An elitist perspective of credentials was not expressed by any of the interviewees, however it was common for interviewees to share an opinion that an important role of credentials was to provide more opportunities for employment. Logically many interviewees viewed a credential as a “career path.” Having a credential through the ACMG that was “associated with the IFMGA allow[ed] [instructors] reciprocity...for working in countries that are regulated by the IFMGA.” For PADI scuba instructors, a credential was critical to accessing employment:

If you wanted to get a job in the Caribbean, Hawaii, or South Pacific, again you are looking at 75% of the time those facilities are PADI facilities and you are going to want to be a PADI instructor. It definitely makes you more marketable.

In the case of Paddle Canada, the barriers to entering the profession were very low and “if someone wanted to become an instructor all they essentially need to do is sign up for the course, have a few basic skills to be able to paddle, and meet the prerequisites.” By meeting these basic requirements the credential would allow instructors to travel throughout Canada and find employment teaching students. A credential from BASI gave ski instructors the ability to “teach anyone whether they are in a club or whether they are in school, and what they can do is charge money for it and start at the beginning and teach beginners.” For BASI, this access to employment emerged as one of the major themes explaining the purpose of the credential. However for other organizations, such as ACMG, the ability to access employment was not the purpose of the certification process or training, however, “it certainly is a helpful byproduct.” Or as Tucker explained, “the usability [of the certification] comes as a result of, but it doesn't shape the training.” One of the benefits of earning an

ACMG credential in Canada was that, “anybody that is qualified as a mountain guide here would be able to go work in any national park.”

***Restrict access to employment.*** Despite the positive nature of a credential to increase access to employment, the opposite yet parallel rationale was perhaps even more prevalent. In many ways outdoor recreation instructor credentials also served to restrict access to employment. In Canada, there are “no legal requirements, like a lawyer who has to write the bar,” to be an outdoor instructor. Although there are not specific laws in Canada, “there are some jobs and some work that is a right to title or right to practice... so you have to have that certification in order to practice.” There is value in earning a credential because a credential gives some instructors access to some areas while preventing other outdoor activity instructors from accessing employment in these areas. In other words, “pretty much anybody can hang up a shingle and call themselves a [guide or instructor], but they can't get permits to operate in some of the land management areas and some of the key mountain areas.”

The Canadian government does not [have any rules or requirements for being an affiliated guide]. But there are certain land managers, such as national parks and Alberta provincial parks that require ACMG membership, or [another] equivalent certification, as a minimum standard.

Johnston confirmed these requirements for paddling instructors as well,

Right now British Columbia is the only area that has an official policy. In some of the national parks you have to have either a Paddle Canada certification or SKGA to run in a national park. But they are probably going to roll out [certification requirements] over the next two years across Canada for all national parks.

Similarly, in New Zealand, “at the moment you don't have to be [certified]; it's better if you are, but there is no law saying you have to hold a certain qualification.” New Zealand operates with a less formal structure of credentialing requirements. Instead of formal rules set

by national or provincial parks that limit access to employment in a specific location, industry has evolved to self-regulate the need for credentials.

In the early days there were a lot of cowboys about. I know this after spending a long time in the outdoor industry, and there were a lot of cowboys which probably got through a lot of things by the skin of their teeth. But with a lot more qualifications and measurable standards around, a lot of those people are disappearing or they are training and being assessed to a certain standard.

Therefore, the rigor of the credentialing process has eliminated some people from accessing employment as an outdoor instructor; while simultaneously the high perceived value of these credentials (that have been designed specifically by the outdoor industry) is also limiting access to employment for persons that do not have these credentials. Cowie remarked on a recent trend among employers and noted that,

If you have quals it is definitely easier to work in the industry. It never used to be [that way] but it is getting harder [to work as an outdoor instructor without qualifications]. You can come along in the industry, but you have to gain quals reasonably quickly. Whereas in the early days you might have been working in industry for a wee while before you actually needed to gain some qualifications.

An example of where it may be the hardest to find employment without a credential is scuba diving instruction. Although most countries do not have laws restricting employment,

If you are not a certified instructor that holds a credential you are not marketable, basically almost anywhere. Very few places take people diving that are not being guided by a professional or training by a professional ... the industry is very much around people having proper training in order to dive or to teach others.

In fact, a scuba diving instructor credential is so important, that it is nearly impossible for person to teach scuba diving without a credential. Not only was a credential necessary to teach diving but specifically having a certain type of credential, such as a PADI scuba instructor credential, was enormously valuable for finding employment

A credentialing organization with even more severe segmenting effects was the case of BASI in the U.K. Many years ago, “the British Ski and Snowboard Federation decreed

that you should have licenses to teach people, to be responsible for youngsters and for championships.” From speaking with Davidson and learning more about the U.K system of licenses, regulations, and organizational governance, it appeared that the structure of the credentials was designed precisely to protect the professional snowsport instructor ability to teach. It is actually illegal for non-credentialed instructors, or even instructors with non-BASI credentials, to teach in many scenarios. Davidson also expressed a variety of other requirements that prevented access to employment,

It is not just a ski instructor’s license. You’ve got to have a CRB check, criminal records check, to make sure that you are a suitable person to be involved around minors, and then you have to have a first aid course. You do a child protection module and as you move up through the chain you add on other elements.

These standards evolved to restrict access to the profession of snowsport instruction.

However limiting access by requiring background checks and child protection laws seems like very different social stratification intent than the credentialist theories portrayed by Weber and Berg.

*For the good of the public and industry.* Although credentials are clearly perceived to improve the employability of instructors, none of the interviewees viewed the primary purpose of an outdoor instructor credential as restricting access to the professions.

Interestingly, the opposite of the elitist and social stratification aspects of credentialing theory were found among outdoor recreation instructor credentials. Yes, credentials were tools used to grant or limit access to employment in the field of outdoor education, however there was a flexible and welcoming approach for new and experienced instructors to gain access to instructor credentials for the “good of the industry.” For example, common remarks such as “all those who are interested in instruction” were welcome, and most of the

credentials were especially receptive to prior experience. That did not mean that these organizations were just giving away certifications, instead as Cowie explained,

If a potential instructor has done a lot of work and has actually done a lot of personal time out in the activity they want to instruct, then they can fly through an assessment quite easily... they'll always be some sort of challenging point in that assessment for them. But training for some people... even that is big challenge for some people.

However, a person's prior experience (or lack thereof) didn't necessarily preclude them from undertaking training to earn a credential. Instead the dominant opinion was that having more instructors credentialed would be better. Better for the public and better for the industry as a whole. As March explained,

[The primary purpose of the certification] is to help grow the sport. We want to get more people on bikes and enjoying riding bikes and this is a great certification for helping that. That is why it is out there, and getting so popular. We are trying to educate more instructors to educate more riders.

Especially in the case of scuba diving, the willingness to credential new instructors went beyond a desire to educate and grow the sport. Instead, there is a real need for people to become certified instructors because people are required to be certified to participate scuba diving and "[PADI] needs people certified to be able to issue those certifications."

Finally, an important theme that appeared during my conversations with representatives from these organizations was a passion for teaching the outdoor activity that went beyond simple job satisfaction. Although in many cases a credential increased an outdoor instructor's access to employment, interviewees expressed a much more profound opinion. A credential was really a tool. A tool that helped to protect the public from harm by providing quality training and a tool that gave instructors access to employment and the ability to share their passion with others. Wickham from PADI summed up this feeling the best, "they do it for the love and they want to share that unbelievable experience with

others.” A credential provides the mechanism to share opportunities of outdoor recreation with all.

**Signaling effects.** Another major theoretical framework for understanding the effects of credentialing is signaling theory. There are many different variations of signaling theory, but essentially the signaling concept is that a credential is a representation of skill or ability. A credential can serve as a simplified proxy for experience that allows a person to more efficiently evaluate another person’s abilities. It was not required for interviewees to be intimately familiar with this theoretical framework to understand the basic principles. Two themes related to signaling theory emerged naturally through the course of the conversations: the value of a credential to signal to both the public and potential employers.

**Public signaling.** A major theme that appeared throughout the different layers of discussions was safety. Even more specifically within the scope of signaling effects was the concept of trust. A common opinion was that an outdoor instructor credential was a way for the public to understand that minimum safety standards have been met through training and that a credential was a way to signal to the public this sense of trust. “While we can’t stop people from hanging out their shingle [claiming to be an instructor/guide], we can raise the profile of minimum certification levels with training etc. for our industry and let the public decide.” The credential helps the “public know that the people they are working with have met minimum standard.” As Congdon explained, this assurance of a minimum standard signals to the public that, “the public can trust that the risk management that they experience during that adventure / experience / course they happen to be taking, and that their safety is paramount.”

A credential was also viewed as, “something that builds confidence to your students and guarantees to them that you have some kind of background knowledge.” Johnston conjectured that one of the primary purposes of a credential was to signal to the public that an instructor knew what they were talking about and there was value in a credential serving as a proxy for knowledge. “Because they can hold that card in front of students who would doubt them and say 'look, someone said I know what I'm doing'.”

The ability of a credential to signal a minimum standard and to build confidence among the public were intertwined themes that occurred throughout the interviews. Across countries and activities, credentials were perceived as, “giving the public a lot more confidence in the people running the activities,” and that these people responsible for educating the public have “met a minimal standard to be working in the industry at that level.” And in some areas, outdoor education organizations have begun to notice that the public is demanding this signal and “what ends up happening is a customer/student now asks, who are you certified with?”

A recent trend in outdoor recreation education that highlights the public signaling attributes of a credential is the proliferation of outdoor registrars. In New Zealand, “there is a register that you can put your qualifications on and the public can go and look, and you can't get onto that unless you have the proper qualifications.” As previously mentioned, these types of outdoor instructor registrars are in Australia (NOLRS) and New Zealand (NZRRP). There is also a U.S outdoor instructor registrar that was recently developed by WEA (2013a) called the International Registry of Outdoor Educators and Leaders (IROEL). However, unlike registries in Australia and New Zealand, the purpose of the IROEL was to network and signal to potential employers.

Although rare, a few times interviewees also mentioned an alternative perspective on the signaling effect of credentials that contradicted the opinions previously discussed. Occasionally it was reported that some instructors might “chase certification cards” as a goal, or in order to achieve “recognition.” Unlike Brown’s (2001) description of credential accumulation for the purpose of job security, the “sheep skin effect” (p. 19), the signaling intent was not for personal profit or public usability. Instead the credential served as an outward reflection of personal achievement. Some instructors, “they never teach; they just wanted to earn that medal so to speak, to show that they got the ability. So there are a lot of people that just do that... for self satisfaction.”

***Employer signaling.*** A common opinion expressed by those interviewed was the value of a credential to signal to an employer the skills and abilities of the holder of the credential. Interviewees were inconsistent on whether the ability for a credential to signal to employer was important or simply a result or a byproduct of the credentialing process. For example, Congdon outlined an opinion that credentials for instructors could,

Insure that they can operate at a level of proficiency that employers would be interested in. So it means that the employer can see that this person is certified to a minimum standard and helps them get a footing in the industry. It is not the only factor but definitely a part of it.

Davidson explained that in the case of BASI in the U.K, “A professional ski instructor certification allows potential employers to see that you have reached a certain standard and it allows you to be paid. Also the license gives you liability and indemnity.” Davidson went on to say,

If the person wants to have a job as a ski instructor and get paid for that job then they need to be able to prove to a ski school or organization that they have met a required standard. So if they are a BASI instructor they are issued with a license annually and that license is accepted internationally and nationally.



Wickham conveyed similar effects for a scuba diving credential,

The whole reason they need to be certified as instructors is because that becomes the verification to others [to employers] that they are competent in being able to teach and supervise other divers.... you've got to meet all of those requirements to show that you have that ability.

In each of the cases above, interviewees used words that illuminated the signaling aspect of a credential. Words and phrases (such as, “prove,” “show,” or “it means the employer can see”) described a purpose of the credential as demonstrating competency to employers without actually performing those skills.

The mobile and often transient nature of the outdoor instructor profession means that the portability of credential and the ability to signal competence across a nation or around the world was an important characteristic of the outdoor instructor credential. Unique to outdoor education, most professional outdoor instructors are not in a classroom or in a defined space; instead they conduct their classes in public spaces. Therefore these signaling characteristics apply not only to employers but also to government land managers who “want to know that people operating on their lands meet that minimum requirement in terms of standards and knowledge and safety practices.”

Credentials were perceived as an important device for clear and efficient communication between outdoor instructors, employers, and public space managers. Johnston suggested that credentials could serve as a, “quick hit for someone that just wants to look at [a person] for five seconds and make a judgment whether to hire [them]” and therefore had a role in “how people view you and the credibility that comes with it.” The signaling power of the credential was especially important for traveling throughout Canada and finding employment as a paddling instructor. Johnston recommended to potential instructor candidates that “if [they] are ever going to travel outside of Ontario you have to go

with Paddle Canada because otherwise your certification doesn't mean anything in any other province.” In other terms, a regional instructor credential doesn't have the same signaling ability to employers across a nation. This was especially the case for international certifications such as the PADI scuba diving instructor and IFMGA affiliated ACMG mountain guide qualification. For these credentials, the signaling aspect of the credential was critical to accessing employment in some areas.

During the interviews there were a few instances in which interviewees questioned the validity of these signals. For example Johnston expressed,

In my opinion the more important one is not how people view you, but how good you are on the water. There are lots of people I know that are beginning instructors, and they don't have a high certification but they are better instructors than those who have a higher certifications.

This did not come up often, however it is an interesting case of a disconfirming perspective and provides a nice segue into the final major theory of the purpose of credentialing, human capital theory.

**Human Capital.** By far the most common perspective on credentialing was the value of training and assessment to improve the skills of outdoor recreation instructors. As previously discussed, within the field of outdoor education many credentialing organizations have very close connections to the professional industry. These relationships mean that there is a fluid and accurate valuation of the credential. In the case of outdoor recreation instruction, this confirms Becker's (1964) theory that employers have a clear understanding of the meaning of the credential. Much evidence emerged to support the skill building aspects of the credentialing process that included both general and specific training that created better instructors.

*A minimum standard.* In the end, training outdoor recreation instructors to a minimum level of competency was the primary purpose of the credentialing process for most organizations. Tucker believed passionately that the AMCG didn't "create a certification so that guides have skills to get jobs. We created it so that guides can achieve a minimum standard to protect the public interest." For Cowie, the purpose of credentialing was "working towards best practice." Others expressed the main benefit of credentialing to instructors is "education just like any other educational experience. It exposes them to best practice in the industry and the community, and it insures that they can operate at a level of proficiency." By "make[ing] sure that that person has a minimum skill set and background knowledge and is able to pass that information" along to new participants, credentialing organizations can promote more participation and safer practices for the public.

*Training is necessary.* Not only is the broad concept of credentialing important for promoting best practice and a minimum standard of competency, but the training component of the credentialing process is critical to the success and safety of instruction. The outdoor environment has many unique challenges. Tucker provided a good explanation for why training outdoor instructors was so important:

When teaching a course or taking people out on mountaineering trip there is this constant moment to moment assessment of what is going on with the client, what is going on with the terrain, with the hazards, and putting all that together to determine how to provide the best adventure for the client without creating undue risk. It's a huge balancing act and you need training in order to do that. Having been through many of these [training] courses myself, I recognize, as a recreationist, there is no way that just the experience of climbing or back-country skiing would provide me with the training that I needed to keep other people safe.

This difference between a recreationist who is competent in the outdoors and an instructor capable of teaching others was a distinction that was also made clear by Davidson:

I think there is a difference between a ski instructor and a ski enthusiast who thinks they know how to ski. To be honest, you don't need a qualification to teach someone to ski, nor any other type of snowsport, but if you want to teach them to do it well and to have a good performance then you need to know what kind of standard there is, and how to attain that standard.

Although Tucker and Davidson expressed different perspectives, both highlighted the importance of receiving training to understand the fundamental concepts to be able to teach effectively and safely the skills needed to participate in the activity. Both believed that there was knowledge that wasn't readily apparent to an experienced participant. Another important attribute of the credentialing process was not only the training, but according to Tucker, the assessment process had a lot of value:

There are lots of training courses out there that don't offer certification, but the value of certification is the assessment process. Because it is one thing to take some training, but it is another thing to actually demonstrate that you've been able to use that training effectively.

*Intangible benefits.* A model of credentialing that supported “personal growth” was an important factor in the design of the credentials. Although much was discussed about the technical value of training and how participating in the credentialing process improves technical and teaching skills, another less obvious purpose of an outdoor instructor credential was also to provide instructors opportunities to grow in intangible ways. Wickham suggested that “what an instructor is taught is being able to make a good judgment call about what may be an unsafe situation.” Likewise Cowie thought that the credentialing process “improves [instructors’] thought processes and what they've got to be aware of.” Improved judgment and thought processes were suggested as being a result of training from interacting with other professionals. The networking effect of the credentialing process was one of the major values of participating in training. As Johnston described,

The other benefit is taking a course with others. You learn from each other and become part of an instructor community.. so that is another big thing... you could go learn on your own and you could learn how to teach on your own, but you are not really plugged into the community and you are much more effective of an instructor if you can share with other professionals.

The process of participating in training, networking with other professionals, and being challenged to perform at a minimum standard that is often set at a very high level, has another benefit that is not outlined in a specific training item or assessment checkbox. It was Tucker's opinion that intangible skills are "often overlooked as far as credentialing goes. There is the process that you go through, the rigor of the process changes you and in most cases it improves your ability to deal with the world."

***Better technical skills.*** All interviewees described a major purpose of credentialing as improving skills in both technical proficiency and teaching ability. These skills were often improved through specific skills courses that were designed to focus on the technical subjects of the curriculum. For BASI,

The technical course ensures that you can reach the technical standards required. There is an element of teaching in it, because some of the elements you might not have covered in your own experience and certainly not to the standard that is required to enable you to instruct other people.

Even if there wasn't a specific technical course, the goal of the training process was "to bring [instructors] along and educate them to get them to that skill set where they are competent."

March explained that one of the main purposes of the credentialing process for mountain bike instructors was to,

Get them to become better mountain bikers, get them to understand a lot more of the techniques that are used and to help them understand how to breakdown things. And what they are going to get out of that process is they are going to get more confidence and understanding.

During training and during the assessment, the credentialing process was designed to improve the skills of the teachers. Cowie described this as,

There is a lot of up-skilling that goes on. Even during an assessment a person might not be up to assessment at the time: if they aren't then they can take a lot of learning away from that assessment and so that when they come back they will be even better than when they came the first time around.

The framing of the assessment process as an educational tool was also expressed by

Wickham:

If they can't meet the minimum base line then they have to go back and remediate and prepare again. We have several types of [assessments] because these people need to be able to instruct student divers in several areas. Again we know that it takes many senses and different components of learning to really reach what we call mastery or competency.

The PADI credentialing processes uses written quizzes and knowledge reviews in conjunction with performance assessments to continually provide feedback to instructor candidates. The goal for PADI, and other organizations, is to use training as an opportunity to refine skills to a level of mastery that prepares instructors to effectively teach students in a variety of conditions. The technical skills training and the teaching ability are inextricably connected. As Johnston suggested, “the value of training is two-fold, the way you paddle gets better and so does coaching, and the breakdown of how to teach the stuff.”

***Better teaching skills.*** Both Johnston and March mentioned a process of “breaking down” how to teach the material. Teaching instructors how to teach the material was a pivotal piece of the credentialing process. In many cases, the majority of the training process was focused on preparing instructors to be better teachers. Many of the instructor candidates have years of experience and knowledge in the activity, however what is often missing from their repertoire are the skills required to effectively transfer this knowledge. Davidson’s view was that training,

Makes them better instructors because you can have really good skiers, who are world class skiers, but that doesn't mean to say that they can instruct or teach. They might be good at what they do, but it doesn't mean to say that they can get their message across.

Davidson continued to explain that “the teaching course teaches you to teach to the same methodology. And then you go through the process of describing what the different elements are in the BASI course, and how to apply them.”

Not only are instructors given the tools to effectively teach the material, but also educated on how to assess student competency. During the certification process Wickham described how instructor trainers, “are evaluating the instructor’s ability [to teach]... but also their ability to recognize problems and issues that the student is having and how to correct those in a positive manner.” Instructors learn the more subtle aspects of teaching during training.

They also need to know how to teach a skill to a student because a single skill could be made up of several sub skills and sub steps and they need to be able to identify areas where students may be having a problem and correct those. They also need to be able to recognize a student that holds mastery so they can pass them onto the next skills.

In some cases, the certification process may involve “weeding out” people who “may not have the personal attributes to be able to manage a group, and to speak clearly and convey themselves in a professional manner.” However according to March the main goal of training is to help instructor focus on:

Body language and other sorts of small details that come together to make a great instructor... We can make their weakness stronger, we can point out what they can do to better themselves. The skills themselves they aren't very technical. But we need to educate people to understand that we need them to use these techniques and the progressions [to become effective instructors].

Regardless of the organizational background, the country, or the type of activity the interviewee was associated with, everyone felt that training improved the skills and abilities of instructors and better prepared instructors to perform their jobs educating students.

***Accountability.*** Although accountability is not a theoretical framework that has been previously discussed, accountability was a recurring theme in discussions about the purpose of credentials in outdoor instruction. The concept of accountability is closely connected to the idea of the importance of having a minimum standard. The difference between the two themes is that a minimum standard was often framed as an outward projection of standards for the safety of the public; while accountability was an inward projection of supervising and managing a loosely affiliated independent association of instructors. In the case of BASI, the concept of accountability was for the purpose of consistency across instructors. “It’s not just getting the message across; it’s getting the message across in a specific standard that is recognized and recognizable by the rest of the international skiing community.” However, by also collecting instructors under the umbrella of minimum standards, “then as an association [the ACMG] can stand behind our members. We know that they have all received at least a minimum level of training.” Congdon continued to explain, “that means maintaining professional standards, and participating in ongoing professional development.”

At the end of the day if something goes wrong and there is an injury or a death, we don't like to talk about those things, but if there is a death and [and instructor] finds themselves in coroners court and the court ask them, 'well what training did you do?' what are your qualifications?' At least [the instructor] can show that [they] have covered both of those areas... and it shows that [they] have gone a long way towards working towards best practice.

Maintaining these processes of professional standards and development, “leads to accountability” because the organization is then in charge of maintaining and the process of “validating] and verifying instructors ability to teach others.” Wickham expounded on this



concept as an “issue of quality management.” His opinion was that it is the organization’s responsibility is to prove that an instructor has the proper abilities and skills. Throughout different organizations and credentials there were a huge variety of requirements for maintaining an instructor certification. However, despite these differences, by consolidating instructors into a credentialing system an organization is attempting to maintain a minimum standard for the quality of outdoor instruction and providing consistent standards for instructors.

**Networking.** The final unexpected development from the interviews was the concept of networking. Rosenbaums (1990) theory of network signaling was based on the idea that credentials within a specific network are more trusted and valuable. Although this may be true for the case of outdoor recreation instruction, that was not a theme that emerged from the interviews. Instead the networking benefits were more closely aligned with the credentialist concept of stratification. Except in the case of outdoor instruction, the social group was a diverse somewhat marginalized group that used the power of common coordination for the good of the organization and industry, and not for elitist control. Congdon suggested that a credential,

Gives [instructors] a common voice, especially if they are part of a professional association. There are always politics in terms of land access... and you can have representation as part of a group and then you have the opportunity to have some influence over the land managers and be able to maintain access to areas to work.

Not only does a credential give an outdoor recreation instructor a united voice for access to work, but being part of an organization also connects instructors to a network of potential occupational partnerships and collaborations.

