Learning Needs Assessment

Not Only for Continuing Education

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An accurate assessment of what participants need to learn is a crucial initial step in planning educational activities. Methods for assessing learner needs can include reviewing the literature, benchmarking, reviewing documents, seeking learner input, and multiple other data collection methods. The purpose of this article is to provide nursing professional development practitioners with an overview of learning needs assessments, including definitions, categories, measurement tools, and steps to perform the assessment.

Medical knowledge is growing exponentially and is constantly evolving. It is often the role of the educator to assure that new knowledge reaches the end user. A significant challenge is deciding what educational issues should be given priority. Learning activities are time consuming and expensive to develop and deliver. As a result, educators must make informed decisions regarding what and how education should be provided. An assessment of what needs to be learned and strategies to best meet the need can assist with decision making. Performing a learning needs assessment (LNA) should be considered as an essential step in the planning process, as it can help ascertain that educational activities are designed for the purposes of enhancing learning outcomes, improving patient outcomes, and optimizing cost-effectiveness of organizational resources.

The purpose of this article is to provide educators with an overview of LNAs, including definitions, categories, measurement tools, and steps to perform the assessment. The article is based on a detailed search and review of the literature using healthcare and education databases. It is important to note that limited current literature was present on this topic. As a result, this article includes older references and sources from a variety of professions.

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DEFINITIONS

An LNA is a systematic approach to examining what individuals or groups need to learn (Adelson, Manolakas, & Moore, 1985). The LNA may be based on individual or organizational needs and can include informal or formal processes. The primary purpose of the LNA is to assist with and enhance planning of educational activities (Grant, 2012). In health care, LNAs are often associated primarily with continuing education (Dickerson, 2014; Meštrović & Rouse, 2015). However, experts have recommended the need to conduct an LNA as a prerequisite for any formal educational activity (Cekada, 2010; Li, 2014). It could even be argued that an LNA is appropriate for informal learning. The latter may not be as involved or formal of a process, yet it is appropriate to find out what individuals need to learn before providing education.

LNA CATEGORIES

LNAs can fall into different categories including formal gap analysis, analysis of organizational needs, analysis of learner self-identified needs, and anticipation of future needs. Although some overlap exists, each will be discussed separately in the upcoming paragraphs. Methods for assessing learner needs can include reviewing the literature, benchmarking, reviewing documents, seeking learner input, and other data collection methods. Table 1 provides the LNA categories with a list of data collection tools for each. Specific examples will be provided in the upcoming paragraphs with the discussion of each of the LNA categories.

Formal Gap Analysis

Gaps can occur between what is known and what should be known (Fox & Bennett, 1998). Gaps are commonly expected when novices enter the workforce or when an experienced practitioner is exposed to new patient populations, equipment, or experiences. Gaps also exist when new knowledge becomes available from research findings, through benchmarking, and from national initiatives.

A gap analysis originally referred to the careful examination of knowledge gaps. However, the definition has moved beyond what an individual knows and now includes whether individuals act on the knowledge. For example, Norman, Shannon, and Marrin (2004) specified that a gap analysis should include a formal process aimed at examining current behavior as compared with "an ideal

TABLE 1	LNA Categories With Data Collection Strategies	
LNA Category	**LNA Data Collection Tools**	
Gap Analysis		
Formal gap analysis for individuals and small groups	Debriefing Pretesting and posttesting Case study with group discussion Return demonstration Simulation Follow-up interviews Observation Audits	
Formal gap analysis for larger groups	Review of the literature with expert analysis Advisory groups Delphi approach Surveys	
Organizational Needs		
Job performance LNA	Job descriptions Policies and procedures Audits Observation of performance Peer review Competency assessment results Patient records Morbidity patterns Patient satisfaction surveys Risk assessment Error reporting Adverse events Focus or advisory group	
Training LNA	Standards and guidelines Advisory group	
Consumer needs LNA	Patient outcome measures Review of adverse events Observation Audits AHRQ tools Patient satisfaction surveys Services needed for client SWOT analysis	
Learner-Identified Needs		
Learner-identified LNA	Surveys Interviews Focus groups Diaries/reflection Difficulties arising from practice	
Future Needs		
Anticipation LNA	Dashboard development Monitoring/analysis of new literature Analysis of eLearning	

