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Perceptions of Teacher Education Students in Kerala about Information Literacy Skills: An assessment

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ABSTRACT

Information literacy skills are essential for individuals to be life-long learners and to be the catalysts of information societies. The review of literature shows that there is a dearth of studies on assessment of information literacy (IL) skills of teacher education students, particularly in India. Assessments of both perceptions of teacher educations students about their IL competencies and their actual level of IL skills were made in many western countries either using standardised tools or locally developed tools. The present study is intended to address the gap in literature in the area of perceptions of student-teachers in Kerala about their IL competencies. A survey was conducted among the students of teacher education institutions (TEIs) in government, government aided and unaided sectors. Sample was selected from students specialising in Languages, Mathematics, Natural Sciences, Physical Sciences and Social Sciences across Kerala. The questionnaire for the purpose was adapted from previously tested ones following ACRL Standards, and adapted to make it appropriate for the Indian context. Analysis of 772 responses revealed that teacher education students in Kerala have high level of perceptions about their IL competencies. Previous investigations reported that when assessments are made, usually students over-estimate or under-estimate their IL self-efficacies. Therefore, it is recommended that another study to be conducted to assess the actual IL skills of these students.

KEYWORDS: *Information literacy assessment, teacher education students, student-teachers, information skills, IL competency, Information literacy Kerala, Teacher Education Kerala*

INTRODUCTION

"I wish someone had taught me how to develop my information literacy skills through resource-based learning in these ways in school"(Asselin and Elizabeth E. Lee, 2002, p. 1). This is a wish of a pre-service teacher reported by Asselin (2002), and that could be a representative remark of other teacher education students as well. The society and the academic community in particular have taken it for granted that every student irrespective of their domain of knowledge, might have acquired the skills necessary to interact with information such as building search strategies, evaluating information, organising and synthesising information etc. in previous stages of their academic path. Teacher education sector also is not different.

The effective way to impart information literacy skills among student-teachers is to integrate information literacy (IL) modules into the core curriculum of teacher education programs(Crouse & Kasbohm, 2005; Kovalik et al., 2010). The National Council of Teacher Education (NCTE) is the regulatory body in India which controls the teacher education system in the country. In continuation of the publication of the National Curriculum Framework (NCF) in 2005, the NCTE made a major revision in the regulations in 2014. The NCF envisages libraries as the essential component of every schools. However, the NCF failed to envision the information literate teachers for the country. There should be provision for collaboration between faculty and librarians of teacher education institutions (TEIs) to promote IL instruction.

Being the major stakeholders in the process of moulding future citizens, teachers have to play a key role(Crouse & Kasbohm, 2005). Due to the peculiarity of teacher-student relationship, if teachers follow information practices ethically, the students would imbibe the ethical practices unknowingly. To begin with, they must be information literates. To make information literacy as fundamental skill for teachers, there must be provisions to impart IL instruction to the student-teachers. In advanced countries, there are mandatory requirements to inculcate IL among student-teachers (Kovalik et al., 2010). A preliminary analysis of the curricula followed by Teacher Education Institutions in Kerala revealed that there are no formal opportunities for TE students to learn and practice information literacy. The TEIs in both government and aided sectors have excellent libraries and qualified librarians. But personal discussion of the researcher with librarians of such institutions revealed that the libraries are heavily used by student-teachers but no formal IL programs are designed to deliver for faculty or student-teachers. It is in this context that the present study was made to ascertain the level of perceptions of teacher education students about their IL competencies Kerala.

