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IMPACT OF INFORMATION LITERACY SKILLS ON THE ACADEMIC PERFORMANCE OF UNDERGRADUATE STUDENTS OF UNIVERSITY OF PESHAWAR

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Abstract

The effectiveness of education performance depends on accessing and equipping students with learning resources and their abilities to access essential information by achieving and progressing in IL skills. This research aimed to analyze the impact of Information Literacy (IL) skills on students' educational achievement. A quantitative research design with a survey questionnaire was used for data collection. The population of this research consisted of 843 undergraduate students of the faculty of management and information sciences of the University of Peshawar. A stratified proportionate random sampling technique was used in this study, and a sample of 263 undergraduate students was selected using the formula $n_h=n/N_h$. The data collected were analyzed by applying both descriptive and inferential statistics using SPSS. The major findings of the research were that undergraduate students in the faculty of management and information science possessed a high level of information literacy skills, especially in evaluating and using information. Most of the respondents agreed that information literacy skills have an impact on their academic performance. Based on the findings, it was recommended that information literacy programs should be incorporated into the university's curricula as a compulsory subject. Moreover, additional efforts like orientation trainings should be arranged to enhance the information literacy skills of male students in particular.

INTRODUCTION

1.1 Background of the Study

The present age is termed the age of information explosion or information boom because of the high ratio of information production in every field of knowledge. In this era of information explosion, students are expected to be capable of using the library and other tools and sources to access and retrieve their needed information and to carry out their research in minimum time with minimum assistance. Information is the most vital resource required in different walks of life by the people of the modern era. Information is the organized form of data used for decision making, increasing knowledge, and improving people's problem-solving capabilities (Kumar & Surendran, 2015). The information is produced in various forms, such as text and digital. Image and video etc. Due to the development of information technology, there is a rapid increase in the creation, storage, processing, retrieving, and communication of information through electronic media (Anandhalli, 2018). The enormous growth and development of information technology and the rapid increase in information resources in printed and electronic formats have impacted the lives of faculty and students in educational institutions and numerous educational programs. As contributors to education and

training everywhere in the world, educational institutions face the vital task of adapting and adjusting to these emerging trends and developments.

To become lifelong learners, students need information literacy skills (Cynthia, 2018). Information Literacy concedes the critical activity that information has in our day-to-day lives. Information Literacy is vital to the overall society and especially to the higher study institutions (Hassani, 2015). Mainly the flood of information has created concern among information operators and users on how to overcome the information excess and use information in a well- organized and systematic way to fulfill their information needs in minimum time. The development of information society has given rise to information literacy as a fundamental part of long-lasting learning (Ranaweera, 2008). Information literacy is encouraging people in all fields of life to efficiently and successfully find, carefully assess, utilize and produce information for attaining their individual, social, professional, and academic goals (Arua et al.,2018). Through a period of learning, students can achieve their primary goals and benefit from rising opportunities in developing an environment for shared values. It helps students and educational institutions overcome technical and academic challenges, overcome the barrier in doing their research, and achieve higher grades in their academic careers (Chanchinmawia & Verma , 2017).

Information literacy is an essential outcome of learning in higher education, a significant mental and practical skill essential for students to integrate and apply learning in all fields (Zoellner, 2016). Information Literacy (IL) is defined as Accessing, evaluating, and using information from multiple sources. Information Literacy is the adaption of suitable informational practices required to identify information requirements and ethically locate, evaluate, organize, use, and communicate information (Johnston & Webber, 2003). The efficient use of information by students is becoming a prerequisite. Information is a contributing factor that helps students at all levels attain their educational tasks and a job placement after graduation. Present information explosion forces students of all categories to indorse and evaluate information to validate its accuracy (Lau, 2006). Information literacy is people's ability to identify the information requirements, find and review the excellence of information, store and retrieve information, and use information effectively and ethically to create and communicate knowledge (Kimani & Onyancha , 2015). Information literacy is accessing, measuring, and using information from multiple sources. Information literacy is an individual's skill, ability, proficiency, capability, and expertise to dig out the exact information using the right source (Eisenberg, 2008).

Information literacy is the recognition that several situations must be present at a time. First, one has to learn to use analytical skills to set questions, identify research methods, and use critical skills to evaluate tentative and empirical results. Second, the person must find the answers to these questions in various fast and complex ways. Third, once a person has identified what they have asked for, they can access it (Prasad & Mahadeva, 2016). Information literacy is the capability to know about the required information, how information is processed, locate and identify the accurate sources of information, criticize sources, and evaluate and share this information. Thus, IL skills are essential for accessing, evaluating, and using information from various sources (Doyle, 1994). Information literacy skills are the capabilities to effectively identify, access, assess, and use information in various forms and select appropriate resources for communication. It also incorporates ethical, legal, and social issues and knowledge around information and information technology (Mee & Singh, 2008). Information literacy is the art of searching, identifying, and selecting the right source for academic requirements like curriculum, teaching, and research needs of individuals. An Information literate user can effectively use information based on information literacy skills for better academic achievement, especially in medical, allied health science, engineering management sciences, and social sciences in various university-level institutes. To perform well in academic activities, students must be capable of utilizing the information for decision-making with artistic obligation, with responsibility, critically, tactically, and

expressively. They should be capable of utilizing the information with technical ability (CASL, 2006). Better analysis and construction of the research model will not be possible without a practical theory. Over the years, information literacy has become a center of interest for many experts, leading to the development of many models. This research will be based on Doyle"s (1999) information literacy theory. This theory will discover that a literate person retrieves information through various methods, including nets, libraries, and personally from the surroundings. For evaluating information and decision making, the information literate indicators must use effective and efficient resources such as a library, specific sites, or in-person services from the institutions. The thesis statement and formulation of questions will quickly be developed by determining the nature and range of information required. By reading text, selecting ideas, and restating the concepts, an information-literate person can summarize the basic theme extracted from his information and incorporate the selected ideas into an existing body of knowledge. Information's reliability, validity, and accuracy will be evaluated through critical thinking and problem solving, which is possible by comparing and examining the knowledge from various sources. Dowell"s theory governs that by gathering accurate and perfect information, researchers must be in a position to identify ideas, examine the information and use them ethically and legally (Dorvlo & Dadzie, 2016).

Whenever students have the appropriate Information Literacy competencies, their self-confidence and capability to work self-sufficiently are improved because they can think decisively, translate information and make informed decisions (Ojedokun, 2007). The multidimensional effectiveness of education performance depends on accessing and equipping students with learning resources and their abilities to access essential information by achieving and progressing IL skills (Abimbola , 2017). Indeed, students' approaches to information and critical thinking benefit from their active involvement in academic activities. Even though having a direct link between information literacy skills and academic success (Duncan & Varcoe, 2012), there is little touch on this relationship in Pakistan. This research aimed to analyze the impact of IL skills on the academic performance of undergraduate students.

1.2 Problem Statement

Information literacy concedes the critical activity that information has in our day-to-day lives. Information literacy is vital to the overall society and higher study institutions. Users' capability to find the information required for practical educational work is critical and necessary. The problem of distorting library books and other social conduct experiences in university libraries shows that consumers (students) lack the information literacy skills needed for information management and other information search features. Information literacy is the art of searching, identifying, and selecting the right source for academic requirements like curriculum, teaching, and research needs of individuals. An Information literate user can effectively use information based on information literacy skills for better academic achievement, especially in medical, allied health science, engineering management sciences, and social sciences in various university-level institutes. To perform well in academic activities, students must be capable of utilizing the information for decision-making with artistic obligation, with responsibility, critically, tactically, and expressively. They should be capable of utilizing the information with technical ability (CASL, 2006). Undoubtedly, students' approaches to information and critical thinking benefit from their active involvement in academic activities. Even though there is a direct link between information literacy skills and academic success (Duncan & Varcoe, 2012), little is known about the problem at the national level in general and the University of Peshawar in particular. Therefore, the research was carried out to analyze the impact of information literacy (IL) skills on the academic performance of undergraduate students at the University of Peshawar.

