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The education in Supply Chain Management and Logistics has gained its popularity in the year 1970, as an area of study in colleges and universities with two professional management organizations; they are National Council of Physical Distribution Management (NCPDM) and Society of Logistics Engineers (SOLE). Both these professional business societies has given credibility in the area of military and defence industries but it became more popular in the commercial sector of the economy. There was a slow recognition by the colleges and universities that there is a need for trained professional logisticians for this new field and only few schools came to know the importance of the logistics discipline and developed formal degree programs. Michigan State University, Ohio State University, Pennsylvania State University, University of Maryland, the University of Tennessee and few other universities had started this program. Later, the companies recognized the importance of logistics professionals, which has an impact on the profitability and long-term business growth. The higher authorities in the colleges and universities were not impressed with the program as they were not able to recognize the importance of this course and so it became a tough task to develop this program. But in the past ten years, there was good reputation for this discipline at both graduate and undergraduate levels. Earlier, the business schools were not ready to accept this discipline, but later as there was a good demand for the professionals in logistics, few business schools came forward to have this discipline as a part of their educational courses. There were few barriers to the development of logistics degree programs. In general, the sources of these barriers arise from three distinct areas: The individual school or department within the university or college. Central Administration of a university or college. The business community of which the university is a part.[1]

## 2. 2 Logistics education: Achieving market and research driven skill development

The modern requirements and practical skill development challenges the standards of logistics education to expand their market and research driven skill development. There are few challenges and criticisms to the logistics education, which is a key challenge for world-wide academic teaching. 1. The evolution of ICT and transport technologies leads to increase the internationalization of the businesses. The downward trend in transportation costs has spearheaded the development of global logistics flows and the flourishing of a logistics service industry. This suggests a content challenge to teaching from basic transport to international logistics and logistics services. 2. The further evolution of content from a separate discipline, in some cases within the marketing area, with basic activities such as transport policy and warehouse design, to an integral contributor to competitiveness at a strategic level. This position is justified by Porter's value chain concept (Kent and Flint, 1997) and the growth of a process orientation to organizations around the supply chain management concept. It requires logistics to contribute to competitiveness not only at the basic cost saving level but also at the customer service and even market creating level. The role of logistics mechanisms are: Direct shipment in the competitive strategy of companies such as Dell (Magretta, 1998); Postponement and central inventories in the strategy of Hewlett Packard (Feitzinger and Lee, 1997); andThe overall growth of the product fulfilment industry through direct marketing and e-business. 3. The development of research capabilities within logistics beyond the traditional operations research and mathematical tools (for traditional capabilities such as transport network design and warehouse system development). A recent stream of publications in the Journal of Business Logistics (Ellram, 1996; Mentzer and Flint, 1997; Williams Walton, 1997; Garner and Mentzer, 1999) have placed the wider academic rigor of marketing, social sciences and economics central to logistics. These three driving forces are confirmed on a global scale by recent studies, such as the Council of Logistics Management (1995), and challenge academic logistics education to advance or upgrade in content and level of teaching into the core of business and economic studies, while improving academic rigor of education[2]. The first is a lack of relevance and practical up to date focus by business and students. This is a serious risk when educators teach from the book only and exclude, or are unfamiliar with, today's hot topics, innovations in practice and the hot cases of today. Secondly, there is a lack of practical and professional skills development. It is often said that young graduates have to unlearn and relearn when making the transformation from lecture room to management office. Management development programs, on-the-job training (tools, professional skills, real life change programs, etc.) are costs for the private sector, of course. These programs not only question quality of teaching at the under-graduate level but also question the validity of public investments in educational institutions. Third, academic students are often criticized for their poor research capabilities by academic staff, especially staff involved in supervising Master's thesis projects. Of course, these projects are primarily educational in nature but ultimately these projects are intended as a test of academic skills as well. These criticisms and challenges needs for greater market relevance and research driven skills in logistics education. The first two challenges are market driven and the third challenge is research driven skills development in logistics education.

