Role of Interpersonal Skills, Communication Capabilities and Information System on Learning Capabilities of Higher Educational Institutions in China: Mediating Role of Students' Satisfaction

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Abstract

The growth of higher educational institutions much depends upon various factors among which interpersonal skills, communication capabilities and information system are prominent ones. The current study aimed to examine the impact of these factors viz., interpersonal skills, communication capabilities and information system, on the learning capabilities of higher educational institutions in China. The study also checks the mediating role of student satisfaction among these three constructs. The study gathered the data from final year students of higher educational institutions using surveys. The study also examines the data reliability along with association among variables using smart-PLS. The outcomes revealed that the interpersonal skills, communication capabilities and information system have a positive association with learning capabilities. The outcomes also exposed that student satisfaction significantly mediated among exogenous constructs of the study. The study findings would act as a guide to the policymakers regarding enhancing the learning capabilities by focusing on interpersonal skills, communication capabilities and information system.

Keywords

1. Introduction

Education is not only restricted to reading or writing but it also helps to learn professional tactics, psychological management, and physical practices. Students are products of an education institution and are future assets of a community. Students who show good performance in exams, quizzes, and different competitive programs, bring handsome revenues, add to the goodwill of institution, attract many juniors, and catch government attention as well. Hence, the existence of an education institution and its future all depend on students' performance (**Sharma; Giannakos**, 2020). In addition, students who do well during their study live and achieve rewards or high grades showing good performance in periodical examination, and prove to be productive in actual lives after completing education (**Malmia *et al.***, 2019).

Interpersonal skills refer to the characteristics of a man's personality which he rely on while interacting or communicating with others. It includes those qualities and abilities that assist in communication and building

relationships with others. Emotional intelligence, communication, reliability, self-efficacy, leadership, positivity, negotiation, and empathy are some of the interpersonal skills. These interpersonal skills improve students' interaction with the study material, relation with acknowledged people, and abilities to acquire, process, and increase knowledge. Hence, interpersonal skills improves students learning capabilities as well (**Nair; Fahimirad**, 2019). For instance, student communication capability enhances through a combination of knowledge, skills, instruments, procedures, attitudes, and behaviors that a student use while interacting with someone across a learning process. Student communication capability determines how well the student communicates his ideas and thoughts to others, polish others' thoughts and behaviors, and accomplishes his goals. The students with high communication capability increase their knowledge and achieve others' support enabling them to improve learning capability (**Murillo-Zamorano et al.**, 2019).

Information system is an integrate comprehension collection of components to collect, store, process, and share information and knowledge. When an education institution carries an information system according to modern requirements and allows the students to benefit from that system, students may attain information and check the validity of their concepts. These students increases their knowledge and attain learning capabilities (**Elfeky**, 2019). Learning capabilities encompass students' abilities to acquire, process, and apply knowledge and skills with speed and flexibility. Some of the learning capabilities are creativity, critical thinking, curiosity digital literacy, communication, collaboration, adaptability, and problem-solving. Learning capabilities are also known to determine students' performance (**Castro**, 2019).

The current study focuses on the learning capabilities of the Chinese students. In China, where nine year-formal education is considered compulsory for children. In 2020, there was a disclosure by ministry of education stating an increase of 34.4 million students entering into compulsory education. It brought the total number of students enrolled in compulsory education increased to 156 million (**Weng; Li**, 2020). Since 1999, Chinese government has spent funds worth 20% of its budget per year in research and development. This investment exceeded $100 billion in 2011. About 1.6 million engineering and science students graduated from Chinese universities in 2006 (**Pan et al.**, 2020). There were 3,012 colleges and universities in China and 146 national key universities. Since 2013, China has been considered a top education destination for international students, becoming the host of the second largest international student population throughout the world. Only the US and the UK were included as the top two countries in the world's top 200 universities, with 17 Chinese colleges among them (**Loyalka et al.**, 2021).