AHRQ = Agency for Healthcare Research and Quality; LNA = learning needs assessment; SWOT = strengths, weaknesses, opportunities, and threats.

or accepted standard of practice" (p. 1000). Grant (2012) described a gap analysis as a method to identify discrepancies when comparing performance with expected competencies. A gap analysis can be used to assist individual learners or groups of learners. A formal gap analysis is a commonly used method to document the need for continuing education (CE) activities for healthcare professionals (Desilets, Dickerson, & Lavin, 2013; Meštrović & Rouse, 2015; Owen & Schmitt, 2013).

A gap can be identified through a careful analysis of performance improvement outcomes, quality improvement initiatives, or examination of sentinel events (Desilets et al., 2013). When analyzing these issues, it is important to evaluate if the problem is a gap in knowledge, skill, or practice. Lubejko (2015) recommended debriefing, pretesting and posttesting, and case study with group discussion as tools to assess gaps in knowledge. Gaps in skills can be measured with case studies, return demonstration, and simulation. Gaps in practice can be measured with follow-up interviews, observation, and audits. These strategies can provide objective measures of learning needs for individuals and small groups of learners.

For larger groups, surveys are a commonly used gap analysis tool. A review of the literature can be conducted to determine if a survey tool is already available, or could be modified (with permission), to address the issue of interest. If not, a survey may need to be developed. Designing an effective survey requires expertise and testing to assure that the tool measures what it is intended to measure (National Institutes for Health, 2015; Wiersma & Jurs, 2009). LNA surveys commonly employ a Likert-style answer format, with scales of 3–7 choices. The types of questions and response choices vary based on the situation. For example, a learner can rate the level of importance of learning about a potential topic with choices ranging from "not at all" to "extremely important" (Foy, Carlson, & White, 2013). Other LNAs may be aimed at measuring frequency of performance, with ranges from "never" to "often" (Johnson & Puglia, 2012). An LNA can address learner confidence with scales ranging from "not confident at all" to "highly confident" (Hecimovich & Volet, 2014). Another example can include self-rated competence level, ranging from "no exposure" to "totally competent" (McCrystle, Murray, & Pinheiro, 2010).

The advantages of using a survey include the potential to reach a larger number of learners and gain a more varied perspective. The disadvantages include the concern regarding the learner's ability to judge their own learning needs and the typical low response rate associated with surveys (Fan & Yan, 2010; Grant, 2012). In addition, if the survey is developed without validity or reliability testing, the results may not provide an accurate picture of the learning needs. Validity refers to how well the survey measures what it was intended to measure (Johnson & Christensen, 2008; Wiersma & Jurs, 2009). Types of validity testing include construct, criterion, and sampling validity.

Reliability refers to the degree to which the survey produces consistent results. Types of reliability testing can include test–retest, parallel forms, interrater, internal consistency, or factor analysis. The National Institutes of Health (2015), and various research textbooks, provides guidance on how to develop an effective survey.

Another formal gap analysis strategy can include review of the literature with expert analysis (Fater, 2013). A group of experts review data or recommendations from the literature and then examine the current situation, followed by an analysis of what educational activity will help bridge the gap between the desired and actual situations (Grant, 2012). For example, a current trend could be an increasing number of older adults, yet a lack of geriatric courses in the local nursing schools. An extensive review of the literature may show that medication interactions are a leading cause of hospital admissions and readmissions for this population. The team of geriatric and education experts may determine that these findings indicate a gap in nurses' knowledge regarding geriatric pharmacology. The team would then recommend learning activities to fill the gap. For CE purposes, this gap would need to be documented and supported with references from the current literature. Similar gap analysis identification strategies could include a Delphi approach, nominal group process, or advisory groups (DeSilets, 2007).