## 2. 3 The State of Supply Chain Education

Over the past decade, logistics management has evolved into the broader discipline of supply chain management. This evolution is a response to the dynamics of a rapidly changing, intensely competitive global marketplace. This article seeks to answer the critical question on how well are educational resources and in particular universities, professional associations and industry publications. Keeping pace with the changing environment this process is to identify areas that need improvement across all three of these educational resources. It is based on a survey which is conducted by the authors, of professionals working in the supply chain and logistics space. The survey respondents fall into two categories: academics and practitioners. Both the academic and practitioner responses reflect recognition of the growing importance of an integrated, more strategic approach to supply chain management. Looking at the bigger picture, practitioners appear to be less satisfied than academics with the current offerings of professional associations and supply chain-related journals. A number of professional associations are dedicated to the needs of logistics and supply chain professionals. Some, such as the Council of Supply Chain Management Professionals (CSCMP) and the American Society of Transportation and Logistics (AST&L) take a broad perspective, focusing on multiple aspects of the supply chain job. Others like the Intermodal Association of North America and the Warehousing Education and Research Council (WHRC), have a more targeted educational focus. At the same time, organizations that originally did not have a logistics or supply chain orientation are moving in that direction[3]. For example, APICS, a long-standing production-oriented group is now emphasizing on resource management as part of a broader supply chain thrust. Similarly, the Institute for Supply Management (ISM), formerly the National Association of Purchasing Management, now offers a range of educational resources targeted toward supply chain professionals. To evaluate how effectively these organizations are responding to the last-changing needs of membership, survey respondents were asked to rate each group against the following criteria: role in educating professionals, national conferences, seminars and workshops, prestige of the organization, local/regional meetings, membership characteristics, and professional certification. Before they actually rated the organization, the respondents were asked to rate the relative importance of the criteria themselves.

## 2. 4 The current state of Supply Chain Education

Universities, professional associations and publications all have a role to play in developing the supply chain leaders of the future. But here the question is: How effectively are they stepping up to the task? The updated research which was conducted among both supply chain practitioners and educators show that they are making an effort to meet tomorrow's leadership challenge. Supply chain management is no longer a stranger in the corporate boardroom. Indeed, today's competitive environment has placed SCM in the spotlight on the strategy stage. To meet ever-rising customer expectations in the face of fierce competition, companies are building global networks and streamlining value-added processes. The goal is to efficiently use worldwide resources to profitably meet the needs of global consumers. Supply chain activities lie at the heart of these strategies. Yet, many companies struggle to find managers capable of executing these strategies and creating value across organizational and national borders. This reality raises a fundamental question for academics and practitioners alike: How well are our educational resources, namely professional associations, universities and industry publications providing the education needed for managers to design and lead today's global supply chains? This article seeks to answer this vital question by evaluating the relevance and efficacy of existing supply chain educational resources. It's based on a survey of (1) academics teaching supply chain subjects and (2) practitioners working in the supply chain arena. Specifically, this latest survey also asked respondents to evaluate the importance and usefulness of continuing education and professional development activities. The original State of Logistics Education was reported in 1995 in the Journal of Business Logistics with a follow-up report appearing 10 years later in Supply Chain Management review[4]. The present study employed an updated version of the original instrument, making it possible to track changing perceptions regarding professional associations, university programs and supply chain journals as well as to identify new educational resources that have become popular in recent years. The principal change to the current study was to include a set of questions to assess continuing education and professional development activities. A constantly changing environment makes life-long learning a critical component of a modern education.