The concept of information literacy has been evolved over several decades from 'library instruction programs' or 'user education programs'(Behrens, 1994; Onyancha, 2020; Sample, 2020). The term was first coined by Paul Zurkowsky when he mentioned that "people trained in the application of information resources in their work can be called information literates" (Zurkowski, 1974). Later, several scholars and professional bodies defined IL from different angles. The most popular definition of information literacy is the one developed by the American Library Association (ALA). In 1989, the ALA defined that "to be information literate, a person must be able to recognize when information is needed, and have the ability to locate, evaluate, and use effectively the needed information"(American Library Association, 2000). Henceforth, the definition grown into a multi-dimensional concept having impact on several areas. Later in 2000, Association of College and Research Libraries (ACRL) developed Information Literacy Competency Standards for Higher Education (Association of College and Research Libraries, 2000). When the concept was formally introduced in 1989, the objective was only to popularise information literacy instruction, but with the publication of ACRL Standards in 2000, the assessment of IL of individuals became another objective. Subsequently, IL Standards were developed specifically for several domains such as Nursing, Science and Engineering/Technology, Teacher Education etc. Now these Standards are used by

administrators, instructors and academic librarians as guidelines for designing IL programs, and benchmarks for IL assessments. For the present study, the 'Information Literacy Standards for Teacher Education' adopted by ACRL in 2011 is used as the benchmark.

REVIEW OF LITERATURE

The corpus of literature is rich with discussions on different aspects of Information literacy. Scholars discuss a series of issues such as theoretical backgrounds, practical implications, pedagogies suitable for IL delivery, development of IL modules, collaborations between faculty and librarians, assessment of IL competencies etc. (Gammons & Inge, 2017; Lindauer, 2004). Among those studies reporting assessments of IL competencies, there is a dearth of literature discussing practical implementations of standardised tools developed in line with the ACRL Standards or other frameworks (Doyle et al., 2019; Gammons &Inge, 2017). However, many articles report perceptions of individuals about their IL competencies (Catalano, 2010b; Michalak et al., 2017). Majority of them used locally developed instruments. 'Perception'is defined as peoples' judgements about their competencies (Bandura, 1978)(Bandura, 1978; Bandura & Adams, 1977). As Mahmood states, perception studies cannot be treated as a substitute for assessing actual IL skills (Mahmood, 2016b). A major criticism against self-efficacy studies is that tools used for such studies might not have tested for reliability or validity, and hence may not be suitable for replication.

In this context, it is reasonable to refer to the development of a self-efficacy scales developed by Kurbanoglu, et al. (Doyle et al., 2019; Kurbanoglu et al., 2006). Kurbanoglu et al explain the steps taken to develop a scale to measure the IL competency. Initially a tool with 40 questions/ statements was tested by distributing it among 374 teachers. After five stages of refinements the scale was narrowed down to a set of 28 questions. The advantage of such a valid tool is its replicability in other instances. Later, as a guide to the development of an assessment tool, Doyle et al designed an instrument called Perception of information Literacy Scale (PILS) that follows the ACRL Framework for Information Literacy for Higher Education (Doyle et al., 2019). This tool contains 36 questions that measures different constructs of IL.

In one of the first ever assessments of IL skills using a standardised tool, Ferguson, Neely, and Sullivan made a survey among the Biology students of University of Maryland, Baltimore (Ferguson, Neely, Sullivan, Literacy, et al., 2006). This was one of the first studies credited with design and use of a tool in line with the ACRL IL competency standards. The research questions of the study were 'whether students report high level of perceptions about their IL skills compared to the actual skills', 'how competent are them to identify components of bibliographic citations', 'how much was the awareness about plagiarism, copyright, fair use' etc. The questionnaire contained 51 items drawn from the concepts defined by the ACRL Standards(Association of College and Research Libraries, 2000) as well as those adapted from the Neely test (Neely, 2000). The study found that students reported a high level of perceptions about their ILCs.

Walsh conducted a review of related literature to understand the popular assessment methods followed by professionals (Walsh, 2009). He found that multiple-choice question format was the most favourite tool of the professionals in assessing IL skills. One of the benefits of the questionnaires other than the established merits such as convenience, ease of use etc., is the replicability of the tool. He cited studies of Cameron et al (2007), Gross and Latham (2007) etc. as the ones which used ACRL Standards for designing assessment tools. He has mentioned some of the tools tested for validity, reliability, etc. as well (Cameron et al., 2007; Connor et al., 2001).

