

Analysis and Priorities: Developing a Modern, Effective, Regulatory Framework

David Benton, RGN, PhD, FFNF, FRCN, FAAN

The previous section described Step Two, the process of developing the concept maps at the Regulation 2030 summit. This section describes and reports on the analytical processes followed to synthesize the 25 concept maps in order to determine the key priorities for moving forward in developing a modern, efficient, and effective regulatory framework.

Method

Documentary analysis has been used to examine content for policy implications for many years (Bowen, 2009; General Accounting Office, 1989; Mogalakwe, 2006). Corbin and Strauss (2015) detailed the steps necessary to develop an analysis of textual data via the constant comparative method. Furthermore, Leech and Onwuegbuzie (2007) contend that this approach is the method of choice when seeking to identify overarching trends and concepts.

To support this analysis, the specialized software package NVivo 11 plus (QSR International Pty LTD., Doncaster, Victoria, Australia) was used. NVivo 11 is specifically designed to import, organize, code, analyze, and report a wide variety of qualitative and quantitative data in an efficient, effective, and flexible way (Edhlund & McDougall, 2016). NVivo 11 plus contains a range of tools to support these processes. In particular, cluster analysis, word counting, and the generation of word trees can all be used to help identify concepts and themes. NVivo 11 plus also facilitates the recording of notes and can document and save the analytical steps followed. This is particularly relevant, as Miles and Huberman (2014) stress the importance of maintaining an accurate audit trail capable of demonstrating the rigor and trustworthiness of the analysis.

As an additional support for such analysis, Fereday and Muir-Cochrane (2006) contend that the reliability of the analysis can be increased by conducting a number of coding cycles and cross-tabulating the results, facilitating the identification of overlaps and gaps in the analysis pointing toward areas where further, more-detailed exploration can take place, thereby clarifying and developing an understanding of the various concepts and trends.

Importing and Visualizing the Contents

The 25 concept maps generated in Step Two were converted to PDFs. The content included in each of the concept maps was compared to all other maps. Maps with similar content were grouped together and those with the most dissimilar material were separated from the similar group, making it possible to isolate and explore the most commonly occurring words and concepts.

There are a number of ways to extract and display a view of the total content of the maps. Three different types of visualizations were used:

- **Cluster analysis.** Provides a means of visualizing similarities and differences across the sources, hence facilitating the identification of higher-order groupings of concepts and themes.
- **Word frequency.** Searches generate a word-cloud—an image composed of words extracted from the source document(s) or transcript(s) being analyzed. The words are then displayed in a manner in which the size of each word indicates its frequency of occurrence in the sources being examined.
- **Word trees.** Focus on a particular word or phrase of interest and provide context by displaying both antecedent and subsequent associated text.