## 2. 5 Executive Education's Role in Our Supply Chain Future

This article focuses mainly on " education" for supply chain professionals. The development of supply chain professionals cannot be left to chance. Organizations need to manage their talent pipeline to ensure that they have individuals with the skills, knowledge and experience to design and execute strategies in a global environment. Executive education can be a key part of this effort. In fact, it can be the catalyst that drives professionals to develop a strategic supply chain perspective and identify new ways to advance the business. Development of supply chain talent is an essential building block for business success. Executive education is an essential part of this development effort. It is an important resource for aspiring supply chain management professionals who desire to extend their perspective, close skill gaps, and increase their technical or global expertise. At the same time, it's an important resource for improving supply chain performance across the enterprise. The number and nature of educational opportunities for working supply chain professionals is rapidly expanding. These include a large number of diverse programs offered by academic institutions, professional organizations, and for profit firms. In the case of academic institutions, the offerings range from short courses, to certificate programs, and even to degree-granting programs for working supply chain executives. To better understand the role and extent of supply chain executive education, it is useful to first assess the scope of current offerings. These can be broadly characterized as education or training. Education incorporates not only the teaching and learning of specific skills but also something less tangible but more profound: the imparting of knowledge, good judgment, and wisdom. Teachers use a variety of methods and materials to impart supply chain knowledge. Many articles in supply chain-related journals, magazines, and books have documented these methods and have assessed their relative effectiveness. The pedagogy suggested in the literature includes lectures, game playing, testing, scheduling, record keeping, bullying, seating arrangements, and computer access. Yet the most important factor in any educational endeavor is the teacher's interaction with students and the personality of the teacher. Whatever pedagogic techniques are employed, the goal of supply chain executive education is to help participants develop the knowledge and fact base, problem-solving skills, perspective, and judgment to make management decisions in a globally integrated supply chain. Accordingly, the education should focus on knowledge, comprehension, and problem solving of complex supply chain issues. Traditional executive education tends to emphasize the skills required to do the job. However, skill development may be neither the program's objective nor in the best interests of the firm as supply chain management is as much about organization and strategy as it is about tactics and transactions[5]. Supply chain executive education must also broaden participants' knowledge base and experiential scope so as to give executives an understanding of global supply chains and their dynamics. Tomorrow's supply chain executives need multiple experiences both within and beyond their own supply chain domain. Business executives today, however, tend to become experts within their own vertical industry while lacking insight into best practices across industries. In contrast to education, training refers to the acquisition of specific knowledge, skills, and attitudes, often as part of a program of vocational or practical instruction. For example, someone in purchasing might receive training in correctly completing a purchase requisition or in the legal requirements for importing and exporting. Training forms the core of apprenticeships and today is often referred to as professional development, not executive education.

## 2. 6 The Emerging Supply Chain Management Profession

Over the past several years, the visibility of supply chain management as a collection of diverse critical skills has increased substantially. Supply chain management (SCM) has evolved from a loose affiliation among functions-such as purchasing, manufacturing and logistics to an integrated and cross-functional discipline. Consistent with this evolution, an increasing number of educational institutions are offering supply chain management degrees. Similarly, many professional organizations are modifying their names and broadening their charters to cover the full spectrum of supply chain activities. When it comes to career progression and human resource management continue to focus on individual functions. A more formalized characterization of the SCM profession is obviously needed. Continued progress requires a more broadly accepted definition of SCM and a definition of the requisite experiences needed to achieve professional status in this business discipline. Towards that end, this article describes the model skills and experiences required to become a SCM professional. The description is based on an internal assessment of IBM human resource practices and benchmarking of these practices with other organizations. The research indicates that integrated SCM has evolved to the point that individuals working in this field need to have career guidance to achieve the level of a " supply chain professional." The needed definitions will help the supply chain community in particular with practitioners and the organizations in which they work, trade and professional associations, and academic institutions to develop and apply a common set of educational and experiential requirements for professional development. Prior to characterizing a supply chain professional, it is necessary to define the SCM profession. The Council of Supply Chain Management Professionals (CSCMP) provides the following definition: Supply chain management encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities. Importantly, it also includes coordination and collaboration with channel partners, suppliers, intermediaries, third-party service providers, and customers. In essence, supply chain management integrates supply and demand management within and across companies. This integrated view of the supply chain has evolved over many decades. The roots of this perspective date back to the early 1960s when transportation managers and researchers realized that transportation decisions affect other activities of the firm, particularly inventory management and production. The emerging concept of logistics management demonstrated that companies could trade-off functional costs. While logistics was traditionally viewed as an individual function focused on distributing finished goods to customers, high-performance supply chain management required that logistics also coordinate with inbound supply to minimize congestion and maximize utilization[6]. Supply chain management affected other parts of the firm as well. SCM focused on breaking down functional silos to create integrated processes. Firms embraced a total systems approach to facilitate coordination internally and with supply chain partners, often using enhanced communication and information technologies. The desire for increased integration also was evident in the actions of professional associations and universities. CSCMP was originally founded in 1963 as the National Council of Physical Distribution Management. As the value of functional integration became increasingly evident, the association changed its name first to the Council of Logistics Management in 1985 and more recently to the Council of Supply Chain Management Professionals in 2005. Other organizations have undergone similar transformations replacing a narrow, functional focus with a broader, integrated supply chain perspective. Two examples are the Institute for Supply Management (ISM) (formerly the National Association of Purchasing Managers) and APICS: The Association for Operations Management (formerly the American Production and Inventory Control Society). In addition, new associations have been formed. One prominent example is the Supply-Chain Council, whose mission is to define critical processes, practices, and metrics in the supply chain. Finally, universities have also participated in this evolution. For example, all four institutions participating in this research initiative (Arizona State, Michigan State, Penn State, and University College, Dublin) have refined their academic and research programs to offer students an integrated supply chain perspective.