1.3 Study objectives

Following are the primary objectives of this study:

1. To investigate the level of information literacy (IL) skills among the

undergraduate students at the University of Peshawar.

2. To examine the use of students‟ IL skills in evaluating the required information sources at the University of Peshawar.

3. To analyze the impact of IL skills on the academic performance of undergraduate students of the University of Peshawar.

1.4 Research Questions

The research aims at answering these research questions.

RQ1. What is the level of information literacy (IL) skills among the undergraduate students at the University of Peshawar?

RQ2. Which IL skills are used by students in evaluating their required information sources at the University of Peshawar?

RQ3. What impact do IL skills have on the academic performance of undergraduate students at the University of Peshawar?

1.5 Operational Definitions

1.5.1 Information Literacy

Information Literacy (IL) is simply defined as Accessing, evaluating, and using information from multiple sources

1.5.2 Information Literacy Skills

IL skill is the ability of people: to identify the information requirements, find and review the excellence of information: store and retrieve information: and make use of the information effectively and ethically to create and communicate knowledge (Kimani & Onyancha , 2015)

1.5.3 Academic Performance

Students‟ academic achievement implies the development of the contemporary state of knowledge and skills of the students that are reflected in their GPA, which helps in building their character and academic progress from lower level to higher level of study (Basri et al., 2018)

Chapter-2 LITERATURE REVIEW

2.1 Introduction

This section thoroughly examines the literature on the IL skills of students and their academic performance. It also identifies gaps in the existing literature that this study intends to fill. During the literature review, many related papers were searched in various sources, and the most relevant studies are briefly reviewed to highlight the main features of those studies. Moreover, the literature review is organized according to the arrangement of objectives of the studies

2.1.1 Information Literacy: An overview

The word “information literacy” was first used by Paul G. Zukowski in the United States in 1974 to illustrate the practices and skills for utilizing various information tools and prime sources used by information literate in modeling the information solution and their problem (ACRL,2015).

Information literacy is the capability to know about the required information, how information is processed, locate and identify the accurate sources of information, criticize authorities, and evaluate and share this information. Thus, IL skills are essential capabilities required for accessing, evaluating, and using information from a variety of sources (Doyle, 1994)

Internationally available literature significantly covers the ILS concept and its impact on the student's academic performance. However, there is a minimal touch on this topic in general in Pakistan and especially at the University of Peshawar.

2.1.2 Studies Assessing the Levels of Information Literacy Skills

Alinejad et al. (2012) highlighted the level of information literacy and its role in the electronics students' learning process. This study found that the level of information literacy is low. The study shows a positive correlation among electronics students between information literacy and educational achievements, such as the highest level of information literacy and the highest academic performance.

Klomsri and Tedre (2016) conducted a study stating that Information literacy (IL) had been highlighted as essential for students going through their courses. This study examined the level of IL abilities among postgraduate students of the University of Dar es Salaam (UDSM), employing questionnaires and focus group

discussions on acquiring perspectives on the students' opinions and contact with information problems. Twenty-two students from four colleges completed the online questionnaire, and 22 students participated in six focus group sessions. The students' questionnaire results were unsatisfactory in all IL categories, implying that present IL training is inadequate in transmitting IL knowledge and abilities. The analysis concludes with recommendations for improving the university's present IL procedures.

Liu and Sun (2012) conducted a study to analyze the effect of the gender gap and IL on educational achievement in undergraduate students. The study indicated that the average male score was higher than that of female students. The authors recommended that teachers should focus more on improving the IL of female students.

Malanga (2017) researched at the University of Livingstonia to examine the IL skills of students. The study indicated that the Faculty of Education students (ES): (1) exhibited a greater awareness and information of various kinds of information sources; (2) both print and electronic information were accessed; and (3) represented acquaintance with the APA referencing style and recognized the significance of citing and to prevent themselves from plagiarism.

Molepo, M. C. (2018) carried out a study aimed at measuring:

1. Students „understanding of information literacy.
2. Students‟ proficiency in using library resources.
3. Students‟ acquaintance with various library resources prior to and after attending Programmes.

Results of the research showed that most first-year students had a different perception of information literacy. In addition, the student‟s familiarity with library resources and abilities to use them were nondescript before they attended the program. However, when assessed afterward, they were aware of the library resources, and their abilities to use them improved. Therefore, the study concluded that Information Literacy Training Programs have a very positive impact on the academic success of the students.

Okon et al. (2014) conducted a study that tested the efficacy of IL skills used by students in the Universities of Uyo and Port Harcourt Libraries. The study concluded that information literacy skills are relevant and helpful in adapting to everyday situations in life. These skills determine not only the quality of an individual‟s life but also his productivity in the academic environment and society. However, information literacy skills are often used mainly in educational activities such as writing research papers and group demonstrations in the university.

Sasikala and Dhanraju (2010) describe the survey results from the perspective of information skill sets among higher education students. The study reported a variety of topics such as library resource awareness (both print and electronic), awareness of different sources of information (including that of the Internet), familiarity with and utilization of technologies of information communication, copyright, and fair usage of details, etc. The study concluded that information literacy (IL) plays a crucial role in a knowledge-based society, notably effective utilization of IT-based services and cooperative learning at all stages of the educational system.

2.1.3 Studies covering Evaluation of IL Skills

Ali et al. (2010) researched engineering students' information literacy skills. The findings reveal that the respondents lacked the knowledge and abilities to determine internet material, the most effective search methodology, the utilization of academic resources, and the use of information responsibly. Most academic materials used were print books, while most non-scholarly items referenced were electronic. The necessity of information literacy evaluation as a first step in enhancing students' information abilities is emphasized in this study. It also highlights the importance of encouraging students to include more scholarly electronic materials in their education.

Eisenberg (2008) asserts that IL is knowledge and skill that allows us to find, analyze and use information. Information skills are essential tools that help them coordinate current and future success. The author observes that information technology has affected everyone in each conceivable setting, work, education, and entertainment.IL is the variety of asset revelation

instruments accessible to them to improve the nature of student data. We should furnish understudies with sufficient IL abilities to assist them with succeeding periods of exploding data. IL abilities are fundamental for understudies' educational achievement.

Ekong and Ekong (2018) researched the effect of literacy-building abilities on using foreign e-library resources in Aqua Abu State, Nigeria. The study stated that students require information for various tasks, and the e-library serves as a resource center for electronic resources that may be used for any educational purpose. The utilization of electronic resources, on the other hand, is primarily dependent on the students' abilities. However, the utilization of technological resources heavily depends on students' skills and literacy among computer literate graduate students. The study further states that the knowledge and abilities accessible in using e-library resources significantly impact the quality and amount of academic work. As a result, it was determined that students at third-year colleges needed to improve their literacy abilities.

2.1.4 Studies Related to the Impact of Information Literacy Skills

Anandhalli (2018) explains that numerous studies show positive relationships between student educational performance and information Literacy skills. In his research, an endeavor has been made to consider the effect of information literacy skills on the educational achievement of understudies. A linear regression test is used to find the impact of IL skills on academic performance. The studies show that IL skills as an important factor in improving educational performance.