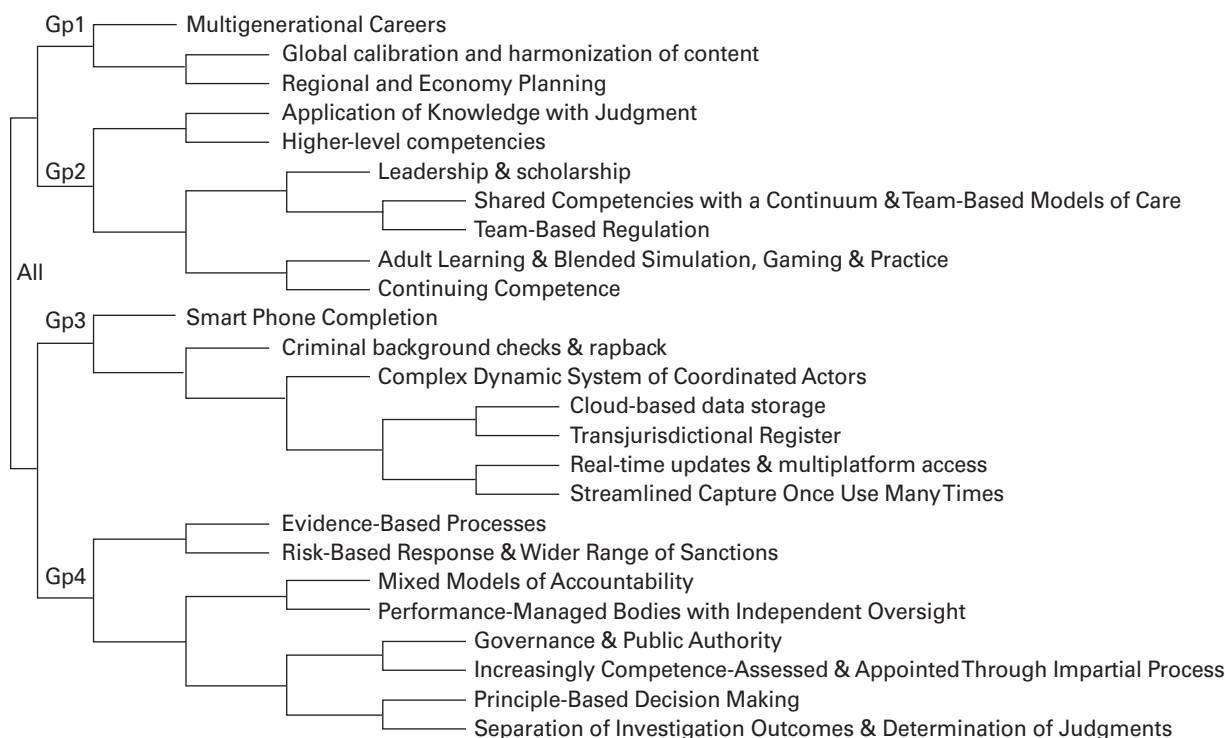
How these three methods of visualizing the content were used to identify concepts and trends in this study is discussed below.

Cluster analysis

All 25 concept maps were uploaded. Cluster analyses of the content of the sources were conducted and generated a cluster diagram (Figure 3.1) based on the similarity of the words contained in each map.

FIGURE 3.1

Cluster analysis of similarity of content across concept maps



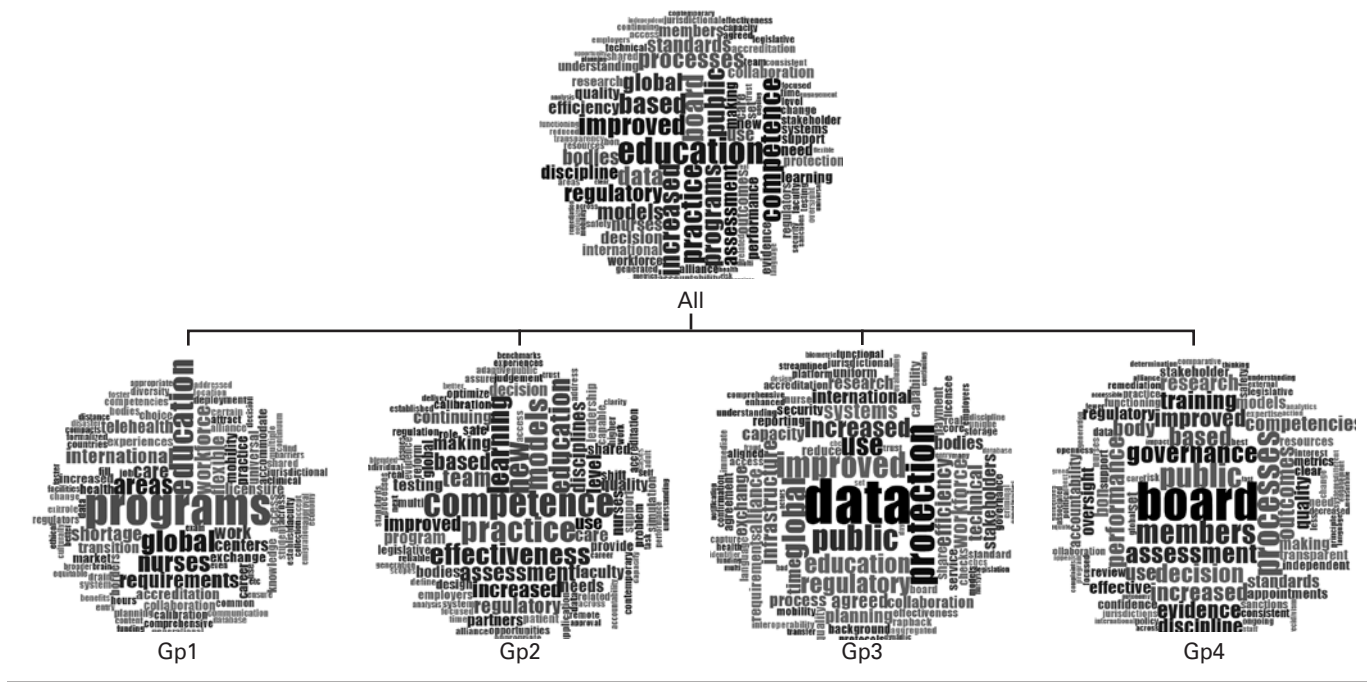
Exact word matches can be used and constitute the most restrictive approach to looking for commonalities. Matching based on word stems is a less restrictive approach; in such an approach, *educator*, *education*, *educating* and *educated* would all be attributed to the same matched group. The least restrictive approach is to use synonym matching, where words with similar meaning are allocated to the same group; in this approach, *training*, *education*, *learning*, and *development* would all be clustered together. This latter approach was used to conduct this analysis.

