

**THE INTERIOR DESIGN PROFESSION'S BODY OF KNOWLEDGE
AND
ITS RELATIONSHIP TO PEOPLE'S HEALTH, SAFETY, AND WELFARE**

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EXECUTIVE SUMMARY

This Executive Summary is a compilation of the highlights of the research report entitled, *The Interior Design Profession's Body of Knowledge and Its Relationship to People's Health, Safety, and Welfare* (September 2010). For an in-depth understanding of all aspects of the study, its purpose, rationale, methods, analysis and results, and conclusions, refer to the report in its entirety.

Note: Throughout this report, "BOK" (use of the acronym) refers to the interior design profession's body of knowledge. When reference is to the concept of a body of knowledge or other professions' bodies of knowledge, it is spelled out, i.e., "body of knowledge."

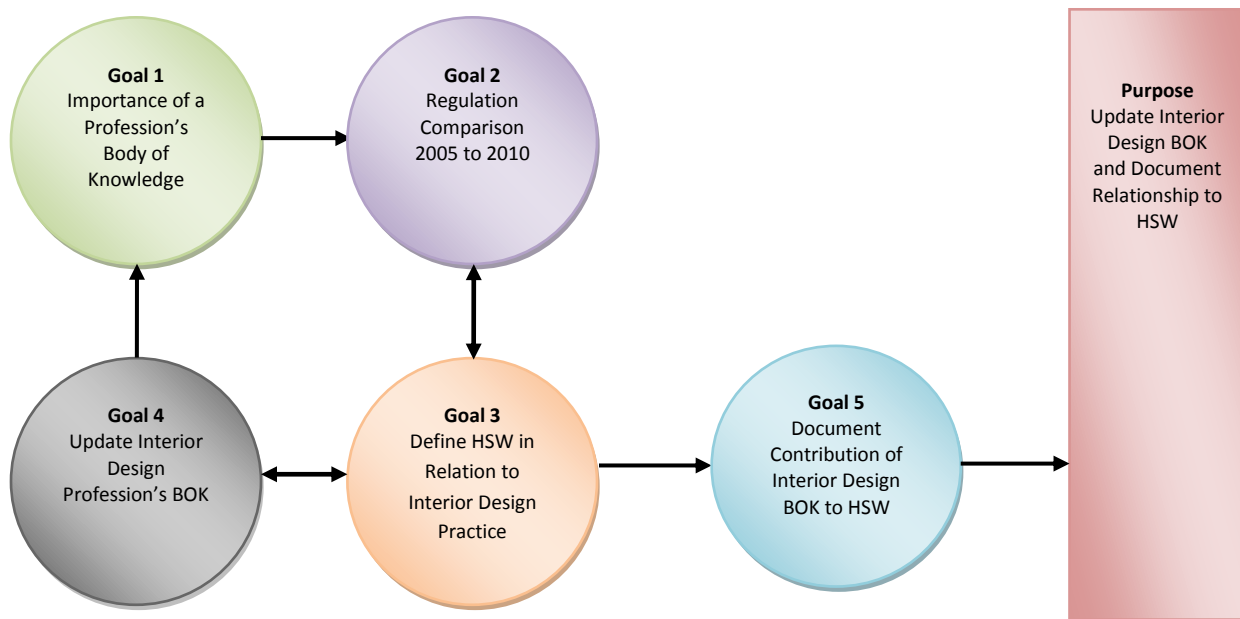
Purpose of the Study

The purpose of this study was to update the interior design profession's body of knowledge (BOK) and document its relationship to health, safety, and welfare (HSW). The following five specific goals were completed to accomplish this purpose:

Goal 1.	Provide an empirical basis for a profession's body of knowledge, relate the importance of a body of knowledge to professions, and document and assess interior design's professionalization journey;
Goal 2.	Compare 2010 interior design regulations to 2005 regulations and discuss the comparison as it relates to how interior design is defined and titled;
Goal 3.	Define and describe HSW as related to interior design practice;
Goal 4.	Update the interior design profession's BOK; and
Goal 5.	Document and analyze the contribution of the interior design profession's BOK to HSW within the context of interior design practice.

As a profession's body of knowledge and its work are inexorably linked, the goals of this study became a set of interrelated smaller studies. Figure 1.2 shows the interrelationship of these goals to achieve the purpose of the study. The outcome of the first goal was an investigation of professionalization literature, which underpinned the importance of an update of the interior design profession's BOK, the fourth goal. Parallel to those two goals, there was a need to review recent regulation of the interior design profession (the second goal and also a component of professionalization), which is contingent upon the public's knowledge that interior design practice contributes to their HSW. Therefore, a definition of HSW was required, which led to identification of HSW factors, i.e., words that define the **work** of the profession. Finally, all of these needed to be vetted by current interior design practitioners who actually do the work of the profession. This was the fifth and final goal, all of which, in this interrelated way, contributed to the purpose so it could be comprehensively addressed.

Figure 1.2. Interrelationships of Goals and Purpose of the Study.



Rationale for Updating the BOK

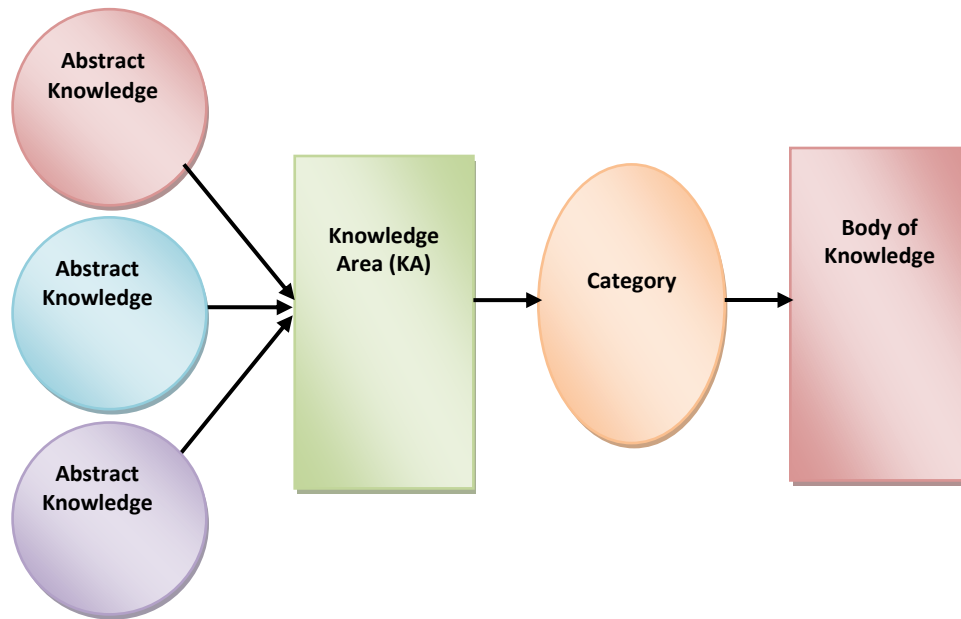
A body of knowledge is considered the foundation of a profession and abstract knowledge is the basis of a body of knowledge (Abbott, 1988). Abstract knowledge is the specialized knowledge that is required to practice and defines the interior design profession's

jurisdictional boundaries through the development and maintenance of knowledge. Knowledge constantly evolves, transforms, and grows, forever demonstrating its value; moreover, it must be discussed, defined, and documented by members of the profession. With a defined body of knowledge, it is possible to declare that a level of professionalization has been reached, the jurisdictional boundaries of knowledge of a profession can be identified, and gaps in knowledge can be defined. Once a profession has defined and documented its body of knowledge, its members can participate in the future growth and development of abstract knowledge in an informed way. The act of documenting the body of knowledge allows all members and other stakeholders to consider what is known by practitioners of the profession or what is newly developing and should be added to augment the current definition, which will change the profession's jurisdictional boundaries.

A profession is identified by society and the public as having expertise based on specialized knowledge. The process of becoming a profession, or professionalization, is “how modern societies institutionalize expertise” (Abbott, 1988, p. xii). The practitioners of a profession, in this case, interior design practitioners, are the ones who, through their practice or **work**, define and add to abstract knowledge that develops the body of knowledge, which, in turn, continues the development of the profession—an iterative process.

Abstract knowledge is the specialized knowledge required by interior designers to do their **work**, that is, to protect people's HSW through the design of interior environments. For example, in this study and report, knowledge areas (KAs) are comprised of clusters of abstract knowledge—the specialized knowledge that interior designers must have to practice. A KA is the umbrella or overarching meaning of specific abstract knowledge. KAs are then grouped into categories that are named to reflect a domain of knowledge within the entire body of knowledge. Figure 1.1 shows a conceptual model of a body of knowledge and the categories, which are comprised of KAs that contain abstract knowledge. It must be noted that Figure 1.1 shows only the relationship among these parts of a body of knowledge, not the number of each part.

Figure 1.1. Relationship of Abstract Knowledge to a KA and to Categories of a Body of Knowledge



The Interior Design Profession's BOK as Related to HSW

As the world becomes more complex, changes have occurred in the interior design profession's BOK. These changes reflect interior designers' evolving, specialized knowledge and illustrate to the profession the need to develop and maintain its abstract knowledge. Since the first comprehensive definition and documentation of the interior design profession's BOK (Guerin & Martin, 2001), there have been societal changes that have affected people's HSW, such as public attention and emphasis on indoor air quality (IAQ), ergonomics, and employee performance in the workplace. These changes have also influenced the growth of interior design's specialized knowledge related to HSW. This typical, constant change in abstract knowledge is the impetus for changes in a profession's jurisdictional boundaries (Abbott, 1988). Subsequently, the BOK changes and requires periodic examination and revised documentation.

Further, external and internal factors are influencing the change in interior design's abstract knowledge. Interior design practitioners' knowledge is growing and their responsibility to protect the public's HSW is becoming regulated by legal jurisdictions throughout Canada and the United States. But, there are few documents that define the interior design profession's **work** as it relates to HSW. There are no studies that have tied together the profession's BOK and the relationship of HSW to practice.

This study was completed in response to the need for the profession to determine its jurisdictional knowledge boundaries as they relate to design for the public's HSW and to document for the public what interior designers do to protect them from harm, as it is the public for whom interior design **work** is done.

BOK Background

The researchers of this study have conducted two previous studies of the interior design profession's BOK. The initial study was conducted in 2000, *The Interior Design Profession's Body of Knowledge: Its Definition and Documentation* (Guerin & Martin, 2001). Eighty-one KAs were assigned to one of seven categories: Codes (2 KAs), Communication (13 KAs), Design (22 KAs), Furnishing, Fixtures, & Equipment (7 KAs), Human Needs (11 KAs), Interior Building Construction (18 KAs), and Professional Practice (10 KAs). The purpose of the second study, the *Interior Design Profession's Body of Knowledge, 2005 Edition* (Martin & Guerin, 2006), was to update the BOK and to weight the categories and KAs within the categories to show relative importance. In the second study, 96 KAs were identified and assigned to six revised categories weighted by importance: Human Environmental Needs (20 KAs); Interior Construction, Codes, & Regulations (20 KAs); Design (19 KAs); Products & Materials (14 KAs); Professional Practice (13 KAs); and Communication (10 KAs).

It has been five years since the last snapshot of the profession's BOK. Given 1) the complexity and increase in quantity of built environment knowledge, 2) the importance of protecting the HSW of the public, and 3) the need to document the value interior design practitioners provide to the occupants of interior environments, it is essential to once again define and document the profession's BOK in context of these issues.

Methods

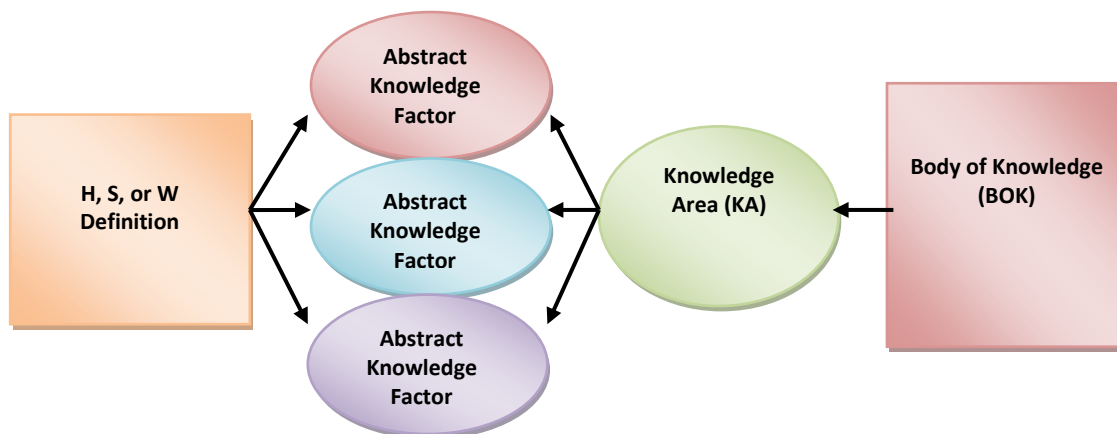
Following is a discussion of the research methods used to accomplish the five goals. **Goal 1** was accomplished by completing a review of professionalization literature. Documents were reviewed from a sample of professions that explored their relative importance to society, the roles they serve, and the path and process they took to become professions. This literature also covered the essential function served by each profession's body of knowledge to both society and the professions themselves, thereby establishing a context for the professionalization of interior design.

