Visible Gap Identification in Vocationalisation of Higher Education

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Abstract: Identification of vocation specific gap in teaching-learning involves various steps to determine visible gaps in available study materials of technical education. The purpose is catered by the development of need analysis tool that will indeed address the identified problems in specialized content delivery in technical education of respective fields. Needs analysis tool looks at each aspect of current teaching-learning as well as make a reach to domain elements through appropriate learning resources. Based on identified gaps new learning resources can be carved to pursue long term goal of building a strong professional cadre of teachers and innovative teaching methodology. Working towards Identified gaps help learners to improve performance within the job environment by setting performance standards for skill acquisition, concept building and attitude towards industry. This paper will focus on methodologies and outcomes of Need analysis tool in higher education.

Keywords: Need Analysis Tool, Teaching learning centre, Learning Resources, LMS, Visible Gap

Introduction: Development of effective learning resource (LR) in teaching learning is analyzed as a huge requirement of running technical courses to fill vocation specific gap in higher education. The development of LRs in teaching learning center(TLC) should be synchronized with the present industry orientation and demand of technical expertise. It is must those newly developed modules should be capable enough to lay a foundation of the Skill based workforce generation. Identification of vocation specific gap in technical content delivery plays a vital role in today's rapidly growing technology. Working practices are becoming flexible these days and require immediate changes with the adoption of concurrent technological tactics in the respective field. At present content available in learning material for technical courses may not have prioritized or adopted the upcoming technologies. Similarly, the technical delivery content that is sustaining from a long time may not be applicable in the upcoming Industrial Scenario. There could be several other such issues that create the vocational gap and become responsible for emerging unskilled pool of graduates.

Need analysis tool is designed to identify visible gaps and utilize it while evolving new deliverable teaching content. Several sequential procedures had been followed to bring out authentic data of visible gap and maintain the effectiveness of need analysis. The project includes the participation of faculties from various states. The diversity bounded to design a typical Need analysis tool that should be applicable to all courses simultaneously regardless of curriculum, university or the region participants belong. In this tool, efforts have already been made for sorting and classification of possible visible gaps that are listed after multiple rounds of discussion with the field experts. Users can select their choice among the listed visible gaps for their respective field of expertise.

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The tool also provides an option for entry of unlisted vocational gaps other than mentioned that may occur while technical content delivery. Also, emphasis on possible resolutions of identified gap has been provided in the tool and participants can respond immediately to achieve the best outcome envisioned in the project. Eventually, the tool covers contact & experience details of the interested participants who are willing to work on the development of new learning resources in their area of specialization. The paper has described a detailed aspect of Need Analysis Tool.

Literature Review

1. Technical and vocational and training is playing a vital role in expanding job opportunity, support economic development, enhance the quality of employment. This paper aims to present a perspective on the TVET development. To support present economic and social developments, vocational industry and school enterprises interaction are one of the most efficient methods for vocational education. Required skills-based training to the teachers is the guarantee for the development of vocational education. a wide variety of activities and experiences that support vocational education has provided by the information and communication technology The improve will make the TVET more sensitive to economic and social changes and current demands.
2. The main purpose of this paper is to identify teachers who support learning which is based on current technology requirement in industries. Results of this paper reveal that teachers' support on various learning channel, learning based on enhanced and current technology, teaching resources which can support and facilitate self-monitoring teaching and learning. It is considered that online platform also suggested for sharing experience of teaching and learning, learning resources between different institutions to support current requirement based learning practice. The main purpose of sharing to address t critical issues.
3. In the context of professional education and higher education, employability plays a vital role. This paper address to express researchers views on job skill gap, employers view on lack of employability and employability skills. Besides addressing on employability, this paper included bridging the gap between industry and academia or in other words bridging the skill gap. The paper reveal hypothesis's to researchers to work and focus in this area i.e skill gap.
4. This paper focuses on the outcome of training need analysis. Data of 123 participants is taken here those are working in particulars organization of Dehradun location. Some important way like the skill and knowledge required by the client, team, appraisal, direct observation made to identify the training needs and Customer Satisfaction Index. In this paper, it is found that proper training process for need identification passage through with smooth flow information and help organization/industry to enhance productivity by enhancing employee productivity. In this paper, many suggestions and presented for increase competitiveness among employee on basis of enhancing skill.
5. This paper address the empirical studies, survey of various organization, report of many committee and commissions which clearly highlight that there is not proper structure and sudden vocational courses introduction at first-degree stage. The main problem derives is protecting technology and effect of globalization cannot alone restructuring vocationalisation of higher education. This paper gives information about equipped with every individual potentiality must be exposed and refined to make enable him or her a potential worker and a devote to the progress of the society of which they are a member. Any country can achieve complete economic growth if it gets through to make the most of all the talent and country progress mostly depends on the manpower utilization efficiently. The conclusion of this paper is restructuring whole higher education system along with proper planning and vision. Our country identifies the need for fundamental reform in education and restructuring various courses.