Analysis of Organizational Needs

An organizational analysis is commonly aligned with the business needs and goals of the organization and often relates to workflow, process, and outcomes (Clark, 2014; Dealtry, 2002). The employee may need to learn business processes or regulations affecting the organization. Business LNAs may render information regarding problems in the organization (Cekada, 2010). In these situations, it is important to examine the results closely and target the actual problem. An educational intervention will not solve system issues or problems caused by insufficient resources or staffing (Sorenson, 2002). An organizational LNA can also be performed to address changing needs of the organization or the customer base (Cekada, 2010). In the healthcare setting, an organizational LNA may include job performance needs, training needs, and consumer needs. Each type will be presented separately in the upcoming paragraphs.

Job performance analysis

An LNA regarding job performance may be associated with a single individual or with a group. The analysis is done when there are concerns regarding incomplete, unsatisfactory, or incorrect performance. The data gathered can assist in determining if education could improve performance (Brown, 2002). An initial question to help make this determination is: "Can the employee perform correctly if their job depends on it?" If they can, it is probably not an educational need. A common example is hand washing. Most experienced healthcare professionals understand the importance of hand washing and know how to perform it correctly. The problem is not a learning need. Rather than education, this situation might call for the management team to assess processes, attitudes, or other issues that could be affecting compliance. Whereas, if an identified problem is an educational issue, the next step would include determining if the deficit is present for one individual, a few people, or an entire group.

Tools for job performance analysis can include a review of job descriptions, policies and procedures, and outcomes (Cekada, 2010). Additional tools may include audits, observation of performance, peer review, competency assessment results, patient records, morbidity patterns, patient satisfaction surveys, risk assessment, error reporting, or adverse events (DeSilets, 2007; Grant, 2012). Another strategy can include using a team approach to LNA. A focus group or advisory team could examine current job performance and desired performance and then analyze what educational activity will help bridge the gap between desired and actual performances (DeSilets, 2007; Grant, 2012).

Training needs analysis

The term training is often associated with skill development for the workplace (Barnes, 2014). Examples include training when new equipment, policies, or processes are introduced into the work setting. Implementation of an electronic health record is one example. The term training also refers to education aimed at meeting regulatory standards or promoting safety in the workplace (Cekada, 2010). Examples include fire and safety training, harassment training, infection prevention, and similar topics.

In these situations, the purpose of the LNA is not to document that education is needed. Instead, the focus of the LNA is to examine what learning strategies would best fulfill the regulatory requirement or help the learner develop the requisite skill (Cekada, 2010). An advisory group, which includes education experts, may serve as the best LNA strategy. For example, for a change in process or policy, the group would examine how different the new item is from the previous. The difference would guide choices regarding what learning strategy would best meet the need. If only minor changes were present, strategies such as notices or FAQ sheets might be recommended. Whereas, if a significant change in a skill was identified, the team might recommend simulation training.

Analysis of consumer needs

Consumer needs in the healthcare setting can include patient outcomes, patient satisfaction, or changes in the services needed. Patient outcome measures include issues such as falls, hospital-acquired infections, and pressure ulcers. The question arises: What aspects are related to the educational needs of healthcare professionals? Tools to

assess learning needs related to patient outcome measures can include a formal gap analysis, review of adverse events, observation, audits, or job performance. In addition, the Agency for Healthcare Research and Quality (2015) provides an LNA tool for comparing best care practices with current organizational processes.

Results from patient satisfaction surveys can also serve as an LNA. Results can be analyzed for weaknesses. Results may indicate the need for education on issues such as teamwork, transparency, or improving pain management. Optimally, the survey results would be used in conjunction with a team approach, such as advisory or focus groups (as discussed earlier in this article).

Another analysis of consumer needs can include examination of the services needed for clients. For example, educational needs should be identified when a facility is adding a new service line or patient population. An LNA could include expert review of the literature and use of advisory groups. An alternative LNA strategy for a changing marketplace is the SWOT (strengths, weaknesses, opportunities, and threats) analysis (Reed & Vakola, 2006). Results of the SWOT analysis can assist in linking needs to current processes, prioritizing learning activities, and providing insight into levels of readiness in the organization.