Goal 2 was accomplished by a review of current regulatory language in Canadian and U.S. jurisdictions, i.e., provinces, states, and territories, relative to how interior design (by whatever title used) is defined and titled, i.e., the regulated title or name. This information was then compared to definitions and titles that were in place in jurisdictions in 2005 (Martin & Guerin, 2006). Regulatory language can be considered a measure of how regulatory bodies, such as licensing boards, define interior design and to what extent they understand/iterate/state/support the profession's role in protecting their citizens' HSW. Appendix B reports the regulatory language in Canada and the United States from 2005 and 2010, the regulated title in 2010, and the type of regulation in each jurisdiction.

Goal 3 began with a review of over 200 pieces of literature from interior design, government, and public documents regarding various entities' definitions of HSW. From this literature, new definitions for the terms "health," "safety," and "welfare" relative to interior design were developed. Additionally, factors that represent the abstract knowledge content were identified in research literature and related to each term, i.e., health, safety, and welfare. It was apparent that definitions could be more meaningful by relating measurable factors from practitioners' work to the HSW definitions. These abstract knowledge factors could then be tied directly and meaningfully to interior design practice.

A conceptual model of this interrelationship might look like Figure 2.1, wherein factors are drawn from the definition of health, safety, or welfare and reflect the specialized knowledge of a KA, which comprises the BOK. In other words, factors arise from the confluence of the HSW definitions and the KAs that comprise the BOK.

Figure 2.1. Relationship of HSW Definition to Abstract Knowledge Factors from KAs.

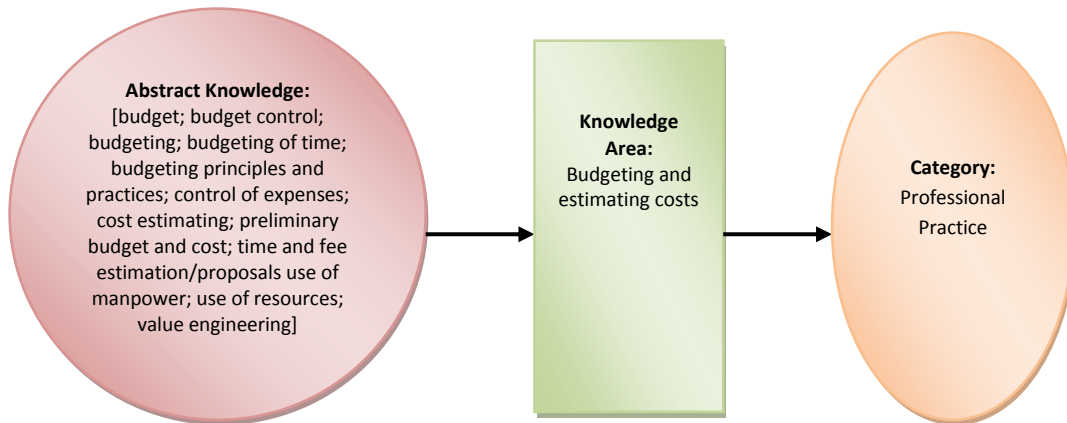


Goal 4 was accomplished by conducting a content analysis of interior design documents from education, experience, and examination. The outcome was identification of abstract knowledge within the current BOK, grouping them into KAs, and then into categories. The findings, the 2010 BOK, were then used as the basis for Goal 5. Content analysis provides an objective, systematic, reproducible approach to derive meaning from any data that have been communicated, e.g., writing, audio recordings, video (Berg, 1989; Stemler, 2001). The basis of content analysis is the counting, coding, and categorization of data. This study applied manifest and latent content analysis through identification of words/phrases that were present in the source documents from interior design education, experience, and examination. Multiple raters were selected for their knowledge of a subject matter and then trained in the content analysis process. Decision rules were made by the researchers to guide and define coding, which impact both reliability and validity of the findings (Berg, 1989; Sommer & Sommer, 2002). Source documents used for this analysis were:

- Education: CIDA's *Professional Standards 2009*; Sections II and III (Council for Interior Design Accreditation, 2008). These sections pertain to interior design educational content, whereas other sections describe aspects of accreditation beyond abstract knowledge, such as faculty and facility requirements;
- Experience: NCIDQ's Interior Design Experience Program, *IDEP Guidelines*, "Task Content Areas" and "Task Content Area Descriptions" (National Council for Interior Design Qualification, 2009); and
- Examination: *Blueprint of the Exam Content Guide* from NCIDQ's *2008 Analysis of the Interior Design Profession* (National Council for Interior Design Qualification, 2008). This is a set of explicit knowledge areas that are used, exclusively, by examination item writers to be certain the practice analysis findings are reflected in the examination content.

Because of the quantity and variety of abstract knowledge that comprise the BOK, the researchers grouped abstract knowledge into KAs and assigned a Knowledge Area name. This relationship is shown in Figure 2.2 to clarify organizing terms that are subsequently used.

Figure 2.2. Relationship Among Category, KA, and Abstract Knowledge.



Goal 5 was accomplished by conducting a survey of interior design practitioners to determine their perceptions of the contribution each KA in the BOK makes to health, safety, and welfare, independently, and as newly defined by the outcomes in Goal 3.

A questionnaire was developed by the researchers to determine interior design practitioners’ perception of each KA to each term “health,” “safety,” and “welfare. Data were collected from interior design practitioners who were NCIDQ certificate holders. These interior design practitioners were determined to be the study population because passage of the NCIDQ exam is recognized by all regulatory boards in Canada and the United States as one of the eligibility criteria for protection of the public’s health, safety, and welfare. Interior designers were asked to rate the extent of contribution of 10-11 different KAs, first to health, then to safety, and finally to welfare on a scale of 1-7 where “1” meant “no contribution” and “7” meant “extensive contribution.” An example of one question is shown in Figure 2.3.

Figure 2.3. Question Example.

The following question was asked for health, safety, and welfare, so three questions were asked for each KA.						
To what extent does the following knowledge area contribute to a client’s or user’s health ?						
❖ Human factors including such knowledge as:						
<ul style="list-style-type: none"> • ergonomic and anthropometric data • proxemics, e.g., territoriality • physiological responses, e.g., visual acuity 						
No Contribution						Extensive Contribution
1	2	3	4	5	6	7

There are 65 different KAs in the BOK; each of them has many abstract knowledge factors. As interior designers had to rate each KA on three different terms (HSW), the KAs were randomly assigned to six different sample groups so practitioners needed to answer only about 35 questions, thus increasing the likelihood, accuracy, and thoughtfulness of their responses. Interior designers were randomly assigned to each of the six different groups who were representative of the population; each group was then sent a different questionnaire in May 2010.

The questionnaires were emailed to the sample of over 10,000 interior designers who were NCIDQ certificate holders. An initial question eliminated interior designers who had not practiced interior design in the last five years; the remainder, 1,578 people completed the entire questionnaire for a 17% return rate. They answered four demographic questions: 1) the number of years of practice, 2) type of practice (residential, commercial, mix), 3) gender, and 4) location of residence (state, province, territory), which gave a profile of each of the six groups of practitioners and the entire sample. The groups were compared for differences, and the characteristics of the entire sample (all six groups) were compared to the population characteristics for differences. Population data were based on the characteristics of NCIDQ certificate holders reported in the *2008 NCIDQ Analysis of the Interior Design Profession*. There were no significant differences in characteristics of each group so the entire sample was combined for analysis.

The sample shows that of those who responded to the questionnaire, 34.3% have practiced more than 20 years. The smallest group of interior designers, 13.4%, has practiced less than six years. The balance of them (52.1%) has practiced between 6 and 20 years. Two-thirds (66.9%) of the sample practice commercial interior design only. The rest were almost evenly split between those who practiced residential interior design only (16%) and those who practice a mix of residential and commercial interior design (17.1%).

Most of the interior designers are female (88.4%); 11.6% are male, which reflects the national numbers for all interior designers. Finally, 90.7% of the interior designers were from the United States; 8.9% were from Canada; and the balance (0.4%) was from other jurisdictions. All of the characteristics are similar between the six groups and from the entire sample to the population, meaning the results of this survey can be generalized to all NCIDQ certificate holders in Canada and the United States. Generalizing means that although only a portion of the population was tested, the characteristics of those sampled closely represent the characteristics

of all NCIDQ certificate holders, i.e., the population, and the answers of respondents would be very similar to the answers of those who were not sampled.

Results and Discussion

This section presents the results of the study's goals. It is important to review the purpose and goals of this study to frame discussion of the results from the data collected and analyzed.

Goal 1. Results of Examination of Professionalization

Goal 1 focuses on the importance of the professionalization process, the influence professions have on society and the professionals themselves, and the importance of a body of knowledge to a profession.

Definition and Characteristics of Profession

Webster's New World College Dictionary (2009) defines "profession" as "a vocation or occupation requiring advanced education and training and involving intellectual skills, as medicine, law, theology, engineering, teaching, etc....The body of persons in any such calling or occupation." According to Abbott (1988), professions are engaged in work that cannot be routinized, but instead involves the accumulation and application of abstract knowledge. Furthermore, Abbott states that "professionalization is how modern societies institutionalize expertise" (1988, p. xii).

Oppenheim and Pollecutt (2000) reviewed librarianship literature and found the basic characteristics of a profession included, "a specialized skill or knowledge gained through extensive education; the development of this body of knowledge through research; a valuable service that benefits society; and autonomy" (p. 187). Dyer (1985) in his discussion of medical ethics as a component of professionalism found that knowledge and expertise, service, and ethics define a profession. Khurana, Nohria, and Penrice (2005) note that "[w]hen the need for such judgment has arisen in other spheres that are vital to the interests of society (such as law and government, military affairs, health, and religion), modern societies have responded by creating the institutions that we know as professions." In comparing business management to the professions noted above, they identified four characteristics that define them:

- A common body of knowledge resting on a well-developed, widely accepted theoretical base;

- A system for certifying that individuals possess such knowledge before being licensed or otherwise allowed to practice;
- A commitment to use specialized knowledge for the public good, and a renunciation of the goal of profit maximization, in return for professional autonomy and monopoly power; and
- A code of ethics, with provisions for monitoring individual compliance with the code and a system of sanctions for enforcing it. (Khurana et al., 2005)

These early descriptors are supported in more recent literature. Walker in Romeo and Rigsby (2008) discussed accountancy and suggested that professions are comprised of four elements, “an intellectual basis...acquired by specialist training and education;...a code of ethical behavior; professional autonomy; and altruism as opposed to self-interest” (p. 418).

Singer (2003) studied traditional and online journalism and identified the benchmarks of a profession to be 1) a cognitive dimension, comprised of the profession's body of esoteric knowledge and the techniques and skills learned to apply that knowledge through training; 2) a normative dimension that encompasses the service aspects of the profession, including its code of conduct and ethics; and 3) autonomy, which allows the profession to identify appropriate standards, separation and identification from other professions and occupations, and status.

Role of Professions in Society (Canada and the United States)

The role of a profession is characterized as protection of the public and actualized as safeguarding of life, health, and/or welfare (Abbott, 1988; Freidson, 1994; Tamir & Wilson, 2005). For example, “[e]stablishment of a ‘community of the competent,’” is used to describe the purpose of the accountancy profession (Miranti, as cited in Romeo & Rigsby, 2008, p. 416). In the case of teachers, “educators proclaim their concerns for the ‘future of our children,’ the ‘health of our democracy,’ or the ‘prosperity of our nation’” (Tamir & Wilson, 2005).

