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## Information Literacy Skills among Female Students of Secondary Schools in Bangladesh

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# **Information Literacy Skills among Female Students of Secondary Schools in Bangladesh**

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## **Abstract**

This study assessed information literacy skills among female students of secondary schools in Bangladesh. A structured questionnaire was developed consisting of library and ICT facilities, information literacy skills, ability to locate information, evaluate information sources, and use the approach of needed information. A total of 596 data were collected from female students of class nine of five general and five girls' high schools in the rural areas of Dhaka Districts. The study revealed that overall, 60.23% of the respondents were aware of IL; however, 49.33% of the female students were unable to locate academic information, 69.63% failed to identify information sources, and 75.17% did not know how to use the required information appropriately. It is the first endeavor to assess IL skills among female students of class nine in Bangladesh. Thus, a holistic approach can be initiated countrywide for further studies on measuring the IL skills of male and female students.

**Keywords:** Information Literacy, Skills, Female Students, Secondary Schools, Dhaka District, Bangladesh

## **Introduction**

The demand of the Fourth Industrial Revolution (4IR) requires information-literate individuals. The 4IR is characterized by a fusion of technologies that impressions the physical, digital, and biological spheres involved with artificial intelligence, robotics, 3D printing, cloud computing, advanced wireless technologies, Internet of Things (IoT), and Machine-to-Machine communication (M2M) (Alam, 2022; Bangani *et al.*, 2020). Information Literacy (IL) empowers people from all walks of life to seek, retrieve, evaluate, use and generate information effectively to achieve their personal, social, professional, and academic goals (Association of College and Research Libraries, 2022). IL is a set of skills requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use the necessary information effectively (Chartered Institute of Library and Information Professionals, 2018). The term IL was coined and used firstly by Paul Zurkowski in 1974 and then appreciated by information professionals and reputed institutions worldwide. People who are confident in using the information in the applied field of work from diverse sources are called information literate (Zurkowski, 1974). The Presidential Committee on IL stated that IL is a survival skill in the information age (Association of College and Research Libraries, 2022).

Hussain *et al.* (2022) stated that academic performance mainly depends on a student's desire to learn, and information literacy help students learn more effectively. IL has a solid relationship with learning (Williamson and Asla, 2009). Hoq (2006) suggested that the government of Bangladesh should engage in a national campaign for information literacy with the cooperation of library and information professionals. Singh (2010) recommended establishing a foundation for learning in perpetuity to build a knowledge-based society. IL is essential for establishing a knowledge-based society effectively (Chowdhury *et al.*, 2011). Hossain *et al.* (2019) found a lack of ICT skills among library professionals in rural non-government secondary school libraries in Bangladesh, where most library professionals believed that ICT literacy would increase their work efficiency. Mezbah-ul-Islam and Ahmed (2013) suggested beginning IL programs in rural and urban schools, but rural schools should be prioritized for lifelong learning.

The Sustainable Development Goals (SDGs) included 169 targets under 17 goals and are to be achieved from 2016 to 2030 (Alam and Mezbah-ul-Islam, 2020). The 4th goal of the SDGs emphasizes ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all by 2030, which was not included in the Millenium Development Goals (MDGs) (Alam, 2018; SDG, 2022). McCartin *et al.* (2019) assessed the students' IL skills before and after completing an IL workshop and a research assignment, where the last survey indicated a significant improvement in IL skills among the students. The education and application of IL should be initiated from the early stage of going to school because the school would be more interactive with other students, teachers, and a vast array of information resources (Carlton, 2021). All the societies of this information age try to educate their citizens to make them confident, independent, self-regulated, and lifelong learners (Mughari *et al.*, 2023). By learning and applying IL skills, students can achieve good grades and meet their desired educational expectations that can enhance their academic performance (Zeeshan *et al.*, 2020). Thus, it is anticipated to assess IL skills among female students of rural secondary schools in Bangladesh to build a knowledge-based society by ensuring equitable quality education and promoting lifelong learning.