6. TVET bring about learning which makes people more productive and relevant in a particular area of economic and technological activities. To meet the demand of workplace for skilled manpower and also produce manpower who will be equipped with saleable skills for employability. To achieve this, educational institutions must collaborate with industry in order to bridge the gap between industry and educational institutions. Through this paper, examine excellent techniques which help in practicing in TVET workplace collaboration, bridging the gap between skill and industry to meet the need of manpower of current requirement.
7. This paper aims to find various research which is conducted to specify the requirement that will have to satisfied by implementation of training in vocational higher education programme which is considered as one of the most effective tool of meeting demand. In this paper, three categories of major questions is considered, first one is school able to achieve aim of competencies-based education, second is up to what extent formal education furnishes people to work and the last one is to what extent should vocational education and training impact to work. The main aim of this research is to analyze the finding of market research and move to the proceed to the guidance of a particular design of curricula to maximize the effectiveness of TVET. More than 1000 sample of clerical staff and senior administrative officer is surveyed. After distributing a questionnaire to all employees, an interview was conducted. On the basis of such methods, it is possible to collect and combine professional based knowledge with experimental data in order to make instructional decisions. Eventually, as a conclusion, data identifies by the researchers are elaborate in detail and analyzed to confirm that relationship of market research, curriculum design, vocational education, and training will be successful and effective.
8. In this paper, gap focused on theory practice in technical vocational education. In order to technology learning, theory concept and considered practice and how to manage in education is considered and discussed. This paper emphasis on practice and theory in technical education. In this paper research questions related to the experience of theory of pupils, teachers, supervisors and relation between teaching and learning in technical education. Interview of pupil, teachers and supervisors are analyzed and focusing on the practical learning and practicing. Result concludes that theory experience and practical practice concerning a dualistic view along with interwoven way.

Problem Statement: Various opinions are there from experts on the development of the proactive courses. The way to deal with the issue of course development is still not concluded. The diversification was also a major Therefore the need of cross impact analysis techniques is analyzed. Problem and cause analysis can be done through certain procedures. It is more essential to bridge the teaching learning with concurrent leading technologies and respective. The expected response is also in benefit of teachers as well as students and brings advance courses in line. Preparation of manpower that is capable to perform the task adequately in vocational domain is a typical challenge in itself. Formal education which still focused on inside classroom study pattern doesn't offer on demand and competent environment for teaching learning community. On the contrary vocational gap identification is done to resolve the challenge by development of LRs and disseminate it.

These are the visible learning gaps a teacher finds with the content/topic

- Content available is redundant and obsolete/ contemporary material.
- Content is difficult to understand.
- Learning examples and non-examples are not available.
- Cases related to content are not available.
- Innovations related to content are not available.
- Experiment related content are not available
- Content are not available for making project.
- Content is not helpful in developing skills for jobs
- Same tasks is executed through newly evolve technologies

Methodology: This paper present vocational learning gap between industry and academia along with how this gap can be bridge by developing learning resources as per industry requirements. The appropriate method has been chosen to find the gaps of graduates from institute to industry needed manpower. This method focus how to fulfill Qualification gaps which is addressed by the existing requirement of the industry. In this method need identification approach uses from institute's teacher and industry expert.

A need identification survey in form of Needs Analysis (NA) tools to identify gaps in teaching-learning perceived by teachers was carried out by TLC researchers among various technical institutions and topics having such gaps were identified. Respondents have also indicated a different type of LRs required in the form of video, audio, animation etc to fill up the teaching-learning gaps. These topics and suggested LRs need further validation from the subject as well as industry experts so as to cover on real gaps those can be filled by appropriate LRs. A validation workshop has been conducted in this reference. After validation of topics, the LRs will be developed using real-life examples from industry by the trained Trainer Educators and mentors. Trainer Educators will be identified from technical institutions and mentors will be identified from industries.

To understand and find learning gaps, first stage is to collect data and data are collected by applying different approaches like by conducting seminars, conferences, survey, interview, form filling, orientation workshop, and online form submission. The need analysis tool is designed to identify visible gaps those might have encountered while teaching a particular topics or topics in the identified course.