Professional responsibility is keenly felt by healthcare providers, air traffic controllers, defense attorneys, and others. This level of responsibility also confers autonomy and power and infers control over knowledge and the work that applies to that knowledge. As noted by Tamir and Wilson (2005), a profession is able to protect the public in important, essential ways by “maximizing the public good, even if economic, social, or political pressures suggest otherwise” (p. 335). Weidner and Kulick (1999), referencing Freidson (1994), discuss a professional's commitment to conducting work based in expert knowledge (gleaned from a body of knowledge) and maintaining a fiduciary relationship with clients as the foundation for affording privileges to professions. And, due to the globalization of knowledge, professions of the future

will need to operate within a paradigm of “risk-knowledge management” as their “professional jurisdictions, mandates, and values” evolve (Olgiati, 2006, p. 545).

Process of Becoming a Profession

The professionalization process has been studied and documented innumerable times by sociologists and others studying a specific profession from within its ranks. According to Sullivan (2001) in the *Journal of Professional Nursing*, “Constructing a profession is similar to building a physical structure. It’s a slow, tedious, and often discouraging process. But, just as a building is assembled brick-by-brick, so is a profession similarly constructed” (p. 67).

The professionalization path is seldom easy and is affected by both internal and external factors. Internal factors typically consist of the actions of the those involved in the future profession such as their determination and clarity regarding their responsibilities to society and the clients they serve and especially their understanding of their body of knowledge as the foundation of their professional work (Martin, 1998).

External factors to the profession such as societal conditions, demographics, and public perception, also affect the professionalization process. The process can run smoothly or delays can occur due to interaction and protest from related professions that view the new or emerging profession as a challenge to their professional jurisdictional claims. For example, protests from persons currently operating within the boundaries of the new profession’s jurisdiction who do not have the newly identified and defined professional qualifications can confuse and delay professionalization. And, there are a myriad of other factors that hamper the new profession, which change over time.

It is the internal actions that are important to this review of where interior design is in the professionalization process as is typical of the professionalization process for all professions. Abbott (1988) identified directly and indirectly six internal actions taken by occupations or trades as they worked to become professions: 1) *professional association (also known as an “organization”) membership* for the purpose of creating community, 2) *name change* of the occupation to help create definition for the new profession, 3) *development of a code of ethics* to signal to professionals and the public that the profession has standards of quality and behavior, and 4) *legal recognition (also known as “regulation”)* to call out those individuals qualified to protect the public. Martin’s (1998; 2007) study of design professions added two internal actions that were indirectly identified by Abbott’s first internal action,

professional association membership. These two actions are implemented by professions in the form of membership requirements: 5) *educational requirements* as the basis of the profession's body of knowledge and 6) *comprehensive examination* of the body of knowledge and skills to establish a minimum level of competency, thereby identifying who is qualified to apply for legal regulation. A seventh internal action is *continuing education* as assurance to the public that the professional's knowledge base is current and continuously updated (Martin, 2007). Each action has been enacted by various professions to first establish and then maintain the boundaries of their profession's jurisdictions.

Importance of a Body of Knowledge to a Profession

Formation and maintenance of a profession's jurisdiction is dependent on the profession's ability to create and apply abstract knowledge (Abbott, 1988). Professions, including interior design, are engaged in knowledge creation—whether or not this knowledge is defined and documented formally in a body of knowledge, have a foundation for engagement and service to the public and consumers (Cohen, 1958; Weidner & Kulick, 1999). This activity serves as both a statement of the profession's existence and as a basis for dialog and debate within the profession—further refining the body of knowledge. These actions support and reflect a principle function of a profession's behavior—constant change, instigated from both internal and external forces (Abbott, 1988). Defining and documenting a body of knowledge is an ongoing effort (Nickols et al., 2009), and for new or emerging professions the task can be daunting. Professions established at the beginning of the 20th-century, such as social work and family social science, found the process to be one of reflecting upon and documenting what was “known” over decades of development (Cohen, 1958; Nickols et al., 2009).

The interior design profession has followed both of these two processes to define and document their BOK (Guerin & Martin, 2001; Martin & Guerin, 2006). The profession's BOK has been disseminated to the profession and the public via a Web site (www.careersininteriordesign.org), and much dialogue and scholarship have focused on discussion and debate about aspects of the profession's BOK, in terms of format, content, and purpose (Dohr, 2010; Guerin & Martin, 2004; Marshall-Baker, 2010; Rhoads, 2010; White & Dickson, 1994). This study itself is evidence of the continued interest in the BOK, commissioned by the Issues Forum members (comprised of the leadership of ASID, CIDA, IDC, IDEC, IIDA, and NCIDQ).

Definition of a “Body of Knowledge”

A search to define “body of knowledge” yielded several results. Though the phrase is not defined by Merriam-Webster, a mainstay of dictionaries, *Wikipedia*TM (2009) offers the following definition:

...is used to represent the complete set of concepts, terms and activities that make up a professional domain, as defined by the relevant professional association. While the term body of knowledge is also used to describe the document that defines that knowledge—the body of knowledge itself is more than simply a collection of terms; a professional reading list; a library; a website or a collection of websites; a description of professional functions; or even a collection of information. It is the accepted ontology for a specific domain.

The importance of a profession's body of knowledge cannot be overstated. Defining it and documenting its components are often the first, important step in establishing and maintaining the jurisdictional boundaries of a profession. As noted by Northrup et al. (2004), when reporting on the current state of professional nursing:

Once differentiated as a distinct domain of knowledge, ultimate responsibility for expanding the conceptual basis of nursing science; for explicating the inextricable link between our theories, practice, and research; for articulating and extending nursing's contribution to healthcare, and; for elucidating the difference we make to the people we serve, rests within nursing and not with other disciplines. (p. 59)

It is apparent that a profession's body of knowledge is not static over time, and in fact, knowledge is accumulated, shared, or lost. Researchers suggest that a body of knowledge is the documentation of knowledge that is primarily used by professionals to a greater extent than by others, i.e., core knowledge, frequently used as the basis for decision making; it is specialized knowledge, some of it unique to the profession, and some is not—some portion of every profession's body of knowledge is shared among many professions. And, professionals integrate shared and unique knowledge in practice. (To review an examination of various professions and the creation, identification, definition, and documentation of their respective bodies of knowledge see *Section 3. Goal 1* of the study.)

Analysis of Interior Design Professionalization and the BOK

Interior design is a profession, based on Abbott's theory of professionalization grounded in the seven internal actions that define a profession. Six of these actions have been

fully accomplished, and the seventh, legal recognition/regulation is underway in Canada and the United States (Martin, 2007). It is important to note that in Canada, IDC is the national organization for members within eight provincial interior design associations. (Prior to 2010, IDC was the umbrella organization over the provincial organizations themselves, not at the member level.) For the purposes of this analysis, one of the provincial associations, ARIDO, the largest association in terms of membership, will be used as an example of adoption of the seven actions taken by interior design to be a profession. Significant actions include:

- 1) *Professional Association (Organization) Membership*: ASID (1975; principal mergers beginning in 1931); IIDA (1994; from organizations established in 1969); and ARIDO (established in 1934 as Interior Designers of Ontario) are all interior design professional associations.
- 2) *Name Change*: Conscious separation from the name “interior decoration” and use of the name “interior design” occurred as the profession began expanding its focus on non-residential/commercial space design in the 1950s.
- 3) *Code of Ethics*: ASID, IIDA, and ARIDO have prescribed codes of ethics and conduct (as do other provincial organizations within Canada including IDC).
- 4) *Educational Requirements*: CIDA has accredited interior design programs in institutions of higher education in Canada and the United States (formerly known as FIDER, 1970-2006).
- 5) *Comprehensive Examination*: NCIDQ has offered an examination that addresses health, safety, and welfare since 1974; it has been the primary qualification examination in both Canada and the United States since 1970).
- 6) *Legal Recognition/Regulation*: Canadian regulation began in 1960 with a title act in Alberta and in 1973 with a practice/title act in Puerto Rico. Currently there are 34 Canadian and U.S. jurisdictions with title, practice/title, self-regulating, or permitting regulations. Every year there are regulatory efforts undertaken in these countries in multiple jurisdictions to clarify, enhance, or establish legal recognition/regulation of interior design.
- 7) *Continuing Education*: a requirement for maintaining professional membership in ASID, IIDA, and ARIDO, among other provincial organizations within IDC, as well as some regulatory jurisdictions. Interior designers must complete a specified number of continuing education units annually that are approved by the Interior Design Continuing Education Council (IDCEC), among others.

Interior Designers Today

Interior designers are creating design solutions for interior spaces that include corporate, government, healthcare, hospitality, institutional, residential, and retail; and many specialize in sustainability, aging-in-place, universal design, or evidence-based design approaches. According to the U.S. Bureau of Labor Statistics (BLS), in 2006, there were 72,000 interior designers in the United States. That number is expected to grow 19% by 2016, raising the total to 86,000, which is higher than the average growth rate projected for all occupations (U.S. Bureau of Labor Statistics, 2009b).

An examination of *the Occupational Outlook Handbook, 2008-2009 Edition*, “Professional and Related Occupations” from the BLS (U.S. Bureau of Labor Statistics, 2008) presents occupations grouped under 16 major categories. “Interior designers” is a subheading under a major category, “Art and design occupations.” Other subheadings under that same major heading include, “artists and related workers; commercial and industrial designers; fashion designers; floral designers; and graphic designers” (U.S. Bureau of Labor Statistics, 2008). In the BLS (U.S. Bureau of Labor Statistics, 2009a) description of interior designers, the discussion of “Related Occupations” states,

Workers in other occupations who *design or arrange objects to enhance their appearance and function* include architects, except landscape and naval; artists and related workers; commercial and industrial designers; fashion designers; floral designers; graphic designers; and landscape architects. (*Italics added for emphasis; p. 4*)

This statement does not acknowledge the responsibilities to a person's HSW; instead, the focus is on designing and arranging of objects.

Interior designers' application of their BOK to plan and design interior space embodies their understanding and responsibility to protect the occupant's HSW. Interior designers protect and enhance people's interaction with the interior built environment, in addition to consideration of aesthetics and cost. Balancing the myriad needs and issues of the people using the space, cultural context, society, and sustainability is complicated; extensive qualifications are required to practice in the profession of interior design.

Qualifications of Interior Designers

As a recognized profession, interior design has identified the three most crucial components necessary for an individual to be qualified to practice interior design. Formalized education, monitored experience, and a qualification examination—commonly referred to by

those in the interior design profession as the “three Es,” are considered the core qualifications of regulated professions in society today (Guerin & Martin, 2001). They define the acquisition of abstract knowledge, i.e., the BOK, accrued through formalized education, application through practice experience, and testing of practitioners’ comprehension and proficiency. The three Es ensure that the interior design professional protects the public’s health, safety, and welfare.

Consistent growth in CIDA-accredited programs and a significant increase in NCIDQ certificate holders are indicative that qualifications do matter, which has been recognized by institutions, prospective interior design students and their parents, educators, interior design practitioners, clients, and the public. Some people believe that interior designers need not meet recognized qualifications even though these qualifications are required and supported by the profession (Carpenter, 2006; Interior Design Protection Council, 2009; National Kitchen and Bath Association, 2008); and others believe that interior designers are not qualified enough (American Institute of Architects, 2009). Understanding and acceptance of qualifications to practice professional interior design are a matter of educating all stakeholders.

From this examination, evidence exists that professions are a well-established, growing facet of our society. Being a profession is acknowledged as a benefit by those engaged in the profession; the benefits to society are far-reaching and crucial as related to protection of life, health, safety, and welfare. This was demonstrated in this report of numerous professions and their development history and bodies of knowledge. In addition, the public trust afforded professions is generally appropriately granted, as professionals have attained specific, time-tested qualifications required to deliver necessary services to the public. Professions that maintain the quality of their expertise and application of knowledge in meeting the public’s needs are enduring, though they typically change over time; others with diminished use lose value and/or cease to exist over time.

It is apparent that interior design has achieved professional status as shown by the criteria from several theorists and researchers, e.g., Abbott (1988), Khurana et al. (2005), Flexner (1915), Freidson (1944), and Martin (1998, 2007).

In later sections of this executive summary, interior design’s BOK will be defined and documented. This report is one of many documents to discuss interior design’s BOK, though perhaps the most recent effort to document the interior design profession’s BOK in the context of its influence on HSW. These authors have done this twice before (Guerin & Martin, 2001; Martin & Guerin, 2006). The second BOK report was more refined than the first, and this BOK

study has an additional refinement as well—focusing on current knowledge areas as documented by entities of the profession and viewed in relation to HSW.

The profession's BOK is important not only to scholars, but educators, researchers, students, and other stakeholders such as clients, code officials, legislators, and the public. Spending 90% of our time indoors makes the design of interior spaces of paramount interest to us all.