## **Phase 2 - Summary**

In order to explore why standards and credentialing elements were different I sought to understand the perceived purpose of outdoor instructor credentials, the impact of the credential on the instructor and society, and what factors might have influenced the design of the credentialing requirements. Within the profession of outdoor recreation instruction, it was clear that credentials play an important role in protecting the public. One of the ways in which credentialing organizations achieve this purpose is by managing and training instructors to a common consistent minimum standard. The requirements for achieving a minimum standard of competency varied for many different reasons. These opinions were based on the interviewees' perspective of developing and managing the credentialing process for their respective organizations, combined with data collected from organizational documents and web pages. However, those interviewed were often not familiar with the intricacies of other credentials and organizations and therefore could only speculate about the rationale for the development of credentialing requirements outside of their own organizations. This confirmed one of the major benefits of this study - to share information among organizations and fields.

As could be expected from the perspective of a credentialing organization, the theme of safety was a major focus of the design of the credential. However, interviewees revealed that there were many ways that the goal of safety was achieved. For organizations that were affiliated with an international standard, safety was achieved through rigorous training to a minimum standard of competency. Often this involved evaluating highly proficient outdoor enthusiast using selective minimum requirements and then training instructor candidates to use a specific methodology. Another factor that helped to improve the safety of the industry

was the process of networking and gathering instructors together to become certified or renew a certification. The opportunity to take highly independent professionals and organize them into a similar space, where ideas could be shared and best practices could be shaped, was also suggested to be an important component for finding new ways to better protect the public. The focus on safety and training, and the improvement of skills and decision making as a result of training, strongly supported the human capital interpretation of the role of credentials in outdoor education. The core philosophy of human capital theory is that purpose of a credential is to improve the skills and abilities of a person. From the credentialing organizations' perspectives, the primary role of a credential was to train and prepare instructors to deliver instruction based on best practice. The benefits of this training were increased skills for the instructors, better safety for the industry, and more consistent instruction for students.

Although there was a strong support for many aspects of human capital theory, all interviewees also readily acknowledged the role of credentials in controlling access to work and signaling skills to the public and potential employers. Interviewees explained that in many cases local and national regulations prevented non-credentialed instructors from working in designated locations. It was not the intent of the organization to prevent access to employment; instead the goal of the organization was to educate high quality instructors. Land grant organizations, such as national parks, independently requested credentialed instructors that had the specific knowledge and skills to safely and effectively teach in these areas. This supported the opinion that credentials have a role in limiting access to employment, but credentials also served to signal to local and national agencies a level of competency. In the U.K, outdoor activities regulated by the national governing bodies

required teachers to have a credential and these requirements were very much designed to control access to employment. In the cases of ACMG and PADI, the signaling capability was especially important for employment in international locations.

Contrary to the previous examples, it was suggested that in many locations, and for certain types of employment, a credential was not a requirement to teach an outdoor activity. New Zealand and the U.S had very few limitations or credentialing requirements for teaching outdoor activities. Even in the U.K, about half of the activities did not require a credential to become an outdoor instructor. However, in many cases it was suggested that a credential was still a useful tool for signaling to employers a person's ability. For example, in New Zealand a credential was not required to teach most outdoor activities; however, Cowie noted that there was increasing pressure among industry professionals to only hire instructors with the proper qualifications. Interviewees also noted that many outdoor instructors operated independently from businesses and other organizations. Therefore, in many cases a credential served as a signal to the public instead of employers. A credential signaled to the public that a person had attained a minimum level of skill and knowledge to teach the outdoor activity.

The debate over the role of credentialing in society is an important consideration for evaluating the design and purpose of outdoor instructor credentials because these theories serve as a framework for understanding the fundamental differences between credentials. A credentialing organization that ascribes to the human capital theory would necessarily design the credential to focus on training and assessment in order to build skills. This focus may influence the design of the credential to include a longer training period and more rigorous assessments. Although all interviewees incorporated this perspective, ACMG, PADI, and

Skills Active are good examples of organizations that intensely focused on the skill building, and the design of the credentials reflected this perspective of credentialing. An organization that that was not motivated with the intent to improve skills through the credentialing process would be less inclined to design the credentialing process to include these requirements.

The NOLRS registration credentialing schemes was an excellent example of an organization that was more focused on signaling skills than developing skills. NOLRS did not have a training requirement or formal assessment process and instead provided a checklist of requirements for potential instructors. The design of the NOLRS credentialing scheme may have been influenced by signaling theory. The NOLRS credential was designed as a tool to signal to employers that NOLRS instructors had fulfilled experience requirements, but instructors did not receive specific training to achieve these standards. Support for signaling theory also influenced other characteristics of the design of a credential. Organizations that shared the signaling value of a credential would also likely incorporated RPL into the design of a credential. RPL allowed instructor candidates to skip training, and in some cases the assessment. RPL reduced the importance of the role of a credential in building skills, which implied that an organization that uses RPL was more interested in allowing the credential to signal achieved competence than build skills.

Finally, the third major theoretical framework, credentialist and control theory, had important implications for the design of a credential and the similarities and differences between credentials. Organizations that focused on limiting access to employment may have designed of the credential with high barriers to entry. These requirements might include: high membership dues, difficult prerequisites, arbitrary experience requirements, extensive training cost, and extremely challenging training and assessment. All of these requirements

would eliminate all but the most elite and fortunate candidates. However this interpretation of credentialing theory was only applicable to situations in which a credential was required to teach an activity. Credentials based on control theory may not allow for RPL. PADI was an example of an organization that included some elements of credentialist theory into the design of the instructor credentials. Wickham and the PADI website described a series of complex prerequisite hurdles, expensive and challenging training, a lack of RPL, and limited access to employment without the PADI credential. A consideration for analyzing the PADI credential is that all of these requirements were framed as important components to becoming a highly specialized and skilled educator. According to Wickham, these requirements were imperative to creating knowledgeable instructors who could properly teach safe scuba diving to the public.

One of the most fascinating findings from this study was that credentialing is not dominated by a single framework that explains the purpose of a credential. A single credentialing theory is also insufficient to explain the role of credentialing in influencing the design of outdoor instructor credentials. Instead, there was consensus among those interviewed that there were many different reasons why credentials have developed similar and different characteristics.

Geography and the activity type were two closely related characteristics that influenced the design of a credential. Outdoor activities are performed in many different environments that require different skills. From the mountains to the ocean; and all the snow, rock, ice, sand, rivers, and waves in between, it was obvious to the interviewees that different skills and were needed to teach in these different environments. Some of the environmental challenges and activities had more risk than other situations. These

characteristics not only affected the training process, but also the pre-requisites, credentialing levels, and membership requirements. For example, ACMG and TRU designed clear distinctions between the requirements for becoming a hiking instructor in low altitude environments and a high-mountain mountaineering instructor. The training was shorter and the prerequisites were less demanding to become a hiking instructor. Likewise the environment often dictated the risk of an activity and the design of different instructor levels.

The environment also influenced the design of a credential in other ways. Organizations in larger countries have more challenges coordinating training schedules for instructors coming from farther distances; therefore Johnston explained that in the case of Canada, training was often compressed into longer single training sessions instead of spreading out training over multiple weeks. The environment encouraged different cultures among outdoor communities in different countries and different regions. More access to open spaces was perceived to promote longer expeditionary style participation over shorter single-day participation sessions. Interviewees suggested that trainings evolved to have different requirements for environments with more extreme access.

Another important characteristic that shaped the design of outdoor instructor credentials was the specific culture of different organizations. Often the ideals, education, and background of the organizational founders influenced many different attributes of the credentialing process. March, from the IMIC, provided a wonderful example that included his passion for teaching physics to help instructors understand why mountain bikes performed in a particular way. This shaped the training program and how instructors were assessed. An organization that did not approach mountain bike instruction with the same

background required different training elements and assessments. For example, the PMBI did not require a written test, but IMIC did require that instructors pass a written test.

Politics and legislation within different countries also determined in the design of credentials. Although politics were less of an influence than I had anticipated, in many cases affiliation with national standards dictated the design of credentials. Davidson and Wickham even described some locations in which local laws dictated how instructors were credentialed. The presence of regulation for some activities and not for other activities was a distinct reason for similarities and differences in credentialing requirements. In many cases industry was a more important influence than the laws or standards of a government. Credentials voluntarily evolved after historical tragedies and industry stakeholders in many cases helped credentials maintain relevance. The role of industry in shaping credentialing programs was specifically highlighted by Cowie and Tucker; however this influence seemed to span across countries and activities.

During the second phase of research I focused on exploring and understanding why outdoor instructor credentials shared some similarities in requirements yet also had many different standards for evaluating competency. Through conversations with program managers, directors, and developers of select outdoor credentials, and further analysis of organizational documents, I uncovered many reasons that helped to explain the relationship between credentialing theory and other factors that shaped the design of credentials. In the final chapter I mix and combine all the data to create a complete picture of credentialing in outdoor instruction and develop a new theory of credentialing.



## **Discussion**

### **Chapter 5**

The purpose of this research was to understand the fundamental characteristics of what is required to become a teacher of outdoor recreation activities and the theoretical rationale for commonalities or differences in the development of the credentialing requirements and standards. This research was conducted in two phases. The first phase involved conducting a census of outdoor instructor credentialing requirements for a purposefully selected sample of credentialing organizations that met criteria based on: country characteristics, activity type, and organizational specifications. The second phase entailed interviewing representatives and reviewing documents from select credentialing organization based on a maximal variation sample design. This sample design highlighted six organizations that represented the most popular outdoor recreation activities and included three major types of organizations from four out of the five sample countries. These organizations were further diversified by characteristics such as, organizational size, international affiliations, and types of activities credentialed.

The previous section provided data and detailed descriptions of the results from the data collection and analysis process for each phase of research. From the analysis of organizational document for 155 different credentials, seven major themes emerged that described the characteristics of the credentialing process for outdoor instructors. The themes of, *organizational affiliation, membership requirements, prerequisites, certification structure, training, and assessments*, were composed of 38 separate categories that provided

a unique perspective on the research questions that were the core focus of this study and served to illuminate the credentialing requirements for becoming an outdoor activity instructor. The categories evolved throughout the constant comparative analysis process. Often when analyzing documents for a different activity, or encountering a new country for the first time, the categories would change dramatically to include new perspectives, until eventually a semblance of consistency emerged and no new categories developed. Understanding the results from the first phase of research was critical for designing the sample for the second phase of research and preparing interview questions. The interviews and secondary analysis of organizational documents also encouraged me to reexamine the results from the initial phase of research for new insights.

To answer the first and second research questions, there were many examples of the types of required elements and assessments used to credential outdoor instructors in the selected countries. The Phase 2 results section included descriptions of the various perspectives of representatives from a diverse group of organizations on the phenomenon of credentialing for outdoor activity instructors. The shared pattern of opinions from interviewees helped to provide insight into the third research question and explain possible theoretical frameworks for why credentials for outdoor education instruction have developed generally the same requirements with different standards. In the following sections I elaborate on the similarities and differences between the selected countries' approach to credentialing outdoor instructors and explore the connections and the themes developed during both phases of research. Integrated throughout the presentation of key findings I highlight the significance of these findings, the relationship of these results to prior studies, and I discuss exciting areas for future research.

To avoid pedantic analysis of 5,700 data points and comparisons of 62 organizations across all five countries, I have highlighted the characteristics of outdoor instructor credentialing that have the most significance for the field of outdoor education and provide the most benefit to increasing public understanding about outdoor instructor credentials. For an overview of the credentials for each country please see Appendix E - A-W or the previous results section for more detailed information from each country.

### **Organizational Affiliation**

The five selected countries represented different types of educational systems and different approaches to outdoor recreation education. Australia and New Zealand shared the similar characteristic of having a national educational framework that included vocational activity specific training for some outdoor activities. Australia, Canada, New Zealand, and the U.K also had national coaching schemes that included coaching credentials for some activities. The most common outdoor education activities to be affiliated with a national education scheme or a coaching scheme were: canoeing, kayaking, mountain biking, rock climbing, sailing, and surfing. By far, the country to have the most credentialing programs affiliated with a national standard was Australia (see Table 5.1). Strikingly, none of the 33 credentialing programs in the U.S were affiliated with national standards. During the interviews, Wickham noted that the dive industry in particular was strongly opposed to government oversight and regulation; however the complex state legislation system in the U.S was also another major factor for the lack of national standards.

More credentialing organizations were affiliated with international standard setting organizations than national standards. This consistency was largely due in part to the overrepresentation of scuba diving instructor credentialing organizations affiliated with the

Table 5.1

*Number (Percentage) of Outdoor Instructor Credentials with International and National Affiliations in Selected Countries*

Affiliation Type	Australia (n=40)	Canada (n=24)	New Zealand (n=32)	U.K (n=26)	U.S (n=33)
International	13 (33)	9 (38)	14 (44)	13 (50)	13 (39)
National	24 (60)	4 (17)	8 (25)	11 (42)	0 (00)

WRSTC in each country. The mountaineering organization IFMGA also had a representative organization in every country except for Australia. The absence of the IFMGA in Australia can largely be attributed to the environmental conditions and lack of high alpine environments. Other international organizations that were represented in each country were the IKO, the primary kitesurfing credentialing organization, and the ISA which provided surf and paddleboard credentialing in every country except Canada.

Tucker from the ACMG, an IFMGA affiliated organization in Canada, acknowledged that the two primary benefits of adhering to international standards were that these standards helped to enforce a consistent and high level of training that also allowed ACMG members to work in other IFMGA affiliated countries. Tucker's perceived value of an international affiliation reinforced all three major theoretical frameworks in credentialing. According to Tucker, human capital theory was supported because training improves outdoor instructors' skills to at least a minimum standard. An international affiliation also signals to the public the quality of an instructor's training and signals to potential employers around the world their ability level. Finally, an international credentialing scheme may also fulfill a credentialist perspective of credentials by preventing non-IFMGA guides from gaining access to work in some locations.

The interviewees hypothesized a variety of reasons for why credentials might have developed different affiliations: *environment, activity type, personal/philosophical,*

Table 5.2

*Number (Percentage) of Outdoor Instructor Credentials with Credentialing Scheme Requirements in Selected Countries*

Credentialing scheme categories	Australia (n=40)	Canada (n=24)	New Zealand (n=32)	U.K (n=26)	U.S (n=33)
Different levels	37 (93)	18 (75)	26 (81)	23 (89)	25 (76)
Environmental conditions	31 (78)	15 (63)	22 (69)	19 (73)	19 (56)
Teaching experience	32 (80)	10 (42)	18 (56)	18 (69)	21 (64)
Ability/skills	36 (90)	16 (67)	25 (78)	22 (85)	24 (73)

*political/legislation, and industry.* The political/legislation factor was an important influence on a credential's affiliation to a national standard. Industry affiliations with national and international standards also likely shaped the design of the credentialing elements and assessment process. The environment, activity type, and personal/philosophical influences on the design of credentials were readily reflected in the different levels within a credentialing scheme.

### **The Design of the Credentialing Scheme**

Across all countries, most credentials had a system of proficiency levels for outdoor recreation instructors. Three major categories emerged that differentiated one level of instructor competency from another level. These categories also mirrored some of the opinions about the rationale for why credentials might have developed differently. The most obvious manifestation of the interviewees' opinions was the category of environment. In most countries, kitesurfing, ice climbing, mountaineering, sailing, and surfing did not have specific environmental conditions that dictated different instructor levels. However, most other activity types had a graduated system of levels for instructors (see Table 5.2). A possible theoretical reason for the different certification levels was represented by the credentials that organized levels based on teaching experience. Although only activity credentials that incorporated instruction were included in the sample, there were many

organizations that concentrated more on the leading/guiding aspects than on the teaching ability of the instructors. About 80% of Australian credentials required instructors to gain teaching experience before progressing to a more advanced certification level. This was largely due to many types of activities that were credentialed through the VET program. The Certificate system of outdoor recreation instruction in Australia included curriculum that progressed through steps of teaching activities at different skill levels. Guide culture was more prevalent among the popular alpine based activities in Canada; therefore the philosophical design was more focused on technical experience and abilities than teaching experience. Almost all the outdoor recreation instructor credentials used the skill or ability of an instructor as one of the primary distinctions between different instructor levels. In conclusion, the specific required elements for advancing to the next certification level were extremely diverse and were not specific to the activity type or the country. However, the majority of credentials had different certification levels for instructors.

This discovery is important for public understanding of outdoor recreation instructor credentials. There are concrete distinctions between different outdoor instructor certification levels that are related to the environment, teaching experience, and the skills and abilities of the instructor. Before employing or receiving instruction from an outdoor instructor it is important to understand the different levels for each credential and what skills are required for the activity in the chosen location and the environment. This may seem obvious after reading through this research; however, previously there had been no analysis of credentialing schemes for outdoor activities. This research uncovered that there were many different levels of credentials, and that each credentialing organization had its own unique requirements for instructors to progress to a more advanced credential.

## **Membership Requirements**

Within the theme of membership requirements, results from four of the categories have the most important significance to the field of outdoor education. Insurance, forms, a code of conduct, and maintenance are important because each of these categories is closely tied to the theme of safety. Maintenance requirements are also closely associated with the education and the topic of continuing education. These categories become even more important when examining these results from the perspective of public understanding. Insurance protects participants and instructors financially; yet, in most cases, surprisingly few credentials provided instructors access to insurance. In cases in which insurance was offered, it was often a major selling point that explained why instructors should become credentialed. In most of these cases instructors were required to have insurance to remain in active teaching status. Although insurance is not a typical topic in education, it is an important signal to potential students, or to schools interested in participating in these activities. As March explained, insurance is another signal that verifies to students that instructors have met a minimum safety standard, or in his words, “they have the insurance backing them proving that they have gone through this course and they understand the safety parameters and they understand the risk and group management structures.” In some cases, access to insurance is an external validation of the quality of the credential. Nearly every credential in Canada provided instructors access to insurance and significantly fewer credentials in other countries provided instructors insurance through the organization or an affiliated company (see Table 5.3).

The categories of forms and code of conduct were closely related. Forms, such as background checks, were rarely used among credentials in every county. This element was

Table 5.3

*Number (Percentage) of Outdoor Instructor Credentials with Membership Requirements in Selected Countries*

Membership requirements	Australia (n=40)	Canada (n=24)	New Zealand (n=32)	U.K (n=26)	U.S (n=33)
Access to insurance	14 (35)	23 (96)	8 (25)	19 (73)	23 (70)
Forms	5 (13)	0 (00)	1 (3)	10 (39)	1 (3)
Code of conduct	19 (48)	17 (71)	14 (44)	10 (39)	20 (61)

designed to restrict access to employment, however with the purpose of protecting student safety. According to those interviewed, one of the reasons why this element was not required very often was because background checks were often conducted by employers instead of the credentialing organization. Background checks were by far the most prevalent in the U.K (see Table 5.3).

A code of conduct or ethics was an element that was very much a characteristic of the personality of the organization. A code of conduct is a set of principles that outlines the expected behavior of instructors. Although a code of conduct is helpful for building consistency among members, an easily accessible code of conduct is also a signal to the public about the behavior expectations of that instructor. Surprisingly few credentials required instructors to sign a code of conduct (see Table 5.3). This has two implications for credentialing in outdoor recreation education. First, one of the five characteristics of Greenwood's (1957) model of a profession was a clear code of ethics. If the primary purpose of an outdoor instructor credential was to signal to the public the characteristics of an instructor, then one would think that more organizations would implement a code of conduct to provide a more information rich signal. Second, this element is a simple element that all organizations could easily incorporate into their credentialing requirements that would help to improve public understanding about the credential and the professionalism of the field of outdoor education.



Table 5.4

*Descriptive Statistics Summary and Number (Percentage) of Outdoor Instructor Credentials with Maintenance Requirements in Selected Countries*

Country	Number (%)	Range (years)	Mean (years)	Median (years)	Mode (years)
Australia (n=40)	16 (40)	1 – 5	2.13	1	1
Canada (n=24)	17 (71)	1 – 3	1.94	2	1, 3
New Zealand (n=32)	24 (75)	1 – 5	2.35	3	3
U.K (n =26)	17 (65)	1 – 5	3.06	3	3
U.S (n=33)	20 (61)	1 – 4	2.40	2.50	1, 3

The final category, maintenance, was closely aligned with the human capital theoretical framework of credentialing. Maintenance requirements force instructors to return for continued training or verification of abilities. This requirement implies that skills are learned by participating in the credentialing process. According to the 2005 National Household Education Survey Program, less than half (46%) of professions in the U.S required workers to have continuing education for their profession (Hagedorn, Montaquila, Carver, O'Donnell, & Chapman, 2006). In all countries except for Australia, more than half of the credentials required some element of maintenance (see Table 5.4). The types of maintenance requirements consisted of professional development seminars, continuing education classes, teaching a certain number of courses/students, or even retraining and evaluation of skills. Australia's lack of maintenance requirements were skewed by the Certificate IV in Outdoor Recreation. The Certificate IV did not outline specific maintenance requirements for instructors and instead allowed individual organizations to manage the maintenance process. As can be seen in Table 5.4 and from the description of maintenance requirements in the previous section, the validation period and specific requirements varied between countries and activities. Overall, I was surprised that in a profession that is predominantly skill based, and exists in a rapidly changing field of education, that more organizations did not have maintenance requirements for the credential.

Canada had the most frequent maintenance requirements and the U.K maintenance requirements were generally the least frequent, however there were many different ways to revalidate a certification within these set validation periods. For example, ENEQ credentials remained valid with completion of a one-day recertification class every three years, whereas NAUI required instructors to attend a one-day professional development course, teach one class, and participate in a least 12 dives every year to be recertified. An important area of future study is an analysis of the validity of the different recertification periods and how the different maintenance requirements affect the skills, abilities, and knowledge of the instructors. Interviewees had no specific opinions about why the maintenance requirements might be different for different organizations.

### **Prerequisites**

The prerequisites defined what was required to become an outdoor activity instructor. For example, age was surprisingly diverse prerequisite for becoming an outdoor instructor. Most credentials required instructors to be a minimum of 18 years old, but not all credentials had a minimum age requirement (see Table 5.5). However, for the activities of canoeing, kayaking, Nordic skiing, sailing, and windsurfing, many countries allowed for minors age 16 years old to become junior instructors. Interestingly, the Certificate IV in Australia did not have a formal minimum age requirement and students could begin taking courses as young as 15 years old with parental approval. Alternatively, there were a few credentials that required instructors to be older than 18. The ACMG mountaineering and ski guide certification minimum age was 19. The NZOIA in New Zealand provided credentials for seven activities and the minimum age was 20 years old for all of these credentials. Similar to the ACMG, the mountaineering and ice climbing credentials from the MTA and BMG also required teachers

Table 5.5

*Number (Percentage) of Outdoor Instructor Credentials with Age and Reference Prerequisite Requirements in Selected Countries*

Prerequisite requirements	Australia (n=40)	Canada (n=24)	New Zealand (n=32)	U.K (n=26)	U.S (n=33)
Minimum age	27 (68)	23 (96)	29 (91)	22 (85)	26 (79)
Reference	0 (00)	5 (21)	5 (16)	4 (15)	3 (9)

to be older than 18. The MTA required instructors to be a minimum of 20 years old and the BMG minimum age was 22. Finally, the GUE scuba diving instructor credential required instructors to be 21 years old. It was unclear why age requirements ranged from 15 to 22 years old for different organizations. A variety of reasons were cited in organizational documents and some interviewees suggested that local laws and concerns about maturity and responsibility were the main reasons for age requirements. However this does not explain a common reason for why some credentials defined the minimum age as 15 while other organizations required instructors to be 22 years old. It would be interesting to explore more about why 16 year old young adults were competent instructors in some activities while not in others. An age requirement is an interesting example of discrimination that was not necessarily based on the skills and abilities of an individual and supported a credentialist perspective of credentialing. Collins (1971) and other theorists have explained that one of the purposes of a credential is to keep social advancement in the hands of few and exclude people from employment instead of promoting the development of skills. An age-based requirement limited entry into the credential based on an arbitrary requirement instead of the skill of the candidate. This requirement thereby restricted the ability of a person to gain access to employment and did not give the candidate an opportunity to prove their skill. Although there may be valid reasons in each case, it is interesting that age requirements

Table 5.6

*Number (Percentage) of Outdoor Instructor Credentials with Certification Prerequisite Requirements in Selected Countries*

Prerequisite requirements	Australia (n=40)	Canada (n=24)	New Zealand (n=32)	U.K (n=26)	U.S (n=33)
First aid	39 (98)	22 (92)	28 (88)	25 (95)	31 (94)
Other external certifications	13 (33)	10 (42)	7 (22)	10 (39)	7 (21)
Experience - prior certifications	22 (55)	18 (75)	16 (50)	16 (62)	15 (46)

appeared to be inconsistently applied across different activities and within the selected countries.