## 2. 7 Job Types in the Supply Chain Management Profession

There is little academic consensus on a definition of supply chain management (SCM). Education and research could benefit from a better understanding of how practice is defining the profession, in terms of the type of jobs associated with SCM. Existing definitions of SCM suggest two archetypal job functions: functional integrator and process manager. To compare existing definitions to practice few job descriptions analyzed which are associated with the field of SCM using computerized text analysis. Supply chain management (SCM) is an evolving field for both researchers and practitioners. Despite the value that effective SCM can create for an organization (Croom, Romano and Giannakis 2000; Wisner and Tan 2000; Carter and Ellram 2003; Rungtusanatham, Choi, Hollingworth, Wu and Forza 2003; Giunipero, Hooker, Joseph-Matthews, Yoon and Brudvig 2008), there is no consensus on what the term " SCM" encompasses (Frankel, Bolumole, Eltantway, Paulraj and Gundlach 2008). In some cases, SCM is defined in a narrower manner, consisting of managing (e. g.) inbound and outbound logistics or material procurement. These definitions tend to distinguish SCM from operations management, which is defined as concerning the internal operations of the firm. In other cases, SCM is defined in a broader manner, consisting of integrating activities from the beginning of the value chain through customer usage, including internal operations. Lack of a shared definition of SCM poses a number of risks for the profession. First, defining what is part of and not part of a professional discipline clarifies the body of knowledge that should be mastered by individuals within the profession (Wegner 1986; Choo 1998; Abbott 2001; Dooley 2009). Without a shared definition of the discipline, there is variation in the body of knowledge for which professionals are educated and continuously trained. Second, the definition of a professional discipline should define, or help define, the job types within that discipline (Abbott 1998). In this sense, the definition specifies the parts of the discipline that can be mastered at a deeper level. Lack of a definition leaves specializations within the discipline undefined. Third, a discipline's definition helps create a bridge between academic researchers and practitioners by indicating both the scope and concepts that they can share in their discourse (Abrahamson 1991). The need to strengthen this bridge has been seen by multiple supply chain researchers. Dess and Markoczy (2008) provide four ideas to close the research-practice gap. Number three is to ensure that research has practical business applications[7]. The research supports this endeavor by providing SC managers with a description of their field as viewed from supply chain positions companies wish to fill. This article contributes to the field of SCM in three ways. First, we examine whether the academic perspective of the discipline of SCM aligns with the practice of SCM. There have been continued calls for " relevance" throughout the history of journals in the discipline (Lee 1966; Miser 1987; Shubik 1987; Boyer and Swink 2006; Gupta, Verma and Victorino 2006; Carter, Ellram and Kaufmann 2008) - relevance usually meaning that academic research should align with the problems of practice. If the academic and formal definitions of SCM do not coincide well with the way that professionals are organized into task-specific positions in practice, then it indicates a continued gap between research and practice. Second, an examination of how SCM practice is organized may shed light on research areas that need to be addressed or changes in curricula that need to be made in order to maintain connection to practice. This article contributes to the practice of SCM by creating a typology of job types, empirically grounded in job requirement statements from the field. This typology may yield a different way to look at the discipline, and suggest different manners in which training and professional development should occur. Third, we demonstrate the novel use of secondary data in order to study a basic research question that has eluded empirical study to date. Definitions of SCM have emerged from conceptual thinking rather than practice in part because the study of SCM practice has been too difficult. By employing computerized text analysis on job descriptions, the methods employed by this study enable the sophisticated processing of the secondary data in order to gain deep insight into how the field of SCM practice defines itself.