Catalano implemented a self-reporting methodology to assess the gap between the perceptions and real IL skills of Education students (Catalano, 2010b). The majority of the 172 respondents reported that they were comfortable in different tasks such as finding information online and from a library, comfortable in developing search strategies,

evaluating information, integrating information into the existing information, organising information, etc. However, they were not comfortable with navigating subject specific databases. She concluded that as in many other studies reported, respondents of her study over-estimated their IL competencies. To understand the level of perceptions about IL skills of MLIS graduates, Hebert conducted an exploratory research (Hebert, 2018). The objectives of the study were to find out (a) the level of the perceptions about IL, (b) the level of the actual skills demonstrated, and (c) whether there is any relationship between perceived and actual IL skills. Forty-two first year students and 30 second year students were participated in two consecutive implementations of the investigation. The questionnaire consisted of four questions to measure perceptions, 18 to measure specific actual skills, and five to collect demographic details. She found that, while in the first instance students perceived high level of competency in a single area 'evaluation of information', in the second instance participants demonstrated very high perceptions in all the six areas subjected for assessment. The study reported that a positive correlation existed between perceptions and actual demonstration of IL skills.

An article by Rosmanand Krampen explains the importance of perception studies in the area of IL assessment (Rosman et al., 2015). They studied the level of perceptions of 81 Psychology students of Saarland University in Germany. Their study corroborated the hypothesis that self-efficacy reporting correlate higher with measurement of actual IL skills if the assessment is done after the IL instruction. The finding is endorsed by another study conducted among International students in USA (Michalak et al., 2017). Authors recommended that studies with both measurements should be encouraged in actual assessments.

Mahmood conducted a systematic review of those studies which compared 'perceptions about IL skills' and 'actual IL skills' to understand the existence or non-existence of Dunning-Kruger effect (Mahmood, 2016). Dunning-Kruger effect postulates that usually individuals tend to over-estimate or under-estimate their IL skills than the actual IL skills. He evaluated 53 articles which compared perceptions and actual skills. The majority of the studies reviewed by had used either locally developed questionnaires or established tools. Of the 53 articles reviewed, 34 articles reported of over-estimation and five reported under-estimation of IL skills than the actual skills. The review is an indication that perception studies may not provide reliable measure of IL skills. Therefore, testing actual IL skills with standardised tools is important.

From the literature reviewed here, it can be inferred that though there is a tendency by participants to over-estimate or under-estimate their skills in perception assessments, they have a special role in the IL measurements. As Rosman and Krampen (2015) pointed out, this measure has validity in educational psychology fields because the subjective ability is considered as crucial in human motivation, Teacher education is a domain that is closely related to educational psychology, and hence, the pupils know the value of perceptions. Another reason is that perception studies motivate participants to perform better in future because of their reflections on self-competencies.

OBJECTIVE OF THE STUDY

The objective of the study was to ascertain the level of perceptions of teacher-education students (TEIs) in Kerala about their information literacy competencies. The study intents to answer a few research questions mentioned below

RESEARCH QUESTIONS

The study would like to find answers for the following research questions:
What is the level of Perceptions of teacher-education students about their skills to: -

- define and articulate the need for information? (Standard 1)
- locate and select information based on it appropriateness to the specific information need? (Standard 2)
- organise and analyse the information in the context of specific information need? (Standard 3)

- synthesise, process, and present the information in a way that is appropriate for the purpose? (Standard 4)
- evaluate discrete pieces of information, and the entire information seeking process? (Standard 5), and
- ethically use and disseminate information? (Standard 6)

METHODOLOGY

The present study used survey method to collect data from student-teachers. The questionnaire consisted of a few questions to collect demographic profile of the respondents and 36 five-point Likert scale questions to collect their Perceptions about Information Literacy Competencies (ILCs). To a large extent, the questionnaire was developed by using the ACRL Standard for Teacher Education (EBSS Instruction for Educators Committee, 2011) and then adapted with a few other studies conducted earlier in advanced countries(Beile, 2005, 2007; Catalano, 2010). Those tools developed in terms of the ACRL Standards for Higher Education (Association of College and Research Libraries, 2000) only were used for adaptation. It was ensured that the adapted questionnaire is suitable for the context of the present study.