Analysis of Learner-Identified Needs

Learning needs that are identified by the individual are different than educational needs identified by organizations, such as CE providers and hospitals. "Learning needs are personal, specific, and identified by the individual learner through practice experience, reflection, questioning, practice audits, self assessment tests, peer review, and other sources" (Norman et al., 2004, p. 1000). Optimally, healthcare professionals would identify their own learning needs and would seek out opportunities to fulfill those needs. Some nurses may share self-identified needs with educators. This notification can serve as an informal LNA. The educator can then use other LNA tools to examine if the same education is needed by additional people. The circumstances and number of individuals in need of education can help guide prioritization of topics. Additional LNA tools for learner-identified needs can include surveys, interviews, focus groups, diaries (or other reflective activities), self-assessments, and difficulties arising from practice (Grant, 2012).

Anticipation of Future Needs

With the ever-evolving healthcare landscape, educators need to also be forward thinking as they plan education for the future. Burk (2008) referred to this as forecasting learning needs. New technologies, medications, diseases, recommended care practices, and research findings will continue to result in the need for education. Optimally, educators will anticipate needs by staying up to date regarding the literature, best practices, and trends in their specialty fields. For exam-

ple, the emergence of diseases such as Ebola has caused educators to think about how to handle similar issues in the future (Butlar, 2015). A proactive LNA would include developing and maintaining a database with information regarding the target audience and patient population. A list of subject matter experts and other resources could be included. Educators should also have records to show the costs associated with various education delivery methods. These preparatory measures will allow educators to make informed decisions and recommendations when a learning need arises.

Increased use of online learning and newer eLearning strategies will have significant effect on how learning occurs in the future (Bristol & Zerwekh, 2011). With a forecasting approach, educators can anticipate increasing use of mobile learning, social media, and online gamification as being likely learning strategies. Applications on mobile devices offer the opportunity for just-in-time learning (Quinn, 2011; Samuel & Hinson, 2014). In a review of over 50 studies, Doyle, Garrett, and Currie (2014) found that mobile devices were increasingly being integrated into nursing school curriculum. Similarly, a growing body of evidence is showing benefits that social media can bring to the education arena (Billingsley & Currie, 2013; Carpenter & Krutka, 2014). Serious gaming, also known as gamification, refers to the use of game principles to promote learning in the online environment (Kapp, 2012). This can include role playing, virtual simulations, and strategy games that may become an integral aspect of healthcare education in the future (Cain & Piascik, 2015).

LNAs associated with eLearning often begin with an assessment of current online devices in the workplace (Gagne, Wager, Golas, & Keller, 2005). For example, it is important to examine if computers have audio capability, so that learners can benefit from multimedia eLearning. Evaluate if Internet is available and if the speed is fast enough to support learning strategies such as watching streaming video. An LNA would also examine which educational Web sites are blocked by the organization and what steps could be taken to remediate if the content were deemed appropriate for learning. Additional questions could include: Does the organization have an acceptable use policy? Is there a learning management system for housing online learning activities? Does the organization have access to eLearning activities or the capability to develop their own eLearning materials? A proactive LNA would also include an assessment of handheld electronic devices. Another important aspect of the proactive LNA is to examine learner readiness to learn with technology. Whereas the perception is that older staff may not be willing to learn with technology, research has shown otherwise. Older Americans own computers and smart phones and are willing to use them to learn more information (Changchit & Klaus, 2008; Pilcher & Bedford, 2011).

The LNA can provide data as to the readiness of learners at individual organizations (Li, 2014).

STEPS IN CONDUCTING AN LNA

Previous experts have recommended steps for conducting an LNA (Adelson et al., 1985; Grant, 2012; Laxdal, 1982). The recommendations have been compiled, synthesized, and modified to meet today's needs.