Although a large number of education institutions serving the primary, secondary, and higher education to the students are operating within the boundaries of China, there are only a few institutions offering education to students across the world and generating foreign exchange. There is a need to formulate strategies for improving students' performance which education performance relies on. The major objective of this study was to examine the impact of interpersonal skills, communication capabilities, and information system on student satisfaction and learning capabilities. The rationale of this study rests in the fact that student learning is a common subject in literature; but there is a dearth of any comprehensive study on the combined role of interpersonal skills, communication capabilities, and information system in developing learning capabilities of students. secondly, previous literature was concerned with only the direct association of student satisfaction with student learning capabilities instead of taking it as a mediator between constructs like interpersonal skills, communication capabilities, and information system and learning capabilities.

The current study thus investigates the mediating role of student satisfaction between interpersonal skills, communication capabilities, and information system and learning capabilities. This study majorly examines students' performance in Chinese educational institutions while analyzing the role of these three constructs. There are five sections of this study: the first part dealt with the background information; the second part presents review of the previous literature for projecting hypotheses; the third part presents techniques and methods selected to conduct the research and draw results; the fourth part illustrates the research outcomes about relationships among interpersonal skills, communication capabilities, information system, student satisfaction, and learning capabilities as hypothesized; finally, results discussion, study implication, limitations and conclusion are given.

2. Literature Review

2.1. Interpersonal Skills and Learning Capabilities

With the strong interpersonal skills, students are able to navigate complexities, changes, daily study tasks including study projects and assignments. This creates cognitive capabilities like understanding, reasoning, and problem-solving essential in a learning process. Thus, interpersonal skills trigger students' learning capability (**Wibowo et al.**, 2020; **Liang et al.**, 2022). For example, **Liu et al.** (2022) checked the relationship between students' interpersonal skills, entrepreneurial performance, and learning capabilities among college students. This study employed multi-scale sample entropy, cross-sample entropy, multi-scale fuzzy entropy, transfer entropy, temporal correlation, and de-trend correlation coefficient, using a mixed method research design with sequential exploratory techniques. The study posited that if students had qualities like interpersonal skills, emotional intelligence, self-efficacy, positivity, empathy, and negotiation skills, they may control their emotions, manage their thoughts, and control physical activity. Such students are able to learn more during their course of study. Thus, interpersonal skills increase students' learning capability.

In another study, **Baird and Parayitam** (2019) imply that interpersonal skills like positivity, self-efficacy, resilience, and friendliness in students enable them to have persuasive, effective, and productive communication with the tutors, class fellows, and seniors building supportive relations. These relations increase students' general knowledge as well as students' knowledge about particular events, situation, things, objects, and behaviors, which are somehow part of their study. The increase in the students' knowledge or surety of attaining knowledge improve students' learning capability. Hence, the first hypothesis of the study was drawn.

H1: Interpersonal skills have a positive association with the learning capabilities of students.

2.2. Communication Capability vis-à-vis Learning Capabilities

Communication capability is the ability of individuals to communicate their emotions, ideas, and thoughts so well that they can make the audience understand what they want to say and achieve the purpose of the conversation. Students with communication capability can motivate teachers and seniors to cooperate with them in resolving their study problems and increasing their knowledge. These students may know about the effective learning techniques and tools as well as increase their knowledge about their subjects. Hence, students' communication capability improves their learning capability (**Kwangmuang et al.**, 2021; **Noerhadi**, 2022). In an empirical survey, **Agustina and Setiawan** (2020) examine the relationship of natural atmosphere, students' communication skills, and students learning ability, applying the Action Research Method. The study sample comprised 32 students of Accounts Department of the State Polytechnic, Malang. The study stated that students who had proficiency in oral communication, expressed their thoughts, opinions, clear concepts, understood the concepts, and learnt the material as per requirement. Therefore, students with communication capability attain core learning capabilities.

In another study, **Wang and Zhang** (2019) revealed that often some individuals are tough to make conversation with and deliver the message; however, their communication capability and speech proficiency enable them to deliver their message and serve the objectives. This suggests that students with communication capability can gain confidence to inquire the things from tutors during a class, consult the seniors, and talk about a project in company with their fellows, in order to meet their learning goals. This entails that students' communication capability improves students learning capabilities, which led to the second hypothesis of the study.