Bailey (2007) conducted a study at the University of Northumbria to examine the impact of four sets of information skills among pre-enrolled nursing diploma students in the UK and inferred that students who used to attend workshops have excelled in their academic accomplishments in addition to increasing their level of confidence and knowledge. There was no failure (less than 40%), four students improved by 70% or even more, 15 students showed a visible difference of up to 50%, while a solitary student who took part in all four workshops improved by 38 to 65%. Focus group participants were interviewed, information was gathered, and questionnaires were used for data collection. Assignment grades were also documented and analyzed to determine the outcome of the intervention.

Banik and Kumar (2019) conducted a study in Bangladesh to assess undergraduate students' IL competencies and educational achievement. The study explores the influence of IL skills on students‟ academic achievement. A linear regression method was used to measure the level of information literacy skills and a linear regression method to determine the effect of IL skills. The research revealed that the IL Skills level ranges from 10 to 20. At the same time, students' GPAs were standard medium ranges between 3.02 to 3.50, which shows that information literacy skills are a significant factor that impacts academic achievement.

Hasanzadeh and Asadi (2007) researched the impact of teaching IL on students' educational performance at Sari's Imam Mohammad Baqer Technical Higher Education Center. The study discovered a significant contrast and dissimilarity in academic performance and production between the different groups of students. These differences were in the ability to identify and explicitly state, locate and obtain information, as well as the ability to utilize information effectively and appropriately, and in the way of using library information resources.

Info and Filson (2014) found that information literacy is an important component of the library infrastructure of any university because of its contribution to academic excellence and learning. Consequently, it is safe to say that a deformity in information literacy skills has an adverse effect on academic performance and the individual's personal and professional growth.

Mayer and Krampen (2016) investigated whether information literacy improves university students' academic achievement and overall cognitive capability. Fifty-three German psychology students (18–25 years old, 85% females) took part in a four-wave longitudinal study encompassing the first 18 months of their bachelor's degree. After correcting for fluid intelligence, stepwise multiple regression findings confirmed that scientific information literacy (measured by a fixed-choice test of expertise about information search and evaluation) influenced university grade point

average and core psychology competence and capability. According to other simple slope evaluations, information literacy was sufficient to reimburse for poor cognitive skills: Only students with lesser working memory capacity had a link between information literacy and academic achievement.

Malanga (2018) stated that IL skills greatly influence the academic performance of the students enrolled in higher education Programmes. The study added that it is the need of the hour that policymakers should not consider IL Skills as a rudimentary part of higher education but as an integral part of the entire teaching methodology.

According to Nkiko (2005), information literacy is a significant skill that allows individuals to participate in valuable decision–making, critical thinking, and examination. It empowers them to assume liability for their learning in areas of individual or professional interest. Nourizadeh (2017) investigated students' information literacy, academic motivation and critical thinking, and educational performance. The study's population comprised all 435 humanities and engineering students, of whom 205 were chosen as the study sample based on the Morgan table. The study reported a positive association between information literacy, academic motivation, and students' academic performance.

According to a study conducted by Perrin et al. (2008) to measure the information skills of first-year nursing students' before and after ILI. The study also found that students' understanding of the scope of knowledge grew due to their exposure to numerous sources of information.

Salleh et al. (2011) explained how students could reveal their capabilities by using related information and skills to achieve a high standard of educational achievement to achieve a higher grade in line with the high prospects of the university. The study also analyzed IL's impact on undergraduate students' educational achievements. The study found no effect of IL on the educational achievements of undergraduates. Shao and Purpur (2016) researched information literacy skills, finding a correlation between writing scores, course grades, and information literacy skills.

Soleymani (2014) studied the association between educational performance and IL at ishfan medical science university. An information literacy Questionnaire was used for the collection of data. Results indicated a positive impact of information literacy skills on the students' educational performance.

Vreeburg et al. (2005) conducted a study to prove the significance of integrating IL skills courses in the curriculum to meet the specific needs of students with disabilities and successfully meet academic precepts for all students. The finding concludes that educators can meet their standards by improving their information literacy skills.

2.1.5 Studies Assessing Information Literacy Skills in Pakistan

Mehmood (2013) stated that due to the abundance of information, it is practically impossible to teach and communicate effectively with every student in a classroom. Thus, students must be equipped with adequate literacy skills to learn how to access, retrieve and use any piece of information they need. Kousar and Mehmood (2013) found that undergraduate engineering students have poor information literacy skills and are low-level. They had little knowledge of the procedures and tools for retrieving needed information from different sites.

Ameen and Ullah (2016) delivered their research findings, which showed that effective information literacy programs are crucial to students' self-determination and efficiency in obtaining information. Information specialists can take the lead in developing literacy programs. They recommended the inclusion of information literacy within the curriculum of LIS.

Yousaf and Akhtar (2018) conducted a study showing that students were fully aware of and capable of using information skills. The finding revealed an insignificant difference in information literacy skills among males and females. However, significant differences were found in students' level of information skills depending on their field of study. Science students had lower information literacy than arts and computer science.

According to Naveed & Mehmood (2019), information literacy is critical to students' academic performance and lifelong learning at all levels. Therefore, Pakistani students at all academic levels and those studying various subjects need an effective, efficient, and specific

IL instruction program.

Zeashan et al. (2020) assert that most students are familiar with information literacy programs. The finding also reveals that most students value literacy development to satisfy their educational needs, indicating their desire to receive such training. They emphasized that LIS professionals at LUMS should develop information literacy programs and courses according to the finding of this research study.

Sakhawat et al. (2021) researched the effect of IL skills of librarians on the faculty members' research productivity. The study's findings revealed that LIS professionals and faculty members had moderate information literacy skills and could improve their information literacy competencies by participating in training courses and seminars.

Waqas and Chaudhry (2021) researched to assess secondary school students' information literacy abilities. An online test was conducted to assess the information literacy of the students. Results of the study showed that secondary school students could not use technology in their regular activities. Therefore, it was recommended that school-level students be allowed to use technology in their daily lives.

Existing literature on IL considers IL the most vital topic of this age. Everyone in any field of work requires information. Nobody can achieve his goals on time without the proper information. IL skills are the sole method for everybody to solve their issues within the shortest possible time. Everybody has different IL skills with the help of distinguishing, searching, retrieving, evaluating, and presenting the information. As previously noted and spotted, most studies focus on information literacy in distinct groups. It is the foremost concern of Information literacy to detect other factors, particularly educational performance; as a result, the primary objective of the current research is to investigate the relationship between undergraduate students' academic performance and information literacy skills.

2.2 Summary of the Chapter

The literature review discovered that IL skills are essential for everyone. Due to its importance in education, several studies have been conducted on this subject. Information is required by everyone in any field of knowledge. Nobody can achieve his objectives on time without acquiring proper information. Information literacy skills are the sole method for everybody to solve their issues within the shortest possible time. Good acquisition skills will facilitate people to reach their destination. Everybody has different levels of IL skills through that they are distinguishing, searching, retrieving, evaluating, and presenting info. The majority of studies focus on information literacy in distinct groups, with only some examining the effects and upshots of information literacy on other factors, particularly educational performance; as a result, the primary goal of the current research is to inspect and evaluate the relationship between undergraduate students' academic performance and information literacy skills.