Another anomaly was the category of references. Required references were limited almost exclusively to IFMGA affiliated organizations (see Table 5.5). The three exceptions were the MTA in the U.K, Yachting NZ sailing instructor credentials, and the NSSIA surfing and paddleboarding instructor credentials. This result was surprising considering that both Barnes (2004) and Munge (2009) found that employers of outdoor instructors ranked personal attributes as one of the top two most important characteristics of an outdoor instructor.

As discovered by Barnes (2004), Garvey and Gass (1999), and Munge (2009) surveys on employability characteristics, a first aid requirement was one of the most universal prerequisites for employment as an outdoor activity instructor. Almost all credentials required some level of first aid training (see Table 5.6). However, fewer credentials than I expected required advanced or more complicated wilderness-based first aid training. Using the minimum of a 16-hour training course as the definition of advanced first aid, only a small percentage of credentials in Australia (18%), Canada (33%), New Zealand (41%), U.K (50%), and the U.S (15%) had advanced first aid requirements for instructors.

Many other types of certifications were required as prerequisites. In some cases, a difficult prerequisite could be seen as a way to create barriers to earning a credential and

finding employment. However, these requirements were not designed to limit access to training or employment; instead they were essential training components and considered basic knowledge for outdoor instructors. The most commonly required certifications were: boater safety certifications for kitesurfing, sailing, and windsurfing; avalanche training for mountaineering, Nordic skiing, and ice climbing; surf rescue/lifeguard certifications for surfing and paddleboarding; and a swiftwater rescue for river kayaking and rafting credentials. Although not all credentials in every country required each of these certifications, these elements were extremely common across most instructor credentials for the previous listed activities. Requiring these additional certifications seemed to emerge as best practice from an overwhelming majority of credentials (see Table 5.6).

The category of *experience - prior certifications* was a reflection of the requirement for instructor credentials to filter candidates through prior certification levels within the organization. The classic example was the scuba diving instructor credentials. In all cases, it was required for candidates to have progressed through a series of recreational trainings that culminated in rescue training, then training as an assistant instructor position or dive leader position, before becoming eligible for instructor training. Many mountaineering certifications also often required instructors to first pass certification courses in rock climbing and skiing. Credentials affiliated with national education standards also had prior levels of certifications that focused on group leading skills before being eligible for instructor training for the activity. These Certificate II and IIIs were used as stepping stones to the instructor credential level of Certificate IV. However, unlike scuba diving and mountaineering or the first aid and rescue certifications listed previously, the Certificate II and IIIs in Australia and New Zealand and many other credentials that required skill-level certifications, could be

Table 5.7

*Number (Percentage) of Outdoor Instructor Credentials with Prior Experience Prerequisite Requirements in Selected Countries*

Prerequisite requirements	Australia (n=40)	Canada (n=24)	New Zealand (n=32)	U.K (n=26)	U.S (n=33)
Prior experience – time	16 (40)	17 (71)	22 (69)	12 (46)	19 (58)
Prior experience – teaching	11 (28)	7 (29)	13 (40)	13 (50)	8 (24)
Prior experience – skills	34 (85)	21 (88)	29 (91)	26 (100)	33 (100)

skipped if an instructor could show documented proof of prior experience. This accommodation for prerequisite exceptions is discussed more in the following training section and RPL.

Other exciting areas of future research are the prior teaching and skill ability requirements for each activity type. There was an amazing amount of variety within countries for these requirements. A holistic analysis uncovered that the requirements for instructors to have spent a minimum amount of time teaching or in participation of the activity at certain level were somewhat common across all countries. The requirement for a specific skill level was the most common prior experience requirement (see Table 5.7). Again, in comparison to Barnes (2004) and Munge's (2009) surveys on employability characteristics of outdoor leaders, these results are not surprising. Both surveys found that prior experience in outdoor activity skills ranked as the first or second most important characteristic. However, from a credentialing organizations' perspective, outdoor activity skills were further divided into sub-characteristics and requirements. The most important aspect of prior experience for credentialing organizations was the specific activity requirements for an instructor's ability level. In other words, simply participating in an activity for a certain number of years was not as important as being able to perform at a prescribed ability level. It is also interesting to note that less than half of the outdoor instructor credentials in the selected countries required teaching experience. Interviewees

expressed that an important purpose of the credentialing process was to take experienced outdoor professionals and to then teach them how to teach an activity. These opinions were confirmed by the data from document analysis. Ability was more important than teaching experience and a focus of training was giving outdoor instructors the skills needed to teach the activity.

The theoretical implications for these findings are conflicting. Any form of prerequisite can be viewed as limiting access to the profession. However, credentialist and control theory argue that this stratification is based on arbitrary terms not the abilities of a person. In the case of outdoor instructor credentials, they are overwhelmingly designed to build from a foundation of minimum skill level and then through further education and training outdoor instructors' skills and abilities improve. As educational philosopher Dewey (1938) once explained, "the beginning of instruction shall be made with the experience learners already have; that this experience and the capacities that have been developed during its course provide the starting point for all further learning" (p. 74). Although not all credentials offered a rationale for the prerequisites, consensus from the majority of credentials was that an essential level of knowledge was required to be able to effectively participate in the instructor training process. These requirements might limit access to the profession, but in most cases the requirements outlined a basic skill level that was needed for comprehension and participation in training. The AMGA (2013c) rock climbing instructor prerequisite description did an excellent job of presenting this perspective:

The above pre-requisites are absolute minimums and most candidates have way in excess of the above. Without having at least this amount experience you are unlikely to play a constructive part on the course or be able to make best use of the training. If you are unsure of your skill levels we suggest hiring an AMGA/IFMGA certified guide to evaluate and enhance your skills and experience prior to SPI Program enrollment. ("prerequisites for SPI," para. 2)

Thus instructors needed a basic skill level in order to participate and understand the knowledge being transferred in the training classes. The belief that new skills are learned during training further supports the human capital interpretation of credentialing theory for outdoor recreation instruction.

### **Education and Training**

Almost all credentials across all countries required instructors to participate in an instructor training course. The exception to requiring training was limited to four organizations in the entire sample. Australian Canoeing provided instructor credentials for canoeing, river kayaking, and sea kayaking in Australia, and training for AC's instructor credentials were optional. NOLRS, also in Australia, was a registration scheme that outlined specific requirements for instructors but did not require training, only proof of experience. Similar to AC in Australia, the NZOIA training was optional. Finally, the NZKI was an assessment only scheme for river kayaking and sea kayaking in New Zealand.

However the more interesting finding from this research was the vastly different lengths of the training that were required for different credentials. The length of training ranged from one day to nearly two years in length for different activities. It was difficult to analyze the trends within a country because of the variety of scales used to measure training periods, however see Table 5.8 for the estimated descriptive statistics based on available data for each country. Notice that the length of training in Australia and New Zealand was inflated due to the longer length of vocational training for the Certificate in Outdoor Recreation in each country. When examining specific activity types, ice climbing, mountaineering, and skiing instructor credentials generally required longer training periods, whereas most other credentials required a training course of a week or less.



Table 5.8

*Descriptive Statistics Summary and Number (Percentage) of Outdoor Instructor Credentials with Training Requirements in Selected Countries*

Country	Required training	Range (days)	Mean (days)	Median (days)	Mode (days)
Australia (n=40)	31 (78)	2 – 180*	51.93	3	3
Canada (n=24)	24 (100)	2 – 32	7.31	5	5
New Zealand (n=32)	23 (72)	2 – 510*	125.12	6	510
U.K (n =26)	26 (100)	1 – 32	5.96	4	5
U.S (n=33)	33 (100)	.5 – 21	4.40	3	2

*Note:* Australia's training requirement of 180 is based on an estimate of a 6 month minimum completion time for the Certificate IV in Outdoor Recreation. New Zealand 's training requirement of 510 days is based on a 17 month completion time for the Certificate IV in Outdoor Recreation.

A unique characteristic of education in the field of the outdoor recreation education is the acceptance of recognition of prior learning (RPL). Many of the credentials allowed for instructor candidates to present evidence of prior experience to become exempt from training. This attribute was most common among credentials in Australia, mostly due to the Certificate IV policies of RPL that were implemented by the Australian Department of Education (DEEWR) model of competency-based training. These exceptions have interesting implications for understanding the theoretical frameworks for credentialing in outdoor recreation instruction. The U.S had the fewest number of credentials (30%) that accepted RPL; however, the fact that many credentialing organizations allowed RPL is an interesting characteristic of credentialing in outdoor education. In Garvey and Gass (1999), Munge (2009), and Barnes' (2004) research of outdoor employers they each independently found that personal experience was one of the top three characteristics that affected a hiring decision for an outdoor instructor. By evaluating a candidate's skills and abilities using verified experiences, a credentialing organization was not only valuing these experiences but also equating the value of these experiences with the value of education from the credentialing organization. In other words, the credentialing organizations are substituting the

skill building learned during training, for the skills and abilities that are developed through experiences. The most common tool for recognizing prior experience and assessing competence was a logbook of experiences, not an entrance exam. This was most likely due to the fact that in almost all cases candidates were required to participate in a series of assessments to become credentialed.

Currently there is an important academic debate about the role of RPL in education with simultaneous critiques from higher education institutions and a proliferation of acceptance of RPL and a portfolio of experiences as an essential part of learning and assessment (Van Klef, 2007). The diverse techniques and different processes for incorporating RPL in outdoor education provides a unique case study for future research into the relationship of RPL and experiential education and also is an interesting juxtaposition to the debate about the recognition of prior learning for educational credentials. Another area for future research is the implications of RPL on credentialing theory. There appears to be little research on the theoretical implications of RPL with respect to credentialing theory. The acceptance of learning from outside a credentialing framework creates a curious paradox for credentialing and professional certifications.

RPL supports the human capital perspective that education develops skills and abilities that are similar to experience in the real-world and useful for efficiently increasing the performance of less skilled professionals. However, equating experience to education also devalues the purpose of the credential for increasing skills. Berg's (1971) observation that workers without formal training often perform as well as those with credentials supports this perspective and a credentialist framework. Offering RPL as an element in the credentialing process also provides contrary evidence to credentialist and signal theories of

credentialing in outdoor instruction. Instead of being segmented by social qualities or arbitrary elements, outdoor instructor credentialing organizations have worked in conjunction with the outdoor education industry to validate a need for certain skills and knowledge gained either through training or prior experience. In many cases RPL was allowed to substitute training and other credentialing requirements thus the credentialing organizations were attempting to recognize alternative paths for proving competency and promoting a greater recognition of skills and access to employment opportunities. However, by allowing for varying types of experiences to qualify as prior learning, the capability of the credential to signal consistency becomes less clear. The reduced signal ability caused by unequal training standards were highlighted by Plaut (2001), Munge (2009) in the case of outdoor education diplomas, and Brown and Sessions (1999) evaluation of high school diplomas.

**Teacher training.** Training instructors to become better teachers was an important aspect of the outdoor recreation instructor credentialing process. This perspective was highlighted throughout the interviews and also in the data collected from the organizational descriptions of the credentialing process. The interviewees discussed the value and importance of training instructors to be better teachers and analysis of training documents revealed two types of perspectives on teaching training. The two categories that emerged were teaching theory and teaching skills. These two subject areas loosely aligned with Swiderski's (1989) portrayal of soft skills and hard skills. Swiderski's third category, conceptual skills of judgment and creativity, permeated the goals of training and evidence of these skills could be found throughout the various category descriptions.

By providing instructors training on the theoretical foundations of teaching, credentialing organizations were attempting to improve soft skills and increase instructors'

Table 5.9

*Number (Percentage) of Outdoor Instructor Credentials Teaching Theory, Skills and Technical Knowledge During Training in Selected Countries*

Training subject	Australia (n=40)	Canada (n=24)	New Zealand (n=32)	U.K (n=26)	U.S (n=33)
Teaching theory	24 (60)	11 (46)	9 (28)	11 (42)	22 (67)
Teaching skills	31 (78)	24 (100)	23 (72)	26 (100)	30 (91)
Technical knowledge	31 (78)	24 (100)	23 (72)	26 (100)	31 (94)

understanding of the social, psychological, and developmental aspects of learning. Although many credentials incorporated training on teaching theory, this may be an area in which credentialing organizations could improve and learn from traditional educational institutions. In Australia and the U.S, the majority of credentials included training on instructional theory. Although Australia's percentage appears to be only 60%, this was artificially deflated due to the lack of any training for the NOLRS credentials. Based on credentials with training programs, 75% of credentials in Australia conducted training on instructional theory. These results were heavily influenced by the VET training for the Certificate IV in Outdoor Recreation which consistently included theoretical training. Much fewer credentialing programs in other countries required training in instructional theory, with New Zealand having the fewest number of credentials educating instructors on teaching theory (see Table 5.9). This could be attributed to what Cowie described as the important role of industry in developing credentials in New Zealand, as opposed to the educational foundation of credentials in Australia. Another possibility, as Wickham explained in the case of PADI, an organization's educational philosophy can be strongly driven by the individual founders of the organization. The haphazard inclusion of instructional theory in outdoor recreation instructor training highlighted one of the major differences among credentials in outdoor education.

Training instructors to be better at teaching specific subject material was nearly universal across all activity types for all of the countries sampled. These instruction skills were an example of one of the core hard skills in Swidersky's (1989) model of an outdoor leader. Teaching skills were a component of 100% of credentialing programs in Canada and the UK. Again Australia's results for teaching skills were deflated by the lack of training associated with the NOLRS registration. The results for New Zealand were also depressed due to the absence of training requirements for seven optional NZOIA credentials and the two NZKI credentials. Excluding credentials that did not require training, all outdoor recreation credentials except for NSSIA and WPA in the U.S incorporated teacher training into the credentialing process (see Table 5.9). The important role of training in developing better teaching skills was corroborated by all of the interviewees. Not only did the outdoor instructor credentials devote time to creating better teachers, but a common opinion among the interviewees was that one of the primary purposes of the training and credentialing was to take highly skilled individuals and educate them on how to effectively teach both the activity skills and the supporting background information.

Technical background information included a vast array of science and conservation topics that served to provide context for the environment and conditions in which the activity operated. This background information was an equally important component of training among outdoor recreation instructor credentials (see Table 5.9). All organizations that included an element of teaching skills training also included training on background knowledge. Educating instructors on technical background information not only provided instructors with the context to make better decisions, but understanding the environment and laws of nature were also critical to safe participation in the activities. As Wickham explained

in the case of scuba diving, there are many physical properties of the ocean environment that are not inherently obvious to the uneducated and can be highly dangerous if not understood properly.

The prevalence of training on background knowledge and the importance of educating instructors with the teaching skills to effectively teach both the context of the activity and the activity itself has two important implications for the field of outdoor education and public recognition of these credentials. First, there were varying levels of teacher training for different activities but no discernible pattern within a specific country. Therefore, the prevalence of teacher training should inspire credentialing organizations to look to other organizations for ideas for improving training and the quality of instruction. Especially within similar activity types, there is an enormous opportunity for credentialing organizations to share information and to perpetuate the quality of material and instructional techniques used in outdoor recreation education. A barrier to sharing background knowledge is limited in many cases due to environmental conditions, activity type, and the country. However, after analyzing thousands of pages of outdoor instructor curricula it was clear there is much knowledge on instructional techniques that could be assimilated across country and activity boundaries.

Second, the credentialing elements of training instructional skills and technical knowledge also have implications for public recognition and the signaling characteristics of the outdoor instructor credentials. Based on the design of the credentialing programs and the perspectives of those who were interviewed, a major theoretical framework for credentialing in outdoor recreation instruction is the human capital interpretation of credentialing theory. In almost all cases, the credentialing programs were designed to improve the teaching skills

and abilities of instructors. Therefore it is important for the public to recognize that an outdoor instructor credential signals a decision by an instructor to devote personal resources, time, energy, and money, towards improving knowledge in these areas and becoming a better teacher. As Becker (1964) noted, undertaking training to improve skills that are valued in the workplace was an example of the validation of the human capital theory of credentialing.

Recognition of instructional techniques and the curricula taught in outdoor education is also especially important for teaching and education in a more traditional classroom environment. An inspiring interpretation from this research was the potential for teachers of all subjects to learn from the field of outdoor recreation instruction. There are interesting professional development opportunities for teachers with a basic amount of experience in an outdoor recreation activity to participate in an outdoor recreation instructor training programs and learn new techniques and tips for teaching students. Techniques learned for outdoor instruction could bring a valuable alternative perspective to traditional classroom-based instruction techniques and could challenge educators in all environments to attempt new teaching strategies. Whether teaching on a lake or in a classroom, there are opportunities for interdisciplinary sharing to improve instruction in all environments. Outdoor instructor credentials could benefit from more training on instructional theory, and teachers in traditional school environments could glean useful experiential education techniques from outdoor instructor training.

**Skill training.** The symbiotic element to teacher training was skill training in outdoor recreation instructor credentialing. Leadership and group management, safety and rescues, and technical skills training were among the more common elements of an outdoor instructor credential. These elements also encompassed all three of Swiderski's (1989) characteristics

Table 5.10

*Number (Percentage) of Outdoor Instructor Credentials Teaching Technical Skills, Safety, and Group Management During Training in Selected Countries*

Training subject	Australia (n=40)	Canada (n=24)	New Zealand (n=32)	U.K (n=26)	U.S (n=33)
Technical skills	28 (70)	24 (100)	21 (66)	20 (77)	29 (88)
Safety and rescue	31 (78)	24 (100)	23 (72)	25 (96)	31 (94)
Group management	28 (70)	23 (96)	22 (69)	23 (89)	24 (73)

of an outdoor leader and included hard skills, soft skills, and conceptual skills. Hard skills were represented by the technical skills training and safety and rescue training. Leadership and group management training was primarily concerned with developing instructor candidates' social, psychological, and communication skills. Judgment and decision making was a key discussion topic that was common across all three skill training categories. From the perspective of the credentialing organizations and the interviewees, the outdoor instructor credentials were designed to improve the skills of instructor candidates so that credentialed outdoor instructors performed their jobs more effectively and more safely. The inclusion of these required elements was further evidence for a human capital theoretical framework of credentialing in outdoor recreation instruction.

Similar to the other categories of training, instructor education on leadership and group management, safety and rescue, and technical skills were nearly universal (see Table 5.10). The consistency of training requirements for safety, group management, and technical skills is an important consideration for public recognition. According to the evidence collected from interviews and organizational documents, the dominant rationale for the purpose of outdoor instructor credentials was safety. The focus on educating the public using consistent minimum standards of competency with a critical intent on safety training is an important signal for the public to be able to evaluate and understand the purpose of the credential.



There were many factors that influenced the differences in the length and the depth of training for each credential however no specific theme emerged to shape the required training elements and assessment strategies. Instead the environment, activity type, personal/philosophical, political/legislation, and industry all shaped the design of the outdoor instructor credentials. There were organizational exceptions to some training requirements; however, these exceptions were not indicative of trend within a specific country. For example, ISA surf instructor credentials did not train instructor candidates on how to be better surfers. Instead, ISA training focused on instructional techniques and safety. ISA provided instructor credentials for surfing in most countries, so there was an obvious pattern, but this trend was not a characteristic that could be explained by theoretical framework or characteristic of a country. The specific characteristics of group management, safety, and technical training for individual credentials were incredibly diverse and specific to both the credentialing organization and the activity type.

A unifying characteristic of outdoor recreation education is the complex set of knowledge and specific skills that are required to teach outdoor activities. A key aspect of Greenwood's (1957) characteristics of a profession was a systematic body of theory necessary for mastery of the profession. The previously mentioned technical knowledge, technical skills, safety and rescue information, and leadership and group management skills all comprise a body of knowledge that requires training in order to achieve mastery. To paraphrase Davidson from BASI and Tucker from ACMG, there are plenty of extremely talented outdoor recreationist however to teach these activities at a high level requires training that cannot be learned simply through participation.

Table 5.11

*Number (Percentage) of Outdoor Instructor Credentials with Assessments in Selected Countries*

Assessment type	Australia (n=40)	Canada (n=24)	New Zealand (n=32)	U.K (n=26)	U.S (n=33)
Required assessment	32 (80)	23 (96)	32 (100)	26 (100)	29 (88)
Written	29 (73)	21 (88)	18 (56)	25 (96)	21 (63)
Practical	40 (100)	24 (100)	32 (100)	26 (100)	30 (91)

### **Assessment**

The final major theme that emerged as a result of analyzing documents from credentialing organizations and interviewing select representatives was the theme of assessment. Exploring the requirements for assessments and how the assessment process might be similar or different in the selected countries was one of the core research questions. Again, the assessment process varied dramatically between individual credentials. Even credentials from the same credentialing organization often had dramatically different assessment processes. However, an unexpected result was the number of credentials with a formal assessment process. Based on my previous experience, I was expecting fewer outdoor instructor credentials to have a formal evaluation of knowledge and skills. Every credential except for the AMGA ice climbing instructor and the NSSIA surfing and paddleboard instructor required a formal performance assessment of an instructor candidate's skills. The AMGA ice climbing certification was a unique case in which this certification was not an independent credential instead it was a parallel certification that could only be earned as a part of another certification. Despite repeated request for more information, little information was available about the NSSIA assessment process. From the NSSIA website all that could be uncovered was that the assessment involved a take home exam and a one day meeting with an undisclosed purpose. Therefore across all countries and all credentials nearly every credential had a formal assessment process.

The number of credentials that used a written assessment to evaluate instructors was also much higher than I had anticipated. The use of written assessments was a credentialing element that varied dramatically by country (see Table 5.11). For example, 96% of U.K. credentials but only 56% of credentials in New Zealand utilized a written assessment. Across all countries the scuba diving instructor credentials seemed to have the most consistent and rigorous written assessment process.