## 2. 8 A model for logistics systems engineering management education in Europe

Logistics is commonly seen as developing discipline in its own right. It is quite common to see job adverts for logistics analysts, logistics managers and logistics directors. Institutions throughout the world have been formed to represent logisticians such as the UK Institute of Logistics, the European Logistics Association and the USA Council of Logistics Management. In fact, logistics owes much to the approach that requires a holistic approach to problem-solving by bringing together different disciplines, such as engineering, business and social sciences. This is particularly pertinent to supply chain engineering, which may be defined as the conceptualization, design and subsequent implementation, operation and re-engineering of the supply chain and its material flows, information flows, cash flows and resource flows. The holistic approach to problem-solving has been summarized in various forms, most notably by von Bertalanffy (1956) as general system theory, but more recently as business systems engineering (Watson 1994, Towill 1997), business process reengineering (Hammer and Champy 1993, Johansson et al. 1993), lean thinking (Womack and Jones 1996) and supply chain management (for an overview, see Bechtel and Jayaram 1997, Cooper et al. 1997). Common to all these concepts is an increased emphasis on processes as a means of understanding the industrial system in another dimension apart from the traditional functional division of systems. As logistics unites various disciplines, it has never been comfortably consolidated within traditional university functional departments Therefore, logistics courses appear in departments or schools of civil engineering, mechanical engineering, transport, management or business, manufacturing, etc. In recognition that logistics is the remit of any single discipline, the Faculty of Technology Management at Eindhoven University of Technology initiated, in 1994, a working group of academic partners. Its aim is to address the issue of how strengths from different disciplines, in different institutions, in countries within Europe may be brought together in order to generate a unified program of teaching, training and research. The consortium, currently consisting of five universities, is known as the European University Network in Logistics (EUNiL) (Naylor 1998). Although EUNiL is by no means totally inclusive of every possible discipline or subject matter, it does represent a broad spectrum. Importantly, EUNiL as it currently stands enables ease of communication and free and frank exchange of views for defining a model for logistics education in Europe[8]. This paper highlights the thinking driving the desire to unify logistics education. It defines logistics in terms of a systems perspective by establishing the inter-functional characteristics of logistics and the need for a process perspective. By doing so it is possible to define a top down model of logistics education and then to populate that model bottom up using essential educational modules. As a prototype of how such a model may be introduced, the role of EUNiL and one of its enabling mechanisms is described.

## 2. 9 Supply Chain Education: Bracing for the Future

Today's supply chain organizations are facing tough challenges when it comes to securing the talent they need to operate-and it won't be getting any easier going forward. In its 2008 report, " Supply Chain Talent: The State of the Discipline," AMR Research cites a number of factors behind this development. A principal one is the dramatic expansion of scope and responsibility of supply chain professionals. The Ohio State University " 2008 Survey of Career Patterns in Logistics" study concurs with AMR's findings. The authors of this annual report note that the major challenges companies are grappling with include global supply chain integration, the repositioning of the logistics/supply chain function, a trend toward more integration of material flow in and out of the firm, and the fact that energy expenditures have shifted from an accepted part of the cost structure to a critical strategic issue. David Aquino, research director at AMR Research, sees supply chain talent-and its nurturing and availability-as critical to business success these days. But at the same time, he says, " The talent pipeline itself is not sufficient to be able to support the growth and extension of supply chain management as a modern discipline." To fill the talent gap universities, colleges, professional associations, and individual companies are expanding their offerings of degree programs, certifications, online courses, and seminars targeting supply chain professionals[9]. Along with focusing on traditional supply chain and logistics topics, the programs now also address collaboration skills, the ability to work across cultures and global boundaries, financial acumen, long- and short-term strategic thinking, planning and technology." A lot of professionals who are mid-career wish that they took more liberal arts courses, which help develop creative and innovative thinking that supply chain managers need to succeed for the long term", says Langley, who sees executive education as a viable way for existing employees to develop their supply chain skills. Through such courses, he says students can expect to develop needed competencies and become familiar with supply chain processes, refine their knowledge of supply chain analytics and hone existing supply chain knowledge into a useful resource for their organizations.

## RESEARCH METHODOLOGY

## Selection between Primary and Secondary Research

## Primary research:

Primary research is based on the present data. In primary research, there is no historical data available for the researcher. In primary research, the researcher has to collect the data through qualitative or quantitative research approach. In this, researcher can collect data either through questionnaire, direct interview, focused group discussion or projective techniques. Then researcher analyse the collected data and come up with the result.