RESEARCH DESIGN AND METHODOLOGY

The section explains the research methodology used in this study, research instrument, population, data collection, and data analysis procedures used in this study. A research methodology consists of a particular strategy followed by data collection, analysis, and presentation.

3.1 Research Approach

The first step in the research process is selecting the most suitable research method to meet the objectives. The primary and overall aim of this research was to analyze the impact of IL skills on undergraduate students' academic performance at the University of Peshawar.

After reviewing the available literature, the researcher determined that the quantitative research technique was appropriate for executing this study, as it was mostly used in previous research studies (Kimani & Onyancha, 2015; Vichea et al.,2017). Quantitative researchers attempt to identify cause-and-effect relationships to predict and generalize their findings to a larger population. Quantitative research was adopted as it helps determine people's attitudes, beliefs, and behavior toward any given phenomenon. (Christensen & Johnson, 2012; Bryman, 2008).

3.1.1 Specific Research Method.

This study used a survey method using a self-constructed questionnaire in the light of

previous studies as it is a widely used method for this kind of study.

The literature also showed that most studies of this kind had used questionnaires to assess information literacy skills and their impact on the educational performance of undergraduate students (Banik &Kumar, 2019; Anandhalli, 2018; Soleymani, 2014; Saleh & Bande, 2019).

3.2 Population

The study population consisted of 843 undergraduate students from the faculty of Management and Information Sciences at the University of Peshawar. This number (843) was calculated based on details provided in the UOP prospectus from sessions 2018-19. The detail is given in Table 3.1

Table 3.1 Undergraduate Students Population

S .No	Department	Total Population
1.	College of Home Economics	315
2.	Institute of Management Studies	224
3.	Journalism and Mass Communication	80
4.	Quaid Azam College of Commerce	224
Grand Total		843

3.2.1 Sampling Technique and Sample Size.

The sample size of 263 out of 843 was determined and calculated through Rao Soft sample size calculator with 95% confidence level and 5% confidence interval. The stratified random sampling technique was used due to the reason that the population of this study was consisted of various strata. The study population contained four strata, and the following formula was used for a balanced representation of each stratum:

$n_h = n/N \times N_h$ (Stratum sample= (sample size/population size) x stratum size)

A sample of 263 was selected based on the proportional allocation technique, The detail of which is given in table 3.2. The data was collected in August and September 2021. The researcher visited the concerned faculty for data collection.

Table 3.2 Sample Size

S .No	Department	Total Population	Sample
1.	College of Home Economics	315	98
2.	Instate of Management Studies	224	70
3.	Journalism and Mass Communication	80	25
4.	Quaid Azam College of Commerce	224	77
Grand Total		843	263

3.3 Data Collection Instrument

A structured questionnaire was developed based on instruments used in other related studies comprised four sections,

(Anunobi & Udem, 2015; Amusa et al.,2016; Kousar & Mehmood, 2013) in the past with minor modifications. The questionnaire

i. Respondent Demographics,
ii. Levels of Information Literacy skills,

iii. Student‟s skills in evaluating information sources,
iv. IL skills impact on Academic Performance.

The second section covers IL skills level, which was further divided into three subsections:

1. Ability to identify information needs and locate and access information.
2. Ability to evaluate information
3. Ability to use information.

For the convenience of students, a structured questionnaire was designed using understandable vocabulary.

3.4 Validity and Reliability of Instrument

The questionnaire was given to three experts, experts in building a questionnaire, one in the faculty of Management and Information science and another from the E&SE Department to validate the questionnaire (Appendix A). As reliable tools were adopted in this study, therefore the pilot test was not conducted.

3.5 Data Collection Process

The data was collected personally by reaching out to the study population. The structured questionnaire was distributed along with a covering letter (Appendix C) among all the undergraduate students of faculty of four departments, i.e., college of home Economics, Institute of management studies, Quaid-e-Azam college of commerce and journalism and mass communication, and participants were informed of the purpose of the study. The respondents were requested to read the instructions and complete the questionnaire correctly. In order to get the most responses, the researcher guided the respondents through the contents of the questionnaire. The researcher received 259 of the 270 questionnaires with a response rate of 95.92%.

3.6 Reliability of Data Collection Instrument

The reliability test was conducted based on the respondents' collected data. Cronbach‟s Alpha was applied, examining the reliability, which was found to be
.879. As per experts, reliability above .80 is conserved excellent.

3.7 Data Analysis

After collecting the data, it was analyzed and interpreted. The researcher used SPSS 20.0 was used to analyze the data. Both descriptive and inferential statistics like frequency, percentage, measures of central tendency, t-test, and variance analysis were utilized for accurate results. The difference in opinions between gender groups and departments of the studies was measured using the independent sample t-test and ANOVA.

3.8 Limitation and Delimitation of Research

The possible limitation of this research is that its findings cannot be generalized to the undergraduate students at other universities.
Due to time constraints, the study was delimited to the faculty of Management and Information Sciences of the University of Peshawar, which includes five departments or constituent colleges of the University of Peshawar, including; Library and Information Science, Department of Journalism and Mass Communication, Quaid e Azam College of Commerce, Institute of Management Studies, College of Home Economics.

DATA ANALYSIS AND DISCUSSION

This chapter presents the study's results regarding demographic information, data analysis, interpretation, and discussion.

Results of the Study

Section 1 of the questionnaire comprised three Items to explore the demographic information of the study participants. Section 2 consisted of 16 indicators, seven indicators in Section 3, and 9 indicators in Section 4

(Appendix A)

4.1 Demographic Information

Table 4.1 shows the gender wise distribution of the study population. It shows that the majority of the respondents, 54.1% were females, while 45.9% were males. Thus, most of the population consisted of female

Table 4.1: Gender Wise Distribution of the Respondents

S. No	Gender	Frequency	Percent
1	Male	119	45.9
2	Female	140	54.1
	Total	259	100.0

4.1.1 Respondents by Age Group

As given in table 4.2, most of the respondents were 18-21 years, followed by the age category of 22-25, i.e., 64 (24.7%), while 2.3% of the respondents were in the age category of 26-29 years.

Table 4.2 Distribution of Respondents by Age

Age	Frequency	Percentage (%)
18-21	189	73
22-25	64	24.7
26-29	6	2.3

4.1.2 Department/Institute wise Distribution of study Papulation

As given in table 4.3, Most of the study participants (35.5%) were from College of Home Economics, 27% from IM studies and Quaid Azam college of commerce, while 10.4% belonged to Journalism and Mass communication department.

Table 4.3 Institutions-wise distribution of respondents

S. No	Departments	Frequency	Percent
1	College of Home Economics	92	35.5
2	Institute of Management Studies	70	27.0
3	Quaid e Azam College of Commerce	70	27.0
4	Journalism and Mass Communication	27	10.4
	Total	259	100.0

4.2 Level of Information Literacy (IL) skills

In order to examine the level of information literacy skills, the respondents were given three elements consisting of 16 indicators. They were asked to indicate on a five Likert scale (from strongly disagree to agree strongly).

4.2.1 Ability to identify the need, locate and access information

Respondents were given nine statements on their ability to identify the needs, locate and access their required information It was found that a large majority (56.7%) readily agreed with the statement," I can formulate a question on my specific information needs and use several sources to increase familiarities with my needed information.". While 8.1% of the respondents strongly disagreed and 13.1% lightly disagreed, and 22% were found unable to respond. The overall mean of the statement was found to be 3.49, showing that the respondents were moderately skilled in their ability to formulate questions on their specific information needs and use multiple sources to increase familiarity with their needed information.