It was difficult to analyze the similarities and differences in assessments between countries because of the variety of types of written assessments and many organizations considered this information proprietary. However, the U.K. utilized written assessments more often than any other country with almost every organization requiring a written assessment (see Table 5.11). However the U.K. used a variety of written assessment tools such as lesson plans, trip plans, theory papers, etc. Canada used the standard written exam more often than any other country with more than half of the credentials requiring a multiple choice or short answer test. The U.S. credentialing organizations also required nearly half of instructor candidates to take a written test, but also incorporated a variety of other written testing strategies such as workbooks, lesson planning, and written presentation outlines. Although not many credentials in New Zealand required a written component, of the credentials that did require a written exam, most used a typical 50 to 100 item multiple-choice or short answer test. Australia was unique among the selected countries. About 73% of credentials required a written test. The percentage of credentials that required written assessment was deflated due to the lack of assessment for the NOLRS registration scheme; however, this percentage also includes the optional written assessments that are part of the Certificate IV in Outdoor Recreation. The ICS and DEEWR implemented a flexible assessment strategy

because training and assessment was conducted by registered training organizations (RTOs) for the Certificate IV in Outdoor Recreation. The educational standards from the ICS and DEEWR outlined possible assessment strategies for each unit of the curriculum, but did not require a specific assessment tool. However, some skills could only be evaluated using performance-based measures. An example of the flexible assessment strategy for the Australian flatwater canoe instructor unit competency was:

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: observation of planning processes, such as consulting with participants to determine their needs and characteristics, oral or written questioning to assess knowledge and application of relevant legislation and organizational policies and procedures to enable safe conduct of all canoeing activities during the session; observation of safe canoeing instruction, monitoring and adjustment according to participant's needs and characteristics; portfolio of canoeing session plans, third-party reports from a supervisor detailing performance. (ICS, 2012b, pp 7-8)

The assessment categories of teaching theory, teaching skills, technical knowledge, technical skills, safety, and group management were identical to the training requirement categories. Each of these categories was assessed using a mixture of written and performance -based assessments. All countries assessed an instructor candidate's knowledge of teaching theory the least frequently out of all the categories. In every other assessment category, at least 79% of credentials in each country assessed the subject matter (see Table 5.12). The difference between assessment strategies were complex and appeared to be based on a multitude of factors instead of a dominant rationale determined by the country. However, by consistently requiring assessment, credentialing organizations corroborated Tucker's explanation that, "the value of certification is the assessment process. Because it is one thing to take some training, but it is another thing to actually demonstrate that you've been able to use that training effectively."

Table 5.12

*Number (Percentage) of Outdoor Instructor Credentials Assessing Outdoor Instructor Subjects in Selected Countries*

Assessment subject	Australia (n=40)	Canada (n=24)	New Zealand (n=32)	U.K (n=26)	U.S (n=33)
Teaching theory	28 (70)	11 (46)	12 (38)	11 (42)	17 (52)
Teaching skills	39 (98)	24 (100)	30 (94)	25 (96)	28 (85)
Technical knowledge	34 (85)	20 (83)	31 (97)	23 (89)	26 (79)
Technical skills	38 (95)	24 (100)	30 (94)	25 (96)	27 (82)
Safety and rescue	37 (93)	23 (96)	31 (97)	24 (92)	27 (82)
Group management	35 (85)	24 (100)	31 (97)	23 (89)	26 (79)

The proliferation and diversity of assessments serve to further support the human capital theory of credentialing. Performance exams, written test, expedition simulations, and the many other types of assessments are by nature an evaluation of skill and ability. Not only do most credentials use assessment tools to evaluate the skills and knowledge gained during training, but they also serve to enforce a minimum level of competency. Many credentialing programs discussed remediation for instructors who did not pass assessments the first time around. Assuming that these assessments are a valid measure of an instructor candidate's skills then training and assessment are essential to a human capital interpretation of credentialing. Without training and verification of ability it would be difficult to argue the effect of earning a credential on a person's ability. There is limited research on the validity of outdoor recreation instructor assessment processes; therefore, this is also an exciting area for future research. Especially due to the variety of assessment strategies employed by different organizations, it would be interesting to explore the validity and reliability of an assessment to determine an instructor's performance in the field. Another fruitful area of future research would be to examine the assessment processes and revalidation requirements for instructors' retention of knowledge and skills. The present research lays the foundation

for much investigation into experiential education and assessment in outdoor recreation education.

### **Credentialing Theory**

Prior to this research there has been little research on the credentialing process for outdoor recreation instructors and even less research that has examined outdoor instructor credentials using theoretical frameworks from credentialing theory. Outdoor education is a unique professional case that blends the borders of vocational training, education, and health and human kinetics, and therefore brings a new perspective to credentialing theory that had not been previously explored in other research. What emerged from the data collection was a new understanding of the theoretical rationale for credentials in outdoor education and a new paradigm for credentialing in education.

Near the end of each interview, after soliciting opinions about the purpose and value of credentialing in outdoor recreation education, I explained some of the main theories in credentialing and asked interviewees if any of the theories seemed to be the primary theory for outdoor instructor credentials. This was a very difficult question for most of the interviewees and each clearly struggled to pick a single theory. Instead interviewees like Cowie would remark, “yeah, definitely, all of them.” When examining the credentialing requirements from organizational documents, again evidence suggested that aspects of each of the major credentialing theories were applicable to outdoor recreation instruction. Therefore one of the new insights from this research was that there is not a single theoretical framework that explains the purpose of credentialing for outdoor education. This research uncovered that the dominant theories about credentialing are insufficient and incomplete when applied to the design of outdoor instructor credentials. Although human capital,

credentialist, and signaling theory can be extrapolated to the design of the credentials, these theories are primarily associated with the purpose and perception of credentials. Whereas the purpose and perceptions of credentials do have an important role in shaping credentials, these are not the only factors that influence the requirements and standards for becoming an outdoor instructor. What is more likely is that credentials can have multiple purposes and can be perceived in many different ways based on the perspective of the stakeholder and sometimes these perceptions overlap and contradict.

**Human capital.** From the perspective of credentialing organizations, the primary purpose of credentialing in outdoor recreation education was to provide consistent and clear minimum standards for safe instruction of outdoor activities. Interestingly, interviewees and the widespread acceptance of RPL and other policies, confirmed that a credential should not necessarily be required to teach outdoor activities. However, as to be expected from the perspective of a credentialing organization, there were many benefits to earning an outdoor instructor credential. Many of these benefits aligned with the human capital interpretation of the purpose of credentials. Training instructors in a variety of skills was at the core of almost all credentials included in this research. According to documents and interviews, training and assessment were designed to improve instructor competence. It was clear from the analysis of credentialing requirements, and when pressed interviewees also surmised, that human capital theory was an important rationale for credentialing in outdoor recreation education. The most common theme from all data sources was the importance of training instructors to perform at a minimum level of competence for the safety and the protection of the public.

As Becker (1964) and Mincer (1958) and many other theorists since have explained, education develops both general and specific skills that increase the employability of those who earn a credential. Therefore, human capital theory is focused on the personal purpose of a credential and the role of education and training in producing better professionals. This research revealed that credentialing organizations perception about the purpose of the outdoor instructor credential was closely aligned with human capital theory. Cowie described the training process as “up-skilling.” Johnston described the purpose of gaining a credential and the value of training was to increase an instructor’s paddling skills, coaching ability, and teaching ability. Davidson described the role of a credential was simply to, “mak[e] them better instructors.” Tucker explained that without the training offered through a credential, “there is no way that just the experience of climbing or back-country skiing would provide me with the training that I needed to keep other people safe.” All of these opinions demonstrated the important role of training and assessment as part of the credentialing process. Likewise the first phase of research also uncovered that almost all credentials incorporated training and assessment into the design of the credential. Human capital theory helped to explain why so many credentials share the common characteristic of requiring training and assessment. Another requirement that supported a human capital interpretation of credentialing theory was the category of maintenance requirements. Requiring instructors to return for further training was a design element that was influenced by the perception that education and training improves skills. The different standards used to revalidate instructors also reflected how much an organization believed in the human capital benefits of training. In a few cases, organizations like NOLRS did not require specific training, assessment, or maintenance and likely believed that the purpose of the credential



was not necessarily to improve the abilities of instructors. This meant that a credential could fulfill another purpose. An alternative focus of credentialing theory was the societal purpose of credentials. Credentialist theory shifts the debate from the personal justification of credentials to the role of credentials in society. Credentialist perspectives approach the purpose of credentials with a competing theory; however, as seen from the data collected from focused interviews and document analysis, credentialing theories are not exclusive and instead provide an alternative perspective about the purpose of credentials.

**Credentialist.** In many cases, in the U.K and in specific locations around the world such as national parks in Canada, credentials are seen as the basic skill requirements for employability. Credentials that were affiliated with international standards also presented a clear meaning to employers around the world that credentialed instructors had passed a challenging series of evaluations, experience requirements, and achieved a high level of skill. The employability benefits of outdoor recreation credentials also meant that in some cases employment was restricted to persons without a credential. Using the previous examples, outdoor instructor employment was limited to only those with credentials in the U.K and the alpine national parks of Canada. Weber (1951) and Berg's (1971) basic tenet of credentialing was that credentials restricted access to jobs and created barriers to entry into the profession. However, beyond the basic philosophy of credentialist theory, the characteristics of outdoor education contradict credentialist theory. Berg's theory that workers without formal training perform as well as those who receive training is an interesting conundrum in outdoor education. I am unaware of any empirical research study that has shown an outdoor instructor credential improves safety. Acceptance of RPL by some outdoor credentialing organizations also supports a perspective that formal training

may not have as big of an impact on instructor performance as often expected. Nevertheless, as Wickham described in the case of scuba diving, there is circumstantial evidence that the number of certified instructors providing training have increased in unison with increasing participation rates and the percentage of injuries and deaths appear to be decreasing. However scuba diving instruction is a unique case and many outdoor recreation activities have much less stringent requirements for teaching certifications.

In contrast to Boylan's (1993) perspective of credentialing theory, the close connection between industry and credentials has meant that there has not been an over-proliferation of credentials. Instead outdoor recreation instructor credentials have developed to fit the educational needs of the marketplace. Likewise the expansion of credentials was described by the interviewees to be a result of industry need and technological changes, not simply for the sake of expansion as described by Collins (1979). Credentials prevented access to employment in specific cases of licensure in the U.K for some activities and credentials reduced access to employment in some location in the U.S and Canada based on local regulations. However, Australia and New Zealand had very few regulations limiting access to employment in the field of outdoor education. In general, credentials segmented the population based on outdoor competency, yet in many cases demonstrated prior experience usurped training requirements. Therefore, preventing access to employment was based on a need for proof of competency. In many cases demonstrated experience and a logbook or RPL would suffice for training or employment. Segmentation effects of the credential were an outcome but not the intent of the credential. As Garvey and Gass (1999), Munge (2009), and Barnes' (2004) all found from surveying outdoor education employers,

outdoor instructor credentials were an important consideration in the hiring process but not the only factor.

Credentialist theory may have impacted the design of credentials and influenced how credentials were similar and different. In some cases outdoor education credentials reflected credentialist theory or rejecting credentialist theory. Both approaches influenced the design and purpose of credentials. Credentials that limited access to employment were sometimes regulated by rules in locations which created similar requirements across activities or even across countries. For example, IFMGA affiliated credentials for mountaineering were designed to allow only the most experienced mountaineers to become certified guides and instructors. Therefore all IFMGA affiliated credentials shared similar standards requiring large financial investments, years of experience, top-notch mountaineering performance, and references from industry peers. Only IFMGA credentialed persons could work in many areas around the world, and only the most dedicated persons could achieve the credential. These requirements were designed to limit access to an elite club of guides and instructors; however these design elements were intended to preserve the quality and safety of teaching in high risk environments. Within countries and across different countries, there were many other credentials for mountaineering instructors each with slightly different requirements and standards for meeting these requirements. None of the other mountaineering credentials were as challenging and restrictive as the IFMGA affiliated credentials. In this case, credentialist theory may help to explain why there were some similarities and differences between credentials based on the perceived societal purpose of the credential. An organization that was more focused on limiting instructor credentials to only the very best

instructors created more challenging standards and more requirements for earning the credential.

To avoid limiting individuals with experience and motivation from gaining access to employment it was also possible for credentialing organizations to design instructor credentials to actively reduce barriers to entry into the credential and the profession. Entry-level credentials with minimum pre-requisites, few experience requirements, and shorter, less expensive training are all examples of techniques that credentialing organizations could use to make the credential more accessible. Depending on an organization's philosophy about using a credential as a tool to limit participation in the profession, an organization could design the credential to make it easier or harder to earn a credential. One of the key ways that an organization could design a credential to make it more accessible was to allow for RPL. RPL is an ingenious solution that allowed credentialing organizations to maintain minimum performance standards while also increasing access to the credential for individuals with the proper amount and type of life experiences by reducing the time and cost of earning a credential. Therefore, credentialist theory could play an important role in the design of credentials by altering the challenge and complexity of credentialing requirements to either decrease or increase access to a credential based on the organization's philosophy about the societal purpose of the credential. Regardless of why the credentialing requirements were designed in a specific way, competency in the profession was the most important concern of the credentialing organizations and the consensus of the persons interviewed for this research was that signals of competency were most efficiently translated by a credential.

**Signaling.** A need for proof of competency is another way to describe signaling theory. Unlike human capital and credentialist theory, which address the purpose of a credential from a personal or societal perspective; signaling theory is concerned with society's perception of a credential. The signaling attributes of outdoor instructor credentials were evident from the interviews but not readily supported by document analysis because it was difficult to ascertain perception from these documents. During the interviews the concept of signaling to the public an assurance of safety and competence was commonly expressed. Spence (1973) referred to this aspect of signaling as supply-side signaling theory. Spence impressed that individual sacrifice to improve through education has value in signaling to others competence or improved skills. For many credentials, such as the credentials affiliated with the IFMGA, there was a significant time investment to achieve these certifications. Therefore there should be a strong signal to others that a person who devoted time to earning these credentials was dedicated to improving their skills. The demand-side of signaling theory, also called screening theory (Riley, 1976; Stiglitz, 1975), focused on an employer's ability to use a credential as a source of information in order to make efficient evaluations of a person's ability. Rosenbaum's (1990) variation of demand-side signaling theory, network signaling theory, focused especially on the organization to organization recognition of a credential. There was strong support for the inter-industry signaling effects of a credential. Often credentialing organizations maintained close connections with industry partners therefore the credentialing elements and assessment processes were commonly understood by employers connected to the credentialing organizations. Outside of these close connections within the industry or related credentialing organization it is unclear how well credentials are understood in other fields or among the

public. A common critique of signaling theory that is also applicable to outdoor education credentials is that the signal may not be very good, and at best may only signal a general competence (Thurow, 1975).

Signal theory relies on a shared understanding of the value of the credential. Although this signal may be effective within the community of outdoor recreation educators and organizations, those effects may be too localized to provide the public recognition of the credential that outdoor education needs for further professionalization. Perhaps the most important implication of this research is the potential for this research to inspire credentialing organizations to reflect on how they are signaling to the public. Outdoor education credentials are faced with a common challenge communicating the unique value of the credential to the public. Even within the field of outdoor education, the people I interviewed were surprised to learn about the differences between credentials. Without being able to understand the differences and similarities between credentials it is difficult for employers and the public to understand the purpose and value of the credential. Although employers and the public may have been able to chunk outdoor instructors into broad categories of skill levels, or what Arrow (1973) called filter theory, understanding the details of the educational process for instructors will help to improve the clarity of this signal.

Although there was much evidence to support the signaling intent of credentials, and many of interviewees remarked how a credential was helpful in signaling to employers and to the public the skills of an instructor; the role of signaling theory in shaping the design of credentials was less clear. Signaling theory supported an understanding about the purpose of a credential based on the perceptions of others. Credentialing organizations concerned about the signaling abilities of a credential could design credentialing elements and requirements

that are driven by the effectiveness of these requirements to signal competence and to increase the efficiency of employment. There are many examples of credentialing elements that could be different based on an organization's perception of the role of signaling in the purpose of a credential. An important requirement for signaling professionalism is a code of conduct. An organization that was more concerned with the signaling effects of the credential would be more likely to make a code of conduct publically available and require that instructors sign the code. Similarly, requiring background checks could serve as a signal to potential employers and students that the organization is responsible for selecting instructors based on both moral and technical attributes. Finally, an organization's affiliation with a national or international standard was an important characteristic of signaling theory. Affiliations create efficient signals of an instructor's skills by using an established network of a larger organization. Organizations that were less concerned about signaling employability to the public or other organizations would be less inclined to align the credential with an external standard. These are a few examples of how organizations demonstrated signaling theory in the design of their credentials. The relative importance of the purpose of the credential to signal to others could help to explain why credentialing elements were both similar and difference across credentials. Organizations more concerned with creating job opportunities for credentialed instructors were more likely to require instructors to demonstrate elements for the purpose of employability and less concerned about training and assessment.

**Credentialing summary and new questions.** The purpose of this research was to understand what was required to become a credentialed outdoor instructor and what theoretical frameworks explained why credentials might have developed similar or different

requirements. Examining the perspectives of credentialing organizations based on the major theories in credentialing provided insight into why credentialing requirements developed in unique ways. These findings were mixed and each theory seemed to contribute to the design of an outdoor credential in different ways. Understanding the many potential theoretical influences on the design of credentials is an important place to begin understanding of the role of credentialing in outdoor education and its role in society. However, this research only begins to explore the phenomenon of credentialing in outdoor education. The interviews and secondary analysis of documents were focused on understanding the diverse perspectives of credentialing organizations and the people in charge of managing and designing the credentialing programs. These individuals were the most appropriate people to interview in order to understand the reasons why requirements were similar and different between different organizations. However, their opinions only provided partial insight in the broader question about the role of outdoor instructor credentials in society.

To begin answering questions about the purpose of outdoor instructor credentials and their role in society, a new research design would be required. Specifically, the sample of interviewees would need to be expanded to provide the perspectives of many more stakeholders. By interviewing only the leaders of credentialing organizations I was limited to a very narrow perspective. In actuality the purpose and role of a credential in society is determined by all of those who are served by the credential, and different stakeholders may interpret the purpose differently. Therefore, by interviewing employers, outdoor instructors, students, and the general public one could begin to better understand the professional nature of outdoor instructor credentials and how these outdoor credentials are perceived and employed in hiring decisions. These different stakeholders would likely have very different



perspective from those in charge of managing the credential and provide interesting insights into phenomenon of credentialing in outdoor education.

Although these perspectives would provide value insight into professional nature of outdoor education and the role of outdoor instructor credentials in society, the mystery remains why some credentials shared some similar requirements yet most credentials incorporated a wide variety of requirements and standards. To understand this question, a new theoretical framework is needed to expand the single theory model of credentialing that allows for greater interpretation of the many factors discussed by the interviewees.

### **A New Interpretation of Credentialing Theory**

The three major theories in credentialing each use a different approach to understand the role of credentials in society. Human capital theory is driven by the purpose of personal improvement. Credentialist theory maligns the purpose of credentials in creating barriers for workers in society. Signaling theory shifts the focus of the purpose of a credential to a tool for translating societal perception. Each of these theories contributes an important viewpoint for understanding credentialing because each theory addresses the concept of credentialing from a different stakeholder perspective. Furthermore, the traditional theories in credentialing are limited by this narrow perspective and therefore researchers have not previously explored the connection between the purpose of a credential and it's design. However, this research demonstrated that the design and purpose of a credential are interrelated and it is remiss to not include both points of view when evaluating the role of a credential in society.

The commonly cited theories on credentialing are flawed when used to explain why credentials have similar and different credentialing requirements. A single theory does not

explain the characteristics of credentialing in outdoor education. Human capital, credentialist, and signaling theory view the purpose of a credential as separate from the evolution and design of professional credentials. It is important to examine credentialing using an expanded theoretical framework; a framework that is focused more on a developmental model of credentialing instead of an explanatory model. To understand why credentials manifest similar and different attributes it is necessary to create a new theoretical framework that incorporates a developmental perspective.

A new approach to understanding that development of credentials can be adapted from Bronfenbrenner's (1979) ecological systems theory. Bronfenbrenner emphasized the role of environment in shaping development in his book *The Ecology of Human Development: Experiments by Nature and Design*. Although Bronfenbrenner's theory was focused on the process of human development, Bronfenbrenner's theory provides a new perspective for understanding the development of occupational credentials and how development in context may shape the design and purpose of the credential. Bronfenbrenner (1989) once wrote:

In examining the scientific conceptions of the developing person from an ecological perspective, one is struck by the curious fact: the overwhelming majority of these conceptions are context free; that is, the characteristic of the person are defined, both conceptually and operationally, without any reference to the environment, and are presumed to have the same meaning irrespective of the culture, class, or setting in which they are observed, or in which the person lives. (p. 202)

The theories describing the conception of credentials often shared the same context free crisis. Specifically, a major concern of Bronfenbrenner was how competence was evaluated in different settings and contexts (Bronfenbrenner, 1989). Competence in context is directly applicable to the dilemma of evaluating outdoor instructor competence across countries and activities in different environments. Through interviews with the directors and developers of

outdoor instructor credentials it was clear that there were many factors that influenced the design and purpose of credentials for instructing outdoor activities.

Bronfenbrenner's (1979) ecological systems theory was based on the interaction of five environmental systems with the person at the center of the system. Although Bronfenbrenner's theory of human development cannot be exactly transcribed by replacing the person in the center of the model with a credentialing organization; this theoretical framework is surprisingly relevant to the developmental process of a credential. Instead of comparing the cognitive development of child to the development of a credential, it is helpful to make a cognitive leap in thinking about the continual design and evaluation of a credential as the developmental process of a credential and the credentialing requirements as the manifestation of the design, or the developmental result.

**Ecological systems theory.** Bronfenbrenner (1977) defined a microsystem as "the complex relations between the developing person and environment in an immediate setting containing that person... a setting is defined as a place with particular physical features in which the participants engage in particular activities in particular roles" (p. 514). The relationship between a credentialing organization and the immediate environment was a factor that was an important consideration in the development of a credential. The environments for credentialing organization include offices, training locations, accreditation and conference locations, and perhaps most importantly the outdoor environment. In all of these environments the organization participates in specific activities and fulfills specific roles. For other types of credentialing organizations the environmental examples would be different; however there were many environmental microsystems that were discussed by the interviewees. For example, Tucker from ACMG in Canada discussed how the vast amounts

of terrain and challenging mountain environments required instructors to have a high degree of skill to teach in these environments. Therefore the environment necessitated designing a difficult and high level of training to adequately prepare instructors. Wickham from PADI also described how the unfamiliarity of the underwater environment required instructors to participate in a unique process of credentialing that involved multiple steps, assessments of different skills and knowledge, apprenticeship, and complex training. Some organizations, like ACMG, had a central home office. While other organizations had multiple offices and separate committees that made independent decisions about credentialing requirements. Some organizations, like IMIC, were small, independent, and had few employees; while other organizations, like Paddle Canada, were large and hyper-connected to industry associations. Different activity types also interacted with the environments in different ways. PADI scuba divers were limited to a short amount of time underwater. While a Nordic skier might spend hours, or days in constant participation. Each organization in each country experienced unique environmental conditions that shaped the development of the credential.

The mesosystem was described by Bronfenbrenner (1977) as a “system of microsystems” (p. 515) or also the “interrelations among major settings containing the developing person at a particular point in his or her life” (p. 515). The most applicable conditions for credentialing organizations were the interactions between the organization and industry and land managers. In Canada there were provincial and local parks that outlined specific requirements for credentials for many different activities that operated in the different environments. Likewise, in New Zealand, Cowie described setting in which he facilitated the design of credentialing programs with industry leaders. Even in the U.S, where credentialing organization were vastly more independent with little national or

international oversight, March described how he worked with the mountain bike industry to develop a credential to meet the high industry standards. The philosophical foundations and the personality of the credentialing organizations also deeply affect these interactions. In the previous example involving March and the IMIC, his personality and educational philosophy encouraged him to seek out relationships with organizations and industry partners to develop a unique set of requirements for becoming a mountain bike instructor. These are just a few examples, but in most cases the interaction between the credentialing organization and other stakeholders influenced the development and design of credentialing requirements.