H2: Communication capabilities has a positive association with the learning capabilities of students.

2.3. Information System and Learning Capabilities

An effective information system is the integration of tasks, people, structure and technologies with the aim to collect, process, store, and share information. The educational institutions where a proper information system is managed, both the management and the teaching faculty have visual and auditory experiences. They conduct training to develop learning capabilities in students out of their experience (**Supriyatno et al.**, 2020; **Xie**, 2023; **Rosulva et al.**, 2022). In a survey of 312 respondents from Universitas Muslim Nusantara, Al-Washliyah. **Mulyono et al.** (2020) examine the association between communication capability, student satisfaction, student loyalty, and learning capability. SEM (Structural Equation Modeling) and the SmartPLS were utilized to analyze the data. The study posits that when an education institution carries an effective information system, tutors become expert and proficient in their work. They develop a cooperative and supportive relationship with students and assist them to develop learning capabilities. Likewise, **Martins et al.** (2019), investigate the relationship between information system and student learning capabilities, on a sample comprising higher education students. In order to estimate the research model, partial least square (PLS) technique was applied using Smart PLS 3.0 M3 software. This suggests that information system could improve students' performance if core learning capabilities are created in students. This led to the third hypothesis of the study.

H3: Information system has a positive association with the learning capabilities of students.

2.4. Student Satisfaction vis-à-vis Interpersonal Skills and Learning Capabilities

Students with interpersonal skills can create broad environment to acquire knowledge and information. This gives a sense of satisfaction in students about their learning future. The students having high satisfaction take more active part in class during lectures, group discussions, quiz programs, and informal learning out of the school. Due to the active participation with mental agility and wholeheartedness, they learn more, polish their thoughts, and increase their knowledge. As a result, students have improved learning capabilities (**Elfeky**, 2019; **Wu**, 2023; **Zhao; Li**, 2023; **Negara et al.**, 2022; **Lalithambigai et al.**, 2023). Another study by **Murniati et al.** (2018) investigated the association between interpersonal skills, learners independence, student satisfaction, and learning capabilities under children-friendly learning management model. The data was acquired from children education ministry in Indonesia. The study posited that interpersonal skills like empathy, emotional intelligence, negotiation, and conflict resolution helped students in psychological and development and enabled them getting the aims while interacting with peers for purpose of learning. This created emotional and psychological satisfaction among students. This suggests that when students have high rate of satisfaction, they are mentally alert and take active participation. Likewise, **Nor et al.** (2024), in a recent study, throw

light on the association among interpersonal skills, student satisfaction, active learning, and learning capabilities. The study sample included the students from the Malaysian Art School. The study conveyed that interpersonal skills create student satisfaction and enable them for active learning. As a result, students develop effective learning capabilities. Hence, this conclusion led to the fourth hypothesis of the study.

H4: Student satisfaction is a significant mediator between interpersonal skills and learning capabilities of students.

2.5. Student Satisfaction vis-à-vis Communication Capabilities and Learning Capabilities

Communication capability of students determines their ability to share their thoughts on some certain topic being discussed in a class, share their problems and limitations in understanding different terms, concepts, formulas, and behaviors included in syllabus. It also develops ability to motivate tutors or seniors to explore the things to greater extent, and help the students resolve their issues in study. This facility of exchange of thoughts, consultation with the experienced and knowledgeable people, as well as solution to the problems gives high satisfaction to the students. The students with high satisfaction are committed to their study; they are attentive and more engaged in learning process. The study highlights a positive contribution of communication ability and student satisfaction to student learning ability (**Wei; Chou**, 2020; **Alghazali et al.**, 2022). Likewise, **Bickle et al.** (2019) examined the association among communication capability, student satisfaction, and learning capability, on a sample of 228 students enrolled in a 14-week online course launched by a major Southeastern university. Descriptive statistics and stepwise regression analyses were conducted through SPSS software. The study implied that students' communication capability is essential to the relationship between tutors and students. Strong communication capability creates a relation of understanding, commitment, and cooperation between tutors and students. It opens ways for the students to a treasure of knowledge. The resultant satisfaction enables to work wholeheartedly and attain learning capabilities. Hence, the fifth hypothesis of the study was framed.