To the statement "I am able to effectively use

library catalogues," it was found that 52.1% of the respondents readily agreed and strongly agreed, while 26.3% (8.5%+17.8%) of the respondents were firmly disagreed and normally disagreed, respectively, whereas 21.6% were undecided. The mean value was 3.34, indicating that the respondents were moderately skilled in using library catalogues effectively.

Results of the statement "I am able to use bibliography or reference list on the book to find other documents on my needed information" shows that 34.8% (11.2+23.6%) respondents strongly disagreed and disagreed, 23.9% remained neutral while 41.4% responded in favor of the statement. The mean value was (3.1042), showing that the study participants were moderately skilled.

As for the statement " I am able to find all the documents about a particular author in the library catalogue, by using access point searches, i.e., either by author, title, subject or keywords," 30.1% of the respondents disagreed, whereas 18.1% remains neutral and 51.2% of the respondents were readily in favor of the statement. The mean value (3.2519) indicates that the respondents were moderately skilled in searching their documents by Author, title, subject, and keywords.

In response to the statement "I am able to reevaluate the initial information need to clarify, revise or refine the questions that need to be answered," 18.5% (7.3%+11.2%) disagreed, and 20% were neutral, while 61.4% responded positively. The mean value was (3.51), which denotes that the respondents were highly skilled in refining the questions that needed to be answered.

The Statement "Finding more documents on my topics online, by putting synonyms in my search using the Boolean operator "OR" shows that 27% (10%+17%) of the respondents were against the statement, 18.9% were undecided, whereas 54% showed agreement. The mean value was found to be 3.35, resulting in the respondents being moderately skilled in using the Boolean operator "OR."

From the statement "Narrow down my search on a particular topic, by using the Boolean operator "AND," it is depicted that the large majority, i.e., 46% (33.6%+12.4%) of the respondents strongly agreed, whereas 29.7% remain neutral and 24.3% were against the statement. The overall mean score of 3.25 reflects that they were moderately skilled in narrowing their search through Boolean operator AND.

The next statement, "Removing unwanted results from my search, by using the Boolean operator "NOT"" shows that 26.3% (8.9%+17.4%) of the respondents strongly disagreed and normally disagreed with the statement, and 27% remained neutral while 46.7% responded in favor of the statement. The mean value appeared to be 3.84, which denotes that the target subjects were Moderately skilled.

To the statement "formulating right keywords in searching for online information," most of the respondents, i.e., 71% (35.5%+35.5%) strongly agreed and just agreed, whereas 13.1% did not give their verdict, and 15.9% strongly disagreed and normally disagreed. The overall mean was 3.84, indicating that the respondents were highly skilled in formulating the right keywords for searching information online.

Thus, from table 4.4., it is concluded that the "Ability to identify the need and to locate and access information" was responded to the mean that ranged from 3.1042 to 3.8417. The average mean of 3.50 and above shows that undergraduate students of the faculty of management and information sciences are highly skilled in those areas of skills, especially their ability to formulate the right keywords in searching for Online information, i.e. (Mean=3.8417). The mean ratings of 3.49 and below show that undergraduate students in the management and information sciences faculty are moderately skilled in identifying the need, locating, and accessing information.

Table 4.4 Ability to identify the Need, Locate, and Access Information

S #	Statement	SDA	DA	UD	A	SA	Mean	Decision
1	I am able to formulate question on my specific information need and using several sources to increase familiarities with my needed information	21 8.1%	34 13.1%	57 22 %	90 34.7%	57 22.0%	3.4942	MS
2	I am able to effectively use library catalogues [both card and online public access catalogue (OPAC)]	22 8.5%	46 17.8%	56 21.6%	91 35.1%	44 17.0%	3.3436	MS
3	I am able to use bibliography or reference list on the book to find other documents on my needed information	29 11.2%	61 23.6%	62 23.9%	68 26.3%	39 15.1%	3.1042	MS
4	I am able to find all the documents about a particular author in the library catalogue, by doing access points search either by author, title, subject or keywords	26 10%	52 20.1%	47 18.1%	99 38.2%	35 13.5%	3.2519	MS
5	I am able to reevaluate the initial information need to clarify, revise or refine the question that needs to be answer.	19 7.3%	29 11.2%	52 20.1%	117 45.2%	42 16.2%	3.5174	HS
6	Finding more documents on my topics online, by combining synonyms in my search by using the Boolean operator "OR"	26 10.%	44 17.0%	49 18.9%	92 35.5%	48 18.5%	3.3552	MS
7	Narrowing my search on a particular topic, by using the Boolean operator "AND"	27 10.4%	36 13.9%	77 29.7%	87 33.6%	32 12.4%	3.2355	MS
8	Removing unwanted documents from my search, by using the Boolean operator "NOT	23 8.9%	45 17.4%	70 27.0%	78 30.1%	43 16.6%	3.2819	MS
9	Formulating right keywords in searching for online information	17 6.6%	24 9.3%	34 13.1%	92 35.5%	92 35.5%	3.8417	HS
	Grand Mean						3.3806	MS

Note: WS 2.49, MS 3.00 and HS 3.50 to 4.0

4.2.2 Ability to Evaluate Information

It is the second element of the level of information literacy skill. In order to know about respondents" ability to evaluate the information, they were given two statements and were requested to tick the relevant box. Results of the same are given in table 4.5.

Responses to the first statement, "Competently evaluate information, whatever the source may be, " show that 23.1% disagreed, 24.3% remained undecided, and 52.5% responded in favor of the statement. The mean value was found to be 3.33, reflecting that they were moderately skilled in competently evaluating information.

To the statement "Evaluating print and online source based on its criterion," 15.5% of the respondents disagreed, 25.1% were neutral, and 59.5% agreed. The mean value of 3.57 shows that the respondents were highly skilled in evaluating print and online sources. The overall mean score of 3.91 shows the undergraduate students in the management and information science were highly

skilled in evaluating information

Table 4.5 Ability to Evaluate Information

S#	Statement	SDA	DA	UD	A	SA	Mean	Decision
10	Competently evaluate information no matter the source	20 7.7%	40 15.4%	63 24.3%	105 40.5%	31 12.0%	3.3359	MS
11	Evaluating print and online source based on its criterion	17 6.6%	23 8.9%	65 25.1%	101 39.0%	53 20.5%	3.5792	HS
	Grand Mean						3.9151	HS

Ability to Use Information

To determine the respondent's ability to use the information, they were given six statements and asked to mark their response on a 5-point Likert scale, from strongly disagree to agree strongly. As given in table 4.6, 1st statement shows that 19.7% (9.7%+10%) of the respondents disagreed, 11.6% remained undecided, while 68.7% agreed with the statement "Selecting materials and summarizing them in my own words for personal use." The mean appeared to be 3.67, indicating that the study respondents were highly skilled in selecting appropriate information.

For the statement "Preserving and storing information for future use," it is shown that the vast majority, 67.2% (41.3%+25.9%) of the respondents, strongly agreed and agreed, respectively, while 29.7% remained neutral and 24.3% were against the statement. The overall mean score of 3.683 reflects that they had a high ability to preserve their information for the future.

The results of the statement "Using acquired information as a lead to produce an article or thesis" showed that 20.5% of the respondents do not agree, 20.5% remain undecided while 59% answered in favor of the affirmation. The mean value was found to be 3.33, indicating they had a moderate ability to use the information to write an article/thesis. Regarding the statement " Communicating and presenting information to others in the appropriate and usable format," 16.6% disagreed. In comparison, 16.2% remained neutral, and the majority, i.e., 51.2%) of respondents (45.9%+21.2%) easily favored the statement. The mean value of 3.826 shows that respondents were highly skilled in communicating information.