Goal 2: Results of Examination of Regulation

This segment of the report compares the 2010 interior design regulations to regulations from 2005 and discusses the comparison as it relates to interior design practice and HSW, specifically the KAs contained in regulatory language. To do this, definitions of interior design from regulatory language in both 2005 and 2010 were reviewed. Also, the specific title used to name the regulated interior design practitioner in a specific Canadian or U.S. jurisdiction is identified. (Definitions of interior design from all jurisdictions with regulation of interior design are presented in Appendix B of the report.)

Regulatory Process

Regulatory process varies by jurisdiction, and moreover to a great degree between Canada and the United States. In Canada, provincial laws are enacted as bills by the legislative assembly but are regulated through the interior design associations within the province. For example, ARIDO, is both an interior design organization with members, similar to ASID, and regulates use of the title Interior Designer in Ontario. In the United States, the legislature enacts laws, namely statutes and rules on a state-by-state basis and is wholly separate from interior design membership organizations.

In both Canada and the United States, most interior design regulation has been enacted first as title legislation. These regulations typically control the title of the profession, but not the practice of the profession. What this means is that persons in a jurisdiction with interior design title regulation can call themselves Certified Interior Designers (as an example title), only if they have met the qualifications established by the jurisdiction. It is a violation of law for all others to use the protected title. However, in that same jurisdiction, anyone can practice interior design if there is only a title act. There are variations; a few jurisdictions afford additional privileges to persons who meet the qualifications, but they are not described in this report. In

contrast to title regulation, practice regulation controls the practice as well as the title/name. Under practice regulation, persons who are not qualified cannot use the title or practice interior design as defined in the regulatory language of the jurisdiction.

Table 3.1 identifies each Canadian and U.S. jurisdiction that regulates interior design, whether or not it was regulated in that jurisdiction in 2005 (at the time of the Martin & Guerin BOK study, 2006), and the title currently regulated. Also, the type of regulation is noted: “title/practice,” “title,” “self-certification,” or “permitting.” (Appendix B.) presents the jurisdictions’ definitions of these titles.) It is important to review these definitions to identify any KAs that are contained in the language and connect them to HSW.

Thirty-four Canadian and U.S. jurisdictions regulate the title and/or practice of interior design. In Canada, there are seven provincial associations with title regulation; one regulates title and practice of interior design. For additional detailed information and to receive the most current information, contact the Interior Designers of Canada (www.interiordesigncanada.org).

In the United States, 27 states and territories have regulation. Of them, six regulate both the title and practice of interior design: Alabama, Florida, Louisiana, Nevada, Puerto Rico, and Washington, DC. For additional detailed information and to receive the most current information, contact the regulatory board directly. Also, both ASID (www.asid.org) and IIDA (www.iida.org) provide information about regulatory activities.

Table 3.1. Interior Design Regulation in Canada and the United States (2005 and 2010).

Canada				
Province	2005	2010	Title Regulated (2010)	Regulation Type (2010)
Alberta	❖	❖	Registered Interior Designer	Title
British Columbia	❖	❖	Registered Interior Designer	Title
Manitoba	❖	❖	Professional Interior Designer	Title
New Brunswick	❖	❖	Registered Interior Designer	Title
Nova Scotia	❖	❖	Interior Designer	Title/Practice
Ontario	❖	❖	Interior Designer	Title
Quebec	❖	none		
Saskatchewan	❖	❖	Interior Designer	Title
United States				
State or Territory	2005	2010	Title Regulated (2010)	Regulation Type (2010)
Alabama*	❖	❖	Registered Interior Designer	Title/Practice
Arkansas	❖	❖	Registered Interior Designer	Title
California	❖	❖	Certified Interior Designer	Title (Self-Certification)
Colorado	❖	❖	Interior Designer	Permitting
Connecticut*	❖	❖	Registered Interior Designer	Title
Florida	❖	❖	Registered Interior Designer	Title/Practice
Georgia	❖	❖	Registered Interior Designer	Title
Illinois	❖	❖	Registered Interior Designer	Title
Indiana	none	❖	Registered Interior Designer	Title
Iowa**	❖	❖	Registered Interior Designer	Title
Kentucky	❖	❖	Certified Interior Designer	Title
Louisiana	❖	❖	Registered Interior Designer	Title/Practice
Maine	❖	❖	Certified Interior Designer	Title
Maryland	❖	❖	Certified Interior Designer	Title
Minnesota	❖	❖	Certified Interior Designer	Title
Missouri	❖	❖	Registered Interior Designer	Title
Nevada	❖	❖	Registered Interior Designer	Title/Practice
New Jersey	❖	❖	Certified Interior Designer	Title
New Mexico	❖	❖	Licensed Interior Designer or Licensed Designer	Title
New York	❖	❖	Certified Interior Designer	Title
Oklahoma	none	❖	Registered Interior Designer	Title
Puerto Rico	❖	❖	NA	Title/Practice
Tennessee	❖	❖	Registered Interior Designer	Title
Texas	❖	❖	Registered Interior Designer	Title
Virginia	❖	❖	Certified Interior Designer	Title
Washington, DC	❖	❖	Interior Designer	Title/Practice
Wisconsin	❖	❖	Registered Interior Designer	Title

*Regulatory titles and language are in flux in several jurisdictions. This information was current at the time of the report, however situations are fluid.

**Interior design was regulated in Iowa in 2005, but after the 2005 Edition of the BOK was published (Martin & Guerin, 2006).

Discussion of Regulatory Findings

Generally, very little has changed within the definitions of interior design when all interior design regulations are taken into account across Canada and the United States between 2005 and 2010. In the 2005 study, there were 32 regulated jurisdictions in Canada and the United States; 33 if Iowa is counted as it took effect in 2005 shortly after that study was completed—as compared to a total of 34 jurisdictions that define interior design in 2010.

Since 2005, one jurisdiction is no longer regulated: Quebec, Canada; two additional jurisdictions are regulated in the United States: Indiana and Oklahoma. Of the seven Canadian provinces with regulation, only British Columbia has changed its definition of interior design. In the United States, of the 27 states, territories, and jurisdictions, approximately nine of them have had definitions of interior design language changes: Alabama, Colorado, Connecticut, Georgia, Illinois, Maine, New Mexico, Tennessee, and Texas. Overall, this represents a period of stability of interior design's regulatory definition(s).

Regulatory Titles (Names)

In 2010, the primary regulatory title used to identify interior design is “Registered Interior Designer” (18 provinces and states), followed by “Certified Interior Designer” in the United States (8 states). In Canada, the titles “Registered Interior Designer” (3) and “Interior Designer” (3) are used equally (Interior Designers of Canada, n.d.). That title is used minimally by states and territories in the United States; Puerto Rico (since 1973) and Washington, DC (since 1986) (Martin, 2007). Florida (1994) also used “Interior Designer” as a regulated title, in addition to “Registered Interior Designer,” but that “naked” title, i.e., “Interior Designer,” was found unconstitutional in early 2010 via a court ruling (Locke et al. v Shore et al., 2010). A “naked” title act was an issue because prior to the law being enacted many persons already used that name to identify themselves; therefore a descriptor was determined necessary to be used with the term “interior design,” e.g., “Registered Interior Designer.” This scenario describes why in most jurisdictions persons who consider themselves an “engineer” have the regulatory title “Professional Engineer.”

Regulation and the BOK

In legislators' views, protection of the public's HSW is the only reason a profession is (or should be) regulated and therefore serves as the means by which the public can identify who is

qualified through meeting minimal standards to use the title and/or practice a specific profession (Kleiner, 2006; Martin, 2007). As interior design continues on its professionalization journey, there is precedent for the profession to pursue regulation of its title and practice as an internal action to further identify it as a profession (Abbott, 1988; Martin, 2007). Professional status is closely tied to the development and maintenance of abstract knowledge, i.e., the profession's BOK. Interior design's efforts to be regulated in Canada and the United States, a nearly 50-year effort, have relied on the relationship between its BOK and HSW. Unfortunately, the definitions of interior design (by any name regulated, as discussed above) that comprise numerous jurisdiction's regulatory language belie this linkage.

However, there are also regulatory jurisdictions that have language that does contain a more comprehensive representation of interior design's KAs within their definition, perhaps best illustrated by those that incorporate or reference the NCIDQ definition of interior design (National Council for Interior Design Qualification, 2004a). Other jurisdictions' definitions do contain an extensive list of KAs representative of interior design's BOK. Many definitions seem restrictive as KAs are included and often present divisions between professions and their knowledge and responsibilities, although in practice, those divisions are often difficult to determine.

Regulatory Support of HSW

"Health, safety, and welfare" is evident in regulatory language in many cases, and in others, it is implied through the KAs noted in the definitions when applied by interior designers. Considering that the purpose of regulation is to "protect the public's health, safety, and welfare," it may be redundant to use those terms in regulatory language as they are the foundation of any regulation. Perhaps that is why that phrase is absent in most regulatory language. Other phrases that capture the essence of the protection of the public's HSW are clearly evident in the tie made overtly between the built environment and the people who will occupy it.

Goal 3. Results of Defining HSW as Related to Interior Design Practice

In the following discussion of *Goal 3*, the purpose and rationale for defining HSW are discussed. New definitions for each HSW term as it related to interior design are presented.

Purpose of Defining Health, Safety, and Welfare

“Protection of the public’s health, safety, and welfare” is a phrase frequently used by licensed professions such as medicine, architecture, and accountants to identify the effect their work has on people’s lives. Prevention of harm is the sole reason any occupation becomes regulated by government agencies (Kleiner, 2006; Martin, 2007), yet the exact meaning of each term in that phrase used to describe the prevention of harm is not always clear.

At the mile-high level, the terms “health, safety, and welfare” seem to be relatively straightforward and clear. However, upon closer inspection, the terms are not as well understood by the public, i.e., the people interior designers protect, and, often, by interior design practitioners themselves. Although interior designers are aware of the value a well-designed, supportive interior environment can bring to its occupants, interior designers generally do not articulate these types of overarching benefits to themselves or their clients. This omission may occur because practitioners do not consciously promote the value of interior design to their clients because they assume the protection of the public is inherent in practice. Therefore, it is important to define the terms “health,” “safety,” and “welfare” to clarify their meanings so interior design practitioners can articulate to their clients and the public 1) the value of designing to prevent harm and 2) clearly understand the ways in which their practices protect the public.

Results of Goal 3 show new definitions for each term, “health,” “safety,” and “welfare” in relation to the practice of interior design. Additionally, research about numerous abstract knowledge factors that describe each term (i.e., HSW) are then related to interior design practice.

Rationale for Defining HSW

The importance of defining HSW cannot be overestimated. People spend 90% or more of their lives indoors, and they have many experiences, such as fires, falls, or exposure to toxic air, in interiors that can harm them. Or, conversely, people can experience environments that negate harmful outcomes and support their productivity, healing, satisfaction, social interaction, or comfort. Responsible, qualified interior designers design interior environments with the goal of increasing positive experiences. In this way, interior designers add value to people’s quality of life. Simply put, well-designed interiors improve the human condition.

However, the current definitions of health, safety, and welfare inadequately identify the outcomes of health, safety, or welfare in language that can be linked to the specialized knowledge that interior designers are required to master to practice. In other words, more explicit terminology for each definition will provide more concrete linkages so interior designers can relate their practice knowledge and application to each term (i.e., HSW). They will be able to document and fully express what they do to protect people through design of interior environments.

Additionally, without a demonstrated linkage between HSW and interior design practice, the public has little understanding of the influence interior designers have on people's lives in ways that prevent harm and improve daily working and living conditions. As suggested by Vanderwagen (2006), these are society's priorities. He stated, "In general...populations are seeking some safety and security in which to function in everyday life. After the police and public safety needs are addressed, preservation of the health and well-being of the population is usually the next priority in most societies" (p. 3).

Definitions of HSW

The most recognized and often-quoted source of basic definitions of HSW for the interior design profession is NCIDQ (2004a). Although these definitions have served well, there is now the need to have definitions that are more specific, measurable, and connected to interior design practice. Definitions of each term, "health," "safety," and "welfare," were culled from a review of over 200 pieces of literature. Sources include dictionaries, government and public entities, and interior design-based publications. Also, abstract knowledge factors that provide meaning to each term (i.e., HSW) were identified as they relate to the BOK.

Health Defined

Overall, dictionary definitions from the sources noted above address the physical, mental, emotional, and, in some cases, spiritual aspects of human health. Many government and public entities do not specifically define health, but address influences of good health or lack of good health. Literature from many of these entities revealed discussions about or observations of health and reflect a connection to interior design practice. Sources included the World Health Organization, the U.S. Department of Health and Human Services, the National Environmental Health Association, the National Institutes of Health, the National Science Foundation, the

National Institute for Occupational Safety and Health, the Occupational Safety and Health Association, and the U.S. Green Building Council, and others.