As can be seen in Figure 3.1, the maps can be ultimately grouped into four subclusters. The complexity of these clusters do differ. Group 1 has two additional levels. Group 2 and group 4 have four additional levels. Group 3, the most complex, has five levels.

Visual inspection of the various groups enables high-level categories to be attributed to the clustered content. To validate these observations, further analysis was conducted; namely, the use of word frequency tables and associated Wordle diagrams.

FIGURE 3.2

Word-cloud diagrams of content contained at aggregate and main group levels



The diagram is set as a hierarchical map. The first level is a summation and visualization of all words contained in all the maps using a synonym-word analysis. This first level or aggregate analysis points to a number of frequently occurring terms—*education*, *programs*, *competence*, *practice*, *public*, *board*, and *improved*. The four Word-cloud diagrams associated with groups 1 through 4 are dominated by the words *programs* and *education* (Gp 1); *competence* and *practice* (Gp 2); *data* and *protection* (Gp 3); and *board* and *processes* (Gp 4). These themes fit comfortably with the descriptors suggested as the overarching titles of the groups of maps derived through cluster analysis.

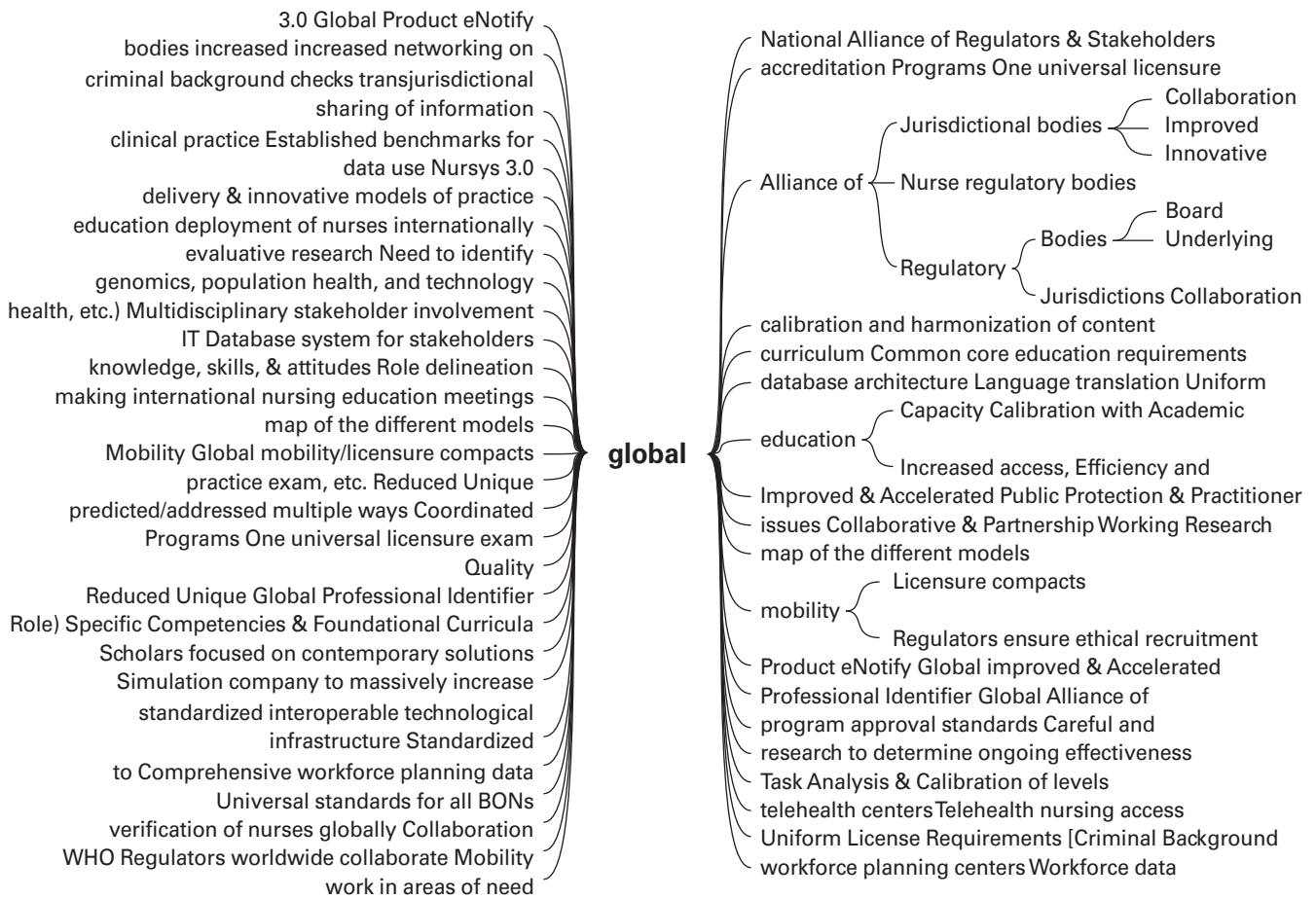
The NVivo program enables the user to click on a particular word in the Word-cloud diagram and identify the multiple sources where the term is located. By examining the various terms, context can be added, thereby improving the understanding of how the term is being used. It also highlights the various synonyms that have been grouped together under the dominant term.

Word Tree Analysis

Another way of displaying the context of a word is through the word tree method. (See Figure 3.3.)