The statement " Cite and acknowledge other people‟s work that I used " shows that 16.9% (6.9% + 10%) of respondents were against the statement, 23.6% were undecided, and 59.5% agreed. The mean value was 3.569, which resulted in acknowledging other people‟s work.

As shown in table 4.6, the mean scores for the ability to use information ranged from 3.5560 to 3.8263.

The grand mean rating of 3.5698 showed that undergraduate students in the management and information sciences faculty were highly skilled in properly using information.

Table: 4.6 Information Using Ability

S#	Statement	SDA	DA	UD	A	SA	Mean	Decision
12	Selecting materials and summarizing them in my own words for personal use	25 9.7%	26 10%	30 11.6%	106 40.9%	72 27.8%	3.671	HS

13	Preserving and storing information for future use	21 8.1%	22 8.5%	42 16.2%	107 41.3%	67 25.9%	3.683	HS
14	Using acquired information as a lead to produce an article or thesis	17 6.6%	36 13.9%	53 20.5%	92 35.5%	61 23.6%	3.556	HS
15	Communicating and presenting information to others in an appropriate and usable format	20 7.7%	23 8.9%	42 16.2%	119 45.9%	55 %21.2	3.826	HS
16	Cite and acknowledge other people's work that I used	18 6.9%	26 10%	61 23.6%	101 39.0%	53 20.5%	3.559	HS
	Grand Mean						3.569	HS

4.3 Students' Information Literacy Skills in Evaluating the Required Information sources:

Students‟ information literacy skills in evaluating their required information were examined using a five-point Likert scale ranging from strongly disagree to agree strongly. The respondents were given seven statements and were asked to tick the relevant box of all the statements. Table 4.7, item 1 indicates that 14.7% of the respondents either strongly disagreed or disagreed with the statement "I summarize the main idea to be extracted from the information gathered." In contrast, the majority, i.e., 68.4%, strongly agreed or agreed with the statement, whereas only 18.9% were undecided. The overall mean score of the statement was 3.73. Item 2 shows that 13.9% of respondents disagreed with the statement "I examine and compare information gathered from various sources in order to evaluate reliability, validity, accuracy, authority, etc.". whereas 20.8% remained neutral while 65.2% responded in favor of the statement. The mean value was 3.78. Item 3 depicts that 15.4% of respondents disagreed with the statement "I synthesize main ideas to construct new concepts for my academic work," while 20.8% remained neutral, and 63.7% responded in favor of the statement. The mean value was 3.58.

As per item 4, 14.7% of respondents disagreed with the statement, "I compare new knowledge with prior knowledge in determining the value-added, contradictions, or other unique characteristics of the information.", 23.6% remain undecided, while 61.7% responded in favor of the statement. The mean value was 3.65. Item 5 indicates that 17.4% of respondents disagreed with the statement "I validate my understanding and interpretation of the information through discussion with other individuals, teachers, subject-area experts, etc.", and 22.8% remain undecided while 59.8% responded in favor of the statement. The mean value was 3.61, which shows they were moderately skilled in the said area.

According to item 6, 21.3% of respondents disagreed with the statement "Evaluate online sources based on its criterion," 22% remained neutral, while 56.7% responded in favor of the statement. The mean value was 3.44. Item7 shows that 18.2% of respondents disagreed with the statement "Evaluate print sources based on its criterion," 19.7% remained undecided, while 62.2% responded in favor of the statement. The mean value was 3.6216.

Overall table 4.7 indicate that the mean rating for students‟ information literacy skills in evaluating the required information sources in items 1,2,3,4,5 and 7 were all above the accepted level of 3.50, which means that the information literacy skills of undergraduate students of faculty of management and information sciences have a significant relationship with evaluating the required information sources and information.

Table 4.7: Evaluation of the Required Information Sources

S#	Statement	SDA	DA	UD	A	SA	Mean

1	I summarize the main ideas to be extracted from the information gathered.	16 6.2%	22 8.5%	49 18.9%	99 38.2%	73 28.2%	3.7375
2	I examine and compare information gathered from various sources in order to evaluate reliability, validity, accuracy, authority etc.	13 5%	23 8.9%	54 20.8%	86 33.2%	83 32.0%	3.7838
3	I synthesize main ideas to construct new concepts for my own academic work	21 8.1%	19 7.3%	54 20.8%	117 45.2%	48 18.5%	3.5869
4	I compare new knowledge with prior knowledge in determining the value added, contradictions, or other unique characteristics of the information.	8 3.1%	30 11.6%	61 23.6%	105 40.5%	55 21.2%	3.6525
5	I validate my understanding and interpretation of the information through discussion with other individuals, teachers, subject-area experts, etc.	16 6.2%	29 11.2%	59 22.8%	91 35.1%	64 24.7%	3.6100
6	Evaluate online sources based on its criterion	16 6.2%	39 15.1%	57 22.0%	107 41.3%	40 15.4%	3.4479
7	Evaluate print sources based on its criterion	17 6.6%	30 11.6%	51 19.7%	97 37.5%	64 24.7%	3.6216

Note: Rejected below 3.50 and accepted at 3.50 and above.

4.4 Impact of Information Literacy Skills on students' Academic Performance

To study the impact of IL skills on students‟ academic performance, the respondents were given nine statements and asked to tick the relevant box per the given scale. The data finding regarding the impact of information literacy skills on academic performance is provided in table 4.8, to the statement "Information literacy skills improved conduct of my continuous assessment," the response of 17.4% of respondents disagreed, 13.9% remained undecided, while 68.7% agreed. The mean value was 3.64, which means there is a high impact of information literacy skills on students‟ academic performance. Item 2 shows that 13.5% of respondents disagreed with the statement "Information literacy skills Improved on your assignment," while 12.4% remained neutral similarly 74.72% believed that Information literacy skills improved on their assignment. Item 3 shows that 16.2% of respondents disagreed with the statement "Information literacy skills increase your efficiency", whereas 10.4% of respondents remained neutral, and 73.4% agreed.

As per item 4, 11.6% of respondents disagreed with the statement "Information Literacy Skills help you to handle my academic task effectively," while 15.8% of respondents remained neutral, and 72.6% agreed. Item 5 shows that 12% of respondents disagreed with the statement "It helps you to deliver your academic task systematically and consistently," 15.1% of respondents remained neutral, while 72.9% responded in favor of the statement. Item 6 shows that 17% of respondents disagreed with the statement "Information literacy skills can overcome your communication barrier" 14.3% of remained undecided, while 68.7% agreed.

Results of Item 7 depict that 19% of respondents disagreed with the statement "Information Literacy skills helps you to search library databases for the relevant materials of your study" 21.6% of respondents remained while

59.4% agreed. Item 8 shows that 17.8% of respondents disagreed with the "Information literacy skills enhance your examination preparation and examination grade" 18.5% of respondents remained undecided, while 63.7% agreed. Item 9 shows that 13.9% of respondents disagreed with the statement "Information literacy skills help you to obtain your learning materials from your course teachers" 11.6% of respondents remained neutral, while 74.5% agreed.