## Literature Review

Usually, there are various types of literacy, such as computer literacy, visual literacy, media literacy, technical literacy, information literacy, and so on. Nowadays, the importance of information literacy is growing significantly. However, different researchers have assessed information literacy skills in different ways. Hussain et al. (2022) assessed IL abilities of Pakistan students and revealed that the ability of the students to access and use of information for their assignments, tests, examinations, and the writing of research articles were extremely limited. Mughari et al. (2023) evaluated the effect of IL on academic performance of top seven business educational institutions in Pakistan and found that IL skills of the business students appeared as a positive effect of their academic performance. Islam and Tsuji (2010) measured the IL competency, strengths, and weaknesses among the graduate students of Information Science and Library Management (ISLM) at the University of Dhaka and revealed that students had inadequate skills in the area of IL which was not discussed comprehensively in their academic course curriculum. Chowdhury et al. (2011) observed the IL concepts, standard indicators, and readiness of the Central Public Library (CPL) and examined whether the CPL is ready to assume an enhanced responsibility for IL education. They found that the CPL of Bangladesh has inadequacies in IL education programs due to the lack of physical facilities, the absence of information retrieval tools, and the low level of staff education in the CPL. They also revealed that the CPL's approaches could not meet the users' needs.

Akanda and Roknuzzaman (2012) explored the extent of agricultural IL of farmers in the northern region of Bangladesh and revealed that many of the farmers were not well aware of modern agriculture techniques, and they used such techniques for farming occasionally. They also found that farmers are moderately satisfied with getting agricultural information due to some problems, and in many cases, their satisfaction level was very low. Shoeb (2013) assessed the level of information skills and IL behavior among the business students at the Independent University of Bangladesh (IUB) and found that most of the students realized their need for IL. Islam and Rahman (2014) conducted a study on the students of Arts faculty at the University of Dhaka to assess IL competency and found that the students had limited skills in the area of IL that was not discussed extensively in their academic course curriculum. Hossain et al. (2019) explored the ICT facilities and literacy of rural non-government secondary school libraries in Bangladesh and found that most of the libraries do not have ICT facilities, and there was a lack of ICT skills among library staff. Banik and Kumar (2019) evaluated the impact of IL skills on the academic performance of undergraduate students in Bangladesh and found that family income, study hours, class attendance, past academic results, and information literacy skills were the significant factors influencing their academic performance. Billah and Rahman (2020) assessed information literacy skills among Feni University students and revealed that most students were urged to start the IL program in the undergraduate program.

Based on the available literature, few studies have been conducted in Bangladesh on evaluating IL and its implications (Hoq, 2006), assessing IL competency of ISLM graduate students of DU (Islam and Tsuji, 2010), studying IL education of CPL (Chowdhury *et al.*, 2011), shaping up IL in IUB (Shoeb, 2013), assessing IL competency of Arts faculty students of DU (Islam and Rahman, 2014), exploring IL initiatives (Dash, 2015), exploring ICT literacy of library staff in rural non-government secondary school (Hossain *et al.*, 2019), evaluating the impact of IL skill on students' academic performance (Banik and Kumar, 2019), assessing IL skills among Feni

University students (Billah and Rahman, 2020), Role of university libraries in enhancing IL skills of undergraduate students (Banik, 2021), Collective aspects of information literacy (Anwar *et al.*, 2022), Media and IL Self-Efficacy of LIS students (Tabassum *et al.*, 2023), Validating of IL self-efficacy scale (Atikuzzaman and Ahmed, 2023). However, less initiative has been made to measure IL skills among secondary school students in Bangladesh.