The third system defined by Bronfenbrenner was the exosystem. Bronfenbrenner (1977) described the exosystem as including “social structures...[and] major institutions of society” (p. 515) such as, “mass media [and] agencies of government (local, state, and national)” (p. 515). The exosystem applied to credentialing organizations with respect to the influence of politics, legislation, and historical/current events covered by the media, on the design of credentials. Wickham described how legislation around the world, but specifically in Australia, dictated how scuba diving instructors were certified. These political influences not only shaped the design of the credential but also the role of the credential in Australian society. He also described how a lack of regulation in many countries allowed PADI to develop their own systems for credentialing instructors without government oversight. Davidson also explained how the U.K government required certain training requirements for instructors who were credentialed through BASI, the U.K governing body for Nordic skiing. Many land managing agencies were also major institutions and part of local, state, or national governments. These institutions influenced the design and purpose of credentials; everywhere from the rocks of Joshua Tree National Park, to the peaks of the Canadian

Rockies, to the reefs of the Great Barrier Reef. Current events, such as the avalanche accident described by Tucker were also an important consideration for how the exosystem might influence the development of credentials. Literature describing the political affects of the Lyme Bay kayaking tragedy on credentialing for adventure sports in the U.K also reflected a similar influence of the exosystem in credentialing (Allison & Telford, 2005).

The macrosystem was described as the “overarching institutional patterns of the culture or subculture, such as the economic, social, educational, legal, and political systems...” (Bronfenbrenner, 1977, p. 515). Bronfenbrenner went on to explain that the macrosystems were not only a finite structures but also “carriers of information and ideology that, both explicitly and implicitly, endow meaning and motivation to particular agencies...” (p. 515). The macrosystem incorporated the major credentialing theories and integrated these theories into a framework that made the ideological purpose of credentialing more relevant to the actual design and implementation of a credentialing scheme. The macrosystem explained how theory is transmitted into practice and how these credentialing theories, based on understanding the role of credentials in society, can instill meaning and motivation for how credentialing organizations develop credentials. The culture and institutional patterns of a society not only shape the role and purpose of credentials and how they are perceived; but these patterns are also an important factor in how credentials develop a system of credentialing requirements. Credentialing themes of skill building, access to employment, and signaling ability each influence the design of a credential differently based on the cultural and institutional influences of the educational, sociological and economic environments surrounding the credential. However, it is important to note that following

Bronfenbrenner's model of development, the influences described in the macrosystems are only one component of the developmental process.

Finally, Bronfenbrenner later added the chronosystem to his theory of development, or simply put a "dimension of time" (1989, p. 201). Understanding that development changes over time is an important consideration for understanding the role and design of credentials. Historical accounts of the evolution of credentials in medicine, law, and education that were discussed in the review of literature highlighted how as professions mature, the credentialing process and the purpose of credential also change. Research in outdoor education also discussed an evolving need for credentials over time and the changing need of educational practices for instructors. Johnston, from Paddle Canada, described the chronosystem influence on credentialing organizations and how it may affect the design of credentials:

How long the organization has been around is another big factor. As organizations age they tend to get more bureaucratic and if you look at older organizations they tend to have become more dogmatic and much more bureaucratic. Until there is a program review and then the program gets redesigned and all that scaled back and then it gets built back up again over time.

It is clear that time and the age of an organization are important factors that determine how a credential is designed and may explain how some of the similarities and differences have evolved across different credentials. However, just like in each of the previous systems, the interaction of all of the systems work together to influence the design of the credential.

Examining credentials from a developmental perspective is new approach and a new way to think about the role of credentials in society. Much more research is needed in order to explore how an ecological system theory applies to credentialing theory. Each of the systems in Bronfenbrenner's theory of development raises new questions and variables to

explore in order to better understand the design and development of credentials in outdoor recreation education. One could examine specific environments, activities, organizational types, organizational philosophies or personalities, cultural characteristics, and how all of these developmental factors change over time. However at the very least, the ecological systems theory provides a new opportunity and framework for discussing credentialing theory and how credentials interact with society.

### **Summary and Limitations**

Despite the detailed preparations, during the process of conducting research a number of limitations were encountered. Most of these limitations were anticipated prior to embarking on the research. First, a complete sampling frame was not available for this research. That is, there was not a complete listing of organizations that provide credentials for teaching outdoor activities for any country and therefore the population of organizations is unknown for each activity. Data collection relied on my ability to find appropriate organizations. To overcome this limitation I used many different sources, including getting confirmation and recommendations from similar organizations. Once organizations were identified another limitation of the study was gaining access to all the information about the credential. In most cases information was readily available online or accessible by request. However in, some cases, organizations considered information about the credential to be proprietary and would not allow access to the details of the credentialing process. In these rare cases information that was publically available was used for basic categorical analysis and the inaccessible information about the standards for the elements were not included in analysis. These omissions did not affect the overall analysis of categories for credentials,



instead only specific examples of some standards were not included in the qualitative description of results.

Another limitation is the intentionally limited list of outdoor activities and countries. Consequently, the results cannot necessarily be generalized across the entire field of outdoor recreation and instead are limited to the specific activities studied. Likewise, only five countries were selected and each of these countries shared many historical and demographic similarities. At present, substantial developments in outdoor education are happening in South America, Scandinavia, Singapore, and China. Compared to the sample used in this study, each of these areas has different socio-political backgrounds that could have demonstrated entirely different approaches to credentialing for teaching outdoor activities.

Although these limitations may have affected some aspects of the study, the overall benefit of this research is significant. Outdoor recreation activities are experiencing an exciting growth in popularity in the U.S and around the world. As more people turn to outdoor recreation activities for leisure, health, and educational opportunities, there is an increased need for training and education for professional outdoor educators. This research provides a landmark survey of what outdoor credentials are available for teaching outdoor activities and a census of the requirements for these credentials across five countries. An exploration into the theoretical frameworks for why these credentials have developed their unique characteristics also provides a foundation for better understanding of the perceived role of these credentials in society and their value.

Providing clear information about the requirements for becoming an outdoor recreation educator will become increasingly important for businesses, organizations, schools, and students to understand the skills and abilities of outdoor activity teachers. It is

my hope that information presented in this research on outdoor educator training and skills requirements will provide a valuable contribution to the field of outdoor education and begin to bridge the gap in understanding outdoor education among the public and other fields of education. This research helps to peel back the veil of mystery surrounding what is required to become an outdoor recreation educator. Outdoor recreation provides many opportunities for alternative forms of education and an outlet for lifelong participation in healthy activities. Not only does this research contribute to the professionalization of the field of outdoor education, it also provides new insight into credentialing theory from the perspective of an emerging occupation. These insights include and a new theory of credentialing based on the Bronfenbrenner's (1979) ecological systems theory that interprets the design and role of credentials through the lens of the interaction of multiple environmental factors that are unique to individual credentialing organizations. This research also illuminates connections from multiple fields, and across literature on credentialing theory, to the field of outdoor education.

**Professionalism of outdoor education.** Perhaps due to its recreational connections, outdoor education is a relatively new concept that struggles with professionalism and the debate about the evolving role of certifications in professions. However, one of the outcomes of this research was a better understanding of outdoor recreation as an educational profession. Following Greenwood's (1957) model of professionalism, this research uncovered that outdoor recreation has achieved many characteristics of a profession. It is clear that there is a systematic body of theory that outdoor instructors are required to learn, and that training is required to master the requirements of teaching these outdoor activities. Another characteristic of a profession is authority. As many of the interviewees described,

this knowledge is not readily self-apparent; therefore the public generally seeks authority from the credentialing organizations. Although not described in depth throughout this paper, there is also a clear professional culture for becoming an outdoor instructor with professional associations, awards, and unique attitudes and behaviors.

An area for professional improvement in the field of outdoor education is creating a more pervasive and clear code of ethics throughout credentialing organizations. Only some credentialing organizations presented a clear code of ethics for the public. Credentialing organizations may have had an internal code of conduct for instructors however a key aspect of Greenwood's characteristics of a profession was a clear and visible code. The final characteristic of a profession described by Greenwood was a public sanctioning of a profession's ability to credential. After completing the evaluation of outdoor recreation instructor credentials for the selected countries, it is clear that a system has developed for consistently credentialing the outdoor professional for teaching almost all of the outdoor recreation activities. An interesting follow-up study would be to explore how well these credentials are recognized and sanctioned by the public.

**Connections.** A goal of this research was not only an increased understanding of educational requirements for becoming an outdoor instructor, but also an attempt to share information about the credentialing process across countries and educational disciplines. Although much more research is needed, this first foray into understanding the credentialing process for outdoor activity instruction revealed many different approaches to training and educating outdoor instructors. For continued growth and evolution of the field of outdoor education it may be beneficial for organizations to review the information presented in this research and reexamine their own credentialing practices. I am not arguing that there should

be a standardized educational scheme for all outdoor educators. In fact, I am suggesting quite the opposite; that each activity in each country is unique and there are interesting attributes that individual credentials have developed that may also be applicable and beneficial to a credential for another activity or even a credential in another country.

Perhaps even more interesting connections can be drawn between credentialing in outdoor education and traditional education or health and exercise science. Williams et al. (2011) recently found that most physical education teachers do not have the necessary skills to teach outdoor recreation and therefore schools are outsourcing this education to outside professionals. For many activities there is enormous potential for professional development opportunities that would give teachers new skills and new opportunities for teaching. Many of the most popular outdoor recreation activities' entry level instructor certifications are achievable with a basic amount of experience. That being said, it is important to recognize that many of the activities also require tremendous dedication and experience and that administrators and teachers should take great care before attempting these activities without professional support or training.

The nascent design of many outdoor instructor credentials and the constant feedback from industry has meant that the credentialing process has been dynamic and evolving. These attributes combined with other characteristics expressed by the interviewees has led to a surprising amount of innovation and diversity among credentials in the field of outdoor education. Innovation and diversity of maintenance requirements, teaching strategies, group management, and assessment tools also have interesting implications for other educational fields. The many unique strategies for training and assessing instructor competence provide the opportunity to explore how people learn and interact in different educational

environments. In many cases different credentials share the same goal of educating an instructor to a minimum level of competence, yet these credentials pursue different approaches to reach this goal. These different strategies present a dynamic for understanding the effectiveness of different educational designs found among the different credentialing schemes. In my previous experience within the field of outdoor and experiential education I have noticed a reluctant and tenuous acceptance of formal assessments. Perhaps this is because there is a lack of understanding about the accuracy of these measures. One of the most interesting findings of this research was the incredible diversity of assessment strategies and tools used to evaluate the competency of outdoor instructors, but heterogeneity can be a great benefit. As Patton (1990) described, “any common patterns that emerge from great variation are of particular interest and value in capturing the core experiences and central, shared aspects or impacts of a program” (p. 172). Not only was there a common pattern of both written and performance-based assessments among credentials, but many of the core categories were being assessed by most credentials using slightly different criteria and standards. These characteristics highlight the importance of these categories and also may stimulate the integration of new ideas that could improve the ability of credentialing organizations to evaluate instructor candidates’ competency.

This research promotes sharing information about the required elements and standards used to train and evaluate competency and allows credentialing organizations to understand the different processes used to credential outdoor instructors around the world. By examining these processes in more depth, organizations can gain insight into educational best practices for a specific activity or across the entire field of outdoor recreation education in the selected countries. Connecting instructors and credentialing organizations to different

educational techniques and standards will improve the educational experience for instructors, students, and all participants in outdoor recreation.

**Conclusion.** To improve the professionalism of outdoor education it is necessary to increase the signaling ability of credentials and the public's recognition of the credentials. This process begins with developing more transparent and clear presentations of the requirements and the skills and abilities of outdoor instructors. One of the most surprising aspects of conducting this research was a lack of transparency of the credentialing requirements. Often, limited public information was available, and when information was requested sometimes organizations were even hesitant to share basic information about the credential for fear of intellectual property theft. Many organizations provided a wonderful description and a clear presentation of all the minute details that make the characteristics of preparation, training, and assessment for the credential unique. However, not all organizations facilitated a clear understanding of the value and purpose of the credential. It is essential for the public to understand the credentialing process in order to value the credential. According to the credentialing organizations, a credentialed outdoor instructor has undertaken important skills training, but if the public cannot recognize the difference between the value of a person with a credential and without, then the human capital benefits of the training are not signaled and the public perception of the professionalism of the field is not advanced.

In Australia and New Zealand the development of national educational standards for instructing outdoor activities has helped to foster a clear signal of qualifications and simultaneously there has been wide acceptance of outdoor education in schools in these countries. However, despite sharing common national standards, the decentralization of the

process through third-party training organizations has also perpetuated the balkanization of credentialing processes that remains strikingly similar to other countries. The independent nature of many of these activities may be a unifying characteristic that supports a philosophy of credentialing independence. Although there can be much innovation in independence, a corresponding drawback is a lack of uniformity, consensus, and clarity when examining the field of outdoor education as a whole.

This research has not been an argument for or against certifications in the field of outdoor education nor a call for consistency between organizations, activities, or countries. Instead, it has been an examination of credentialing for a select sample of educational organizations in the field of outdoor education. This research has been an attempt to understand educational credentials for outdoor instructors, why they exist, what do they mean, and what are the requirements for becoming an instructor. Although I have suggested some improvements and recommendations along the way, the main goal has been to explore and explain some of the characteristics of the phenomenon of credentialing in outdoor education. Examining outdoor education credentialing using the major theoretical frameworks in credentialing theory provides a new perspective to the already rich discussion about the role of certifications in outdoor education. It is generally agreed upon by many experts in outdoor education that certifications will continually be a more important force in outdoor education (Attarian, 2001; Priest, 2000). Therefore one of the major implications of this study is the realization for the need of increased transparency about the credentialing elements, assessments, and standards by which outdoor instructors are trained and evaluated.

Clarity of credentialing requirements will not only bring greater recognition but will also increase the accessibility of outdoor education to more people. For example, if teachers

can recognize the detailed background knowledge that is incorporated into training, a teacher may be more likely to draw a connection between the classroom curriculum and the opportunity to use an outdoor recreation activity as an experiential education tool. Likewise if school administrators and parents can define what Pate et al. (2006) called “qualified supervision” (p. 1221) by more clearly understanding the technical skills, safety and rescue training, and group management philosophies of outdoor instructors then schools may be more willing to incorporate outdoor recreation activities in schools. Educating youth about lifelong healthy habits is one of the most important educational challenges facing teachers (NASPE & ACA, 2010) and research has shown that there are many educational and health benefits associated with participation in outdoor recreation activities. School curricula around the world are beginning to realize the potential of outdoor recreation education and this research gives all stakeholders a tool to evaluate and understand the purpose of outdoor recreation instructor credentials in a new light.



## **Appendix A: Example Document Request Letter**

Dear \_\_\_\_\_ [organization],

My name is Nathan Trappe and I am a student and University of North at Chapel Hill conducting research for partial fulfillment of my master's degree thesis requirement. The purpose of my research is to understand the certification requirements for teaching a variety of outdoor activities. I have been on your website and I have been unable to locate descriptions of the specific standards required for certification in your \_\_\_\_\_ [name of certification].

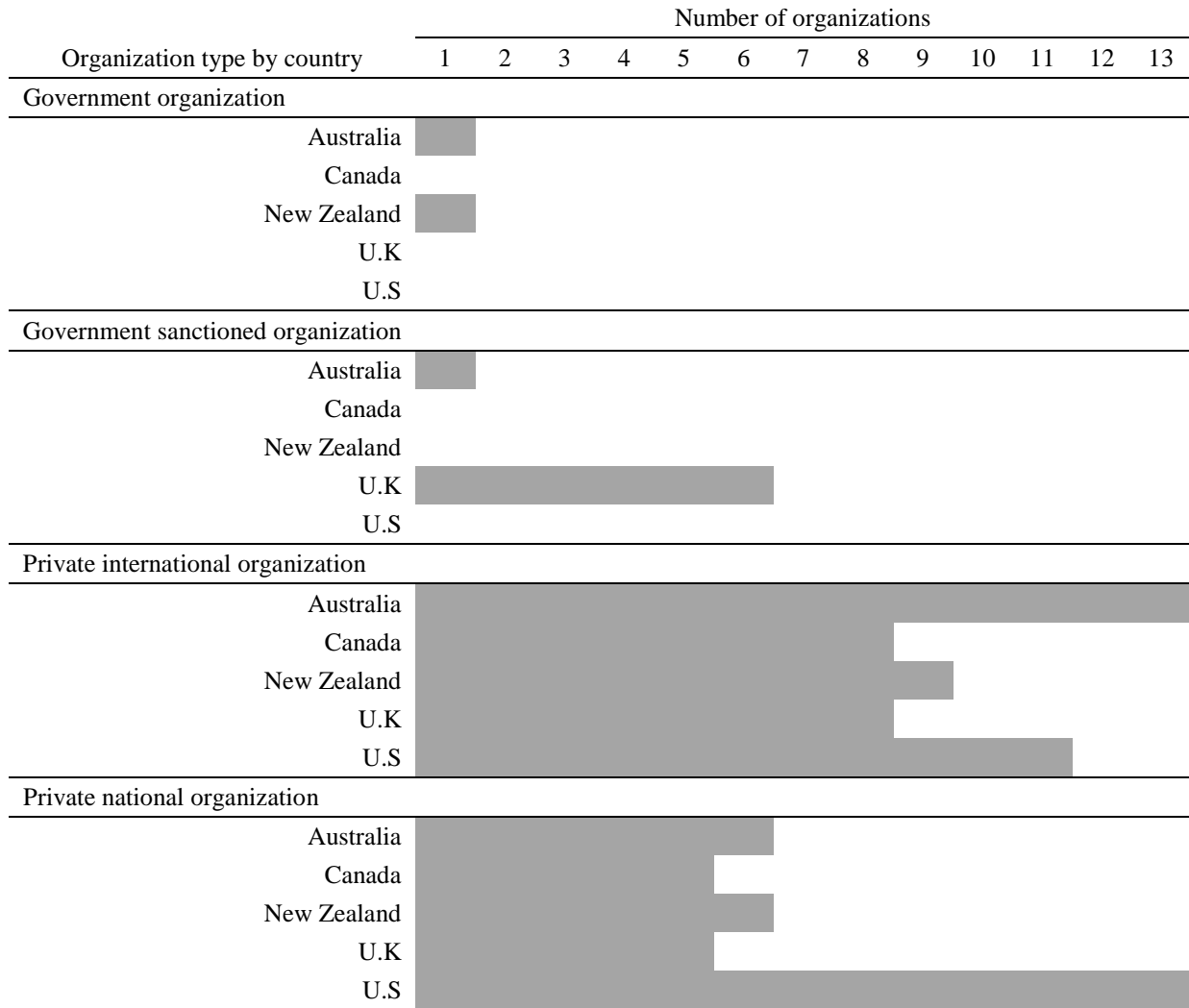
I would greatly appreciate your help in locating these documents. Could you please send me copies of any documents that outline the requirements for becoming a \_\_\_\_\_ [activity] instructor. These documents may consist of instructor certification course details, assessment protocols, pre-requisites descriptions, or any information that pertains to the requirements of what it takes to become an instructor. I will analyze these documents and use them in my research to outline the requirements of the certification and also compare the certification process to other outdoor activities across different countries. If you have any questions about my research, please let me know.

Thank you in advance for your help.

Best Regards,

Nathan Trappe

## Appendix B: Organizational Typography by Country



*Note:* The organization type was based on the dominant characteristic of that organization. For example, the RYA is the national governing body for sailing and windsurfing in the U.K, and the RYA also credentials sailing instructors in Australia. Although the RYA is technically an international organization, it's primary role is acting as the U.K governing body for sailing activities.

## **Appendix C: Example Interview Protocol**

**Project:** Credentialing standards for teaching outdoor activities: An international comparison

**Time of interview:**

**Date:**

**Interviewer:** Nathan Trappe

**Interviewee:**

**Position of Interviewee:**

**Summary:** Thank you for taking the time to speak with me today. My name is Nathan Trappe and I am a master's degree student at UNC-Chapel Hill. I am conducting research on credentialing standards for outdoor activities for completion of my master's degree thesis. Is it OK for me to record this conversation? [Start recording] The purpose of my thesis research is to explore how different organizations have developed credentialing standards for teaching outdoor activities, what these standards are, and the rationale for these standards. The interview should take about 30 minutes; will this amount of time still work for your schedule?

### **Questions:**

1. Can you please describe your role or position at \_\_\_\_ [organization]?
2. Is your organization affiliated with any international or national standards?
3. Why/why not affiliated?
4. Are there any regulations that affect the design of the credentials?  
Probing questions: International standards? National laws?
5. Are there any regulations that require a \_\_\_\_ certification to teach activities in certain areas?  
Probing questions: Are instructors limited by not having a teaching credential? Does a credential give an instructor more access to employment?
6. Besides any regulations are there any other factors that affected the development of the credentials and the required elements?  
Probing questions: The type of activity? The environment? Historical reasons?
7. In your opinion, why do you think organizations and activities might have developed different standards and processes for certifying outdoor instructors?
8. Why might an activity have different levels of certification?
9. In your opinion, why should a certification be required to teach \_\_\_\_\_ [activity]?

10. In your opinion, why should a person get a \_\_\_\_\_ [activity] teaching certification?
11. One a person has earned a certification, what role does it have in their life?
12. What is the primary purpose of the certification?  
Probing questions? Does it improve the skills of the person and make them better at teaching the activity? Will it help them become more employable because employers will see their certification and know they have the right skills? Does it help keep highly trained people in the right positions and prevent people with less experience from teaching?
13. Are there any other people in your organization that I should talk to about the details of the certification process?
14. Are there any other resources about the certification process available, that are not available publically?

**Closing comments:**

Thank you for your assistance in answering all of my questions about the certification process. The information you have provided has been very helpful. Our conversation has been recorded, but I will only be using the recordings to produce a transcript for my analysis. Will it be alright for me to quote some of your responses in my thesis? Would you like for me to send you a copy of my final thesis when it is completed? If I have more questions would it be possible to contact you for another follow-up interview? Thanks again.

## Appendix D: Interviewed Consent Form

Dear \_\_\_\_\_,

First and foremost, thank you for agreeing to participate in my research study. This form details the purpose of the study, provides you with a description of the information being collected and the methods being used to collect this data. This form also outlines your rights as a participant, the risk involved, and potential benefits.

The purpose of this interview is to collect information about the credentialing standards that are required to become a/n \_\_\_\_\_ instructor. This research is being conducted in partial fulfillment of the master's degree thesis requirements at UNC-Chapel Hill. The goal of the research is enhance public understanding of the credentialing process for teaching a variety of outdoor activities, inform hiring decisions of outdoor activity instructors, and encourage cross-disciplinary sharing about standards and rationale for their development. The main benefit of the study will be an increased understanding of the requirements that organizations use to certify outdoor activity instructors. There are minimal risks to the interviewee, however it will not be possible to ensure anonymity due to the relatively small number of credentialing organizations and focused interviews.

Participation is primarily requested for one interview that will last approximately 30 minutes. You are not required to answer all of the questions. A follow-up interview may be necessary, but these interviews will be requested on a case by case basis. All interviews will be recorded for analysis. If you request that an interview not be recorded, accommodations can be made for the researcher to only take notes. At anytime you may choose to no longer participate in the interview or in the research study, and the recordings and transcripts will be destroyed without any repercussions.

If you have any questions prior to, during, or post interview, please do not hesitate to contact me in person, by telephone, or by e-mail. Please see the attached list of questions that represent the type of questions that will be asked during the interview. And again, thank you.