Table 4.8 Impact of Information Literacy Skills

S#	Statement	SDA	DA	UD	A	SA	Mean
1	Information literacy skills improved conduct of your continuous assessment	23 8.9%	22 8.5%	36 13.9%	122 47.1%	56 21.6%	3.6409
2	Information literacy skills Improved on your assignment	12 4.6%	23 8.9%	32 12.4%	118 45.6%	74 28.6%	3.8456
3	Information literacy skills increase your efficiency	20 7.7%	22 8.5%	27 10.4%	104 40.2%	86 33.2%	3.8263
4	Information Literacy Skills help you to handle my academic task effectively	10 3.9%	20 7.7%	41 15.8%	101 39%	87 33.6%	3.9073
5	Its help you to deliver your academic task systematically and consistently	15 5.8%	16 6.2%	39 15.1%	126 48.6%	63 24.3%	3.7954
6	Information literacy skills can overcome your communication barrier	15 5.8%	29 11.2%	37 14.3%	115 44.4%	83 24.3%	3.7027
7	Information Literacy skills helps you to search library databases for the relevant materials of your study.	17 6.6%	32 12.4%	56 21.6%	99 38.2%	55 21.2%	3.5521
8	Information literacy skills enhances your examination preparation and examination grade.	8 3.1%	38 14.7%	48 18.5%	96 37.1%		3.6938
9	Information literacy skills helps you to obtain your learning materials from your course teachers	14 5.4%	22 8.5%	30 11.6%	113 43.6%	80 30.9%	3.8610

4.5 Respondent's Level of Information Literacy (IL) Skills by gender (Levene's Test for equality of variances)

Levene's Test for equality of variances was used to examine respondents" level of IL skills by gender. The mean scores of male respondents were 3.39 (0.746 std. deviation), while for females, it was 3.58 (0.516 standard deviation). As given in table 4.7, the relationships towards the level of IL skills between male and female respondents were found to be significant with a P- value of .000. Thus, our results showed a significant relationship in the respondent"s level of IL skills by gender.

Table 4.9: Respondent's Level of IL Skills by Gender

	Gender	N	Mean	Std. Deviation	Std. Error Mean	t value	P-value
LILS	Male	119	3.3924	.74663	.06844	2.492	.000
	Female	140	3.5891	.51694	.04369		

Respondent's Information Literacy (IL) skills in evaluating required information Sources by gender (Levene's test for equality of variances)

In order to investigate respondents" IL skills in

evaluating the required information sources by gender, Levene"s Test for equality of variances was used. The ean score of male respondents was 3.54 (.73598 Std. deviation), whereas female respondents' mean score was 3.71 (.66145 Std. deviation). As given in table 4.8, the relationship between the level of information literacy skills between male and female respondents was found to be significant with a P-value of .040, which is significant at the level of 0.05. The result showed a significant relationship between gender types and the level of information literacy skills.

Table 4.10: IL skills in evaluating required information Sources by Gender

Gender	N	Mean	Std. Deviation	Std. Error Mean	t value	P-value
Male	119	3.5450	.73598	.06747		
SERIS					-1.902	.040
Female	140	3.710	.66145	.05590		

4.6 Respondent's Impact of Information Literacy (IL) Skills by gender (Levene's Test for equality of variances)

Levene's Test for equality of variances was used to investigate respondents" impact of IL skills by gender. The means score of male respondents appeared to be 3.71 (.71926 Std. deviation), while the female mean score was 3.79 (.69565 std. deviation). As shown in table 4.9, the relationship between the impact of IL skills between male and female respondents was found to be insignificant, with a P-value of .124. Hence, the result showed an insignificant relationship in the respondent"s impact of information literacy skills by gender.

Table 4.11: Respondent's Impact of IL Skills by Gender

Gender	N	Mean	Std. Deviation	Std. Error Mean	T value	P-value
Male	119	3.7115	.71926	.06593		
Impact					-.951	.124
Female	140	3.7952	.69565	.05879		

4.7 Level of Information Literacy (IL) Skills by Department.

An ANOVA test was used to examine students' level of information literacy skills by department. Results showed no significant difference between groups F=2.589, P>0.05.

Table 4.12: Level of Information literacy (IL) skills by Department

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	3.116	3	1.039		
Within Groups	102.296	255	.401	2.589	.053
Total	105.412	258			

4.8 Information Literacy (IL) Skills of undergraduate students in evaluating information sources by Dept.

In order to assess students' IL skills in evaluating the information sources, ANOVA test was conducted. Results showed no significant difference between groups F=1.930, P>0.05. Thus, it can be inferred that the students of different departments had similar skills in evaluating their required information.

Table 4.13: IL skills in evaluating required information Sources by Dept.

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2.809	3	.936	1.930	.125
Within Groups	123.677	255	.485		
Total	126.486	258			

4.9 Impact of I.L skills on students' academic performance by department (ANOVA)

The ANOVA test was also utilized to know the department's impact of information literacy (IL) Skills on students" academic performance. Here, too no significant difference was found F=1.474, P>0.05.

Table 4.14: Impact of I.L skills on students' academic performance by Dept.

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2.195	3	.732	1.474	.222
Within Groups	126.567	255	.496		
Total	128.762	258			

FINDINGS, CONCLUSION AND RECOMMENDATIONS

The chapter gives the following findings, discussion, conclusion, and recommendations

4.1

4.2 Major Findings of the Study

The major findings, as brought by this study, are given as under:

4.2.1 Ability to identify the Need, locate and access information

1. Most respondents (56.7%) agreed that they could formulate questions on their specific information needs. They are also able to use various sources for their needed information. The mean value was found to be (3.4942), which meant that they were moderately skilled.
2. 52.1% of respondents effectively used library catalogue cards and OPAC. The mean value i-e 3.3436 shows that the respondents were skilled moderately
3. 41.4% of respondents agreed they could use a bibliography or reference list to find their needed information. In this field mean value appeared to be 3.1042, which shows that the respondents were skilled moderately
4. 51.2% of respondents believed they could find their needed documents by searching access points by author, title, and subject. The mean value was (3.2519) and hence were moderately skilled.
5. Our findings showed that 61.4% of respondents agreed that they were able to re-evaluate the initial information needed to clarify, revise or refine the question. The mean value was 3.5174, which meant that they were highly skilled
6. 54.0% of respondents agreed that combining synonyms in their search using the Boolean operator "OR" helped them find more documents on their topics online. The mean value was 3.3552, and they were moderately skilled.
7. 46.0% of respondents agreed

they could narrow their search on a particular topic using the Boolean operator "AND." The mean value was 3.2355, and hence the respondents were moderately skilled.

8. 46.7% of respondents agreed they could remove unwanted documents from their search using the Boolean operator "NOT". The mean value of 3.8417 showed that the respondents were moderately skilled.

9. 71.0% of respondents agreed that they could formulate the right keywords in searching for Online information. The mean value i-e 3.8417 showed that respondents were highly skilled

4.2.2 Ability to Evaluate Information

1. Regarding their ability to evaluate information, 52.5% of respondents agreed that they could competently evaluate the information no matter the source. The mean value (3.3359) showed that they were moderately skilled.

2. Similarly, 59.5% of respondents agreed that they can evaluate print and online sources based on their criteria. The mean value was found to be 3.5792, and hence they were highly skilled.

4.2.3 Ability to use Information

1. 68.7% of respondents agreed they could select materials and summarize them in their own words for personal use. The mean value in this regard was 3.6718, which shows that they were highly skilled

2. 67.2% of respondents agreed they could preserve and store information for future use. The mean was found to be 3.6834, and they were highly skilled.