H5: Student satisfaction is a significant mediator between communication capabilities and learning capabilities of students.

2.6. Student Satisfaction vis-à-vis Information System and Learning Capabilities

An effective information system requires the use of different electronic and digital components like computers, projectors, laptop, social media tools, and smooth internet service. Such information system brings the students closer to the innovative digital technologies which provides multiple learning resources (**Miao**, 2021; **Röst; Sadeghimanesh**, 2023; **Jianchao**, 2023). When such sturdy and consistent learning resources are available, students are able to increase self-ability to acquire knowledge and feel satisfied. When students have high satisfaction, their interest in learning as well as engagement in classroom activities increase, resulting in a quick accomplishment of learning objectives. As a result, students develop better learning capabilities (**Al-Fraihat et al.**, 2020; **Selamat**, 2023). **Chopra et al.** (2019) reveal that a few educational institutions carry information system requiring a physical contact with experts, educators, and other professionals. These information systems also require proper training classes and the use of digital technologies for faculty and students. Students who have the thirst of knowledge to accomplish the learning objectives and become experts in their fields, feel a higher level of satisfaction through such information systems, which brings many positive changes in their study life and improves learning capabilities. Hence, the sixth hypothesis of the study was framed.

H6: Student satisfaction is a significant mediator between information system and learning capabilities of students.

3. Research Methodology

The study examines the impact of interpersonal skills, communication capabilities and information system on learning capabilities of students of higher educational institutions in China. It also checks the mediating role of student satisfaction among the constructs of the study viz., interpersonal skills (IPS), communication capabilities (CC), information system IS) and learning capabilities (LC) of students. The data was collected using survey methods from the final year students of higher educational institutions of China. The survey items were borrowed from previous studies: four items on interpersonal skills from **Lavi et al.** (2021); eight items on communication capabilities from **Owens and Hite** (2022); six items on information system from **Pai and Huang** (2011); three items from student satisfaction (**Frick et al.**, 2009); and five items on learning capabilities from **Frick et al.** (2009). These measurements are mentioned in Table 1.

The sample of the study comprised final year students of the higher educational institutions in China as respondents. The surveys were sent to the students by personal visits to their institutions. A total of 592 students were contacted but only 357 valid responses were received, at about 60 percent response rate. Moreover, the study also examined the data reliability along with association among variables using smart-PLS, a commonly used primary data analysis tool that deals with large data sets effectively (**Hair Jr et al.**, 2020). The three predictors were used named interpersonal skills (IPS), communication capabilities (CC) and information system (IS) while one mediating variable, student satisfaction (SS) and one predictive variable. learning capabilities (LC) were used. Figure 1 depicts these variables.

Table 1: Measurements of Variables.

Items	Statements	Sources
Interpersonal Skills		
IPS1	Individual learning.	(**Lavi et al.**, 2021)
IPS2	Complex problem-solving.	
IPS3	Critical thinking.	
IPS4	Question posing	
Communication Capabilities		
CC1	I stay open to the other person's opinion even if it is different than mine and try to understand.	(**Owens; Hite**, 2022)
CC2	I pay attention to what others are saying, as people could have different views.	
CC3	I take the lead in communication or discussion even though I meet people for the first time.	
CC4	I do not hesitate to use facial expressions and gestures beyond verbal expressions to make sure to deliver the message that I intend to say.	
CC5	I am prepared by thinking over what I want to say in advance and take chances whenever they arise.	
CC6	I understand how the other party is feeling by reading his/her facial expressions or gestures.	
CC7	I try to think how my friends would feel if I snap at them with frustration.	
CC8	During the conversation, I keep thinking how the other side would understand/interpret my comments.	
Information System		
IS1	The information covered in the educational information system meet my needs.	(**Pai; Huang**, 2011)
IS2	The educational information system can provide correct information.	
IS3	When I am facing difficulty, service people from the information center can help me solve the problems.	
IS4	Service people from the information center have good service attitudes.	
IS5	I can get related information while using the educational information system.	
IS6	The educational information system can be linked to or integrated with information from other systems	
Student Satisfaction		
SS1	Overall, I would rate the quality of this course as outstanding.	(**Frick et al.**, 2009)
SS2	Overall, I would rate this instructor as outstanding.	
SS3	Overall, I would recommend this instructor to others.	
Learning Capabilities		
LC1	Compared to what I knew before I took this course, I learned a lot.	(**Frick et al.**, 2009)
LC2	I learned a lot in this course.	
LC3	Looking back to when this course began, I have made a big improvement in my skills and knowledge in this subject.	
LC4	I learned very much in this course.	
LC5	I did learn much as a result of taking this course.	