Professional interior design/design-related organizations and practitioners provide few definitions of health as related to interior design practice. However, their literature often includes descriptions of health-related design factors under the purview of interior designers, such as descriptions of health by Kopec (2006), the *Whole Building Design Guide* (Heerwagen, 2008), ASID (2010), IIDA (n.d.), ARIDO (n.d.a), the Business and Institutional Furniture Manufacturer's Association (2008), the Environmental Design Research Association (n.d.a), and others.

New Definition of Health as Related to Interior Design Practice

Based on an analysis of the literature, a new definition of health was developed to reflect interior design practitioners' knowledge. It identifies where the profession's BOK intersects with health and describes the knowledge needed to design healthy interior environments. Health is actualized in design by the contributions of numerous abstract knowledge factors contained in KAs in the BOK.

Definition of Health as Related to Interior Design Practice: Interior designers create interior environments that support people's soundness of body and mind; protect their physical, mental, and social well-being; and prevent disease, injury, illness, or pain that could be caused by occupancy of interior environments.

Evidence of Protecting People's Health via the Interior Design BOK

Interior designers' abstract knowledge is used to design interior spaces that protect people's health, i.e., that the factors that comprise the definition affect people's health. A sampling of four abstract knowledge factors contained within KAs of the BOK and their effect on health might include ergonomics, IAQ, light, and acoustics—and there are many others. The relationship between these factors and the BOK places designing for positive health squarely on responsible practice by the interior design profession.

Safety Defined

Definitions of safety from dictionaries address the freedom or right people have to not be exposed to physical danger or risk; conditions must exist so that people will not be put in harm's way. Safety in the built environment is related to avoidance of risk and accidents. A review of government and public entities' publications authored by committees, commissions, departments, or other entities revealed that many of these entities do not specifically define safety, but address influences of safety or lack thereof. Sources included the National Safety Council (n.d.), a review of high-risk population occupancies by Thornton (2003), impacts experienced by those in healthcare settings (Cooper, Gaba, Liang, Woods, & Blum, 2000; Spath, 2000), creation of a Total Safety Culture (Geller, 2001) in work settings, occupational safety by the National Institute for Occupational Safety and Health (2007), and product safety as identified by the U.S. Consumer Product Safety Commission (n.d.) to name a few.

Professional interior design/design-related organizations and practitioners provide few definitions of safety as related to interior design practice. However, their literature often includes descriptions of safety-related design factors under the purview of interior designers, such as descriptions offered by Carson Guest (2008), Kopec (2006), the National Business Institute, the *Whole Building Design Guide*, ASID (American Society of Interior Designers, 2010), IIDA (International Interior Design Association, n.d.), ARIDO (Association of Registered Interior Designers of Ontario, n.d.b.) and the Business and Institutional Furniture Manufacturer's Association (n.d.a) as well as others.

New Definition of Safety as Related to Interior Design Practice

Based on an analysis of the previous literature, a new definition of safety was developed to reflect interior design practitioners' knowledge. It defines where the profession's BOK intersects with safety and describes the knowledge needed to design safe interior environments. Safety is actualized in design by the contributions of numerous factors represented by KAs in the BOK.

Definition of Safety as Related to Interior Design Practice: Interior designers create interior environments that protect people against actual or perceived danger; protect against risk from crime, accidents, or physical hazards; and prevent injury, loss, or death that could be caused by occupancy of interior environments.

Evidence of Protecting People's Safety via the Interior Design BOK

Interior designers' abstract knowledge is used to design interior spaces that protect people's safety, i.e., the factors that comprise the definition affect people's safety. A sampling of three abstract knowledge factors contained within KAs of the BOK and their effect on safety might include building systems; space planning; and specification of equipment, materials, and products. The relationship between these factors and the BOK places designing for safety squarely on responsible practice by the interior design profession.

Welfare/Well-Being Defined

Definitions of welfare from dictionaries (it should be noted here that only the term *welfare* was searched in the dictionaries; *well-being* was not) frequently included the term well-being; the terms were found to be nearly interchangeable. Overall, these definitions address people's emotional state that signals their overall well-being. Welfare and well-being are used to define a person's social, psychological, and emotional quality of life. Definitions from government and public entities' publications authored by committees, commissions, departments, or other entities, revealed that many of these entities do not specifically define welfare, but address influences of welfare and well-being. Sources included the U.S. Department of Health and Human Services (2000), the U.S. National Research Council (2001), the American Association of Retired Persons (n.d.), the National Institute for Occupational Safety and Health (n.d.), and the U.S. Green Building Council (n.d.); as well as researchers (Strengmann-Kuhn, 2002) and entities (National Institutes of Health, n.d.) that focused on economic welfare

Professional interior design and design-related organizations and practitioners provide few definitions of welfare as related to interior design practice. However, their literature often includes descriptions of welfare-related design factors under the purview of interior designers,

such as is presented by Carson Guest (2008), Heerwagen (as cited in Kolleeny, 2003), and organizational literature of ASID (American Society of Interior Designers, 2010), IIDA (International Interior Design Association, n.d.), ARIDO (Association of Registered Interior Designers of Ontario, n.d.b), BIFMA (Business and Institutional Furniture Manufacturer's Association, n.d.b), IFMA (International Facility Management Association, 2010), and the Environmental Design Research Association (n.d.b), among others.

New Definition of Welfare as Related to Interior Design Practice

Based on an analysis of the previous literature, a new definition of welfare was developed to reflect interior design practitioners' knowledge. It identifies where the profession's BOK intersects with welfare/well-being and describes the knowledge needed to design interior environments that provide for people's welfare/well-being. Welfare is actualized in design by the contributions of numerous factors represented by KAs in the BOK.

Definition of Welfare as Related to Interior Design Practice: Interior designers create interior environments that support people's physical, psychological, social, and spiritual well-being; and assist with or contribute to their financial or economic management, success, and responsibility.

Evidence of Protecting People's Welfare via the Interior Design BOK

Interior designers' abstract knowledge is used to design interior spaces that protect people's welfare, i.e., the factors that comprise the definition affect people's welfare. A sampling of five abstract knowledge factors contained within KAs of the BOK and their effect on welfare might be occupant well-being and performance, human factors/behavior, cultural and social context, natural lighting/nature, and color principles. The relationship between these factors and the BOK places designing for people's welfare squarely on responsible practice by the interior design profession.

One overarching conclusion is readily apparent; there is an interrelatedness of the conditions that result in HSW. Roberts and Guenther (2006) say it well, "...numerous studies have shown that buildings designed for good IAQ, have many benefits, including increased production, safety, morale, and general well-being of the occupants, not to mention extended

life and value of the building” (p. 88). Interior designers specify the products, materials, finishes, and textiles, all of which can be selected to reduce off-gassing of toxins and create positive health issues for users. Interior designers also influence a person’s safety through the specification of room exiting and people’s egress paths. Finally, an interior environment that has good IAQ reduces fatigue, which can contribute to increased productivity and employee satisfaction—all of which reflect on how well a person functions in the interior environment.

Goal 4: Results of Updating the BOK

Discussion of BOK Categories and Knowledge Areas

The interior design profession’s BOK was updated by a content analysis method. Results of the BOK content analysis are discussed in this segment of the report. Included are the description of the categories and KAs within each category and identification of abstract knowledge in each KA. The raters found 65 KAs, which they placed into six categories. Each category has 7-16 KAs; each KA has from 1-30 terms factors that are identified as abstract knowledge and assigned to a KA. The categories are shown in Table 3.5 below:

Table 3.5. Categories with Number of KAs per Category.

Category
• Number of KAs
Communication
• 7 KAs
Design Theory and Process
• 16 KAs
Human Environment Needs: Research and Application
• 10 KAs
Interior Construction, Codes, and Regulations
• 10 KAs
Products and Materials: Evaluation, Installation, Specifications, Inspection
• 8 KAs
Professional Practice: Principles, Methods, and Tools
• 14 KAs

Categories were named to reflect the overall content of the KAs in each category. Category names used in this study were based on those established in the 2005 study (Martin & Guerin, 2006). Some category names were revised to clarify the category content. For example, “Professional Practice” from the 2005 study became “Professional Practice: Principles, Methods, and Tools.” This change meant aspects of the design process that relate to the business of interior design, i.e., “project scope and size” within “project management,” could be contained within this category, yet remain distinct from the design aspects of the design process, i.e.,

“detailed space plans” within “design development,” that were contained within “Design Theory and Process,” which had formerly been named “Design.”

It should be noted that in this study frequencies for KAs are not given, and KAs were not weighted for importance or contribution to their category or the BOK. Weighting allows a number to be attached to a KA, which can be used to artificially evaluate and assign a level of importance of a KA. As the BOK only represents the three stages of the first phase of the career cycle, i.e., education, experience, and examination, this level of importance could erroneously underpin decisions made by educators, practitioners, and researchers. It was determined that it is more important to identify *what* knowledge interior design practitioners attain in the first phase of their careers, a strength of content analysis (Stemler, 2001). Attaching a number to the KAs does not consider the quality, depth, or duration of learning the specific abstract knowledge.

Abstract Knowledge that Comprise KAs of the 2010 BOK

Tables 3.6 – 3.11 show each category followed by a list of its KAs and a list of the abstract knowledge contained in that KA. The categories, KAs, and abstract knowledge are all listed in alphabetical order within the KA to help readers find certain content. The quantity of KAs and their abstract knowledge within categories varies. This is evidenced by the two largest categories, Design Theory and Process (16 KAs) and Professional Practice (14 KAs) versus the category with the fewest KAs, Communication (7 KAs). In many cases, the source documents contained abstract knowledge that was not identical but closely related to other abstract knowledge, and so the quantity of abstract knowledge within a KA increases such as within the KA “project management” (contains 13 abstract knowledge factors) within Professional Practice.

In other cases, abstract knowledge seemed to separate into smaller subgroups within a KA, and so the researchers assigned them as such. An example would be the subgroup contained within the KA “design process” in the Design Theory and Process Category. Subgroups of abstract knowledge within “design process” include “programming,” “schematic design,” “design development,” “contract documents,” and “contract administration,” and each of them have their own abstract knowledge. Subgroups were simply a way to organize the content and make it manageable. However, it was also discovered that in certain cases, the specificity of the abstract knowledge identified did not allow it to be part of another KA. For

example, “evidence-based design” and “wayfinding” were unique within the KAs. Also, in these cases, the KA may or may not contain additional abstract knowledge beyond that which is noted in the KA itself.

Table 3.6. Communication Category with KAs and Abstract Knowledge.

Communication Category (7 KAs)	
Knowledge Areas (KAs)	Abstract Knowledge
communication	client and contractor meetings; client meetings; client/user interviews; collaboration; communication techniques and technologies; consensus building; discussions with the client; effective communicators; facilitation/negotiation; interviewing clients and users; liaison between the client and contractors; negotiation strategies; project team dynamics
construction documents	coordinated drawings, schedules, and specifications; general conditions; general notes - construction drawings and documents; as-built plan; construction drawings; demolition plan; detail drawings; detail page; drawings; drawings for interior construction; electrical plans and preliminary specs; elevation plan; floor plans; lighting plans and preliminary specs; reflected ceiling plan; working drawings; working drawings for all details; working drawings-custom cabinets and furniture; working drawings-interior construction - specifications and schedules for construction and materials; prescriptive, performance, and proprietary specifications; schedules; spec writing; specifications; specifications and related schedules; technical specifications
critical listening	critical listening skills; evaluate what they are hearing from several points of view, including but not limited to speaker credibility, logic and meaning of the message, underlying assumptions of the message
presentation(s)	color rendering; color use effectively in all aspects of visual communications, e.g., presentations, models, etc.; integrate oral and visual material to present ideas clearly; material and color boards; presentation of the conceptual drawings; presentation drawings across a range of appropriate media; presentations—oral, written, and graphic; presentation techniques and skills; presentation of a variety of ideas, approaches, and concepts; presentation materials; presenting the complete design to the client for approval; rendering, e.g., 3-D and 2-D
sketching	preliminary drawings; sketches as a design and communication tool (ideation drawings); three-dimensional sketches that explore the image of the concept
visual, written, and verbal design communication methods and techniques	digital media; graphic software; measuring, drafting, and technical drawing conventions; models; oral and written communication; visual design communication methods and techniques; written design communication methods and techniques
written form of agreement	bid forms/tender forms; bonds; bulletins; change orders; charts; contracts; contractual agreements; form(s); invoices; minutes and field reports; proposals; punch/deficiency list; purchase documents; purchase orders; records for tax purposes; tenant work letter requirements; transmittals

Table 3.7. Design Theory and Process Category with KAs and Abstract Knowledge.