The study population consists of Teacher Education Students (student-teachers) undergoing Bachelor of Education (B. Ed) program in Teacher Education Institutions in Kerala. There are three categories of institutions in Kerala imparting B. Ed. program such as Government colleges (4 in nos. of which one is an Institute for Advanced Studies in Education), Government-aided colleges (17 nos.), and Un-aided colleges (143 nos.). Since 2014, in accordance with the new regulations of NCTE, the B. Ed program is of two years' duration and every year 50 students each are enrolled in each batch. The specialisations include Languages (Arabic, English, Malayalam, Sanskrit etc.), Mathematics, Natural Sciences, Physical Sciences, and Social Sciences. The 50 students admitted into each batch may opt specialisations mentioned above depending upon the availability of specialisations in each institution. Hence, there are approximately 400 students in government colleges, 1700 students in aided colleges and 14300 students in un-aided colleges.

From this population of 16,400 students a sample was selected for the study. Stratified random sampling method was resorted to identify the sample. At the first level, as there are only four government colleges all the four colleges were selected, and 8 colleges each from aided and un-aided streams were selected. These colleges are affiliated to any one of the four universities – Kannur University, Mahatma Gandhi University, University of Calicut, or University of Kerala - depending upon the geographical jurisdiction. As far as possible, except government colleges, two colleges each were selected from each affiliating university area, and subsequently from them, one each from different districts to make the sample representative. In total, 20 colleges were selected (4 government colleges, 8 aided, and 8 un-aided). The students belong to each category of institution were considered as distinct population, and then selected sample as per the formulae suggested by Krejcie and Morgan (Krejcie & Morgan, 1970). As such 886 respondents were selected (197 from government, 314 from aided, and 375 from un-aided), and 1500 questionnaires were distributed personally during February-March 2021, and August-September, 2021. However, only 772 responses were returned (61 from government, 328 from aided, and 383 from un-aided) which means a response rate of 51.46%

To assess the level of Perceptions of student-teachers about their ILCs corresponding to each Standard, mean percentage scores of responses were calculated. For this purpose, right answers for multiple choice questions were scored with 1 and wrong answers with 0; and responses for five-point Likert scale were scored with 1 for Strongly disagree, 2 for Disagree, 3 for Neutral, 4 for Agree, and 5 for Strongly agree. Mean percentage scores of all the 772 responses were calculated. Then the Mean % score corresponding to each Standard was calculated. The formulae used to find mean percentage score was

$$\left[MPS = \frac{Mean\ Score \times 100}{Maximum\ possible\ score}\right].$$

This result was classified into one of the four groups as 'Low' if the mean % score is less than 35%, 'Average' if the mean % score is between 35 to 50 percent, 'High' if the mean % score lies in the interval of 50% to 75%, and 'Very high' if the mean % score is above 75% (Loyd & Abidin, 1985). The following table gives the Mean, SD, Mean %Score and Z value of the variable considered.

RESULTS AND INTERPRETATION

The questionnaire for the study was framed following the ACRL Standards for Teacher Education and by adapting with a few instruments used by previous studies (Beile, 2005; Catalano, 2010b) who developed their tools from the Performance indicators and Outcomes stated under the ACRL Standards for Higher Education (Association of College and Research Libraries, 2000). The Standards for Teacher Education (EBSS Instruction for Educators Committee, 2011)states that:

Standard 1: The information literate teacher education student defines and articulated the need for information and selects strategies and tools to find that information

Standard 2: The information literate teacher education student defines and articulated the need for information and selects strategies and tools to find that information

Standard 3: The information literate teacher education student organizes and analyses the information in the context of specific information needs and the developmental appropriateness for the audience

Standard 4: The information literate teacher education student synthesizes, processes, and presents the information in a way that is appropriate for the purpose for which information is needed

Standard 5: The information literate teacher education student evaluates discrete pieces of information as well as the entire information seeking process

Standard 6: The information literate teacher education student knows how to ethically use and disseminate information

Demographic and academic details of the participants:

A few questions were asked to collect data about the participants' demographic and academic profiles. The analysis of the data revealed the following details:

Gender-wise, majority of the participants were female (727; 94.2%) and remainder were male (45; 5.8%).