Figure 1: Research Model.

4. Results and Findings

Right at the outset, the study examined the convergent validity that exposed the correlation between items. The outcomes indicated that Alpha and composite reliability (CR) figures were bigger than 0.70. The results also indicated that factor loadings and average variance extracted (AVE) figures were bigger than 0.50. These figures indicated a higher correlation between items. These figures are given in Table 2.

Table 2: Convergent Validity.

Constructs	Items	Loadings	Alpha	CR	AVE
Communication Capabilities (CC)	CC1	0.843	0.905	0.923	0.601
	CC2	0.797			
	CC3	0.784			
	CC4	0.688			
	CC5	0.795			
	CC6	0.783			
	CC7	0.754			
	CC8	0.751			
Interpersonal Skills (IPS)	IPS1	0.866	0.890	0.924	0.752
	IPS2	0.863			
	IPS3	0.906			
	IPS4	0.833			
Information System (IS)	IS1	0.881	0.922	0.939	0.720
	IS2	0.800			
	IS3	0.807			
	IS4	0.875			
	IS5	0.863			
	IS6	0.861			
Learning Capabilities (LC)	LC1	0.750	0.798	0.861	0.554
	LC2	0.762			
	LC3	0.768			
	LC4	0.767			
	LC5	0.670			
Students Satisfaction (SS)	SS1	0.810	0.764	0.818	0.600
	SS2	0.804			
	SS3	0.705			

Next, the study examined the discriminant validity that exposed the correlation between variables. The outcomes indicated that Fornell Larcker and cross-loadings figures that exposed the correlation with construct itself are bigger than the figures that exposed the correlation with other constructs. These figures indicated a low correlation between variables. These figures are given in Table 3 and Table 4.

Table 3: Fornell Larcker.

	CC	IPS	IS	LC	SS
CC	0.776				
IPS	0.592	0.867			
IS	0.464	0.526	0.849		
LC	0.682	0.746	0.631	0.744	
SS	0.503	0.454	0.436	0.599	0.775

Table 4: Cross-loadings.

	CC	IPS	IS	LC	SS
CC1	**0.843**	0.599	0.429	0.630	0.410
CC2	**0.797**	0.487	0.433	0.587	0.380
CC3	**0.784**	0.372	0.309	0.445	0.446
CC4	**0.688**	0.381	0.327	0.464	0.374
CC5	**0.795**	0.500	0.393	0.593	0.417
CC6	**0.783**	0.521	0.358	0.542	0.335
CC7	**0.754**	0.342	0.263	0.407	0.408
CC8	**0.751**	0.429	0.336	0.520	0.352
IPS1	0.540	**0.866**	0.449	0.677	0.369
IPS2	0.529	**0.863**	0.456	0.680	0.368
IPS3	0.521	**0.906**	0.494	0.645	0.435
IPS4	0.461	**0.833**	0.421	0.584	0.402
IS1	0.391	0.474	**0.881**	0.567	0.404
IS2	0.384	0.409	**0.800**	0.559	0.364
IS3	0.441	0.434	**0.807**	0.500	0.316
IS4	0.385	0.466	**0.875**	0.527	0.361
IS5	0.390	0.450	**0.863**	0.552	0.417
IS6	0.374	0.441	**0.861**	0.499	0.345
LC1	0.514	0.549	0.445	**0.750**	0.507
LC2	0.410	0.552	0.458	**0.762**	0.627
LC3	0.562	0.462	0.522	**0.768**	0.422
LC4	0.558	0.488	0.464	**0.767**	0.403
LC5	0.493	0.709	0.458	**0.670**	0.266
SS1	0.372	0.337	0.373	0.493	**0.810**
SS2	0.428	0.369	0.288	0.476	**0.804**
SS3	0.368	0.349	0.352	0.421	**0.705**