## **Research Methodology**

Attaining research objectives, an initiative was taken to collect data from secondary and primary sources of information. Initially, several secondary sources, i.e., journal articles, research papers, conference proceedings, theses, relevant textbooks, etc., were reviewed to know what has been written on IL and its assessment tools. The study conducted a questionnaire-based sample survey for primary data. Currently, there are 64 districts (subdivisions) under eight divisions in Bangladesh. A total of ten high schools were selected from suburban and rural areas of five Upazilas, i.e., Dhamrai, Dohar, Keraniganj, Nawabganj, and Savar of Dhaka district, considering one general high school and one girls high school as well as one government high school and one non-government high schools from each of the Upazilas. The population for this study consisted of female students studying in class nine of the selected schools. The purposive sampling method was considered to make this study more convenient. A structured questionnaire was developed for conducting the study consisting of demographic information, library and ICT facilities, six items on information literacy skills, six items on the ability to locate information, six items on information sources, and six items on using retrieved information. All the items were taken from the available IL literature related to the local area, school, general knowledge, textbooks, IL, library use, and computer lab, which were modified as per the students of class nine. The questionnaire was developed in Bengali language (local language) so that the respondents could understand it easily. Moreover, the questionnaire was individually presented among the participants to avoid difficulty understanding the questions. The researchers visited the selected schools and delivered 700 copies of the questionnaire to the female students studying in class nine. A total of 624 survey questionnaires were returned. Among them, 596 were found to be completely filled up, which were considered for analysis. The SPSS 22 assessed IL skills through descriptive statistics to satisfy the research objectives.

## **Analysis and Findings**

### **Demographic Information**

The demographic information of the 596 respondents demonstrated that the highest number of respondents were from the Nawabagon Pilot Uchcha Madyamic Balika Bidyalaya (68, 11.41%), followed by the Dhamrai Girls High School (65, 10.91), Savar Girls High School (63, 10.57%), Dhamrai Hardinge Govt. Model High School and College (62, 10.4%), Joypara Pilot Govt. High School (61, 10.24%), Kabi Nazrul Girls High School (58, 9.73%), Shakta Govt. High School (57, 9.56%), Keranigonj Girls' School and College (56, 9.40%), Nawabgonj Govt. Pilot High School and College (54, 9.06%) and Savar Adharchandra Govt. High School (52, 8.72%). Among the respondents, 310 (52.01%) were from non-government high schools, and 286 (47.99%) were from government high schools. The more significant proportion of the respondents was from Dhamrai Upazila (127, 21.31%), followed by Nawabgonj Upazila (122, 20.47%), Dohar Upazila (119, 19.97%), Savar Upazila (115, 19.29%), and Keranigonj Upazila (113, 18.96%). Among the respondents, 310 (52.01%) were from girls' high schools, and 286

(47.99%) were from general high schools (Table 1). According to Sekaran (2003), if the total population size is 75,000 or more, would be required minimum sample size of 384 respondents in research. Roscoe (1975) recommended for determining sample size that if the samples are to be broken into subsamples, a minimum sample size of 30 is essential for each subsample. The demographic information indicated that the sample size of 596 is suitable for conducting the study, which has fulfilled the criteria of Sekaran (2003) as well as Roscoe (1975).

**Table 1: Demographic Information of Respondents**

<b>Category</b>	<b>Category of Respondents</b>	<b>Respondents</b>	<b>%</b>
<b>School</b>	Nawabagon Pilot Uchcha Madyamic Balika Bidyalaya	68	11.41
	Dhamrai Girls High School	65	10.91
	Savar Girls High School	63	10.57
	Dhamrai Hardinge Govt. Model High School & College	62	10.40
	Joypara Pilot Govt. High School	61	10.24
	Kabi Nazrul Girls High School	58	9.73
	Shakta Govt. High School	57	9.56
	Keranigonj Girls' School and College	56	9.40
	Nawabgonj Govt. Pilot High School and College	54	9.06
	Savar Adharchandra Govt. High School	52	8.72
<b>Govt. / Non-Govt.</b>	Non-Govt. High School	310	52.01
	Govt. High School	286	47.99
<b>Upazila</b>	Dhamrai	127	21.31
	Nawabgonj	122	20.47
	Dohar	119	19.97
	Savar	115	19.29
	Keranigonj	113	18.96
<b>School Category</b>	Girls High School	310	52.01
	General High School	286	47.99

### **Library and ICT facilities available in the Schools**

Table 2 shows the present scenario of library and ICT facilities available at the respective secondary schools. The oldest school was established in 1902, and the newest one was established in 1989. Among the selected ten schools, five were government, and five were non-government, whereas five were girls schools and five were general schools. It is found that all the schools have a library, but 70 percent of the schools have librarians. It is also found that all the schools have a computer lab, but 60 percent of the labs have Lab Instructors.