The data regarding subject of specialisation of the respondents shows that while 214 (27.7%) specialise in Languages, 144 (18.7%) specialise in Natural Sciences, 153 (19.8%) in Physical Sciences, 164 (21.2%) in Social Sciences and 97 (12.6%) specialise in Mathematics.

Majority of the respondents (490; 63.5%) were in the age group of 26-30. Of the 772 respondents, 139 (18.0%) were in the age group of less than 26, 106 (13.7%) were in the 31-35 age bracket, and 37 (4.8%) were in the 36-40 group. None of them were in the greater than 40 age group.

It is interesting that, of the 772 study participants, 581 have postgraduate degrees like M. A., or M. Sc. or in M. Com. While 191 (24.7%) have no postgraduate degree, 262 (33.9%) have M. A., 307 (39.8%) have M. Sc. and 12 (1.6%) have M. Com.

Another question gathered information about participants' frequency of library visit. Nineteen (2.5%) respondents visit library every day. While 100 (13.0%) respondents visit it twice a week, 162 (21.0%) visit only once in a week. When the daily visitors, and other frequencies like twice in a week and once in a week combined together, 281 (36.5%) survey participants visit their libraries frequently. When 15 (1.9%) respondents reported that they have never visited their library, 332 (43.0%) visit the library occasionally, and 144 (18.7%) visit rarely.

Analysis to ascertain level of perceptions

Research question 1: What is the level of perceptions of the student-teachers about their competency to define and articulate need for information and to select strategies and tools to find that information.

To assess the level of Perceptions, the researcher identified six variables from the Performance indicators and Outcomes defined in Standard 1. The variables include self-efficacy to express information need, competency to determine nature and extend need, competency to apply skills, etc. One of the statements given in the questionnaire was 'I am able to determine the scope of the information needed'. The Table 1 shown below displays the responses of the student-teachers:

Table 1: Frequency of responses to the statement 'I am able to determine the scope of the information… '

Responses	Frequency	Percent
Strongly Disagree	46	6.0
Disagree	131	17.0
Neutral	239	31.0
Agree	326	42.2
Strongly Disagree	30	3.9
Total	772	100.0

To the statements given above, 326 (42.2%) individuals responded that they 'agree' to the statement. Only 46.1% (326 agreed + 30 strongly agreed) of the respondents reported self-efficacy to determine the scope of needed information. It is interesting to note that 239 (31.0%) respondents took a neutral position. The neutral stance indicates indecisiveness.

Table 2: Mean, SD and Mean % Score for variables related to Standard 1

Variable	N	Mean	SD	Mean % score
Perceptions about Standard 1	772	18.65	2.82	62.18

As the Table 2 shows, the mean of the responses to six variables considered is 18.65 and Mean Percentage Score is 62.18%. As mentioned above, if the mean percentage score lies between 50% and 75%, the level of the Perceptions will be assessed as 'High'. Hence it can be inferred that the level of the Perceptions of student-teachers about their competency to define and articulate the need for information is 'High'.

Research question 2: What is the level of the Perceptions of student-teachers about their competency to locate and select information based on its appropriateness to the specific information need? (Standard 2)

The 2nd Standard lists out two Performance indicators (PIs) and seven Outcomes. Based on these PIs and Outcomes, seven variables such as ability to access and retrieve information, ability to use variety of tools, identification of key ideas, use of inter-library loan etc. were identified. The following table (Table 3) illustrate an example of the statements used in the questionnaire

Table 3: Perceptions about the 'competency to identify key ideas that can extend…'.