Design Theory and Process Category (16 KAs)	
Knowledge Areas (KAs)	Abstract Knowledge
acoustical design principles	no additional abstract knowledge
color and light principles and theories	color and light; interaction of light and color and their impact on one another and interior environments
color principles, theories, and systems	apply color effectively; color(s); color concept; color with regard to its multiple purposes
creative thinking	creative solutions that support human behavior within the interior environment; creative thinking and originality; innovation
design concept	concept(s); concept models; design concept statement; functional parti diagrams
design process	<p>phases of a project</p> <ul style="list-style-type: none"> -programming [design problem (goals, objectives, performance criteria); goals; design research; project context; programmatic information; clients' and users' needs, goals, and special requirements; client requirements; gathering and analyzing information about the client's and user's needs; compiling and evaluating data; writing the program; matrices; adjacency matrices; square footage allocations] -schematic design [multiple design responses to programmatic requirements; design issues and implications; design application; bubble diagrams; block plans; stacking/zoning diagrams; preliminary plans, furniture layouts, materials choices, and other components; preliminary space and furniture plans that are appropriate to the budget and reflect the character, function and aesthetic concept; furniture, fixture, and equipment (layouts)] -design development [detailed space plans; mock-ups and prototypes; final recommendations for the complete project; procedures necessary to obtain approval of design; client approval for production of working drawings] -contract documents (note: see Communication category, "construction documents" for additional KAs) [interior design documentation; coordinating design drawings for these components (lighting, electrical, plumbing, and HVAC)] -contract administration [construction mock-ups; shop drawings; substitutions; inspection of the completed premises with review of deficiencies; inspection of final design solutions; project close-out]
design theory	elements, principles, and theories of design; theories of two- and three-dimensional design, and spatial definition and organization; three-dimensional design solutions; two-dimensional design solutions
evaluating existing premises including space allocation, furnishings, equipment, and other attributes of the existing environment	existing conditions; field administration; inventory of furniture; measure and record all site conditions; site analysis; site analysis procedures; site inspection, survey, and documentation; space and conditions analysis
evidence-based design	evaluate, select, and apply information and research findings to design
historical precedent to inform design solutions	history; interiors, architecture, art and the decorative arts within a historical and cultural context; movements and periods in interior design and furniture; movements and traditions in architecture; social, political, and physical influences affecting historical changes in design of the built environment; stylistic movements and periods of art
natural and electrical lighting design principles	daylighting; lighting: color, quality, sources, use control; select and apply luminaires and light sources
principles of thermal design	no additional abstract knowledge
CONTINUED ON NEXT PAGE	

Table 3.7. Design Theory and Process Category with KAs and Abstract Knowledge (Continued).

Design Theory and Process Category (16 KAs) CONTINUED	
Knowledge Areas (KAs)	Abstract Knowledge
problem solving	creative problem solving; critical thinking; design responses/solutions; identify and explore complex problems; multiple design responses to programmatic requirements; problem solving methods; strategic planning; synthesize information
space planning	space and form; space relationships; spatial definition and organization
sustainability concepts, principles, and theories	renewable resources; sustainable design practices; sustainability; sustainability guidelines
wayfinding	signage

Table 3.8. Human Environment Needs Category with KAs and Abstract Knowledge.

Human Environment Needs Category (10 KAs)	
Knowledge Areas (KAs)	Abstract Knowledge
business, organizational, and familial structures	client organization structure and facility type; familial structures (co-housing, nuclear, extended family, or others)
ecological, socio-economic, and cultural contexts	cultural contexts; ecological (issues); economic factors; environmental, social, psychological, cultural, aesthetic, global influences; external considerations; functional, behavioral, aesthetic, perceptual, cultural, and economic; functional, behavioral, and cultural needs; other cultures; social and cultural norms; social, political, economic, ecological issues; varied needs for different socio-economic populations
globalization	geography; global context for design; global view to weigh design decisions; implications of conducting interior practice within a world market; location; surroundings
human factors	anthropometrics; ergonomics; ergonomic and anthropometric data; physiological responses, e.g., visual acuity; proxemics, e.g., territoriality
lighting, acoustics, thermal comfort, and indoor air quality principles	acoustics; acoustical control; indoor air quality; indoor air quality principles; noise control, sound distribution, speech privacy; white noise
occupant well-being and performance	aging in place; children; elderly; health, safety, welfare; illness or injury; performance of building occupants; special needs - physical, cognitive, or emotional
post-occupancy evaluation	validity of design decisions and original programs
research	analysis of user satisfaction; development and execution of surveys and questionnaires; qualitative analysis tools, e.g., characteristics, special needs, image; quantitative analysis tools, e.g., functional program; research findings; research methods, e.g., interviewing, surveying, case studies, benchmarking/precedent; research special requirements and needs of a project
theories about the relationship between human behavior and the designed environment	behavioral science; human behavior; human behavior theories; relationship between human behavior and the built environment; relationship of object to body
universal design	design for all people including those with special needs – physical, cognitive, or emotional; universal/accessible design; universal design concepts

Table 3.9. Interior Construction, Codes, and Regulations Category with KAs and Abstract Knowledge.

Interior Construction, Codes, and Regulations Category (10 KAs)	
Knowledge Areas (KAs)	Abstract Knowledge
building construction	building construction types; building methods; construction and installation standards; construction standards; construction types, e.g., wood, steel, concrete
building systems	-acoustical systems -distribution systems including power, mechanical, HVAC, data/voice telecommunications, and plumbing -energy management including HVAC, safety, and security [energy, security, and building control systems; environmental system and controls; mechanical systems; mechanical system design, airflow, occupant reaction to thermal variables; plumbing; plumbing plans and preliminary specs; plumbing systems] -lighting; electrical systems; light distribution, e.g., ambient lighting and task lighting; light source(s); lighting systems; low voltage systems; luminaires; sources (i.e., lamping, illumination) -pollutant source control, filtration, ventilation variables [CO ₂ monitoring; mold prevention; thermal systems impact interior design solutions] -structural systems [structural systems and methods; wood-frame; wood-frame and steel-frame] -vertical circulation systems [elevators and stairways]
calculations	calculating requirements for numbers and sizes of stairs and exits, stair and corridor dimensions, ramps and public washrooms; foot candle requirements, energy efficiency, codes, lease requirements; square footage measurement standards
code requirements, laws, standards, regulations, accessibility, and sustainability	accessibility guidelines; codes; code requirements; energy conservation, energy efficiency; federal, state/provincial, and local codes; health codes; law(s); laws, codes, standards, and guidelines that impact fire and life safety; plans for barrier free design
critical path	critical path for construction and installation; design milestones, sequencing
interior construction	components, e.g., doors, windows, studs; non-structural systems including ceilings, flooring, and interior walls; relationship of design solutions and interior construction; sequencing of work, e.g., plumbing before dry walling
laws, codes, standards, and guidelines that impact the design of interior spaces	American National Standards Institute (ANSI); California 01350; CHPS; Energy Policy Act 2005; International Building Code (IBC); LEED; National Building Code of Canada
life safety	compartmentalization: fire separation and smoke containment; detection; devices that alert occupants including smoke/heat detectors and alarm systems; egress plan; fire and life safety; fire protection systems; life safety and code requirements; fire separation; movement: access to the means of egress including stairwells, corridors, exitways, egress; suppression: devices used to extinguish flames including sprinklers, standpipes, fire hose cabinets, extinguishers
regulations and ordinances	industry-specific regulations; regulations; regulations for education projects including daycare; regulations for government projects; regulations governing work in historic districts or on historic properties
researching life safety and code requirements, project type location, and access	permit requirements; searching and documenting codes, regulations, and ordinances; variances for particular requirements

Table 3.10. Products and Materials Category with KAs and Abstract Knowledge.

Products and Materials Category (8 KAs)	
Knowledge Areas (KAs)	Abstract Knowledge
building materials and finishes	finish materials; maintenance requirements; materials; materials and finish selection; materials and products; material selection; selection, specification, use, and care of interior finishes, materials, and lighting
custom work	architectural woodwork; custom cabinetry, furniture, and millwork; details; detailing of custom cabinetry, furniture, and millwork; fabrication and installation methods; product assembly; product development; production time
floor, wall, and ceiling systems	ceiling treatments; floor coverings; wall treatments; window treatments
furniture, fixtures, equipment, and finish materials	furniture, fixtures, and equipment (selection; furnishing and textile selection; textiles; flammability); select and specify furniture, fixtures, equipment, and finish materials; selection of furnishings, textiles, materials, finishes, and colors
installation	installation scheduling; furniture delivery; schedules for installation of furniture, fixtures, and equipment; scheduling; installation supervision; supervising the installation of furniture, fixtures and equipment
interface of furniture with distribution and construction systems	integration with building systems and construction
performance criteria	quality control; quality control and performance; select and apply appropriate materials and products on the basis of their properties and performance criteria, including environmental attributes and life cycle cost; technical knowledge
selection and application of products and systems impact indoor air quality	toxicity

Table 3.11. Professional Practice: Principles, Methods, and Tools Category with KAs and Abstract Knowledge.

Professional Practice Category (14 KAs)	
Knowledge Areas (KAs)	Abstract Knowledge
budgeting and estimating costs	budget; budgeting; budget control; budgeting of time; budgeting principles and practices; control of expenses; cost estimating; preliminary budget and cost; time and fee estimation/proposals; use of manpower; use of resources; value engineering
business development	bringing in new clients; market sectors and client types; marketing the services of the firm; marketing tools; public image; public relations; public speaking
business practice	business and organizational structures; business licenses required by local jurisdictions; human relations; lease requirements; legal considerations (e.g., liabilities and forms of business); maintaining an efficient and effective practice; organization, structure, and goals; sole proprietor, partnerships; strategic planning (internal); types of design practices
consultations with consultants	specialized consultants including: acoustical consultants; audiovisual consultants; architects; contractors/construction managers; decorators; developers; electrical, structural mechanical, civil engineers; food service consultants; graphics/signage designer; landscape architects; leasing agents; lighting consultants; lighting, electrical, plumbing, and HVAC consultants; real estate professionals
contributions of interior design to contemporary society	community service; contemporary issues affecting interior design; public and community service; value of interior designers' contribution to the built environment
ethical and accepted standards of practice	leadership; practice of interior design; professional ethics; professionalism; professional practice; professional values
financial management	accounting principles; accounting; billing and design compensation; contract fee systems; fee for services/fee systems; financial aspects; financial limitations; income; methods of compensation; payouts
legal aspects of the contracts	awarding of contracts; contracts between clients and designers; contract negotiation; contracts with consultants and sub-consultants; prepayment requirements
legal recognition for the profession	certification; professional licensure; registration
liabilities	errors and omissions insurance; insurance contracts; insurance coverage; insurance issues; insurance; legal responsibility for all documents and drawings; professional exposure and liability
multi-disciplinary collaboration	determine other disciplines/specialized skills needed; good relations with contractors and suppliers; integrated design practice; integration of disciplines; integration of the work of consultants; interaction with multiple disciplines; multi-disciplinary team projects; team work structures and dynamics; team work
office procedures and regulations	office management; office procedures and technology; operating a design business; operations
professional development	professional organizations; professional activities; life-long learning; continuing education
project management	bidding process; bidding; close-out procedures; coordinate the tasks and scheduling; coordination of program requirements with consultants; determine scope of work; job observation; on-site observation; project accounting; project budget/budget review/progress and tracking; project budget; project budgeting/tracking during design phases; project coordination procedures and the roles of related design professionals; project coordination; project management of consultants; project management, project communication, and project delivery methods; project meetings/meeting management/meeting protocol; project planning; project schedule/schedule review/progress and tracking; project size and scope; scheduling; site visits

The purpose of updating the BOK was to identify the current KAs so they could be used in an empirical study to determine the level of contribution each KA makes to people's HSW through the practice of interior design. The content analysis of abstract knowledge provided the researchers with the content for the practitioner survey conducted to accomplish the next goal, Goal 5. In that way, it was critical to determining the current BOK, but that is the extent of the importance of the content analysis.

Goal 5: Results of Examining the Relationship of HSW to the Interior Design BOK

A survey of interior design practitioners was conducted to identify their perceptions of the contribution each KA makes to "health," "safety," and "welfare." A questionnaire was developed and sent to 10,040 interior design practitioners who are NCIDQ certificate holders in Canada and the United States. The response rate was 17% (N=1578). Findings are the result of descriptive, statistical, and inferential analyses.