## Secondary research:

It is based on the historical data and these data are available through journals, newspaper, data on internet, annual reports of the company etc. Here, I have done more of a Primary research as the objective of my thesis is find the current status of Supply Chain Management and Logistics Education In India, what are the main issues that the universities and colleges are facing to implement this discipline as a part of their academics in the graduate and post-graduate studies. Secondary research also helped me to find some relative information regarding this topic to know about the universities that are currently having this discipline in their academics.

## Selection between Quantitative and Qualitative analysis for primary research

There are basically two types of research for collecting primary data, are as follows:

## Quantitative research:

Quantitative research is more structured and more related to the numerical data. Quantitative research is done to quantify the data that is collected from the large sample from population and generalize the result to the population. These generalized results represent the interest of whole population. In quantitative research, the sample size should be large. In quantitative research, the researcher needs to prepare the questionnaire and this questionnaire includes set of close ended questions. Survey is done through the questionnaire and it includes some statistical tool to analyze the data. This type of research is done to know the customer opinion in a well-structured way and that provides numerical facts and statistic to researcher to better understand the customer opinion.

## Qualitative research

It is an unstructured way of analysis. Qualitative research is totally different from the quantitative research. It provides more in-depth knowledge and understanding about the sample. It does not rely upon the numerical data and statistical tools. It includes more open ended questions rather than close ended questions. It more focuses on why and how. Close ended question in quantitative analysis provides less opportunity to respondent to express their view while open ended question motivate the respondent to express their views. In Qualitative research set of open ended question is being asked by the researcher that provides flexibility to turn the decision in any direction wherever interviewee wants to take it. Qualitative research is done through In-depth interview, Focused group discussion etc. Interview may be long but sample size of the respondent is very small. It provides instant feedback by the respondent and provides opportunity to researcher to clarify all their doubts then and there if required[10]. As the objective of my thesis is find the current status of Supply Chain Management and Logistics Education In India, I need to understand the issues that the universities and colleges are facing to implement this discipline as a part of their academics in the graduate and post-graduate studies, how they can overcome them, what would be their major issue: cost, infrastructure, faculty, jobs. All this information will help me to fulfill my objective of research and answer of these questions can be getting through interacting with the key faculty in the university/college. Hence, I have selected Qualitative research for primary data. I will conduct interview of the key faculty of the university/college which will provide me the depth insight about above mentioned fact.

## Method of Data collection and Analysis:

Data collected in qualitative analysis is lengthier; the data is collected by closely observing the interview or focused group discussion. I will collect the data by conducting interview of the educational professionals who has industry experience. Each qualitative research is unique and analyze in different ways. There are many ways to analyze these data are as follows:

## Thematic analysis

## Content analysis

I will collect data by conducting interview of the specific participants. As I am doing qualitative research I will chose content analysis, where first the data has collected from the entire participant through interview and then it is being analyzed by the researcher. So, first I will collect the data from all participants through interview and then I will try to find out the common pattern and theme in all the participants to analyze all the participants in depth. Then from this common pattern, I will try to find out the current status and future scenario of Supply Chain Management and Logistics Education in India to achieve my objective. The steps involved in qualitative analysis are as follows: During the interview, listen properly and note down all the information in interview transcript. Go through all the data that is collected in the form of interview transcript and try to identify common theme and pattern among all the interviews. This is called coding of data. Then find the important pattern and theme among the all. Then identify the status of Supply Chain Management and Logistics education by analysing these common patterns. I have selected this method because it provides certain benefits to me, that are as follows: In this method, both the interviewer and the respondent take part face to face and interviewer can involve the respondent more actively. This method provides opportunity to easily understand the respondent perception about specific thing. Sometimes respondent in spite of verbal communication make different facial expression while replying on certain question, that helps researcher to recognise what actually the respondent want to convey.

## 3. 4 Limitation of Qualitative analysis

There are many limitation of qualitative analysis that is as follows: If researcher doesn’t listen properly to the respondent, he may interpret message in different direction than actual. Since the sample size of Qualitative research is small, one wrong interpretation from any side (either from the respondent or the researcher side) can impact whole result. So, in qualitative analysis there are more chances of error. In order to avoid error researcher should sincerely listen the respondent and researcher should have proper knowledge of the subject.