FIGURE 3.3

Word tree search of term *global* and terms relating to *alliance*

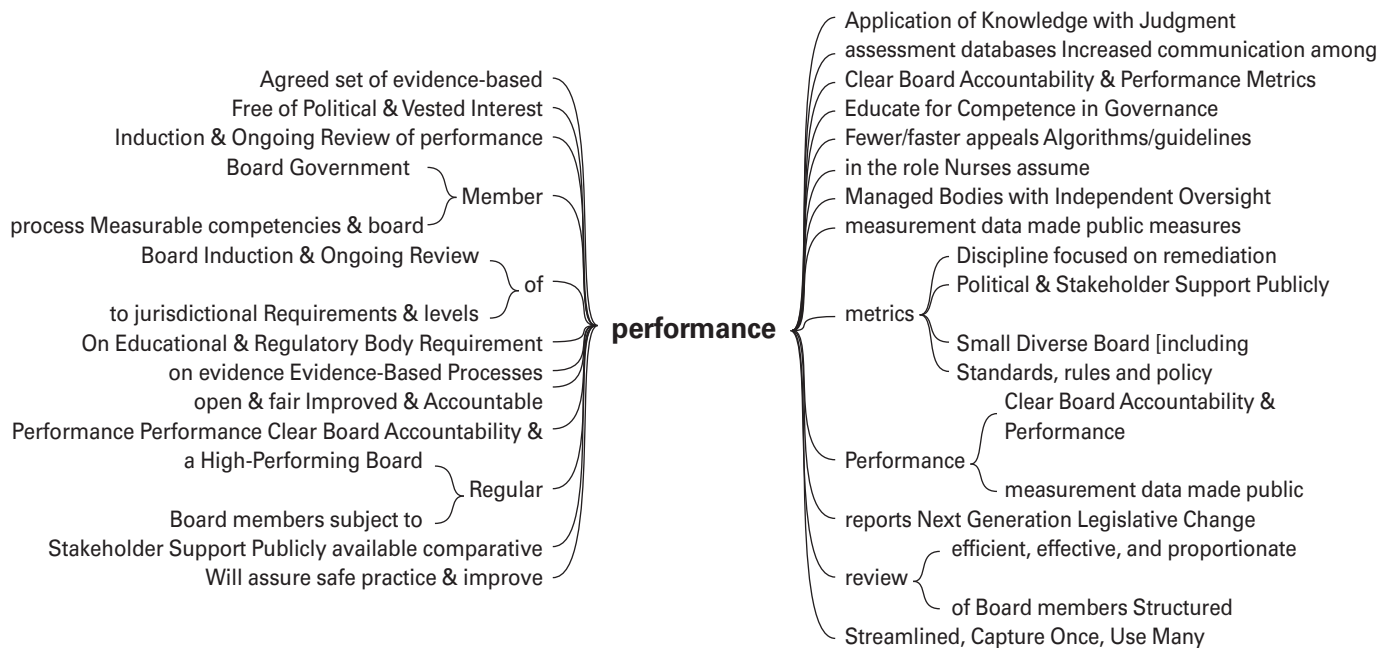


In this case, the word *global* was the search term and is highlighted as the central word in the tree. The software allows for single words or phrases to be identified as the query term(s). By reading from left to right, the context of the search term can be visualized. By clicking on any word or phrase, the subsequent and antecedent terms uniquely associated with the particular word or phrase of interest can be highlighted (as can be seen in Figure 3.3, where the phrase *alliance of* was highlighted). As a result of such an inquiry, insights into what is potentially driving the creation of a global alliance of regulatory bodies can be identified. Also, as can be seen from the righthand side of the image, a variety of similar terms has been used in the source maps: *alliance of*, *jurisdictional bodies/nurse regulatory bodies/boards*, and various permutations. Since the maps were developed by various groups and the participants came from different countries as well as from a variety of stakeholder groups, it is not surprising that similar concepts are described using a range of terms.

Another example of the word tree method offers the concept of *performance* as the word tree search term. (See Figure 3.4.) To identify the dimensions of this concept, the word trees associated with performance, quality, effectiveness, efficiency, and public safety were all examined. Due to space limitations, only the word tree relating to the focus concepts of performance is included here.

FIGURE 3.4

Word tree search of the term performance



By examining the content of these word trees, three dimensions associated with the concept of performance measures and metrics can be identified. First, focus, the measures and metrics relate to organizations, such as jurisdictional boards, educational institutions, and accrediting bodies; to functions such as discipline, data entry, licensure, and educational programs; and to individuals, namely, board members, staff of the regulatory body, and licensees. The second dimension is required features or characteristics of the measures. Specifically, they need to be evidence-based, proportionate to the level of risk, clearly defined, transparent, triangulated, meaningful, available in real time, reliable, valid, objective, economically feasible to collect, and comprehensive. Some of these features may be at variance with each other, such as comprehensive and proportionate to risk or being available in real time and simultaneously being economically feasible to collect. These important tensions will need to be addressed when specific measures are being developed and implemented. The third dimension relates to the outputs associated with performance measures and metrics, including effectiveness, efficiency, costs both financial and in terms of human resource usage of the various products and services—satisfaction.

Focusing on the Future

By exploring a wide range of commonly occurring words and phrases, then identifying key concepts that continually occur, priorities can be identified for action or approaches that need to be pursued to assist in developing a regulatory model fit for the future. For example, the term *collaboration* and its associated synonyms (*collaborate*, *collaborative*, *collaboratively*, *partner*, *partners*), when searched for, can be appreciated because the terms appear one or more times in 15 of the 25 maps.

The four major concepts identified in this study and recommended for focus and action in the development of a Regulation 2030 model are

- collaboration
- performance measures and metrics
- governance
- data and technology.

Collaboration

Closer examination of collaboration and its synonyms helps identify the purpose of collaboration and the stakeholders who need to be involved in the process. Namely, collaboration needs to take place at various levels among teams, systems, and jurisdictions, both regionally and internationally. The stakeholders who need to be involved at the various levels include regulators, educators, employers, and legislators. The purpose of the collaboration is to help standardize a wide range of regulatory functions, such as registers, discipline,

education, accreditation, governance, and performance assessment. Furthermore, such collaboration should lead to increased efficiency and effectiveness and improved quality and safety as well as reduced risks and costs.