All respondents, i.e., interior designers, were asked to rate KAs on their contributions to HSW, independently. That is, they assigned a score or rating to each KA for each term; one score for health, a second score for safety, and a third score for welfare. They rated the extent of contribution on a scale of 1-7 where "1" meant "no contribution" and "7" meant "extensive contribution."

Descriptive Analysis Results

Overall Contribution of BOK Categories to HSW

The first results discussed are the contribution level of each BOK category to HSW. The Human Environment Needs Category was found to have the highest contribution level of all categories to health and welfare. It also had the highest grand mean, which implies it contributes the most of all categories to HSW, combined (see Table 3.13). The grand mean is the average of all means for each term and is calculated by averaging the means of responses for each term. It does not reflect a question asked of respondents; it is an analysis tool that helps describe responses.

Table 3.13 Contributions of Interior Design BOK Categories to HSW.

Category		Health	Safety	Welfare	Grand Mean
Human Environment Needs: Research and Application Category	Mean	5.85	5.38	5.84	5.69
	SD	1.28	1.45	1.21	1.31
Interior Construction, Codes, and Regulations	Mean	5.52	5.92	5.42	5.62
	SD	1.49	1.37	1.47	1.44
Products and Materials: Evaluation, Installation, Specifications, and Inspection	Mean	5.59	5.79	5.32	5.57
	SD	1.47	1.34	1.47	1.43
Design Theory and Process	Mean	4.85	4.47	5.09	4.80
	SD	1.36	1.44	1.39	1.40
Communication	Mean	4.32	4.44	5.22	4.66
	SD	1.87	1.91	1.68	1.82
Professional Practice: Principles, Methods, and Tools Category	Mean	3.86	3.90	4.86	4.21
	SD	1.59	1.56	1.47	1.54
Total	Grand Mean	5.00	4.98	5.29	5.09
	SD	1.05	1.03	1.08	1.05

There is a tight range of grand means among the top three categories relative to the highest contributions to HSW: Human Environment Needs Category at 5.69; Interior Construction, Codes, and Regulations Category at 5.62; and the Products and Materials Category at 5.57. Both the Design Theory and Process Category (grand mean of 4.80) and the Communication Category (grand mean of 4.66) contribute at the substantial level.

The means for the Human Environment Needs Category are at the extensive contribution level for health (5.85) and welfare (5.84) and the substantial contribution level for safety (5.38). The Interior Construction, Codes, and Regulation Category contributes the most of all categories to safety, which is also at the extensive (5.92) level. The Professional Practice Category contributes the least of all categories to HSW, independently, as well as to HSW combined. However, the KAs in this category still contribute at the moderate level for health (3.86) and safety (3.90) and at the substantial level for welfare (4.86). All categories, except Professional Practice are perceived as contributing substantially to the BOK.

Also shown in Table 3.13, the grand mean of all categories (reading down the columns) of the BOK contribute at the substantial level to health (5.0), safety (4.98), and welfare (5.29). Moreover, it is interesting to note that KA categories' contributions to welfare (5.29) are higher than health and safety.

The category contributing most to HSW combined, and highest in contribution to both health and welfare independently, is Human Environment Needs. It contains KAs that are the heart of interior design practice. KAs such as universal design; human factors; occupant well-

being; lighting, acoustics, thermal comfort and IAQ; and human behavior theories directly impact people's health by application of knowledge that prevents disease or pain and enhances people's emotional and spiritual well-being.

The Interior Construction, Codes, and Regulations Category contributes the most of any category to safety. KAs in this category include code requirements, laws, and standards; life safety; and interior and building construction. These KAs directly protect people from physical hazards within an environment.

The Products and Materials Category also contributes at the substantial level across HSW. Abstract knowledge such as building materials and finishes; performance criteria; and selection and application of products and systems impact indoor air quality are representative of the importance of this category's KAs.

The Communication Category contributes at the substantial level to welfare, which is higher than its contribution to health or safety. The Professional Practice Category contributes at the moderate level (grand mean of 4.21) to overall HSW. The category has lower means than other categories but still contributes at the substantial level to welfare, which reflects the category's KAs of legal, ethical, financial, and business operations issues. These KAs focus on the internal factors of practice that directly affect people's financial stability and success.

Contributions of KAs to HSW

Contributions of the KAs to HSW are described in detail, separately within the report. To view the findings of these descriptive statistics, reported as means and standard deviations, and related discussion, see *Section 3. Goal 5* of the study, Tables 3.15-3.17.

All of the 65 KAs are distributed among the three highest levels of contribution, that is, KAs in the BOK contribute to welfare at the extensive, substantial, and moderate level. None are at the lower levels of minimal or no contribution, unlike contributions by KAs to health (5 KAs, 8%, at the minimal level) or safety (7 KAs, 11%, at the minimal level). Five of eleven KAs that contribute extensively to welfare are from the Human Environment Needs Category. The four highest contributors are from this category confirming the importance of KAs such as "universal design [e.g., design for all people]," "occupant well-being and performance [e.g., physical, cognitive, emotional]," and "human factors [e.g., anthropometrics, ergonomics, proxemics, physiological responses]" to protecting people's welfare.

Comparison of KAs Within Categories as They Relate to HSW

Findings from descriptive analysis report the contributions of KAs to HSW within the six categories; they too are available in the study, *Section 3. Goal 5*. Category results are being reported in the order of the KAs' contributions, highest grand mean to lowest. Complete results can be found in Tables 3.18-3.23.

Human Environment Needs Category

Of the 10 KAs within the Human Environment Needs Category, nine of 10 KAs contribute to health at the extensive (4 KAs) or substantial level (5 KAs); seven of 10 KAs contribute to safety at the extensive (3 KAs) or substantial level (4 KAs); and all KAs contribute to welfare at either the extensive (5 KAs) or substantial (5 KAs) levels. In the Human Environment Needs Category, "universal design [e.g., design for all people]" is the highest contributor to HSW. This KA includes abstract knowledge such as universal/accessible design and design for people with special needs – physical, cognitive, or emotional. It is important to note that none of the KAs within this category are at the minimum level of contribution and only four of the 10 KAs are at the moderate level of contribution.

Interior Construction, Codes, and Regulations Category

The Interior Construction, Codes, and Regulations Category presents the second highest contribution to HSW (grand mean of 5.62), and its KAs contributions to safety are the highest among all categories (mean of 5.92). Of the 10 KAs within the Interior Construction, Codes, and Regulations Category nine of 10 KAs contribute to health at the extensive (5 KAs) or substantial (4 KAs) level; all KAs contribute to safety at the extensive (9 KAs) or substantial (1 KAs) level; and all KAs contribute to welfare at either the extensive (2 KAs) or substantial (8 KAs) level. In this category, all KAs contribute to safety at the extensive level, except for "critical path," which contributes to safety at the moderate level. Also, the KAs contributing to safety are contributing at a high level; of the nine KAs at the extensive level of contribution, eight have scores ranging between 6.05-6.76—greater than any other KA's contribution to safety in the BOK.

Products and Materials Category

Overall, of the eight KAs within the Products and Materials Category, seven contribute to health at the extensive (5 KAs) or substantial (2 KAs) level; all eight KAs contribute to safety

at the extensive (5 KAs) or substantial (3 KAs) level; and all eight KAs contribute to welfare at either the extensive (1 KA) or substantial (7 KAs) level. In the Products and Materials Category, “selection and application of products/systems and their impact indoor air quality” is the highest KA contributor to health and welfare, but is fifth in level of contribution to safety. This KA includes toxicity. “Furniture, fixtures, equipment, and finish materials” is the highest KA contributor to safety, third highest contributor to health, and fourth highest contributor to welfare—but at the extensive level for safety and health and at the moderate level for welfare. Within this category, all KAs contribute to HSW at the extensive or substantial levels, except for “installation,” which contributes to health at the moderate level. This KA contributes the least to HSW in this category.

Design Theory and Process Category

Overall, of the 16 KAs within the Design Theory and Process Category, which is the category with the highest number of KAs of all six categories, 12 of 16 KAs contribute to health at the extensive (1 KA) or substantial (11 KAs) level; seven of 16 KAs contribute to safety at the extensive (1 KA) or substantial (6 KAs) level; and 13 of 16 KAs contribute to welfare at either the extensive (1 KA) or substantial (12 KAs) level. “Natural and electrical lighting design principles” is the highest contributor to health and welfare and third highest contributor to safety. This KA includes knowledge of “daylighting; lighting: color, quality, sources, controls; and the selection and application of luminaires and light sources.” “Design process [e.g., programming, schematic design, design development, contract documents, contract administration]” is the second highest contributor to safety and welfare and third highest contributor to health. This KA contains a significant amount of abstract knowledge that is the foundation of responsible design.

Communication Category

Of the seven KAs within the Communication Category, two of seven KAs contribute to health at the substantial level; two of seven KAs contribute to safety at the extensive level; and five of seven KAs contribute to welfare at either the extensive (2 KAs) or substantial (3 KAs) level. “Critical listening” is the highest contributor to health and second highest contributor to safety and welfare; “communication [e.g., consensus building, collaboration, facilitation/negotiation]” is the highest contributor to welfare and the third highest contributor

to health and safety. "Construction documents" is the highest contributor to safety, second highest contributor to health, and the fourth highest contributor to welfare. The importance of being able to communicate a design solution through appropriate drawings that demonstrate the knowledge that protects the public cannot be overstated, and is indicative of this KA's extensive level of contribution to safety.

Professional Practice Category

Of the 14 KAs within the Professional Practice Category, three of 14 KAs contribute to health at the substantial level, with the majority of KAs (seven) contributing at the moderate level; four of 14 KAs contribute to safety at the substantial level, with equal numbers (5 KAs) contributing at the moderate or minimal levels. Regarding welfare, the majority (11 KAs) of the 14 KAs contribute at the substantial level, with the remainder (3 KAs) contributing at the moderate level. "Consultation with consultants" is the highest KA contributor in all three areas of HSW, at the substantial level. Perhaps this KA contributes at the highest level as it includes all consultants in areas of design that cross over interior design practice and with whom an interior designer works depending on project scope, part of which may require knowledge outside the interior design BOK. Consultants are not limited, to but can include, acoustical and audiovisual consultants; architects; contractors/construction managers; decorators; electrical, structural mechanical, civil engineers; graphics/signage designers; and lighting, electrical, plumbing, and HVAC consultants. Though this category includes the second highest number of KAs in the BOK, it is unique in that it contains abstract knowledge that is basically inward in its focus, which may be contributing to its grand mean (4.21), the lowest among all six categories (see Table 3.13). However, KAs contained within this category are essential to the development and maintenance of the interior design profession.

Statistical Analysis Results

A series of ANOVAs was conducted to examine if there is a significant difference between demographic groups relative to the extent of contributions of BOK categories to HSW. The demographics investigated were professional practice type, location where interior designers lived by region, and years of practice. Significant findings are summarized in the next segment.

Category Contribution to HSW by Professional Practice Type

Interior designers were asked to identify the type of interior design they practiced, “nearly 100% commercial,” “nearly 100% residential,” or “about an even mix of commercial and residential.” Results from these three groups, i.e., different practice types, were then tested for any differences in their responses to the contribution levels of KAs to HSW. Differences were found for health and welfare, but not for safety.

BOK Category Contributions to HSW by Region

Analysis was also conducted to determine if there were any differences among interior designers' rating of the contributions of KAs to HSW based on the regions where they lived. There were differences found for HSW across specific categories. Complete information can be found in the study, *Section 3. Goal 5*, Tables 3.26-3.28.

Category Contributions to Health by Region

There is a statistically significant mean difference in the rating by interior designers of the level of contribution of the Design Theory and Process Category to health across different regions. Interior designers practicing in Southern, Northeastern, or Western United States are more likely to highly rate the contribution of Design Theory and Process Category to health than Midwest interior designers, though all rated the contributions of the Design Theory and Process Category KAs at the substantial level.

Category Contributions to Safety by Region

There are also statistically significant mean differences in interior designers' rating of the level of contribution to safety by the Human Environment Needs Category and the Products and Materials Category. Overall, Canadian interior designers are less likely to highly rate the contribution of the Human Environment Needs Category and the Products and Materials Category to safety than U.S. interior designers. The level of the Products and Materials Category contributions to safety by interior designers in the South, Northeast, and West United States were at the extensive level, and at the substantial level for respondents in the Midwest United States and Canada.

Category Contributions to Welfare by Region

There are statistically significant mean differences in interior designers' rating of the level of contribution to welfare in three categories: Interior Construction, Codes, and

Regulations; Products and Materials; and Professional Practice. Overall, Canadian interior designers are less likely to highly rate the contribution of each of these three categories to welfare than U.S. interior designers. Ratings of the contributions of welfare within all three categories by interior designers in the South and West United States rated contributions of the Products and Materials Category and the Professional Practice Category most highly to welfare. Interior designers in the South and Northeast United States rate the Interior Construction, Codes, and Regulations Category most highly to welfare.