3. 59.1% of respondents agreed they can use acquired information effectively to produce an article or thesis. The mean value was found to be 3.5560, and it showed that they were highly skilled.

4. 67.1% of respondents agreed they can present and communicate information to others in an appropriate and usable format. The mean value of 3.8263 showed that they were highly skilled.

5. 59.5% of respondents agreed they can cite and acknowledge others" work.

Here, the mean value of 3.5598 showed that they were highly skilled.

4.2.4 Student's information literacy skills in evaluating the required information sources

4.2.4.1 Evaluation of the required information sources

1. Most respondents, i.e., 66.4%, agreed that they could summarize the main ideas extracted from gathered information. The mean value was (3.7375).

2. Most respondents, i.e., 65.2%, agreed that they could examine and compare information gathered from various sources to evaluate reliability, validity, accuracy, and authority. The mean value was (3.7838)

3. Most respondents, i.e., 63.7%, agreed they could synthesize main ideas to construct new concepts for their academic work. The mean value was (3.5869).

4. The majority of the respondents, i.e., 61.7%, agreed that they could compare new knowledge with prior knowledge in determining the value- added, contradictions, or other unique characteristics of the information. The mean value was (3.6525).

5. Most respondents, i.e., 59.8%, agreed that they could validate their understanding and interpretation of the information by talking to other people, teachers, subject experts, etc. The mean value was (3.6100)

6. Most of the respondents, i.e., 56.7%, believed that they could not Evaluate online sources based on their criteria. The mean value was (3.4479)

7. Most respondents, i.e., 62.2%, agreed that they can evaluate print sources based on their criteria. Here, the mean value was (3.6216)

4.2.5 Impact of Information Literacy Skills on Students Academic performance

4.2.5.1 Impact of Information Literacy Skills

1. The majority of the respondents, i.e., 68.7%, agreed that Information literacy skills improved their continuous assessment. The mean value was 3.6409.

2. Most respondents, i.e., 74.72%, agreed that Information literacy skills Improved their assignments.

3. The majority of the respondents,

i.e., 73.4%, agreed that Information literacy skills increased their efficiency.

4. Most respondents, i.e., 72.6%, agreed that information Literacy Skills helped them handle their academic tasks effectively.
5. Most respondents, i.e., 72.9%, agreed that Information literacy (IL) skills helped them deliver their academic tasks systematically and consistently.
6. Most respondents, i.e., 68.7%, agreed that Information literacy skills could help them overcome communication barriers.
7. The majority of the respondents, i.e., 59.4%, agreed that Information Literacy skills help them search library databases for the relevant materials for their study.
8. Most respondents, i.e., 63.7%, agreed that Information literacy enhances their examination preparation and grade.
9. The majority of the respondents, i.e., 74.5%, agreed that Information literacy skills help them obtain learning materials from their course teachers.

4.3 Discussion

The result related to the level of information literacy skills is high as most students can identify, locate, access, evaluate, and ethically use their needed information. The result of the first objective is contradictory to that of the study carried out by Kousar and Mehmood (2013), who found that undergraduate engineering students have poor information literacy skills and are low level, it is because this research studied undergraduate students of the faculty of management and information sciences while they studied first-year engineering undergraduate students. The result also differs from the study by Santharooban (2016), who revealed that undergraduate medical students have a poor and very low level of information literacy skills because the study was carried out in the medical field and a different culture and environment. However, the result is in line with Anunobi and Udem (2015) study. They found that library and information science postgraduate students possess information literacy skills and exceptionally high skills in using information. This finding is in line with Irwati (2009), who concluded that library and information science students have very good information literacy skills. However, the result might be unreliable because the study sample was limited to only five students. This result is also similar to that of soleymani (2014), who found that the faculty of management and information science students had the highest level of information literacy skills.

The findings regarding evaluating information sources are in line with Zulfiqar (2017), who found that most students could determine and summarize the main ideas. The respondents could also examine and compare content to ensure reliability, validity, accuracy, and authority of information gathered from various sources.

The result regarding the impact of information literacy skills on the academic performance of undergraduate students revealed a positive influence, as most of the students agreed with the facts. The finding of this study is similar to that of Anandhali (2018), who found that information literacy skills positively influence undergraduate students' academic performance. The study is also in line with Soleymani (2014), who conducted a study at Isfahan medical university and found that information literacy skills positively affect students' academic performance. The result is contradictory to that of the study by Salleh. et al. (2011) revealed that there is no impact of information literacy skills on the academic performance of undergraduate students. The results also match with the study carried out by Banik and Kumar (2019). They revealed that the GPAs might be increased by increasing the information literacy skills, which implies that information literacy skills positively impact the academic performance of undergraduate students. The result of this study is not misleading and is mainly supported by the other study, and those that were not in support were carried out in other countries.

4.4 Conclusion

The study was undertaken with the chief aim of analyzing the impact of information literacy skills on the academic performance of the Undergraduate students at the University of Peshawar. The study's target population consisted of undergraduate students of the faculty of management and information sciences. The first objective of this research was to assess the undergraduate students‟ Information Literacy (IL) Skills at the University of Peshawar.

The objective was achieved successfully. Their level of information literacy skills was high, as they were able to formulate a question on their information need and were competent enough to use various sources to increase their familiarities with their needed information. They could effectively use library catalogues, bibliographies, or reference lists to find documents for their needed information. They were also competent enough to find all the documents using a catalogue and searching access points. Results showed that they could evaluate information to clarify, revise or refine the questions. They were skilled in finding more documents online on their topics by combining synonyms in their search using the Boolean operator "OR." They could narrow their search on a particular topic using the Boolean operator "AND." They knew how to remove unwanted documents from their search using the Boolean operator "NOT". They could formulate the right keywords in searching for Online information. They had skilled in competently evaluating information no matter the source and could evaluate print and online sources based on their criterion. They could select materials and summarize them in their own words for personal use. They could preserve and store information for future use. Our results showed that they could use the acquired information to produce an article or thesis and communicate and present information to others in an appropriate and usable format.

The second objective was to determine the use of students' IL skills in evaluating the required information. Source. Results showed that the respondents were experts in summarizing the main ideas extracted from the information gathered. They had the skill to examine and compare information gathered from various sources to evaluate reliability, validity, accuracy, authority etc. They could synthesize main ideas to construct new concepts for their academic work. They could compare new knowledge with previous knowledge to determine the information's value-added, contradictions, or other unique characteristics. They used to validate their understanding and interpretation of the information through discussion with other individuals, teachers, subject-area experts, etc., to evaluate online and print sources based on their specific criteria.

The third objective of our research was to analyze the Impact of information Literacy Skills on undergraduate students' academic performance at the University of Peshawar. Most respondents believed that information literacy skills have positively impacted their academic performance. They opined that information literacy skills improved the conduct of their continuous assessment and improved their assignment. Information literacy skills increased their efficiency, helped them handle their academic task systematically and consistently, and has overcome their communication barrier. Information Literacy skills helped them search library databases for the relevant materials of their choice and improved their examination preparation and grade.

4.5 Recommendations

Based on the findings and discussion, it is recommended that

1. Information literacy programs should be incorporated into the university's curricula as a compulsory subject.
2. IT training is recommendable for teachers of the faculties so that they may be able to assist their students in retrieving their needed information.
3. Female students have higher information literacy skills than males. Therefore, additional efforts such as orientation and training should be arranged to enhance the information literacy skills of male students.
4. This research study was completed at the University of Peshawar. It is recommended that the same studies should be explored in other universities in Pakistan.

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