Performance Measures and Metrics

The dimensions associated with the concept of performance measures and metrics were identified and visualized in the last section. (See Figure 3.4.) Examination of this concept does raise an additional point that needs to be considered if performance measures and metrics are to be implemented. Namely, should these measures and metrics be codified into law or in rules or should they be set as standards? If a standards-based route is pursued, should such standards be set as the minimal acceptable performance or should they be aspirational in nature that can be part of driving regulatory modernization efforts. Certainly a number of the maps do make reference to standards and from consideration of the related and surrounding text it would appear that the intent is to use standards to help coordinate, align, harmonize, bring uniformity and commonality, and increase interoperability so as to facilitate systemic changes.

Governance

The third focusing concept relates to governance, of which the three recurrent aspects were identified: board member competence, conformance, and reputation enhancement.

Regarding board member competence, the need to focus on the specification and develop the competencies required to enable the regulatory board to fully discharge its duties was identified in a number of the concept maps. Associated with this level of specificity is the need to have a competence-based assessment process as part of board member selection, which should be conducted by an independent entity and therefore be free from political bias or professional representative influence. This focus on competence is then carried through to the board orientation and induction processes as well as the identification of any development needs. Progress should be tracked as part of a cycle of ongoing board member performance review, again using a competence-based approach.

The second aspect of governance, not surprisingly, is conformance. Regulatory body performance has been the focus of a great deal of media and professional and legislative concerns over the past several decades (OECD, 2014). The need to hold the board accountable through a set of key performance metrics that address all areas of legislative responsibility has been the focus of a number of recent studies (Australian Government, 2007, 2014; Benton et al., 2013; Benton et al., 2016; Benton & Rajwany, 2017). In addition, the need to have an open and transparent process for the development of strategic plans and the associated resource mobilization also emerged as well as the need to develop regulatory interventions that achieve the desired results through the use of risk-based proportionate actions; that is, regulating only those things that make a difference to public protection and by using the least restrictive regulatory tools.

Linked to the concept of collaboration through the aspect of governance, reputation enhancement is important to the development of a regulatory framework fit for the digital era. Regulatory bodies have been accused of being too slow to react to the changing needs of health systems as well as being risk-averse and overly conservative in their processes and actions (WHO, 2006; Wall, 2017). Reputation enhancement will require frequent and early stakeholder engagement, proactive problem solving, and an assessment of the impact of any proposed regulatory change to ensure minimum intervention and maximum effect. In addition to conformance efforts previously discussed, a regulatory body will need to subject itself to routine independent external review in order to benchmark its performance with its peers. The combined impact of competent board members, a focus on conformance, and actions that enhance reputation will result in a regulatory model that is congruent with contemporary needs.

Data and Technology

The fourth concept in the development of a Regulation 2030 model is data and technology, which has the potential to widely impact various aspects of regulatory work; however, the specifics can be categorized under two major headings—Definitions and Processes.

To maximize the potential of data and technology, licensees must have a universal identifier that will enable them to be traced across jurisdictions. In addition, uniform datasets relating to the key areas of responsibility will also be needed if efficient, effective, reliable, and valid conclusions are to be drawn from the complex datasets being generated. These datasets will require operational definitions and a lexicon of terms that will map their use across jurisdictions. And if accurate interpretations of data are to be made, it will be particularly important to achieve multilingual usage and interoperability of systems.

A range of technical processes was identified, including various aspects of data confidentiality and integrity and awareness that privacy laws vary from one jurisdiction to the next. More sophisticated mechanisms of data capture and presentation were also identified, along with the idea that administrative, educational, and clinical sources may all play a part in generating a comprehensive regulatory record. Once captured, the data may then be pushed to licensees, their employers, or other interested parties. With such large quantities of data, artificial intelligence reporting would most likely play an increased role in extracting key information so as to move from a model of reactive discipline to one preventative in nature.

Collectively, these data will provide a new way of gathering and using information, moving progressively from descriptive to comparative to predictive analytic-based evidential change. These data will help inform workforce planning, facilitate tracking of new technology-based interventions, such as telehealth, tele-treatment, advanced simulation, and supervision of remote technology.