**Table 2: Library and ICT facilities available in the Schools**

SL	Name of School	Estd. Year	Library	Library Teacher	Computer LAB	LAB Instructor
1	Dhamrai Hardinge Govt. Model High School and College	1914	Yes	No	Yes	Yes
2	Dhamrai Girls High School	1959	Yes	Yes	Yes	No
3	Joypara Pilot Govt. High School	1902	Yes	No	Yes	Yes
4	Kabi Nazrul Girls High School	1989	Yes	Yes	Yes	Yes
5	Shakta Govt. High School	1972	Yes	Yes	Yes	No
6	Keranigonj Girls' School and College	1972	Yes	Yes	Yes	No
7	Nawabgonj Govt. Pilot High School and College	1905	Yes	No	Yes	Yes
8	Nawabagon Pilot Uchcha Madyamic Balika Bidyalaya	1963	Yes	Yes	Yes	No
9	Savar Adharchandra Govt. High School	1913	Yes	Yes	Yes	Yes
10	Savar Girls High School	1959	Yes	Yes	Yes	Yes
Overall			100%	70%	100%	60%

**Capacity Level of Secondary School Female Students on Information Literacy**

The study included six questions to know the capacity level of the secondary school female students on information literacy. Among the six questions, the highest number of the respondents (426) clearly identified information literacy, followed by literacy (381), information (370), library (344), information literate person (318), and purpose for going to their school library (315). Table 3 shows that overall, 60.23 percent of the respondents clearly identified the basics of information literacy. It is also found that the highest number of the respondents (281) provided ambiguous answers regarding the purpose for going to their school library, followed by information literate person (278), library (252), information (226), literacy (215), and information literacy (170). The study revealed that overall, 39.77 percent of the respondents could not clearly identify the fundamentals of information literacy.

**Table 3: Capacity Level of Secondary School Female Students on IL**

SL	Item	Clearly Identified by the Respondents		Ambiguous Answer by the Respondents		Total	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
1	What is information?	370	62.08	226	37.92	596	100
2	What is literacy?	381	63.93	215	36.07	596	100
3	What do you mean by information literacy?	426	71.48	170	28.52	596	100
4	Who is information literate?	318	53.36	278	46.64	596	100
5	What is library?	344	57.72	252	42.28	596	100
6	Why do you go to your school library?	315	52.85	281	47.15	596	100
Overall		359	60.23	237	39.77	596	100

### Skills of Secondary School Female Students for Locating Information

The study included six questions to know the skills of secondary school female students in locating information. Among the six questions, the highest number of the respondents (344) clearly identified the required media to get the news, followed by which book deals with papaya cultivation (327), which textbook discusses the environment (307), which book is needed to read for learning about ICT (303), which book deals with different types of acids (268), and which book helps to find the Pythagorean Theorem (261). Table 4 shows that overall, 50.67 percent of the respondents clearly located the required information sources. It is also found that the highest number of the respondents (335) provided ambiguous answers to locating which book helps to find the Pythagorean Theorem, followed by which book deals with different types of acids (328), which book is needed to read for learning about ICT (293), which textbook discusses the environment (289), which book deals with papaya cultivation, (269), and which of the following media is needed to use for getting the news (252). The study revealed that overall, 49.33 percent of the respondents could not clearly locate their required information.

**Table 4: Skills of Secondary School Female Students for Locating Information**

SL	Item	Clearly Identified by the Respondents		Ambiguous Answer by the Respondents		Total	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
1	Which book deals with different types of acids?	268	44.97	328	55.03	596	100
2	Which textbook discusses the environment?	307	51.51	289	48.49	596	100
3	Which book will help you to find the Pythagorean Theorem?	261	43.79	335	56.21	596	100
4	Which book deals with papaya cultivation?	327	54.87	269	45.13	596	100
5	Which book do you read to learn about ICT?	303	50.84	293	49.16	596	100
6	Which of the following media will you use to get news?	344	57.72	252	42.28	596	100
	Overall	302	50.67	294	49.33	596	100