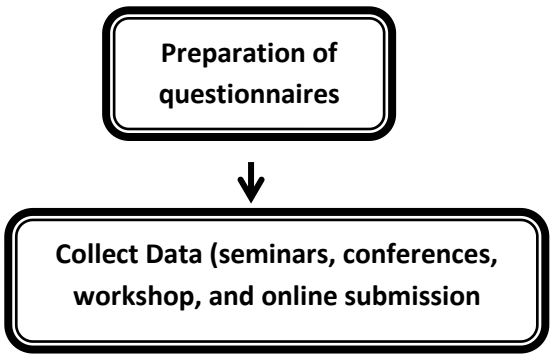
Here need analysis form technique was used as a method of collecting data. As need analysis form allows data collection by questionnaires. In the preparation of questionnaires the opinion of teachers and experts were consulted. This questionnaire explores learning gaps in those difficulties which teacher might have encountered during the course of teaching learning. Questionnaire contains list of visible gaps of learning as well as learning resource to address those difficulties.

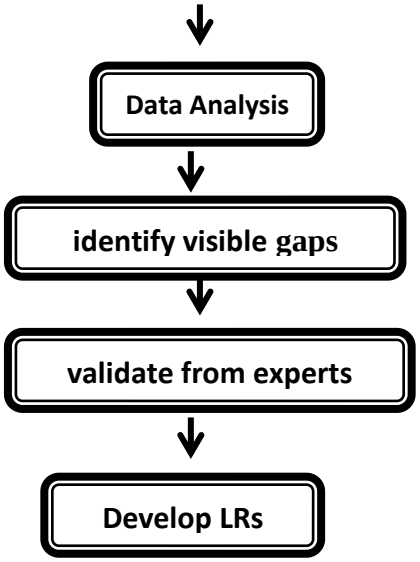
Next phase after collecting data is data analysis. Initially collected data was not in interpretable form. So Collected data first arranged in tables or in such a way that readers can understand and sub topics were arranged discipline wise. The main reason for analyzing data is to bring similar data within one framework. Here proper arrangement of collected data is required to indentify and interpret topics and sub topics.

After analyzing data is identification of all related topics and identify visible learning gaps that encountered while implementation of need analysis tool during workshop by domains experts. The main purpose is to identify visible gap is to develop a model under vocational education.

Now analysis is identification of visible learning gap. Identified visible learning gaps is first validating from academia experts then validate from industry experts in order to meet exact industry need in term of each level of development. Validation involved a decision of experts from industry and academia those would understand the actual causes of the problems with the current industry requirement.

Next phase after identification and validation of the learning gap is to develop a model or evaluate a model of vocational course curriculum with the help of experts from academia and experts from industry. LRs are prepared by expert's individuals. Experts give their opinion on the development of the proactive course. The content of the module is to be clear, simple, understandable, updated and meet with industry requirements. The current need of the industry is to be taken into account in the preparation of LR.





Flow Diagram of Proposed methodology

Implementation:

1. Identification of vocation specific gaps through need analysis tool in the content delivered in the technical education institutions.
2. Creating a group of subject expert and industry expert and mentors from institutions & industry.
3. Vocation specific gaps validation and uses them to develop useful learning resources (LRs) with the help of trained experts from institutions and industry and mentors.
4. Disseminate developed learning resources to students and teachers through a online platform like Learning & Content Management System (LCMS).
5. The Learning Resources such as case studies, anecdotes, modules, incidences, stories, animation and videos will be shared to learner including teachers and students through a Learning & Content Management System.

Outcome: Industrial growth essentially depends on the quality of manpower and relevant resources available to it. The effective and skilled workforce can only be achieved through structured training and education offerings. The procedures described in the paper are innovated and adapted to find vocational specific gaps that can be aligned in order to satisfy current market necessities. Latest concerns like rapid globalization and a paradigm shift in technology are also successfully covered by the processes followed. The outcome of Need analysis is to be used for the development of appropriate learning resources (LRs) consists of modules, training kits, informative videos, modern laboratories, and new course design. Long term goals of a developing nation is also served through learning resources available to generations that cope up with universal demands and lead to quality improvement of vocational education. The need analysis will also be helpful to develop and design new curriculums of Professional studies. Its major outcome can be seen as a capacity building of Teachers and therefore upgrade the quality of teaching-learning. Based on identified topics activities like training of teachers, Faculty development programmes, skill training can be arranged for a purposeful educational gain of trainers and learners. Learning resources dedicated to fulfilling vocational specific gap would also be helpful to generate self-employment. The whole process can be classified as

1. Validated topics in each discipline for development of LRS Identification of relevant LRs
2. List of experts who will volunteer to support LRs development
3. Dissemination of developed LRs in the community
4. Major impact on the society can be experienced through the entire performed task. Overall utility is to shape and upgrade the generations of the country through enabling & accessing them cutting edge LRs compatible with the modern, demandable and competent skill set.

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