The participant understands that:

- participation in the interview is optional and that participant can withdrawal from the interview at any time.
- data from the study will be used in partial fulfillment of master's degree from University North Carolina at Chapel Hill.
- interviews will be recorded unless otherwise requested.
- quotes and opinions of the participant may be cited in the final research.
- data from this study may be used in this research project or future projects conducted by the researcher.
- transcripts of the interviews will be kept secured on a password protected laptop, but the participant may request a full transcript from the researcher.
- contact information for the research has been made readily available.

Print Name: \_\_\_\_\_ Signature \_\_\_\_\_ Date: \_\_\_\_\_

## Appendix E: Australia Organizational Affiliations

Activity	Organization	International	National
Canoeing	AC		x
Canoeing	VET		x
Canoeing	NOLRS		x
Caving	VET		x
Caving	NOLRS		x
Hiking	NOLRS		x
Kayaking River	VET		x
Kayaking River	NOLRS		x
Kayaking River	AC		x
Kayaking Sea	VET		x
Kayaking Sea	NOLRS		x
Kayaking Sea	AC		x
Kite Surfing	BKSA		
Kite Surfing	IKO		
Mountain Biking	AMBIA		
Mountain Biking	PMBI		
Mountain Biking	VET		x
Nordic Skiing	APSI	x	
Nordic Skiing	VET		
Paddleboarding	ASI	x	
Paddleboarding	ISA	x	x
Rafting	NOLRS		x
Rock Climbing	ACIA		
Rock Climbing	PACI		x
Rock Climbing	VET		x
Sailing	YA	x	x
Sailing	RYA	x	
Sailing	VET		x
Scuba diving	AUSI		x
Scuba diving	VET		
Scuba diving	PADI	x	
Scuba diving	SSI	x	
Scuba diving	NAUI		
Scuba diving	BSAC	`	
Scuba diving	SDI	x	
Scuba diving	CMAS	x	
Surfing	ASI	x	x
Surfing	ISA	x	x
Surfing	VET		x
Windsurfing	YA	x	x

*Note:* Ice climbing and mountaineering instructor certifications are not represented.

## Appendix F: Australia Membership Requirements

Activity	Organization	Insurance	Dues	Forms	Code of conduct	Medical clearance	Maintenance
Canoeing	AC	x	x		x		x
Canoeing	VET						
Canoeing	NOLRS		x		x		
Caving	VET						
Caving	NOLRS		x		x		
Hiking	NOLRS		x		x		
Kayaking River	VET						
Kayaking River	NOLRS		x		x		
Kayaking River	AC	x	x		x		x
Kayaking Sea	VET						
Kayaking Sea	NOLRS		x		x		
Kayaking Sea	AC	x	x		x		x
Kite Surfing	BKSA	x	x		x		x
Kite Surfing	IKO	x					
Mountain Biking	AMBIA		x				x
Mountain Biking	PMBI						
Mountain Biking	VET						
Nordic Skiing	APSI		x				x
Nordic Skiing	VET						
Paddleboarding	ASI		x				
Paddleboarding	ISA		x	x	x		
Rafting	NOLRS		x		x		x
Rock Climbing	ACIA		x				x
Rock Climbing	PACI	x	x		x		x
Rock Climbing	VET						
Sailing	YA	x	x	x	x		x
Sailing	RYA		x		x		x
Sailing	VET						
Scuba diving	AUSI	x	x		x	x	x
Scuba diving	VET					x	
Scuba diving	PADI	x	x			x	
Scuba diving	SSI	x	x			x	x
Scuba diving	NAUI	x	x			x	x
Scuba diving	BSAC	x	x	x	x		
Scuba diving	SDI	x	x		x	x	x
Scuba diving	CMAS					x	
Surfing	ASI		x				
Surfing	ISA		x	x	x		
Surfing	VET						
Windsurfing	YA	x	x	x	x		x

*Note:* Ice climbing and mountaineering instructor certifications are not represented.

## Appendix G: Australia Prerequisites

Activity	Organization	Minimum age	Reference	First aid	Other certifications
Canoeing	AC	x		x	
Canoeing	VET	x		x	
Canoeing	NOLRS			x	
Caving	VET	x		x	
Caving	NOLRS			x	x
Hiking	NOLRS			x	
Kayaking River	VET	x		x	
Kayaking River	NOLRS			x	x
Kayaking River	AC	x		x	x
Kayaking Sea	VET	x		x	
Kayaking Sea	NOLRS			x	x
Kayaking Sea	AC	x		x	
Kite Surfing	BKSA	x		x	x
Kite Surfing	IKO	x		x	x
Mountain Biking	AMBI	x		x x	
Mountain Biking	PMBI			x x	
Mountain Biking	VET	x		x	
Nordic Skiing	APSI	x		x x	
Nordic Skiing	VET	x		x	
Paddleboarding	ASI			x x	x
Paddleboarding	ISA			x	x
Rafting	NOLRS			x	
Rock Climbing	ACIA			x	
Rock Climbing	PACI	x		x	
Rock Climbing	VET	x		x	
Sailing	YA	x		x x	x
Sailing	RYA	x		x	
Sailing	VET	x		x	
Scuba diving	AUSI	x		x	
Scuba diving	VET	x		x	
Scuba diving	PADI	x		x	
Scuba diving	SSI	x		x	
Scuba diving	NAUI	x		x	
Scuba diving	BSAC	x			
Scuba diving	SDI	x		x	
Scuba diving	CMAS	x		x	
Surfing	ASI			x x	x
Surfing	ISA			x	x
Surfing	VET	x		x	x
Windsurfing	YA	x		x x	x

*Note:* Ice climbing and mountaineering instructor certifications are not represented. The symbol xx signifies advanced first aid training.



## Appendix H: Australia Experience Prerequisites

Activity	Organization	Experience time	Experience teaching	Experience skills	Experience prior certification	Interpersonal
Canoeing	AC	x	x	x	x	
Canoeing	VET			x	x	x
Canoeing	NOLRS		x	x		
Caving	VET			x	x	x
Caving	NOLRS	x	x	x		
Hiking	NOLRS		x	x		
Kayaking River	VET					x
Kayaking River	NOLRS	x	x	x		x
Kayaking River	AC	x	x	x	x	x
Kayaking Sea	VET			x	x	x
Kayaking Sea	NOLRS	x	x	x		
Kayaking Sea	AC	x	x	x	x	
Kite Surfing	BKSA		x	x		
Kite Surfing	IKO	x		x	x	
Mountain Biking	AMBIA					
Mountain Biking	PMBI	x		x		
Mountain Biking	VET			x	x	x
Nordic Skiing	APSI			x		x
Nordic Skiing	VET			x		x
Paddleboarding	ASI					
Paddleboarding	ISA			x	x	
Rafting	NOLRS	x	x	x	x	
Rock Climbing	ACIA	x		x	x	
Rock Climbing	PACI			x		
Rock Climbing	VET					x
Sailing	YA			x		
Sailing	RYA			x		
Sailing	VET				x	x
Scuba diving	AUSI	x		x	x	
Scuba diving	VET				x	x
Scuba diving	PADI	x		x	x	
Scuba diving	SSI	x		x	x	
Scuba diving	NAUI			x	x	x
Scuba diving	BSAC		x	x	x	
Scuba diving	SDI	x		x	x	
Scuba diving	CMAS	x		x	x	
Surfing	ASI			x		
Surfing	ISA			x		
Surfing	VET			x	x	x
Windsurfing	YA	x		x	x	x

*Note:* Ice climbing and mountaineering instructor certifications are not represented.

## Appendix I: Australia Structure of the Certification Schemes

Activity	Organization	Level	Environment conditions	Experience teaching	Experience skills
Canoeing	AC	x	x	x	x
Canoeing	VET	x	x	x	x
Canoeing	NOLRS	x	x	x	x
Caving	VET	x	x	x	x
Caving	NOLRS	x	x	x	x
Hiking	NOLRS	x	x	x	x
Kayaking River	VET	x	x	x	x
Kayaking River	NOLRS	x	x	x	x
Kayaking River	AC	x	x	x	x
Kayaking Sea	VET	x	x	x	x
Kayaking Sea	NOLRS	x	x		x
Kayaking Sea	AC	x	x	x	x
Kite Surfing	BKSA				
Kite Surfing	IKO	x		x	
Mountain Biking	AMBIA				
Mountain Biking	PMBI	x	x	x	x
Mountain Biking	VET	x	x	x	x
Nordic Skiing	APSI	x	x	x	x
Nordic Skiing	VET				
Paddleboarding	ASI	x	x		x
Paddleboarding	ISA	x		x	x
Rafting	NOLRS	x	x	x	x
Rock Climbing	ACIA	x	x	x	x
Rock Climbing	PACI	x	x		x
Rock Climbing	VET	x	x	x	x
Sailing	YA	x		x	x
Sailing	RYA	x	x	x	x
Sailing	VET	x	x	x	x
Scuba diving	AUSI	x	x	x	x
Scuba diving	VET	x	x		x
Scuba diving	PADI	x	x	x	x
Scuba diving	SSI	x	x	x	x
Scuba diving	NAUI	x	x		x
Scuba diving	BSAC	x	x	x	x
Scuba diving	SDI	x	x	x	x
SCUBA	CMAS	x	x	x	x
Surfing	ASI	x		x	x
Surfing	ISA	x		x	x
Surfing	VET	x	x	x	x
Windsurfing	YA	x		x	x

*Note:* Ice climbing and mountaineering instructor certifications are not represented.

## Appendix J: Australia Training Courses

Activity	Organization	Training	RPL	Teaching theory	Teaching skills
Canoeing	AC	☒	x		
Canoeing	VET	x	x	x	x
Canoeing	NOLRS		x		
Caving	VET	x	x	x	x
Caving	NOLRS		x		
Hiking	NOLRS		x		
Kayaking River	VET	x	x	x	x
Kayaking River	NOLRS		x		
Kayaking River	AC	☒	x		
Kayaking Sea	VET	x	x	x	x
Kayaking Sea	NOLRS		x		
Kayaking Sea	AC	☒	x		
Kite Surfing	BKSA	x		x	x
Kite Surfing	IKO	x		x	x
Mountain Biking	AMBIA	x		x	x
Mountain Biking	PMBI	x		x	x
Mountain Biking	VET	x	x	x	x
Nordic Skiing	APSI	x		x	x
Nordic Skiing	VET	x		x	x
Paddleboarding	ASI	x			x
Paddleboarding	ISA	x	x	x	x
Rafting	NOLRS		x		
Rock Climbing	ACIA	x	x		x
Rock Climbing	PACI	x	x		x
Rock Climbing	VET	x	x	x	x
Sailing	YA	x	x	x	x
Sailing	RYA	x		x	x
Sailing	VET	x	x	x	x
Scuba diving	AUSI	x			x
Scuba diving	VET	x	x	x	x
Scuba diving	PADI	x			x
Scuba diving	SSI	x			x
Scuba diving	NAUI	x			x
Scuba diving	BSAC	x		x	x
Scuba diving	SDI	x		x	x
Scuba diving	CMAS	x		x	x
Surfing	ASI	x	x	x	x
Surfing	ISA	x	x	x	x
Surfing	VET	x	x	x	x
Windsurfing	YA	x		x	x

*Note:* Ice climbing and mountaineering instructor certifications are not represented. The symbol ☒ represents an optional training requirement.

## Appendix K: Australia Training Courses Part 2

Activity	Organization	Technical knowledge	Technical skills	Safety rescue	Leadership group mgmt.
Canoeing	AC				
Canoeing	VET	x	x	x	x
Canoeing	NOLRS				
Caving	VET	x	x	x	x
Caving	NOLRS				
Hiking	NOLRS				
Kayaking River	VET	x	x	x	x
Kayaking River	NOLRS				
Kayaking River	AC				
Kayaking Sea	VET	x	x	x	x
Kayaking Sea	NOLRS				
Kayaking Sea	AC				
Kite Surfing	BKSA	x	x	x	x
Kite Surfing	IKO	x	x	x	
Mountain Biking	AMBI	x	x	x	x
Mountain Biking	PMBI	x	x	x	x
Mountain Biking	VET	x	x	x	x
Nordic Skiing	APSI	x	x	x	x
Nordic Skiing	VET	x	x	x	x
Paddleboarding	ASI	x	x	x	x
Paddleboarding	ISA	x		x	x
Rafting	NOLRS				
Rock Climbing	ACIA	x	x	x	x
Rock Climbing	PACI	x	x	x	x
Rock Climbing	VET	x	x	x	x
Sailing	YA	x	x	x	
Sailing	RYA	x	x	x	x
Sailing	VET	x	x	x	x
Scuba diving	AUSI	x	x	x	x
Scuba diving	VET	x	x	x	x
Scuba diving	PADI	x	x	x	x
Scuba diving	SSI	x	x	x	x
Scuba diving	NAUI	x	x	x	x
Scuba diving	BSAC	x	x	x	x
Scuba diving	SDI	x	x	x	x
Scuba diving	CMAS	x	x	x	x
Surfing	ASI	x		x	
Surfing	ISA	x		x	x
Surfing	VET	x	x	x	x
Windsurfing	YA	x	x	x	x

*Note:* Ice climbing and mountaineering instructor certifications are not represented.

## Appendix L: Australia Assessment Processes

Activity	Organization	Assessment	Written	Practical	Teaching theory	Teaching skills
Canoeing	AC	x	x	x	x	x
Canoeing	VET	x	☐	x	x	x
Canoeing	NOLRS				x	x
Caving	VET	x	☐	x	x	x
Caving	NOLRS				x	x
Hiking	NOLRS					
Kayaking River	VET	x	☐	x	x	x
Kayaking River	NOLRS				x	x
Kayaking River	AC	x	x	x	x	x
Kayaking Sea	VET	x	☐	x	x	x
Kayaking Sea	NOLRS				x	x
Kayaking Sea	AC	x	x	x		x
Kite Surfing	BKSA	x	x	x	x	x
Kite Surfing	IKO	x	x	x		x
Mountain Biking	AMBIA	x		x	x	x
Mountain Biking	PMBI			x		x
Mountain Biking	VET	x	☐	x	x	x
Nordic Skiing	APSI	x	x	x	x	x
Nordic Skiing	VET	x	☐	x	x	x
Paddleboarding	ASI	x	x	x		x
Paddleboarding	ISA	x	x	x	x	x
Rafting	NOLRS				x	x
Rock Climbing	ACIA	x		x		x
Rock Climbing	PACI	x	x	x	x	x
Rock Climbing	VET	x	☐	x	x	x
Sailing	YA	x		x	x	x
Sailing	RYA	x	x	x	x	x
Sailing	VET	x	☐	x	x	x
Scuba diving	AUSI	x	x	x		x
Scuba diving	VET	x	☐	x	x	x
Scuba diving	PADI	x	x	x		x
Scuba diving	SSI	x	x	x		x
Scuba diving	NAUI	x	x	x		x
Scuba diving	BSAC	x	x	x	x	x
Scuba diving	SDI	x	x	x	x	x
Scuba diving	CMAS	x	x	x	x	x
Surfing	ASI	x	x	x	x	x
Surfing	ISA	x	x	x	x	x
Surfing	VET	x	☐	x	x	x
Windsurfing	YA	x		x		x

*Note:* Ice climbing and mountaineering instructor certifications are not represented. The symbol ☐ represents an optional assessment requirement.

## Appendix M: Australia Assessment Processes Part 2

Activity	Organization	Technical knowledge	Technical skills	Safety rescue	Leadership group mgmt.
Canoeing	AC	x	x	x	x
Canoeing	VET	x	x	x	x
Canoeing	NOLRS	x	x	x	x
Caving	VET	x	x	x	x
Caving	NOLRS	x	x	x	x
Hiking	NOLRS	x	x	x	x
Kayaking River	VET	x	x	x	x
Kayaking River	NOLRS	x	x	x	x
Kayaking River	AC	x	x	x	x
Kayaking Sea	VET	x	x	x	x
Kayaking Sea	NOLRS	x	x	x	x
Kayaking Sea	AC	x	x	x	x
Kite Surfing	BKSA	x	x	x	x
Kite Surfing	IKO		x		x
Mountain Biking	AMBIA	x	x	x	x
Mountain Biking	PMBI		x	x	x
Mountain Biking	VET	x	x	x	x
Nordic Skiing	APSI	x	x	x	x
Nordic Skiing	VET	x	x	x	x
Paddleboarding	ASI		x		
Paddleboarding	ISA	x		x	x
Rafting	NOLRS	x	x	x	
Rock Climbing	ACIA		x		
Rock Climbing	PACI	x	x	x	x
Rock Climbing	VET	x	x	x	x
Sailing	YA		x	x	x
Sailing	RYA	x	x	x	x
Sailing	VET	x	x	x	x
Scuba diving	AUSI	x	x	x	x
Scuba diving	VET	x	x	x	x
Scuba diving	PADI	x	x	x	x
Scuba diving	SSI	x	x	x	x
Scuba diving	NAUI	x	x	x	x
Scuba diving	BSAC	x	x	x	x
Scuba diving	SDI	x	x	x	x
Scuba diving	CMAS	x	x	x	x
Surfing	ASI	x	x	x	
Surfing	ISA	x		x	x
Surfing	VET	x	x	x	x
Windsurfing	YA		x	x	

*Note:* Ice climbing and mountaineering instructor certifications are not represented.

## Appendix N: Canada Organizational Affiliations

Activity	Organization	International	National
Canoeing	Paddle Canada		
Hiking	ACMG		
Kayaking River	Paddle Canada		x
Kayaking Sea	Paddle Canada		x
Kite Surfing	IKO		
Ice Climbing	ACMG		
Ice Climbing	NEQ	x	
Mountain Biking	PMBI		
Mountain Biking	IMIC		
Mountaineering	ENEQ	x	
Mountaineering	ACMG	x	
Nordic Skiing	CANSI		
Nordic Skiing	ENEQ	x	
Nordic Skiing	ACMG		
Paddleboarding	Paddle Canada		
Rock Climbing	ACMG		
Rock Climbing	ENEQ	x	
Sailing	CYA		x
Scuba diving	ACUC	x	
Scuba diving	PADI	x	
Scuba diving	SSI	x	
Scuba diving	NAUI		
Scuba diving	SDI	x	
Windsurfing	CYA		x

*Note:* Caving, rafting, and surfing instructor certifications are not represented.

## Appendix O: Canada Membership Requirements

Activity	Organization	Insurance	Dues	Forms	Code of conduct	Medical clearance	Maintenance
Canoeing	Paddle Canada	x	x		x		
Hiking	ACMG	x	x		x		x
Kayaking River	Paddle Canada	x	x		x		x
Kayaking Sea	Paddle Canada	x	x		x		
Kite Surfing	IKO	x					
Ice Climbing	ACMG	x	x		x		x
Ice Climbing	NEQ	x	x		x		x
Mountain Biking	PMBI						
Mountain Biking	IMIC	x	x				x
Mountaineering	ENEQ	x	x		x		x
Mountaineering	ACMG	x	x		x		x
Nordic Skiing	CANSI	x	x		x		x
Nordic Skiing	ENEQ	x	x		x		x
Nordic Skiing	ACMG	x	x		x		x
Paddleboarding	Paddle Canada	x	x		x		
Rock Climbing	ACMG	x	x		x		x
Rock Climbing	ENEQ	x	x		x		x
Sailing	CYA	x	x		x		x
Scuba diving	ACUC	x	x			x	
Scuba diving	PADI	x	x			x	
Scuba diving	SSI	x	x			x	x
Scuba diving	NAUI	x	x			x	x
Scuba diving	SDI	x	x		x	x	x
Windsurfing	CYA	x	x		x		x

*Note:* Caving, rafting, and surfing instructor certifications are not represented.



## Appendix P: Canada Prerequisites

Activity	Organization	Minimum age	Reference	First aid	Other certifications
Canoeing	Paddle Canada	x			
Hiking	ACMG	x	x	xx	
Kayaking River	Paddle Canada	x		x	x
Kayaking Sea	Paddle Canada	x		xx	
Kite Surfing	IKO	x		x	x
Ice Climbing	ACMG	x	x	xx	x
Ice Climbing	ENEQ	x		x	x
Mountain Biking	PMBI			xx	
Mountain Biking	IMIC	x		x	
Mountaineering	ENEQ	x		x	x
Mountaineering	ACMG	x	x	xx	x
Nordic Skiing	CANSI	x			
Nordic Skiing	ENEQ	x		x	x
Nordic Skiing	ACMG	x	x	xx	x
Paddleboarding	Paddle Canada	x		x	
Rock Climbing	ACMG	x	x	xx	
Rock Climbing	ENEQ	x		x	
Sailing	CYA	x		x	x
Scuba diving	ACUC	x		x	
Scuba diving	PADI	x		x	
Scuba diving	SSI	x		x	
Scuba diving	NAUI	x		x	
Scuba diving	SDI	x		x	
Windsurfing	CYA	x		x	x

*Note:* Caving, rafting, and surfing instructor certifications are not represented. The symbol xx signifies advanced first aid training.

## Appendix Q: Canada Experience Prerequisites

Activity	Organization	Experience time	Experience teaching	Experience skill	Experience prior certifications	Interpersonal
Canoeing	Paddle Canada			x		
Hiking	ACMG	x	x	x	x	
Kayaking River	Paddle Canada		x	x	x	
Kayaking Sea	Paddle Canada	x		x	x	
Kite Surfing	IKO	x		x	x	
Ice Climbing	ACMG	x	x	x	x	
Ice Climbing	ENEQ	x		x	x	
Mountain Biking	PMBI	x		x		
Mountain Biking	IMIC	x		x		x
Mountaineering	ENEQ	x		x	x	
Mountaineering	ACMG	x	x	x	x	
Nordic Skiing	CANSI					
Nordic Skiing	ENEQ	x		x	x	
Nordic Skiing	ACMG	x	x	x	x	
Paddleboarding	Paddle Canada				x	
Rock Climbing	ACMG	x	x	x	x	
Rock Climbing	ENEQ	x		x		
Sailing	CYA			x	x	x
Scuba diving	ACUC	x	x	x	x	
Scuba diving	PADI	x		x	x	
Scuba diving	SSI	x		x	x	
Scuba diving	NAUI			x	x	x
Scuba diving	SDI	x		x	x	
Windsurfing	CYA					x

*Note:* Caving, rafting, and surfing instructor certifications are not represented.

## Appendix R: Canada Structure of the Certification Schemes

Activity	Organization	Level	Environment conditions	Experience teaching	Experience skills
Canoeing	Paddle Canada	x	x	x	x
Hiking	ACMG	x		x	
Kayaking River	Paddle Canada	x	x	x	x
Kayaking Sea	Paddle Canada	x	x	x	x
Kite Surfing	IKO	x		x	
Ice Climbing	ACMG				
Ice Climbing	NEQ	x	x		x
Mountain Biking	PMBI	x	x	x	x
Mountain Biking	IMIC	x	x	x	x
Mountaineering	ENEQ				
Mountaineering	ACMG				
Nordic Skiing	CANSI	x			x
Nordic Skiing	ENEQ				
Nordic Skiing	ACMG				
Paddleboarding	Paddle Canada	x	x		x
Rock Climbing	ACMG	x	x		x
Rock Climbing	ENEQ	x	x		x
Sailing	CYA	x	x		x
Scuba diving	ACUC				
Scuba diving	PADI	x	x	x	x
Scuba diving	SSI	x	x	x	x
Scuba diving	NAUI	x	x		x
Scuba diving	SDI	x	x	x	x
Windsurfing	CYA	x	x		x

*Note:* Caving, rafting, and surfing instructor certifications are not represented.