### Evaluation Way of Information Sources by Secondary School Female Students

The study included six questions to determine the evaluation way of information sources by secondary school female students. Among the six questions, the highest number of the respondents (215) clearly identified which book deals with the importance of the family farm, followed by which book they should use to find the lengths of the two sides of a triangle (200), which book is needed to use for learning the writing method for a CV (189), which organization's publication is more reliable for knowing the area, population, etc. of Bangladesh (176), how they can evaluate the authenticity of Facebook information (171), and which internet medium is needed to use for playing the national anthem properly (137). Table 5 shows that overall, 30.37 percent of the respondents clearly evaluated the way of information sources. It is also found that the highest number of the respondents (459) provided an ambiguous answer to determine which internet medium they should use to play the national anthem properly, followed

by how they can evaluate the authenticity of Facebook information (425), which organization's publication is more reliable for knowing the area, population, etc. of Bangladesh (420), which book is needed to learn the writing method for a CV (407), which book is needed to find the lengths of the two sides of a triangle (396), and which book deals with the importance of the family farm (381). The study revealed that overall, 69.63 percent of the respondents provided ambiguous answers to evaluate the way of information sources.

**Table 5: Evaluation Way of Information Sources by Students**

SL	Item	Clearly Identified by the Respondents		Ambiguous Answer by the Respondents		Total	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
1	Which book will you use to learn the writing method for a CV?	189	31.71	407	68.29	596	100
2	Which book deals with the importance of the family farm?	215	36.07	381	63.93	596	100
3	Which book will you use to find the lengths of the two sides of a triangle?	200	33.55	396	66.45	596	100
4	How do you evaluate the authenticity of Facebook information?	171	28.69	425	71.31	596	100
5	Which organization's publication is more reliable for knowing the area, population, etc., of Bangladesh?	176	29.53	420	70.47	596	100
6	Which internet medium will you use to play the national anthem properly?	137	22.99	459	77.01	596	100
	Overall	181	30.37	415	69.63	596	100

### **Approach to Using Needed Information by Students**

The study included six questions to assess the approach of using needed information by secondary school female students. Among the six questions, the highest number of the respondents (204) clearly identified which book is needed to use for writing an essay on the liberation war in Bangladesh, followed by which medium is needed for using instantly to know the SSC result (195), which book is needed to read for learning about computer viruses (164), which book deals with commercial banks (134), which book is needed to read for learning about banana cultivation (122), and which book is needed to use for learning the types of nouns (71). Table 6 shows that overall, 24.83 percent of the respondents clearly assessed the approach of using needed information. It is also found that the highest number of the respondents (525) provided ambiguous answers to assess which book is needed to use for learning the types of nouns, followed by which book is needed to read for learning about banana cultivation (474), which book deals with commercial banks (462), which book is needed to read for learning about computer viruses (432), which medium is needed to use instantly to know their SSC result (401), and which book is needed to use for writing an essay on the liberation war in Bangladesh (392). The study revealed that overall, 75.17 percent of the respondents provided ambiguous answers to assess the approach of using needed information.

**Table 6: Approach to Using Needed Information by Students**

SL	Item	Clearly Identified by the Respondents		Ambiguous Answer by the Respondents		Total	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
1	Which book will you read to learn about banana cultivation?	122	20.47	474	79.53	596	100
2	Which book will you use to learn the types of nouns?	71	11.91	525	88.09	596	100
3	Which book will you read to learn about computer viruses?	164	27.52	432	72.48	596	100
4	Which book deals with commercial banks?	134	22.48	462	77.52	596	100
5	Which book will you use to write an essay on the liberation war in Bangladesh?	204	34.23	392	65.77	596	100
6	Which medium will you use instantly to know your SSC result?	195	32.72	401	67.28	596	100
	Overall	148	24.83	448	75.17	596	100

## Discussion

The study revealed that all the schools have a library, but 30 percent of the schools have no librarian to provide minimum level of library services to their users. It is also found that all the schools have a computer lab, but 40 percent of the lab have no Lab Instructors to operate the lab equipment and provide instructions to their users. Moreover, the collection of the libraries and the number of ICT devices in the computer labs are insufficient. It is expected to appoint a minimum of a librarian and a library assistant in each of the school libraries, as well as a Lab Instructor and a Lab Assistant in each of the school labs in Bangladesh.