Responses	Frequency	Percent
Strongly Disagree	38	4.9
Disagree	56	7.3
Neutral	181	23.4
Agree	418	54.1
Strongly agree	79	10.2
Total	772	100.0

The table shows that if the respondents who 'agree' and 'strongly agree' to the statement are combined, 497 (64.3%) respondents perceived that they have competency to identify key ideas. Besides, 181 (23.4%) of the respondents were 'neutral to the statement.

Table 4: Mean, SD and Mean % Score of the variables related to Standard 2

Variable	N	Mean	SD	Mean % score
Perceptions about Standard 2	772	22.22	2.84	63.47

The mean of the responses to seven variables assessed is 22.22 and Mean Percentage Score is 63.47%. As the mean percentage score lies between 50% and 75%, the level of the Perceptions is considered as 'High'. Hence, it can be inferred that the level of the Perceptions of student-teachers about their competency to

locate and select appropriate information is 'High'.

Research question 3: What is the level of the Perceptions of student-teachers about their competency to organise and analyse the information in the context of specific information needs? (Standard 3)

The student-teachers were requested to respond to five statements corresponding to six variables selected from the Performance Indicators and Outcomes of Standard 3. The statements were 'I can organise obtained information in a meaningful way', I am well aware of citation management tools' etc. Responses to one such statement is analysed and presented in the table 5.

Table 5: Responses to the statement 'I can organise obtained information in a meaningful way'

Responses	Frequency	Percent
Strongly Disagree	50	6.5
Disagree	102	13.2
Neutral	235	30.4
Agree	317	41.1
Strongly agree	68	8.8
Total	772	100.0

Apparently, 385 (almost 50%) respondents 'agree' or 'strongly agree' that they are competent to organise obtained information in a meaningful way. Those who perceive negatively about the statement is only 152 (19.7%) respondents. The result of the analysis conducted is displayed below (Table 6):

Table 6: Mean, SD and Mean % Score of the responses to the variables related to Standard 3

Variable	N	Mean	SD	Mean % score
Perceptions about Standard 3	772	13.97	3.12	55.88

It is evident from the Table 6 that the mean percentage score is 55.88%. As the mean percentage score lies between 50% and 75%, the level is considered as 'High' in a scale of 'Low', 'Average', 'High', and 'Very high'. Hence, it is concluded that the student-teachers have 'High' level of Perceptions about their competencies to organize and analyse the information in the specific context of information need'.

Research question 4: What is the level of the Perceptions of student-teachers about their competency to synthesise, process, and present the information in a way that is appropriate for the purpose for which information is needed? (Standard 4)

A few statements representing eleven variables identified from three Performance indicators and 16 Outcomes were included in the questionnaire. Some of the variables were ability to determine whether to incorporate or reject viewpoints, integrate new information with previous information, drawing conclusions etc. Analysis of one of the statements corresponding to the Standard 4 is given below in the Table 7.

Table 7: Result of the analysis of responses to the statement 'I can communicate the information effectively …'

Responses	Frequency	Percent
Strongly Disagree	34	4.4
Disagree	59	7.6
Neutral	193	25.0
Agree	407	52.7
Strongly agree	79	10.2
Total	772	100.0

Altogether, 486 (62.9%) respondents (407 agreed and 79 strongly agreed) claimed that they are competent to communicate the information effectively to others. Still, 93 (12%) respondents perceive that they are not competent to communicate information effectively.

Table 8: Mean, SD and Mean % Score of the variables related to Standard 4

Variable	N	Mean	SD	Mean % score
Perceptions about Standard 4	772	37.46	5.84	68.12

From the Table 8, it can be seen that themean is 37.46 and the mean percentage score is 68.12%. If the mean percentage score lies between 50% and 75%, the level is considered as 'High' in a scale of 'Low', 'Average', 'High', and 'Very high'. Hence, it is concluded that the student-teachers have 'High' level of Perceptions about their competencies to synthesise, process, and present the information in a way that is appropriate for the purpose for which information is needed.