## Appendix S: Canada Training Courses

Activity	Organization	Training	RPL	Teaching theory	Teaching skills
Canoeing	Paddle Canada	x	x	x	x
Hiking	ACMG	x	x		x
Kayaking River	Paddle Canada	x	x	x	x
Kayaking Sea	Paddle Canada	x	x	x	x
Kite Surfing	IKO	x		x	x
Ice Climbing	ACMG	x	x		x
Ice Climbing	NEQ	x			x
Mountain Biking	PMBI	x		x	x
Mountain Biking	IMIC	x		x	x
Mountaineering	ENEQ	x			x
Mountaineering	ACMG	x	x		x
Nordic Skiing	CANSI	x	x	x	x
Nordic Skiing	ENEQ	x			x
Nordic Skiing	ACMG	x	x		x
Paddleboarding	Paddle Canada	x	x	x	x
Rock Climbing	ACMG	x	x		x
Rock Climbing	ENEQ	x			x
Sailing	CYA	x		x	x
Scuba diving	ACUC	x			x
Scuba diving	PADI	x			x
Scuba diving	SSI	x			x
Scuba diving	NAUI	x			x
Scuba diving	SDI	x		x	x
Windsurfing	CYA	x		x	x

*Note:* Caving, rafting, and surfing instructor certifications are not represented.

## Appendix T: Canada Training Courses Part 2

Activity	Organization	Technical knowledge	Technical skills	Safety rescue	Leadership group mgmt/
Canoeing	Paddle Canada	x	x	x	x
Hiking	ACMG	x	x	x	x
Kayaking River	Paddle Canada	x	x	x	x
Kayaking Sea	Paddle Canada	x	x	x	x
Kite Surfing	IKO	x	x	x	
Ice Climbing	ACMG	x	x	x	x
Ice Climbing	NEQ	x	x	x	x
Mountain Biking	PMBI	x	x	x	x
Mountain Biking	IMIC	x	x	x	x
Mountaineering	ENEQ	x	x	x	x
Mountaineering	ACMG	x	x	x	x
Nordic Skiing	CANSI	x	x	x	x
Nordic Skiing	ENEQ	x	x	x	x
Nordic Skiing	ACMG	x	x	x	x
Paddleboarding	Paddle Canada	x	x	x	x
Rock Climbing	ACMG	x	x	x	x
Rock Climbing	ENEQ	x	x	x	x
Sailing	CYA	x	x	x	x
Scuba diving	ACUC	x	x	x	x
Scuba diving	PADI	x	x	x	x
Scuba diving	SSI	x	x	x	x
Scuba diving	NAUI	x	x	x	x
Scuba diving	SDI	x	x	x	x
Windsurfing	CYA	x	x	x	x

*Note:* Caving, rafting, and surfing instructor certifications are not represented.

## Appendix U: Canada Assessment Processes

Activity	Organization	Assessment	Written	Practical	Teaching theory	Teaching skills
Canoeing	Paddle Canada	x	x	x	x	x
Hiking	ACMG	x	x	x		x
Kayaking River	Paddle Canada	x		x	x	x
Kayaking Sea	Paddle Canada	x	x	x	x	x
Kite Surfing	IKO	x	x	x		x
Ice Climbing	ACMG	x	x	x		x
Ice Climbing	NEQ	x	x	x	x	x
Mountain Biking	PMBI			x		x
Mountain Biking	IMIC	x	x	x	x	x
Mountaineering	ENEQ	x	x	x	x	x
Mountaineering	ACMG	x	x	x		x
Nordic Skiing	CANSI	x		x		x
Nordic Skiing	ENEQ	x	x	x	x	x
Nordic Skiing	ACMG	x	x	x		x
Paddleboarding	Paddle Canada	x	x	x	x	x
Rock Climbing	ACMG	x	x	x		x
Rock Climbing	ENEQ	x	x	x	x	x
Sailing	CYA	x	x	x	x	x
Scuba diving	ACUC	x	x	x		x
Scuba diving	PADI	x	x	x		x
Scuba diving	SSI	x	x	x		x
Scuba diving	NAUI	x	x	x		x
Scuba diving	SDI	x	x	x		x
Windsurfing	CYA	x	x	x	x	x

*Note:* Caving, rafting, and surfing instructor certifications are not represented.

## Appendix V: Canada Assessment Processes Part 2

Activity	Organization	Technical knowledge	Technical skills	Safety rescue	Leadership group mgmt
Canoeing	Paddle Canada	x	x	x	x
Hiking	ACMG	x	x	x	x
Kayaking River	Paddle Canada		x	x	x
Kayaking Sea	Paddle Canada	x	x	x	x
Kite Surfing	IKO		x		x
Ice Climbing	ACMG	x	x	x	x
Ice Climbing	NEQ	x	x	x	x
Mountain Biking	PMBI		x	x	x
Mountain Biking	IMIC	x	x	x	x
Mountaineering	ENEQ	x	x	x	x
Mountaineering	ACMG	x	x	x	x
Nordic Skiing	CANSI		x	x	x
Nordic Skiing	ENEQ	x	x	x	x
Nordic Skiing	ACMG	x	x	x	x
Paddleboarding	Paddle Canada	x	x	x	x
Rock Climbing	ACMG	x	x	x	x
Rock Climbing	ENEQ	x	x	x	x
Sailing	CYA	x	x	x	x
Scuba diving	ACUC	x	x	x	x
Scuba diving	PADI	x	x	x	x
Scuba diving	SSI	x	x	x	x
Scuba diving	NAUI	x	x	x	x
Scuba diving	SDI	x	x	x	x
Windsurfing	CYA	x	x	x	x

*Note:* Caving, rafting, and surfing instructor certifications are not represented.

## Appendix W: New Zealand Organizational Affiliations

Activity	Organization	International	National
Canoeing	NZOIA		
Caving	NZOIA		
Hiking	NZOIA		
Hiking	NZQA		x
Hiking	MSC		x
Kayaking River	NZKI		
Kayaking River	NZQA		x
Kayaking River	NZOIA		
Kayaking Sea	NZKI		
Kayaking Sea	NZOIA		
Kite Surfing	IKO	x	
Ice Climbing	NZMGA	x	
Mountaineering	NZMGA	x	
Mountaineering	MSC		x
Mountaineering	NZOIA		
Mountaineering	NZQA		x
Nordic Skiing	NZMGA	x	
Paddleboarding	Surfing NZ	x	
Rock Climbing	NZOIA		
Rock Climbing	NZQA		x
Rock Climbing	NZMGA	x	
Sailing	Yachting NZ		x
Scuba diving	NZQA	x	
Scuba diving	PADI	x	
Scuba diving	SSI	x	
Scuba diving	NAUI		
Scuba diving	BSAC		
Scuba diving	CMAS	x	
Scuba diving	IDEA	x	
Scuba diving	SDI	x	
Surfing	Surfing NZ	x	x
Windsurfing	Windsurfing NZ	x	

*Note:* Mountain biking and rafting instructor certifications are not represented.



## Appendix X: New Zealand Membership Requirements

Activity	Organization	Insurance	Dues	Forms	Code of conduct	Medical clearance	Maintenance
Canoeing	NZOIA		x		x		x
Caving	NZOIA		x		x		x
Hiking	NZOIA		x		x		x
Hiking	NZQA						x
Hiking	MSC	x					
Kayaking River	NZKI						
Kayaking River	NZQA		x				x
Kayaking River	NZOIA		x		x		x
Kayaking Sea	NZKI						x
Kayaking Sea	NZOIA		x		x		x
Kite Surfing	IKO	x					
Ice Climbing	NZMGA		x		x	x	x
Mountaineering	NZMGA		x		x	x	x
Mountaineering	MSC	x					x
Mountaineering	NZOIA		x		x		x
Mountaineering	NZQA		x				x
Nordic Skiing	NZMGA		x		x	x	x
Paddleboarding	Surfing NZ		x		x		
Rock Climbing	NZOIA		x				x
Rock Climbing	NZQA		x				x
Rock Climbing	NZMGA		x		x	x	x
Sailing	Yachting NZ		x				x
Scuba diving	NZQA					x	x
Scuba diving	PADI	x	x			x	
Scuba diving	SSI	x	x			x	x
Scuba diving	NAUI	x	x			x	x
Scuba diving	BSAC	x	x	x	x		
Scuba diving	CMAS					x	
Scuba diving	IDEA					x	
Scuba diving	SDI	x	x		x	x	x
Surfing	Surfing NZ		x		x		
Windsurfing	Windsurfing NZ						x

*Note:* Mountain biking and rafting instructor certifications are not represented.

## Appendix Y: New Zealand Prerequisites

Activity	Organization	Minimum age	Reference	First aid	Other certifications
Canoeing	NZOIA	x		xx	
Caving	NZOIA	x		xx	
Hiking	NZOIA	x		xx	
Hiking	NZQA	x		xx	
Hiking	MSC	x		x	
Kayaking River	NZKI				
Kayaking River	NZQA	x		xx	
Kayaking River	NZOIA	x		xx	
Kayaking Sea	NZKI				
Kayaking Sea	NZOIA	x		xx	x
Kite Surfing	IKO	x		x	x
Ice Climbing	NZMGA	x	x	xx	
Mountaineering	NZMGA	x		xx	x
Mountaineering	MSC	x		x	
Mountaineering	NZOIA	x		xx	
Mountaineering	NZQA	x		xx	
Nordic Skiing	NZMGA	x	x	xx	x
Paddleboarding	Surfing NZ			x	x
Rock Climbing	NZOIA	x		xx	
Rock Climbing	NZQA	x		xx	
Rock Climbing	NZMGA	x	x	xx	x
Sailing	Yachting NZ	x	x		
Scuba diving	NZQA	x		x	
Scuba diving	PADI	x		x	
Scuba diving	SSI	x		x	
Scuba diving	NAUI	x		x	
Scuba diving	BSAC	x			
Scuba diving	CMAS	x		x	
Scuba diving	IDEA	x		x	
Scuba diving	SDI	x		x	
Surfing	Surfing NZ	x	x	x	x
Windsurfing	Windsurfing NZ	x		x	

*Note:* Mountain biking and rafting instructor certifications are not represented. The symbol xx signifies advanced first aid training.

## Appendix Z: New Zealand Experience Prerequisites

Activity	Organization	Experience time	Experience teaching	Experience skills	Experience prior certification	Interpersonal
Canoeing	NZOIA	x	x	x		
Caving	NZOIA	x	x	x		
Hiking	NZOIA	x	x	x		
Hiking	NZQA	x	x	x		
Hiking	MSC	x	x	x		
Kayaking River	NZKI					
Kayaking River	NZQA		x	x	x	
Kayaking River	NZOIA	x	x	x	x	
Kayaking Sea	NZKI					
Kayaking Sea	NZOIA	x	x	x	x	
Kite Surfing	IKO	x		x	x	
Ice Climbing	NZMGA	x		x		
Mountaineering	NZMGA	x		x	x	
Mountaineering	MSC	x		x		
Mountaineering	NZOIA	x	x	x		
Mountaineering	NZQA	x		x		
Nordic Skiing	NZMGA	x		x	x	
Paddleboarding	Surfing NZ			x		
Rock Climbing	NZOIA	x	x	x		
Rock Climbing	NZQA	x	x	x	x	
Rock Climbing	NZMGA	x		x		
Sailing	Yachting NZ			x		
Scuba diving	NZQA		x	x	x	
Scuba diving	PADI	x		x	x	
Scuba diving	SSI	x		x	x	
Scuba diving	NAUI			x	x	x
Scuba diving	BSAC		x	x	x	
Scuba diving	CMAS	x		x	x	
Scuba diving	IDEA	x		x	x	
Scuba diving	SDI	x		x	x	
Surfing	Surfing NZ			x		
Windsurfing	Windsurfing NZ				x	

*Note:* Mountain biking and rafting instructor certifications are not represented.

## Appendix AA: New Zealand Structure of the Certification Schemes

Activity	Organization	Level	Environmental conditions	Experience teaching	Experience skills
Canoeing	NZOIA				
Caving	NZOIA	x	x		x
Hiking	NZOIA	x	x		x
Hiking	NZQA	x	x	x	x
Hiking	MSC	x	x		x
Kayaking River	NZKI	x	x		x
Kayaking River	NZQA	x	x	x	x
Kayaking River	NZOIA	x	x	x	x
Kayaking Sea	NZKI	x	x		x
Kayaking Sea	NZOIA	x	x	x	x
Kite Surfing	IKO	x		x	
Ice Climbing	NZMGA				
Mountaineering	NZMGA	x	x		x
Mountaineering	MSC	x	x		x
Mountaineering	NZOIA	x	x		x
Mountaineering	NZQA				
Nordic Skiing	NZMGA	x	x	x	x
Paddleboarding	Surfing NZ	x		x	x
Rock Climbing	NZOIA	x	x	x	x
Rock Climbing	NZQA	x	x		x
Rock Climbing	NZMGA	x	x		x
Sailing	Yachting NZ	x		x	x
Scuba diving	NZQA				
Scuba diving	PADI	x	x	x	x
Scuba diving	SSI	x	x	x	x
Scuba diving	NAUI	x	x		x
Scuba diving	BSAC	x	x	x	x
Scuba diving	CMAS	x	x	x	x
Scuba diving	IDEA				
Scuba diving	SDI	x	x	x	x
Surfing	Surfing NZ	x		x	x
Windsurfing	Windsurfing NZ				

*Note:* Mountain biking and rafting instructor certifications are not represented.

## Appendix AB: New Zealand Training Courses

Activity	Organization	Training	RPL	Teaching theory	Teaching skills
Canoeing	NZOIA	☐			
Caving	NZOIA	☐			☐
Hiking	NZOIA	☐	☐		☐
Hiking	NZQA	x	x		x
Hiking	MSC	x	x		x
Kayaking River	NZKI				
Kayaking River	NZQA	x	x	x	x
Kayaking River	NZOIA	☐	☐		☐
Kayaking Sea	NZKI				
Kayaking Sea	NZOIA	☐	☐		☐
Kite Surfing	IKO	x		x	x
Ice Climbing	NZMGA	x			x
Mountaineering	NZMGA	x	x		x
Mountaineering	MSC	x	x		x
Mountaineering	NZOIA	☐			☐
Mountaineering	NZQA	x	x	x	x
Nordic Skiing	NZMGA	x			x
Paddleboarding	Surfing NZ	x	x	x	x
Rock Climbing	NZOIA	☐			☐
Rock Climbing	NZQA	x	x	x	x
Rock Climbing	NZMGA	x			x
Sailing	Yachting NZ	x	x		x
Scuba diving	NZQA	x	x		x
Scuba diving	PADI	x			x
Scuba diving	SSI	x			x
Scuba diving	NAUI	x			x
Scuba diving	BSAC	x		x	x
Scuba diving	CMAS	x		x	x
Scuba diving	IDEA	x			x
Scuba diving	SDI	x		x	x
Surfing	Surfing NZ	x	x,	x	x
Windsurfing	Windsurfing NZ	x			x

*Note:* Mountain biking and rafting instructor certifications are not represented. The symbol ☐ represents an optional training requirement.

## Appendix AC: New Zealand Training Courses Part 2

Activity	Organization	Technical knowledge	Technical skills	Safety rescue	Leadership group mgmt
Canoeing	NZOIA	☐	☐	☐	☐
Caving	NZOIA	☐	☐	☐	☐
Hiking	NZOIA	☐	☐	☐	☐
Hiking	NZQA	x	x	x	x
Hiking	MSC	x	x	x	x
Kayaking River	NZKI				
Kayaking River	NZQA	x	x	x	x
Kayaking River	NZOIA	☐	☐	☐	☐
Kayaking Sea	NZKI				
Kayaking Sea	NZOIA	☐	☐	☐	☐
Kite Surfing	IKO	x	x	x	
Ice Climbing	NZMGA	x	x	x	x
Mountaineering	NZMGA	x	x	x	x
Mountaineering	MSC	x	x	x	x
Mountaineering	NZOIA	☐	☐	☐	☐
Mountaineering	NZQA	x	x	x	x
Nordic Skiing	NZMGA	x	x	x	x
Paddleboarding	Surfing NZ	x		x	x
Rock Climbing	NZOIA	☐	☐	☐	☐
Rock Climbing	NZQA	x	x	x	x
Rock Climbing	NZMGA	x	x	x	x
Sailing	Yachting NZ	x	x	x	x
Scuba diving	NZQA	x	x	x	x
Scuba diving	PADI	x	x	x	x
Scuba diving	SSI	x	x	x	x
Scuba diving	NAUI	x	x	x	x
Scuba diving	BSAC	x	x	x	x
Scuba diving	CMAS	x	x	x	x
Scuba diving	IDEA	x	x	x	x
Scuba diving	SDI	x	x	x	x
Surfing	Surfing NZ	x		x	x
Windsurfing	Windsurfing NZ	x	x	x	x

*Note:* Mountain biking and rafting instructor certifications are not represented. The symbol ☐ represents an optional training requirement.

## Appendix AD: New Zealand Assessment Processes

Activity	Organization	Assessment	Written	Practical	Teaching theory	Teaching skills
Canoeing	NZOIA	x		x		
Caving	NZOIA	x		x		
Hiking	NZOIA	x	x	x		x
Hiking	NZQA	x		x	x	x
Hiking	MSC	x	x	x		x
Kayaking River	NZKI	x	x	x		x
Kayaking River	NZQA	x		x	x	x
Kayaking River	NZOIA	x		x		x
Kayaking Sea	NZKI	x	x	x		x
Kayaking Sea	NZOIA	x	x	x		x
Kite Surfing	IKO	x	x	x		x
Ice Climbing	NZMGA	x		x		x
Mountaineering	NZMGA	x		x		x
Mountaineering	MSC	x	x	x		x
Mountaineering	NZOIA	x		x		x
Mountaineering	NZQA	x		x	x	x
Nordic Skiing	NZMGA	x		x		x
Paddleboarding	Surfing NZ	x	x	x	x	x
Rock Climbing	NZOIA	x	x	x		x
Rock Climbing	NZQA	x		x	x	x
Rock Climbing	NZMGA	x		x		x
Sailing	Yachting NZ	x	x	x	x	x
Scuba diving	NZQA	x		x		x
Scuba diving	PADI	x	x	x		x
Scuba diving	SSI	x	x	x		x
Scuba diving	NAUI	x	x	x		x
Scuba diving	BSAC	x	x	x	x	x
Scuba diving	CMAS	x	x	x	x	x
Scuba diving	IDEA	x		x		x
Scuba diving	SDI	x	x	x	x	x
Surfing	Surfing NZ	x	x	x	x	x
Windsurfing	Windsurfing NZ	x	x	x	x	x

*Note:* Mountain biking and rafting instructor certifications are not represented.

## Appendix AE: New Zealand Assessment Processes Part 2

Activity	Organization	Technical knowledge	Technical skills	Safety rescue	Leadership group mgmt
Canoeing	NZOIA	x	x	x	x
Caving	NZOIA	x	x	x	x
Hiking	NZOIA	x	x	x	x
Hiking	NZQA	x	x	x	x
Hiking	MSC	x	x	x	x
Kayaking River	NZKI	x	x	x	x
Kayaking River	NZQA	x	x	x	x
Kayaking River	NZOIA	x	x	x	x
Kayaking Sea	NZKI	x	x	x	x
Kayaking Sea	NZOIA	x	x	x	x
Kite Surfing	IKO		x		x
Ice Climbing	NZMGA	x	x	x	x
Mountaineering	NZMGA	x	x	x	x
Mountaineering	MSC	x	x	x	x
Mountaineering	NZOIA	x	x	x	x
Mountaineering	NZQA	x	x	x	x
Nordic Skiing	NZMGA	x	x	x	x
Paddleboarding	Surfing NZ	x		x	x
Rock Climbing	NZOIA	x	x	x	x
Rock Climbing	NZQA	x	x	x	x
Rock Climbing	NZMGA	x	x	x	x
Sailing	Yachting NZ	x	x	x	
Scuba diving	NZQA	x	x	x	x
Scuba diving	PADI	x	x	x	x
Scuba diving	SSI	x	x	x	x
Scuba diving	NAUI	x	x	x	x
Scuba diving	BSAC	x	x	x	x
Scuba diving	CMAS	x	x	x	x
Scuba diving	IDEA	x	x	x	x
Scuba diving	SDI	x	x	x	x
Surfing	Surfing NZ	x		x	x
Windsurfing	Windsurfing NZ	x	x	x	x

*Note:* Mountain biking and rafting instructor certifications are not represented.



## Appendix AF: U.K Organizational Affiliations

Activity	Organizations	International	National
Canoeing	BCU		x
Caving	BCA		x
Kayaking River	BCU		x
Kayaking Sea	BCU		x
Kite Surfing	BKSA		
Kite Surfing	IKO		
Ice Climbing	MTA		x
Ice Climbing	BMG	x	
Mountain Biking	BC		x
Mountain Biking	MIAS		x
Mountain Biking	CTC		
Mountaineering	BMG	x	
Mountaineering	MTA		x
Nordic Skiing	BASI	x	x
Paddleboarding	BSUPA	x	
Paddleboarding	ASI	x	
Rock Climbing	MTA		x
Sailing	RYA	x	x
Scuba diving	BSAC	`	
Scuba diving	PADI	x	
Scuba diving	SSI	x	
Scuba diving	NAUI		
Scuba diving	SDI	x	
Surfing	Surfing GB	x	
Surfing	ASI	x	
Windsurfing	RYA	x	

*Note:* Hiking and rafting instructor certifications were not represented.

## Appendix AG: U.K Membership Requirements

Activity	Organizations	Insurance	Dues	Forms	Code of conduct	Medical clearance	Maintenance
Canoeing	BCU	x	x	x			x
Caving	BCA	x	x	x	x		x
Kayaking River	BCU	x	x	x			x
Kayaking Sea	BCU	x	x	x	x		x
Kite Surfing	BKSA	x	x	x	x		x
Kite Surfing	IKO	x					
Ice Climbing	MTA	x	x				
Ice Climbing	BMG		x			x	x
Mountain Biking	BC	x	x	x	x		x
Mountain Biking	MIAS	x	x				
Mountain Biking	CTC	x	x	x			x
Mountaineering	BMG		x			x	x
Mountaineering	MTA	x	x				
Nordic Skiing	BASI	x	x	x	x		x
Paddleboarding	BSUPA	x	x				x
Paddleboarding	ASI		x				
Rock Climbing	MTA	x	x	x			
Sailing	RYA		x		x		x
Scuba diving	BSAC	x	x	x	x		
Scuba diving	PADI	x	x			x	
Scuba diving	SSI	x	x			x	x
Scuba diving	NAUI	x	x			x	x
Scuba diving	SDI	x	x		x	x	x
Surfing	Surfing GB		x		x		
Surfing	ASI		x				
Windsurfing	RYA		x		x		x

*Note:* Hiking and rafting instructor certifications were not represented.