BOK Category Contributions to HSW by Years of Practice

In this study's sample, over two-thirds of the interior designers had practiced eight years or more; differences based on years of interior design practice were compared. Years of practice were examined in three ranges: "1-7 years," "8-15 years," or "16+ years." Findings relevant to HSW are presented in detail in the study, *Section 3. Goal 5*, Tables 3.29-3.31.

Category Contributions to Health by Years of Practice

There is a statistically significant mean difference in the rating by interior designers who have practiced less than eight years on the level of contribution by three categories to health: Communication; Design Theory and Practice; and Interior Construction, Codes, and Regulations. In other words, the contributions of these categories to health are rated significantly higher by more experienced interior designers (8+ years of practice). However, relative to the Interior Construction, Codes, and Regulations Category, there is no statistically significant difference of means regarding the rating of contribution by this category to health between those interior designers with 1-7 years versus 8-15 years of practice.

Category Contributions to Safety by Years of Practice

There is a statistically significant mean difference in the rating by interior designers who have practiced more than 16 years on the level of contribution by two categories to safety: Design Theory and Process and Professional Practice. In other words, with more experience, interior designers' rating of the contributions of these categories to safety continues to grow.

Category Contributions to Welfare by Years of Practice

There is a statistically significant mean difference between the rating by interior designers with more than 16 years of practice and those who have practiced 1-7 years on the level of contribution of five of six categories to welfare. In other words, findings indicate that

with more experience, interior designers' rating of the contributions of these categories to welfare increases. Interior designers with the most years of practice rated the KAs in these categories higher. It is likely that business experience and the impact of embedded knowledge gained via practice and continuing education are contributing to these findings. Based on these results, a closer look at KAs was warranted to determine if years of practice have any significant effect on the study results.

KA Contributions to HSW as Influenced by Years of Practice

Descriptive analysis was used to determine differences and similarities between years of practice on KA contributions to HSW. Only those KAs that were significantly different are shown. For this analysis two groups were used. Group 1 includes interior designers with 1-7 years of practice; Group 2 includes interior designers with 8 or more years of practice. The findings and detailed discussion can be found in the study, *Section 3. Goal 5*, Tables 3.32-3.34.

KAs Contributions to Health by Years of Practice

Group 1 (1-7 years) and Group 2 (8 years or more) rated the contributions of the same 12 KAs to health with the highest rating, and all were at the extensive level. The highest rated 12 KAs are distributed across three categories: Interior Construction, Codes, and Regulations; Products and Materials; and Human Environment Needs.

KAs Contributions to Safety by Years of Practice

Descriptive analysis of the two practice groups comparing contributions of KAs to safety show that there are 18 KAs rated at the extensive level (5.81-7.0) by interior designers in both Group 1 and Group 2. Of these, 16 KAs are the same. The highest rated KA contributions to safety are distributed across all six categories.

KAs Contributions to Welfare by Years of Practice

Descriptive analysis of the two practice groups comparing contributions of KAs to welfare shows results are more diverse than health and safety. Group 1 has seven KAs rated at the extensive level, and Group 2 has 14 KAs at the same level. Of the seven KAs from Group 1, all are also rated at the extensive level of contribution to welfare in Group 2. Additionally, four of the first five KAs across both groups of interior designers are exactly the same. The KAs at this extensive level of contribution to welfare are distributed across all categories with the exception of Professional Practice.

Inferential Analysis Results

Many of the descriptive analysis results previously presented raised additional questions. When possible, descriptive findings were further examined via inferential statistical analysis. As a result higher degree of validity could be assigned to the findings. The results of this analysis follow.

Contribution of BOK Categories to HSW by Years of Practice

Analysis was conducted to determine any differences between the two groups of years of practice (Group 1 who practiced 0-7 years vs. Group 2 who practiced 8 years or more) and the contribution each BOK category made to HSW, independently. To do this, *t*-test comparisons were conducted to examine if rated contributions of BOK categories to HSW significantly differed between the two groups.

Category Contributions to Health by Years of Practice

In results from a *t*-test that examined category contributions to health across both groups (i.e., Group 1 and Group 2), Group 2 has a higher mean score than Group 1 in all six categories. However, there are significant differences in only four categories: Communication; Design Theory and Process; Interior Construction, Codes, and Regulations; and Professional Practice. This finding may indicate that the more experienced interior designers put a greater emphasis on these four categories to achieve the goal of designing to protect people's health in their design practices or that embedded knowledge contributes more significantly to KAs found in these categories.

Category Contributions to Safety by Years of Practice

In results from a *t*-test that examined category contributions to safety across both groups (i.e., Group 1 and Group 2), Group 2 has higher mean scores than Group 1 in five categories and is the same in one category. The five categories that indicate significant differences are: Communication; Design Theory and Process; Human Environment Needs; Interior Construction, Codes, and Regulations; and Professional Practice. This finding may indicate that the more experienced interior designers put a greater emphasis on these five categories to achieve the goal of designing to protect people's safety in their design practices.

Category Contributions to Welfare by Years of Practice

In results from a *t*-test that examined category contributions to welfare across both groups (i.e., Group 1 and Group 2), Group 2 had higher mean scores than Group 1 in all six categories. Of the six, there are significant differences in four categories: Communication; Design Theory and Process; Interior Construction, Codes, and Regulations; and Products and Materials. This finding may indicate that the more experienced interior designers put a greater emphasis on these four categories to achieve the goal of designing for people's welfare in their design practices.

Contribution of KAs to HSW by Years of Practice

T-test comparisons were conducted to examine if there are significant differences between years of practice and KA contribution to HSW.

Contribution of KAs to Health by Years of Practice

Out of 65 KAs, there are only 11 KAs where significant differences in interior designers' ratings of the contribution of KAs to health are found between the two groups, i.e., Group 1 and Group 2. The means for each KA for Group 2 are higher than Group 1. Therefore, Group 2 is more likely than Group 1 to rate more highly the contribution of all those KAs to health.

Contribution of KAs to Safety by Years of Practice

Out of 65 KAs, there are 20 KAs where significant differences in interior designers' ratings of the contributions of KAs to safety are found between the two groups, i.e., Group 1 and Group 2. Group 2 rates all but two of the KAs more highly than Group 1. Therefore, for KAs with higher means, Group 2 is more likely than Group 1 to rate more highly the contribution of those KAs to safety. The two KAs that Group 1 rate higher were "floor, wall, and ceiling systems" and "life safety."

Contribution of KAs to Welfare by Years of Practice

Out of 65 KAs, there are 12 KAs where significant differences in interior designers' ratings of the contribution of KAs to welfare are found between the two groups, i.e., Group 1 and Group 2. Group 2 rates all but one KA higher than Group 1. Therefore, for KAs with higher means, Group 2 is more likely than Group 1 to rate more highly the contribution of those KAs to welfare. The KA that Group 1 rated higher is "business, organizational, and familial structures."

Comparison of Years of Practice and Practice Type

Using statistical analysis, it was found that there were significant differences in the demographics of interior designers who participated in the study, across both number of years of practice and practice types. To determine if either of these variables influenced interior designers' ratings of the contributions of KAs to HSW, z-tests were conducted. Results indicated that there is a significant difference between the years of practice and type of practice. The proportion of commercial interior designers is higher in Group 1 (1-7 years) than in Group 2 (8+ years).

Conversely, the proportion of residential interior designers is higher in Group 2 than in Group 1. However, there is no significant difference in the third practice type, the mix of commercial and residential interior design and years of practice. Further analysis showed ratings of contributions of KAs to HSW were not influenced by years of practice interacting with practice type

Descriptive, statistical, and inferential analyses of interior designers' rating of the contribution of KAs to HSW provide a depth of information not previously documented. Overall, findings reinforce the importance of the interior design profession's BOK to people's HSW both at the category and KA levels. Further investigation is warranted to understand influences of practice type and years of practice on ratings of KA contributions to HSW. An additional look at welfare differences relative to regions where interior designers live would provide additional information. Results for analysis can be found in the study, *Section 3. Goal 5*, Tables 3.35-3.37.

Recommendations and Conclusions

The researchers have identified recommendations for the interior design profession that address all five goals of this study. They are steps that need to be taken by the profession to support its future relative to its BOK and contributions to HSW. These recommendations include:

- *Recommendation 1. The interior design profession must understand its vision of where it wants to be and develop strategies on how to get there. Contribution to the profession's BOK must be at the core of these efforts.*
- *Recommendation 2. Research must be conducted that measures abstract knowledge that protects the public's HSW. This is research of the science of interior design and will connect the BOK to HSW by identifying, documenting, and measuring HSW*

outcomes. Measured results of these outcomes will further support the regulation of practice, to the benefit of people via protection of their HSW.

- *Recommendation 3. Interior design practitioners must become and remain engaged with the evolving BOK or be marginalized by the profession as being less qualified.*
- *Recommendation 4. The connection between interior design practice and research must be strengthened, integrated, coalesced, and automatic.*
- *Recommendation 5. NCIDQ must update its definition of interior design practice to accurately represent the 2010 BOK.*
- *Recommendation 6. The interior design profession must work toward changing the U.S. Bureau of Labor Statistic's definition of interior design to reflect its contributions to HSW and prevention of harm, as well as how the profession is currently categorized.*
- *Recommendation 7. Once vetted, the interior design profession's definitions of HSW should be publicized and promoted to the public as a description of the abstract knowledge that interior designers possess and critically apply.*
- *Recommendation 8. Interior designers must be able to articulate their ability to prevent harm through design of interior environments. They must:*
 - *include design goals that have metrics attached to them to determine when solutions achieve the predicted outcomes;*
 - *develop a vocabulary around HSW and their practice outcomes;*
 - *be able to talk about the human and environmental benefits related to HSW beyond their passion for the design solution itself; and*
 - *document the relationship between their work and HSW as defined by the study.*
- *Recommendation 9. The interior design profession needs to be a stakeholder in NIOSH's Prevention through Design National Initiative (National Institute for Occupational Safety and Health, 2007).*
- *Recommendation 10. Regulatory bodies need to require continuing education on welfare, not just health and safety.*
- *Recommendation 11. Welfare abstract knowledge factors must be researched by interior design researchers to provide evidence of improved human conditions via design of the interior environment.*
- *Recommendation 12. Interior design practitioners and researchers need to change the order of the HSW terms and speak of these terms as WELFARE, health, and safety (WHS) to reflect interior design practitioners' critical contribution to quality of life.*
- *Recommendation 13. Educators must determine curriculum focus based on results from the interior design practitioners' rating of KA contributions to HSW.*

The Interior Design Profession's Body of Knowledge and Its Relationship to People's Health, Safety, and Welfare is a complex study, intended to update the interior design profession's BOK and document its relationship to health, safety, and welfare. Five specific goals were completed to accomplish this purpose. The researchers strongly suggest that the study be considered in its entirety as this Executive Summary is too condensed to present the extensive and significant findings contained in the full report, especially as it concerns the results from the survey of interior design practitioners in *Section 3. Goal 5*.

Upon completion of this five-goal study, the researchers identified four overarching conclusions about KA contributions to HSW:

- *The survey findings provide evidence that the KAs contained in the BOK significantly contribute to interior design practitioners' ability and responsibility to protect the public's HSW;*
- *The survey findings document that interior designers' specialized knowledge underpins their goal and responsibility of protecting people;*
- *As evidenced in this study, the specialized knowledge provided by interior designers' education, experience, and examination (i.e., their BOK), shows they are prepared to protect people's HSW, and, in fact, prevent people from being harmed and, based on this evidence;*
- *Interior design practice in public spaces must be regulated so that people know when they are receiving services from interior design practitioners who understand and apply the interior design profession's BOK and are able to design interior environments that protect them.*

This study informs the interior design profession where its jurisdictional boundaries are, regardless of their fluidity. It defines for the public, and all the built environment design professions, the content of the interior design profession's abstract knowledge, based on vetted documents, in a way that cannot be disputed. This abstract knowledge is the currency of the profession, that is, the way the public and all stakeholders identify the value added by responsible interior designers who are qualified by education, experience, examination, and regulation to prevent them from coming to harm in spaces where they live their lives. Moreover, interior designers' application of abstract knowledge will improve the quality of their lives.

The researchers are looking forward to the dialogue that the profession will conduct based on this study. They hope the evidence-based recommendations will be considered in light of their contributions to the profession's continued development.

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