Research question 5: What is the level of the Perceptions of student-teachers about their competency to evaluate discrete pieces of information as well as the entire information seeking process? (Standard 5)

In order to answer the above question, mean percentage score of the variables assessed was calculated. Six variables identified from two Performance indicators and seven Outcomes were posed to the respondents in the form of statements. Examples of the variables included were the competency to find trustworthy information, ability to determine accuracy of information, ability to check credentials of websites etc. One of the statements and its analysis are given below in the Table 9.

Table 9: Result of the analysis of responses to the statement 'I can communicate the information effectively to others'

Responses	Frequency	Percent
Strongly Disagree	32	4.1
Disagree	117	15.2
Neutral	192	24.9
Agree	340	44.0
Strongly agree	91	11.8
Total	772	100.0

To the statement, 431 (55.8%) student-teachers responded positively, i.e. 340 (44.0%) respondents agreed, and 91 (11.8%) respondents strongly agreed. Five more similar statements were collected the Perceptions of student-teachers regarding ILCs stated in the Standard 5. The result of the analysis is given below (Table 10)

Table 10: Mean, SD and Mean Percentage Score of the variables related to Standard 5

Variable	N	Mean	SD	Mean % score
Perceptions about Standard 5	772	17.52	2.87	58.40

As given in the Table 10, the mean of the responses to six variables considered to measure the Perceptions about competencies stated in the Standard 5 is 17.52 and mean percentage score is 58.40%. The mean percentage score lies between 50% and 75% indicates 'High' level of Perceptions. Therefore, the conclusion is that the level of the Perceptions of student-teachers about their competency to evaluate discrete pieces of information as well as the entire information seeking process is 'High'.

Research question 6: What is the level of the Perceptions of student-teachers about their competency to ethically use and disseminate information? (Standard 6)

There were two variables included in the corresponding statements. The variables such as competency to use 'fair use' and 'plagiarism', research ethics were considered. One of the statements posed was about the knowledge of 'fair use' and 'plagiarism'. The responses to the statement is illustrated in the Table 11.

Table 11: Result of the analysis of the statement 'I am aware of Fair use and Plagiarism'

Responses	Frequency	Percent
Strongly Disagree	41	5.3
Disagree	93	12.0
Neutral	225	29.1
Agree	311	40.3
Strongly agree	102	13.2
Total	772	100.0

If the responses 'Agree' and 'Strongly Agree' are cumulated, it can be stated that the 413 (53.5%) student-teachers perceive that they are aware of 'fair use' and 'plagiarism'. The standard defines that "information literate teacher education student knows how to ethically use and

disseminate information" (EBSS Instruction for Educators Committee, 2011, p. 8)

The total 772 responses to the statements were analysed. The result is presented in the Table12.

Table 12: Mean, SD and Mean % Score of the variables related to Standard 6

Variable	N	Mean	SD	Mean % score
Perceptions about Standard 6	772	5.41	1.81	54.15

The table shows that the mean percentage score of the responses is 54.15%. As the score lies between 50% and 75%, the level of the Perceptions can be considered as 'High'. That means, the level of the Perceptions of student-teachers about their competency to ethically use and disseminate information is 'High'.

FINDINGS AND DISCUSSION

The objective of the study was to ascertain the level of Perceptions of teacher-education students (TEIs) in Kerala about their information literacy competencies. In order to do so, a few specific research questions were formulated, and variables were identified from PIs and Outcomes of each Standards of Teacher Education (EBSS Instruction for Educators Committee, 2011). The number of variables vary depending on the nature of individual Standards. The result of analysis of these variables were presented in the previous section. The levels of perceptions are indicated on a scale of 'low', 'average', 'high', and 'very high'). The implication of these results are listed in this section.