Identify the Purpose

Educators often identify the purpose for an LNA to gain further clarification of a current problem, to help in planning curriculum, or to improve practice and safety. Identifying the purpose of the LNA will assist in determining the data collection method and how the findings will be used (Grant, 2012). For example, is the purpose of the LNA to identify a gap to provide CE; to meet organizational needs, learner self-identified needs, and consumer needs; or in preparation for future needs? An integral aspect includes identification of the desired outcome for any education that will be provided based on LNA findings (Dickerson, 2014). Specifically, the desired outcome will delineate what the learner will be expected to know or do after the educational activity. For example, if administrators asked for an education initiative regarding fall prevention in the hospital setting, a potential desired outcome might be specified as: "Within six month after completion of the educational initiative, the fall rate for the hospital will decrease by 10 percent." Beginning with a known outcome will assist educators in developing the LNA, planning the education, and monitoring the results.

Identify Parameters

The next step often includes identifying parameters or characteristics of the learner and the environment (Laxdal, 1982). Learner characteristics can include demographics, readiness to learn, what they already know, and how they learn best (Fox & Bennett, 1998). Educators who work in one department or specialty area may be familiar with their audience, whereas this step is crucial when the educator is unfamiliar with the learners. Parameters also include an examination of varied learning strategies and which strategies might best meet the identified need (Grant, 2012). In some situations, a complete educational course may be needed. In others, an FAQ sheet may be adequate. Examination of the learning environment can include location and if it is conducive to learning. For example, although it may be appropriate to provide education regarding a piece of equipment in the work area, the same location may not be appropriate for learning that requires close cognitive attention. Assessment of the learning environment can also include assessment of whether the education should be in a formal or informal setting and if it should be online or face-to-face.

In some situations, identification of parameters may need to be included with the next step, as it may not be clear as to who the learners should be until after the investigation has been conducted. For example, with organizational needs, it may not be clear if the target audience for education regarding patient falls should be developed for nurses or for ancillary staff until an LNA using review of events, observation, and audits has been conducted.

Select the Tool and Conduct the Investigation

The third step involves selecting the most appropriate LNA data collection tool. Tools can include expert review of the literature, observation, interviews, focus groups, surveys, critical incident review, self-assessment, and other strategies (DeSilets, 2007; Grant, 2012). The first section of this article included examples of which tools may be most appropriate based on the situation. The specific steps in conducting the investigation will depend on the tool selected.

Analyze the Results

The fourth step includes an objective review and analysis of the results (Laxdal, 1982). Did the tool provide the answers needed to guide curriculum planning? If a survey was used, was the return rate adequate for establishing confidence levels around your results? For interviews and focus groups, what major themes and topics arose? With expert review of the literature, how did the recommendations align with anticipated needs of the organization? Are the needs individual or organizational? Burk (2008) recommended prioritizing the results based on urgency, safety, and required time and resources. The results of the analysis can guide planning and implementation of the educational activity.

Ongoing Analysis

The analysis of learning needs should not stop once the education is planned and presented. Optimally, an ongoing analysis will employ a full scope evaluation process as described by Dessinger and Moseley (2003). This model includes formative, summative, and confirmative evaluation. Formative evaluation occurs while the program is in progress and focuses on how teaching can be improved to facilitate learning (Worral, 2008). Formative evaluation may include individual or group input, expert opinion, and field/pilot testing (Dessinger & Moseley, 2003). Summative evaluation measures immediate learning outcomes. Did learning occur? Were objectives met? Summative evaluation may include pretest and posttest, surveys, observation, return demonstration, solving of case studies, and so forth. Confirmative evaluation addresses the long-term impact of the program. Confirmative evaluations may include measurement of learner ability to transfer learning to the clinical setting, staff turnover, return on investment, and quality of care indicators (Dessinger & Moseley, 2003; Worral, 2008). Results of the full scope evaluation may also provide data for future LNAs.

CONCLUSION

Assessment of learning needs provides the foundation for designing effective educational activities. A variety of tools can be used to collect evidence regarding learning needs. Choosing the data collection tool should be based on the purpose of the LNA, the desired learning outcome, and the current situation. A well-developed and implemented LNA can provide many benefits, as outlined in the seminal work of Warshauer (1988). Benefits include

1. increasing the commitment of management and potential participants to ongoing training and development;
2. increasing the visibility of the training function;
3. clarifying crucial organizational issues;
4. providing for the best use of limited resources;
5. providing program and design ideas; and
6. formulating strategies for how to proceed with training efforts (p. 16).

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