Among the six questions regarding the capacity level of secondary school female students on information literacy, the highest proportion (71.48%) of the female students clearly identified the basics of information literacy, whereas the lowest proportion (52.85%) of the students clearly known the purpose for going to their school library. The study found that overall, 60.23 percent of the respondents clearly identified the basics of information literacy, indicating that 60.23 percent of the female students were aware of information literacy skills in some rural secondary schools in Bangladesh. The study also revealed that 39.77 percent of the respondents provided ambiguous answers regarding the basics of information literacy, indicating that 39.77 percent of the female students were unaware of information literacy skills. Thus, the school libraries should take the initiative to build awareness regarding information literacy skills for their female students.

Among the six questions regarding the skills of secondary school female students for locating information, the highest proportion (57.72%) of the female students clearly identified the required media to get the news, whereas the lowest proportion (43.79%) of the female students obviously recognized which book will help them to find the Pythagorean Theorem. It is found that overall, 50.67 percent of the respondents clearly located the required information sources, indicating that 50.67 percent of the female students were able to locate the required information

sources to get their academic information. The study also revealed that overall, 49.33 percent of the respondents provided ambiguous answers to locate their required information, indicating that 49.33 percent of the female students could not locate their required academic information. Therefore, school libraries should take the initiative to train their female students on how to locate required academic information.

Among the six questions to determine the evaluation way of information sources, the highest proportion (36.07%) of the female students clearly identified which book deals with the importance of the family farm, whereas the lowest proportion (22.99%) of the students apparently known which internet medium is needed to use for playing the national anthem properly. The study also revealed that overall, 30.37 percent of the respondents clearly evaluated the way of information sources, indicating that 30.37 percent of the female students could evaluate the way of information sources. The study revealed that overall, 69.63 percent of the respondents provided ambiguous answers to evaluate the information sources, indicating that 69.63 percent of the female students were unable to evaluate the information sources. So, it is expected to take the initiative to provide training to their students regarding the evaluation process of information sources.

Among the six questions regarding the approach of using needed information by secondary school female students, the highest proportion (34.23%) of the female students clearly identified which book is needed to write an essay on the liberation war in Bangladesh, whereas the lowest proportion (11.91%) of the students clearly find out which book is needed to use for learning the types of nouns. Overall, 24.83 percent of the respondents clearly assessed the approach of using needed information, indicating that 24.83 percent of the female students were able to assess the approach of using needed information. The study also revealed that overall, 75.17 percent of the respondents provided an ambiguous answer to assess the approach of using needed information, indicating 75.17 percent of the female students were not able to assess the approach of using needed information. To reduce the inability of the female students of using approach of their required information, the school authorities should take proper initiatives.

## **Conclusion**

The study assessed the information literacy skills among female students in the rural secondary schools of Bangladesh, focusing on the need for information literacy skills regarding academic activities. The study revealed that 30 percent of the school libraries have no librarians and 40 percent of the school labs have no lab instructors. Moreover, the collection of the libraries and the number of ICT devices in the labs are not adequate. Overall, 39.8 percent of the female students were not aware of information literacy skills, 49.4 percent were unable to locate their required academic information, 69.5 percent were unable to evaluate the way of information sources, and 74.8 percent were not competent to assess the approach of using required information. Based on the findings, the study recommended appointing a minimum of a librarian and a library assistant in each of the school libraries as well as a lab instructor and a lab assistant in each of the school labs in Bangladesh. Besides, it is expected to take initiatives to build awareness regarding information literacy skills, provide training on locating required academic information, evaluating information sources, and using their required information. Furthermore, librarian and teacher collaboration will make the IL training, learning, and teaching programs

effective. Government and non-government organizations, as well as corporate groups, should come forward to sponsor IL training, campaigns, and awareness-raising efforts at various levels. Philanthropists, social workers, and patrons of education should also join hands in this endeavor. The "International Federation of Library Associations and Institutions" (IFLA), "United Nations Education, Scientific and Cultural Organizations" (UNESCO), and other development partners can support the proposed training programs. Finally, Bangladesh can think of forming a National Forum on Information Literacy. The present study was conducted only at five selected rural Upazilas of the Dhaka district. So, a holistic approach can be initiated countrywide for further study regarding this research problem, including male and female students.

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