1. The academic profile collected from the participants revealed that of the total 772 respondents, 581 (75.25%) have postgraduate degrees like M. A. or M. Sc. or M. Com. The advanced qualifications of the participants might have influenced the level of perceptions of the student-teachers because of their academic experience in previous institutions

2. The first research question inquired the level of perceptions of teacher-education students about their skill to define and articulate the need for information. The analysis shows that the teacher-education students in Kerala have high level of perceptions about their competency to define and articulate information. This result endorses the finding of previous studies (Catalano, 2010b; Ferguson, Neely, Sullivan, & Ferguson, 2006; Hebert, 2018). Ferguson et al found that almost 90% of the respondents were most comfortable in seeking information, and 78% were comfortable in framing questions according to their information need. Similarly, 92% of respondents of the study of Catalano reported they were 'comfortable' in finding information according to the need. In a similar study, (Hebert, 2018) reports of high level of perceptions of LIS students in developing a topic.

3. The second research question of the study sought to assess the student-teachers' level of perceptions about their skill to locate and select information based on its appropriateness to the specific information need. As per the data given in Table 4, the mean % score of the responses of students is 63.47, which indicates high level of perceptions. That is, the students perceive that they are highly competent to locate and select information. While Ferguson et al reported that the majority of participants of their study were comfortable in tasks such as implementing search strategies effectively, retrieve information from various sources, and using classification schemes appropriately(Ferguson, Neely, Sullivan, & Ferguson, 2006), Catalano found that 71% of her participants were 'comfortable' in constructing search strategies (Catalano, 2010). To a question on comfortability to access potential sources of information, 85% of respondents of Catalano reported that they were 'comfortable'(Catalano, 2010). The same finding is supported by the research of (Hebert, 2018), which reported higher level of perceptions in locating and accessing information sources.

4. Another research question corresponding to the Standard 3 ascertained the level of perceptions of teacher education students about their competency to organise and analyse the information in the context of specific

information need. In organising information for practical situations, Catalano (2010) found almost the same result i. e., 77% of students of Education discipline were comfortable or very comfortable.

5. The fourth research question was' What is the level of Perceptions of teacher education students about their competency to synthesise, process, and present the information in a way that is appropriate for the purpose?' The study found that the teacher education students' perceptions were high. The same result was reported by Catalano, Ferguson, and Hebert (Catalano, 2010b; Ferguson, Neely, Sullivan, & Ferguson, 2006; Hebert, 2018). While 74% of the respondents were comfortable in integrating new information into the existing information in Catalano's study, 67% of respondents in Ferguson's study were comfortable. In the same context, Hebert reported that LIS students had very high perceptions about presenting information. Similarly, 64% of the study participants of Ferguson et al could revise outline of drafts based on findings.

6. The next research question ascertained the level of perceptions of student-teachers about their competency to evaluate discrete pieces of information, and the entire information seeking process. The analysis of the data proved that the teacher education students have high level of perceptions in this regard. Ferguson et al found that 74% of the students were very comfortable in this skill, and Catalano reported that 76% of her respondents were comfortable in identifying bias of publications.

7. The sixth research question assessed the level of perceptions of teacher education students about their competency to ethically use and disseminating information. The present study found that the perceptions of the teacher education students were high in ethical use and dissemination of information. Studies of Ferguson et al and Hebert also found the same result in their studies. While Heber reported of very high perceptions in citing articles, Ferguson reported high level of perceptions about understanding copyright issues, fair use and awareness about plagiarism.

CONCLUSION

The review of literature shows that assessments were conducted to ascertain the level of perceptions of individuals about their IL skills as well as the actual IL skills of individuals. Some such studies used certain benchmarks for development of tools to assess the level, and some others used locally developed tools. The advantage of those tools developed in line with ACRL Standards or Research Readiness Self-Assessment scale (RRSA) is their replicability. This study conducted with a tool that was adapted from other established instruments addressed a gap in the literature. Not many investigations were conducted in India that cover 'teacher education students' and 'information literacy'. This investigation which assessed the perceptions of teacher education students about their IL skills revealed that they have a high level of perceptions about their IL competencies. The finding corroborates the findings of other studies conducted elsewhere as well that usually students report high level of perceptions. However, another study has to be conducted to assess the level of actual IL competencies of this population.

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