Key Skills and Competencies

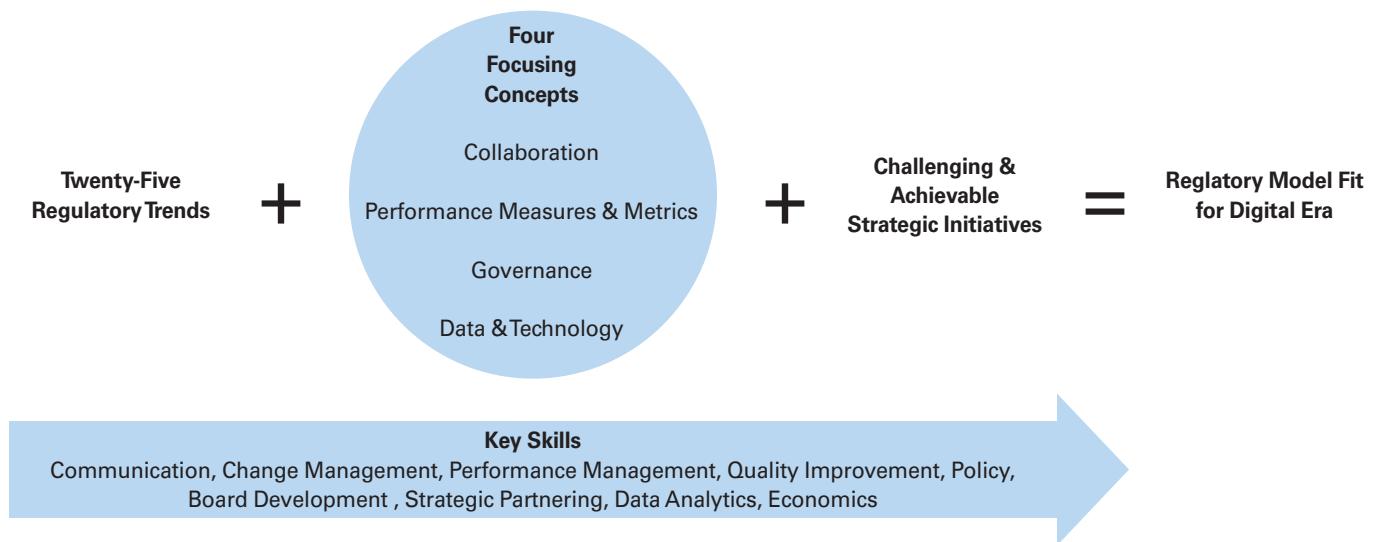
While it was noted, in relation to governance, that specific attention was needed regarding the competencies required of board members, board member competency was not the only concept that required an enhanced range or depth of competence to support the attainment of the new model. The required competencies were in addition to those already found among regulatory staff. In some cases, existing competence in communication, change management, and quality improvement would need enhancement since the challenges ahead are perceived as more complex and more dynamic. In other areas, such as policy, board development, and strategic partnering, there tends to be considerable variation among boards. Some have well-developed skills, while others could best be described as neophytes. Two areas of competence viewed as essential to the future but almost totally absent in the present are data analytics and economics.

Summary

Throughout the three steps presented in this study, a great deal of literature has been considered, a wide range of information has been generated and presented, and a diverse range of methods has been used to provide concrete insights into the future of nursing regulation. Step Three attempts to unite all of the various findings and set the key priorities found to have the greatest impact for the next steps of this work. Figure 3.5 provides a schematic representation of the continued work needed to create a regulatory model fit for future decades.

FIGURE 3.5

Representation of work completed and work to be continued to address Regulation 2030



Identification of the 25 emergent trends and the development of the associated concept maps have made it possible to synthesize four focusing concepts, or priorities that, if pursued, will help drive the various regulatory trends toward a model capable of delivering nursing regulation fit for a complex digital age. Each of the concepts must underpin a set of challenging and achievable strategic initiatives. Each of these initiatives will have a range of specific multiyear objectives.

NCSBN has a 3-year strategic initiative cycle; see www.ncsbn.org/476.htm. The 2017–2019 initiatives align well with these initiatives and position the organization and its members to address the creation of a regulatory model fit to address the rapidly changing health care agenda.