## Appendix AH: U.K Prerequisites

Activity	Organizations	Minimum age	Reference	First aid	Other certifications
Canoeing	BCU	x			x
Caving	BCA	x		xx	
Kayaking River	BCU	x		xx	
Kayaking Sea	BCU	x		xx	
Kite Surfing	BKSA	x		x	x
Kite Surfing	IKO	x		x	x
Ice Climbing	MTA	x	x	xx	
Ice Climbing	BMG	x	x	xx	
Mountain Biking	BC	x		x	
Mountain Biking	MIAS	x		xx	x
Mountain Biking	CTC	x		xx	
Mountaineering	BMG	x	x	xx	
Mountaineering	MTA	x	x	xx	
Nordic Skiing	BASI	x		xx	
Paddleboarding	BSUPA	x		x	x
Paddleboarding	ASI			xx	x
Rock Climbing	MTA	x		xx	
Sailing	RYA	x		x	x
Scuba diving	BSAC	x			
Scuba diving	PADI	x		x	
Scuba diving	SSI	x		x	
Scuba diving	NAUI	x		x	
Scuba diving	SDI	x		x	
Surfing	Surfing GB			x	x
Surfing	ASI			xx	x
Windsurfing	RYA	x		x	x

*Note:* Hiking and rafting instructor certifications were not represented. The symbol xx signifies advanced first aid training.

## Appendix AI: U.K Experience Prerequisites

Activity	Organizations	Experience time	Experience teaching	Experience skills	Experience prior certification	Interpersonal
Canoeing	BCU			x	x	
Caving	BCA	x	x	x	x	
Kayaking River	BCU		x	x	x	
Kayaking Sea	BCU		x	x	x	
Kite Surfing	BKSA		x	x		
Kite Surfing	IKO	x		x	x	
Ice Climbing	MTA	x	x	x	x	
Ice Climbing	BMG	x	x	x	x	
Mountain Biking	BC	x		x	x	x
Mountain Biking	MIAS			x		
Mountain Biking	CTC		x	x	x	
Mountaineering	BMG	x	x	x	x	
Mountaineering	MTA	x	x	x	x	
Nordic Skiing	BASI	x	x	x		x
Paddleboarding	BSUPA		x	x		
Paddleboarding	ASI			x		
Rock Climbing	MTA	x	x	x		
Sailing	RYA			x		
Scuba diving	BSAC		x	x	x	
Scuba diving	PADI	x		x	x	
Scuba diving	SSI	x		x	x	
Scuba diving	NAUI			x	x	x
Scuba diving	SDI	x		x	x	
Surfing	Surfing GB			x		
Surfing	ASI			x		
Windsurfing	RYA			x		

*Note:* Hiking and rafting instructor certifications were not represented.

## Appendix AJ: U.K Structure of the Certification Schemes

Activity	Organizations	Level	Environmental conditions	Experience teaching	Experience skills
Canoeing	BCU	x	x	x	x
Caving	BCA	x	x	x	x
Kayaking River	BCU	x	x	x	x
Kayaking Sea	BCU	x	x	x	x
Kite Surfing	BKSA				
Kite Surfing	IKO	x		x	
Ice Climbing	MTA	x	x	x	x
Ice Climbing	BMG				
Mountain Biking	BC	x	x	x	x
Mountain Biking	MIAS	x	x		x
Mountain Biking	CTC	x	x		x
Mountaineering	BMG				
Mountaineering	MTA	x	x	x	x
Nordic Skiing	BASI	x	x	x	x
Paddleboarding	BSUPA	x	x	x	x
Paddleboarding	ASI	x	x		x
Rock Climbing	MTA	x	x		x
Sailing	RYA	x	x	x	x
Scuba diving	BSAC	x	x	x	x
Scuba diving	PADI	x	x	x	x
Scuba diving	SSI	x	x	x	x
Scuba diving	NAUI	x	x		x
Scuba diving	SDI	x	x	x	x
Surfing	Surfing GB	x		x	x
Surfing	ASI	x		x	x
Windsurfing	RYA	x		x	x

*Note:* Hiking and rafting instructor certifications were not represented.

## Appendix AK: U.K Training Courses

Activity	Organizations	Training	RPL	Teaching theory	Teaching skills
Canoeing	BCU	x	x		x
Caving	BCA	x	x		x
Kayaking River	BCU	x	x		x
Kayaking Sea	BCU	x	x		x
Kite Surfing	BKSA	x		x	x
Kite Surfing	IKO	x		x	x
Ice Climbing	MTA	x			x
Ice Climbing	BMG	x			x
Mountain Biking	BC	x			x
Mountain Biking	MIAS	x			x
Mountain Biking	CTC	x	x	x	x
Mountaineering	BMG	x			x
Mountaineering	MTA	x			x
Nordic Skiing	BASI	x	x	x	x
Paddleboarding	BSUPA	x			x
Paddleboarding	ASI	x			x
Rock Climbing	MTA	x	x	x	x
Sailing	RYA	x		x	x
Scuba diving	BSAC	x		x	x
Scuba diving	PADI	x			x
Scuba diving	SSI	x			x
Scuba diving	NAUI	x			x
Scuba diving	SDI	x		x	x
Surfing	Surfing GB	x	x,	x	x
Surfing	ASI	x	x	x	x
Windsurfing	RYA	x		x	x

*Note:* Hiking and rafting instructor certifications were not represented.

## Appendix AL: U.K Training Courses Part 2

Activity	Organizations	Technical knowledge	Technical skills	Safety rescue	Leadership group mgmt
Canoeing	BCU	x		x	x
Caving	BCA	x	x	x	x
Kayaking River	BCU	x		x	x
Kayaking Sea	BCU	x		x	x
Kite Surfing	BKSA	x	x	x	x
Kite Surfing	IKO	x	x	x	
Ice Climbing	MTA	x	x	x	x
Ice Climbing	BMG	x	x	x	x
Mountain Biking	BC	x	x	x	x
Mountain Biking	MIAS	x	x	x	x
Mountain Biking	CTC	x	x	x	x
Mountaineering	BMG	x	x	x	x
Mountaineering	MTA	x	x	x	x
Nordic Skiing	BASI	x	x		
Paddleboarding	BSUPA		x	x	x
Paddleboarding	ASI	x		x	x
Rock Climbing	MTA	x	x	x	x
Sailing	RYA	x	x	x	x
Scuba diving	BSAC	x	x	x	x
Scuba diving	PADI	x	x	x	x
Scuba diving	SSI	x	x	x	x
Scuba diving	NAUI	x	x	x	x
Scuba diving	SDI	x	x	x	x
Surfing	Surfing GB	x		x	x
Surfing	ASI	x		x	
Windsurfing	RYA	x	x	x	x

*Note:* Hiking and rafting instructor certifications were not represented.

## Appendix AM: U.K Assessment Processes

Activity	Organizations	Assessment	Written	Practical	Teaching theory	Teaching skills
Canoeing	BCU	x	x	x		x
Caving	BCA	x	x	x		x
Kayaking River	BCU	x	x	x	x	x
Kayaking Sea	BCU	x	x	x	x	x
Kite Surfing	BKSA	x	x	x	x	x
Kite Surfing	IKO	x	x	x		x
Ice Climbing	MTA	x	x	x		x
Ice Climbing	BMG	x	x	x		x
Mountain Biking	BC	x	x	x		
Mountain Biking	MIAS	x	x	x		x
Mountain Biking	CTC	x		x	x	x
Mountaineering	BMG	x	x	x		x
Mountaineering	MTA	x	x	x		x
Nordic Skiing	BASI	x	x	x	x	x
Paddleboarding	BSUPA	x	x	x	x	x
Paddleboarding	ASI	x	x	x		x
Rock Climbing	MTA	x	x	x		x
Sailing	RYA	x	x	x	x	x
Scuba diving	BSAC	x	x	x	x	x
Scuba diving	PADI	x	x	x		x
Scuba diving	SSI	x	x	x		x
Scuba diving	NAUI	x	x	x		x
Scuba diving	SDI	x	x	x		x
Surfing	Surfing GB	x	x	x	x	x
Surfing	ASI	x	x	x	x	x
Windsurfing	RYA	x	x	x	x	x

*Note:* Hiking and rafting instructor certifications were not represented.



## Appendix AN: U.K Assessment Processes Part 2

Activity	Organizations	Technical knowledge	Technical skills	Safety rescue	Leadership group mgmt.
Canoeing	BCU	x	x	x	x
Caving	BCA	x	x	x	x
Kayaking River	BCU	x	x	x	x
Kayaking Sea	BCU	x	x	x	x
Kite Surfing	BKSA	x	x	x	x
Kite Surfing	IKO		x		x
Ice Climbing	MTA	x	x	x	x
Ice Climbing	BMG	x	x	x	x
Mountain Biking	BC	x	x	x	x
Mountain Biking	MIAS		x	x	x
Mountain Biking	CTC	x	x	x	x
Mountaineering	BMG	x	x	x	x
Mountaineering	MTA	x	x	x	x
Nordic Skiing	BASI	x	x		
Paddleboarding	BSUPA	x	x	x	x
Paddleboarding	ASI		x	x	
Rock Climbing	MTA	x	x	x	x
Sailing	RYA	x	x	x	x
Scuba diving	BSAC	x	x	x	x
Scuba diving	PADI	x	x	x	x
Scuba diving	SSI	x	x	x	x
Scuba diving	NAUI	x	x	x	x
Scuba diving	SDI	x	x	x	x
Surfing	Surfing GB	x		x	x
Surfing	ASI	x	x	x	
Windsurfing	RYA	x	x	x	x

*Note:* Hiking and rafting instructor certifications were not represented.

## Appendix AO: U.S Organizational Affiliations

Activity	Organization	International	National
Canoeing	ACA		
Canoeing	USCA		
Kayaking River	ACA		
Kayaking Sea	ACA		
Kite Surfing	PASA		
Kite Surfing	IKO		
Ice Climbing	AMGA	x	
Mountain Biking	IMIC		
Mountain Biking	PMBI		
Mountaineering	AMGA	x	
Nordic Skiing	PSIA		
Nordic Skiing	AMGA	x	
Paddleboarding	NSSIA		
Paddleboarding	WSUPA	x	
Paddleboarding	WPA		
Paddleboarding	ISA	x	
Paddleboarding	ACA		
Rock Climbing	PCIA		
Rock Climbing	PCGI		
Rock Climbing	AMGA	x	
Sailing	US Sailing		
Sailing	ASA		
Scuba diving	SEI	x	
Scuba diving	GUE		
Scuba diving	PSAI		
Scuba diving	IDEA	x	
Scuba diving	PADI	x	
Scuba diving	SSI	x	
Scuba diving	NAUI		
Scuba diving	SDI	x	
Surfing	NSSIA		
Surfing	ISA	x	
Windsurfing	US Sailing		

*Note:* Caving, Hiking, and Rafting instructor certifications are not represented.

## Appendix AP: U.S Membership Requirements

Activity	Organization	Insurance	Dues	Forms	Code of conduct	Medical clearance	Maintenance
Canoeing	ACA	x	x		x		x
Canoeing	USCA	x	x				
Kayaking River	ACA	x	x		x		x
Kayaking Sea	ACA	x	x		x		x
Kite Surfing	PASA	x	x				
Kite Surfing	IKO	x					
Ice Climbing	AMGA		x		x		x
Mountain Biking	IMIC	x	x				x
Mountain Biking	PMBI						
Mountaineering	AMGA	x	x		x		x
Nordic Skiing	PSIA		x		x		x
Nordic Skiing	AMGA	x	x		x		x
Paddleboarding	NSSIA	x	x		x		x
Paddleboarding	WSUPA		x				
Paddleboarding	WPA		x				
Paddleboarding	ISA		x		x		
Paddleboarding	ACA	x	x		x		x
Rock Climbing	PCIA		x		x		x
Rock Climbing	PCGI	x					x
Rock Climbing	AMGA		x		x		x
Sailing	US Sailing	x	x		x		
Sailing	ASA	x	x	x	x		x
Scuba diving	SEI	x	x		x	x	x
Scuba diving	GUE	x	x			x	x
Scuba diving	PSAI	x	x		x	x	
Scuba diving	IDEA					x	
Scuba diving	PADI	x	x			x	
Scuba diving	SSI	x	x			x	x*
Scuba diving	NAUI	x	x			x	x
Scuba diving	SDI	x	x		x	x	x
Surfing	NSSIA	x	x		x		x
Surfing	ISA		x		x		
Windsurfing	US Sailing	x	x		x		

*Note:* Caving, Hiking, and Rafting instructor certifications are not represented.

## Appendix AQ: U.S Prerequisites

Activity	Organization	Minimum age	Reference	First aid	Other certifications
Canoeing	ACA	x		x	
Canoeing	USCA	x		x	
Kayaking River	ACA	x		x	
Kayaking Sea	ACA	x		x	
Kite Surfing	PASA			x	x
Kite Surfing	IKO	x		x	x
Ice Climbing	AMGA	x		xx	
Mountain Biking	IMIC	x		xx	
Mountain Biking	PMBI			xx	
Mountaineering	AMGA	x		xx	x
Nordic Skiing	PSIA	x			
Nordic Skiing	AMGA	x	x	xx	x
Paddleboarding	NSSIA		x	x	
Paddleboarding	WSUPA			x	
Paddleboarding	WPA	x		x	
Paddleboarding	ISA			x	x
Paddleboarding	ACA	x		x	
Rock Climbing	PCIA	x			
Rock Climbing	PCGI	x		xx	
Rock Climbing	AMGA	x		x	
Sailing	US Sailing	x		x	x
Sailing	ASA	x		x	
Scuba diving	SEI	x		x	
Scuba diving	GUE	x		x	
Scuba diving	PSAI	x		x	
Scuba diving	IDEA	x		x	
Scuba diving	PADI	x		x	
Scuba diving	SSI	x		x	
Scuba diving	NAUI	x		x	
Scuba diving	SDI	x		x	
Surfing	NSSIA		x	x	
Surfing	ISA			x	x
Windsurfing	US Sailing	x		x	

*Note:* Caving, Hiking, and Rafting instructor certifications are not represented.

## Appendix AR: U.S Experience Prerequisites

Activity	Organization	Experience time	Experience teaching	Experience skills	Experience prior certifications	Interpersonal
Canoeing	ACA			x		x
Canoeing	USCA			x		
Kayaking River	ACA			x		x
Kayaking Sea	ACA			x		x
Kite Surfing	PASA			x	x	
Kite Surfing	IKO	x		x	x	
Ice Climbing	AMGA	x		x	x	
Mountain Biking	IMIC	x		x		x
Mountain Biking	PMBI	x		x		
Mountaineering	AMGA	x		x	x	
Nordic Skiing	PSIA	x	x	x	x	
Nordic Skiing	AMGA	x	x	x	x	
Paddleboarding	NSSIA	x	x	x		
Paddleboarding	WSUPA			x		
Paddleboarding	WPA	x	x	x		
Paddleboarding	ISA			x		
Paddleboarding	ACA		x	x		x
Rock Climbing	PCIA			x		
Rock Climbing	PCGI	x		x		
Rock Climbing	AMGA	x		x		
Sailing	US Sailing			x		x
Sailing	ASA	x	x	x	x	
Scuba diving	SEI	x	x	x	x	
Scuba diving	GUE			x	x	
Scuba diving	PSAI	x		x	x	
Scuba diving	IDEA	x		x	x	
Scuba diving	PADI	x		x	x	
Scuba diving	SSI	x		x	x	
Scuba diving	NAUI			x	x	x
Scuba diving	SDI	x		x	x	
Surfing	NSSIA	x	x	x		
Surfing	ISA			x		
Windsurfing	US Sailing			x		

*Note:* Caving, Hiking, and Rafting instructor certifications are not represented.

## Appendix AS: U.S Structure of the Certification Schemes

Activity	Organization	Level	Environmental conditions	Experience teaching	Experience skills
Canoeing	ACA	x	x	x	x
Canoeing	USCA				
Kayaking River	ACA	x	x	x	x
Kayaking Sea	ACA	x	x	x	x
Kite Surfing	PASA				
Kite Surfing	IKO	x		x	
Ice Climbing	AMGA				
Mountain Biking	IMIC	x	x	x	x
Mountain Biking	PMBI	x	x	x	x
Mountaineering	AMGA	x	x	x	x
Nordic Skiing	PSIA	x	x	x	x
Nordic Skiing	AMGA				
Paddleboarding	NSSIA	x		x	x
Paddleboarding	WSUPA				
Paddleboarding	WPA	x	x	x	x
Paddleboarding	ISA	x		x	x
Paddleboarding	ACA	x	x	x	x
Rock Climbing	PCIA	x	x		x
Rock Climbing	PCGI	x	x		x
Rock Climbing	AMGA	x	x	x	x
Sailing	US Sailing	x		x	x
Sailing	ASA	x			x
Scuba diving	SEI				
Scuba diving	GUE	x	x	x	x
Scuba diving	PSAI	x	x		x
Scuba diving	IDEA				
Scuba diving	PADI	x	x	x	x
Scuba diving	SSI	x	x	x	x
Scuba diving	NAUI	x	x		x
Scuba diving	SDI	x	x	x	x
Surfing	NSSIA	x		x	x
Surfing	ISA	x		x	x
Windsurfing	US Sailing				

*Note:* Caving, Hiking, and Rafting instructor certifications are not represented.

## Appendix AT: U.S Training Courses

Activity	Organization	Training	RPL	Teaching theory	Teaching skills
Canoeing	ACA	x	x	x	x
Canoeing	USCA	x			x
Kayaking River	ACA	x	x	x	x
Kayaking Sea	ACA	x		x	x
Kite Surfing	PASA	x		x	x
Kite Surfing	IKO	x		x	x
Ice Climbing	AMGA	x		x	x
Mountain Biking	IMIC	x		x	x
Mountain Biking	PMBI	x		x	x
Mountaineering	AMGA	x		x	x
Nordic Skiing	PSIA	x		x	x
Nordic Skiing	AMGA	x		x	x
Paddleboarding	NSSIA	x	x		
Paddleboarding	WSUPA	x			x
Paddleboarding	WPA	x			
Paddleboarding	ISA	x	x	x	x
Paddleboarding	ACA	x		x	x
Rock Climbing	PCIA	x	x		x
Rock Climbing	PCGI	x	x	x	x
Rock Climbing	AMGA	x	x	x	x
Sailing	US Sailing	x		x	x
Sailing	ASA	x		x	x
Scuba diving	SEI	x		x	x
Scuba diving	GUE	x			x
Scuba diving	PSAI	x	x	x	x
Scuba diving	IDEA	x			x
Scuba diving	PADI	x			x
Scuba diving	SSI	x			x
Scuba diving	NAUI	x			x
Scuba diving	SDI	x		x	x
Surfing	NSSIA	x	x		
Surfing	ISA	x	x	x	x
Windsurfing	US Sailing	x		x	x

*Note:* Caving, Hiking, and Rafting instructor certifications are not represented.

## Appendix AU: U.S Training Courses Part 2

Activity	Organization	Technical knowledge	Technical skills	Safety	Leadership group mgmt
Canoeing	ACA	x	x	x	x
Canoeing	USCA	x	x	x	
Kayaking River	ACA	x	x	x	x
Kayaking Sea	ACA	x	x	x	x
Kite Surfing	PASA	x	x	x	x
Kite Surfing	IKO	x	x	x	
Ice Climbing	AMGA	x	x	x	x
Mountain Biking	IMIC	x	x	x	x
Mountain Biking	PMBI	x	x	x	x
Mountaineering	AMGA	x	x	x	x
Nordic Skiing	PSIA	x	x	x	x
Nordic Skiing	AMGA	x	x	x	x
Paddleboarding	NSSIA				
Paddleboarding	WSUPA	x	x	x	
Paddleboarding	WPA	x	x	x	
Paddleboarding	ISA	x		x	x
Paddleboarding	ACA	x	x	x	x
Rock Climbing	PCIA	x	x	x	
Rock Climbing	PCGI	x	x	x	x
Rock Climbing	AMGA	x	x	x	x
Sailing	US Sailing	x	x	x	x
Sailing	ASA	x	x	x	
Scuba diving	SEI	x	x	x	x
Scuba diving	GUE	x	x	x	x
Scuba diving	PSAI	x	x	x	x
Scuba diving	IDEA	x	x	x	x
Scuba diving	PADI	x	x	x	x
Scuba diving	SSI	x	x	x	x
Scuba diving	NAUI	x	x	x	x
Scuba diving	SDI	x	x	x	x
Surfing	NSSIA				
Surfing	ISA	x		x	x
Windsurfing	US Sailing	x	x	x	

*Note:* Caving, Hiking, and Rafting instructor certifications are not represented.



## Appendix AV: U.S Assessment Processes

Activity	Organization	Assessment	Written	Practical	Teaching theory	Teaching skills
Canoeing	ACA			x	x	x
Canoeing	USCA	x	x	x		x
Kayaking River	ACA			x	x	x
Kayaking Sea	ACA			x	x	x
Kite Surfing	PASA	x	x	x	x	x
Kite Surfing	IKO	x	x	x		x
Ice Climbing	AMGA					
Mountain Biking	IMIC	x	x	x	x	x
Mountain Biking	PMBI			x		x
Mountaineering	AMGA	x		x		
Nordic Skiing	PSIA	x	x	x	x	x
Nordic Skiing	AMGA	x		x		x
Paddleboarding	NSSIA	x	x			
Paddleboarding	WSUPA	x	x	x		x
Paddleboarding	WPA	x	x	x	x	
Paddleboarding	ISA	x	x	x	x	x
Paddleboarding	ACA	x		x	x	x
Rock Climbing	PCIA	x	x	x	x	x
Rock Climbing	PCGI	x		x	x	x
Rock Climbing	AMGA	x		x		x
Sailing	US Sailing	x	x	x	x	x
Sailing	ASA	x	x	x	x	x
Scuba diving	SEI	x	x	x	x	x
Scuba diving	GUE	x		x		x
Scuba diving	PSAI	x	x	x	x	x
Scuba diving	IDEA	x		x		x
Scuba diving	PADI	x	x	x		x
Scuba diving	SSI	x	x	x		x
Scuba diving	NAUI	x	x	x		x
Scuba diving	SDI	x	x	x		x
Surfing	NSSIA	x	x			
Surfing	ISA	x	x	x	x	x
Windsurfing	US Sailing	x	x	x	x	x

*Note:* Caving, Hiking, and Rafting instructor certifications are not represented.

## Appendix AW: U.S Assessment Processes Part 2

Activity	Organization	Technical knowledge	Technical skills	Safety	Leadership group mgmt.
Canoeing	ACA	x	x	x	x
Canoeing	USCA	x	x	x	x
Kayaking River	ACA	x	x	x	x
Kayaking Sea	ACA	x	x	x	x
Kite Surfing	PASA	x	x	x	x
Kite Surfing	IKO		x		x
Ice Climbing	AMGA				
Mountain Biking	IMIC	x	x	x	x
Mountain Biking	PMBI		x	x	x
Mountaineering	AMGA	x	x	x	x
Nordic Skiing	PSIA	x	x	x	x
Nordic Skiing	AMGA	x	x	x	x/
Paddleboarding	NSSIA				
Paddleboarding	WSUPA		x		
Paddleboarding	WPA				
Paddleboarding	ISA	x		x	x
Paddleboarding	ACA	x	x	x	x
Rock Climbing	PCIA	x	x	x	
Rock Climbing	PCGI	x	x	x	x
Rock Climbing	AMGA	x	x	x	x
Sailing	US Sailing	x	x	x	x
Sailing	ASA	x	x	x	x
Scuba diving	SEI	x	x	x	x
Scuba diving	GUE	x	x	x	x
Scuba diving	PSAI	x	x	x	x
Scuba diving	IDEA	x	x	x	x
Scuba diving	PADI	x	x	x	x
Scuba diving	SSI	x	x	x	x
Scuba diving	NAUI	x	x	x	x
Scuba diving	SDI	x	x	x	x
Surfing	NSSIA				
Surfing	ISA	x		x	x
Windsurfing	US Sailing	x	x		

*Note:* Caving, Hiking, and Rafting instructor certifications are not represented.

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