The discriminant validity exposed the correlation between variables as shown in Figure 2. The outcomes indicated that Heterotrait Monotrait (HTMT) ratio figures are lower than 0.90. These figures indicated a low correlation between variables. These figures are given in Table 5.

Table 5: Heterotrait Monotrait Ratio.

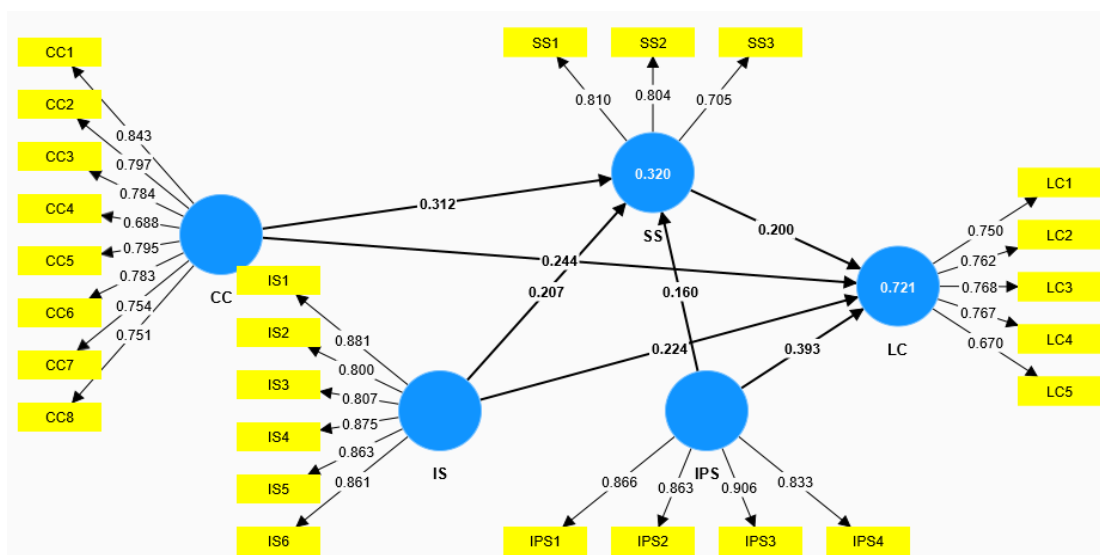|	CC	IPS	IS	SL	SS
CC					
IPS	0.652				
IS	0.504	0.580			
SL	0.796	0.880	0.734		
SS	0.650	0.592	0.556	0.822	

Figure 2: Measurement assessment model.

Figure 2 confirms the direct path correlation showing a direct association among variables. These outcomes also revealed that interpersonal skills, communication capabilities and information system have a positive association with learning capabilities of higher educational institutions in China. Thus, H1, H2 and H3 were accepted. Table 6 reiterates these relationships.

Table 6: Direct Path Analysis.

Relationships	Beta	Standard Deviation	T statistics	P values
CC -> LC	0.244	0.049	4.958	0.000
CC -> SS	0.312	0.068	4.574	0.000
IPS -> LC	0.393	0.043	9.088	0.000
IPS -> SS	0.160	0.060	2.663	0.008
IS -> LC	0.224	0.039	5.742	0.000
IS -> SS	0.207	0.057	3.600	0.000
SS -> LC	0.200	0.045	4.412	0.000

However, the indirect path analysis shows an indirect association among variables. The outcomes also exposed that student satisfaction significantly mediated among interpersonal skills, communication capabilities, information system and learning capabilities of higher educational institutions in China and accept H4, H5 and H6. Table 7 shows these relationships.

Table 7: Indirect Path Analysis.

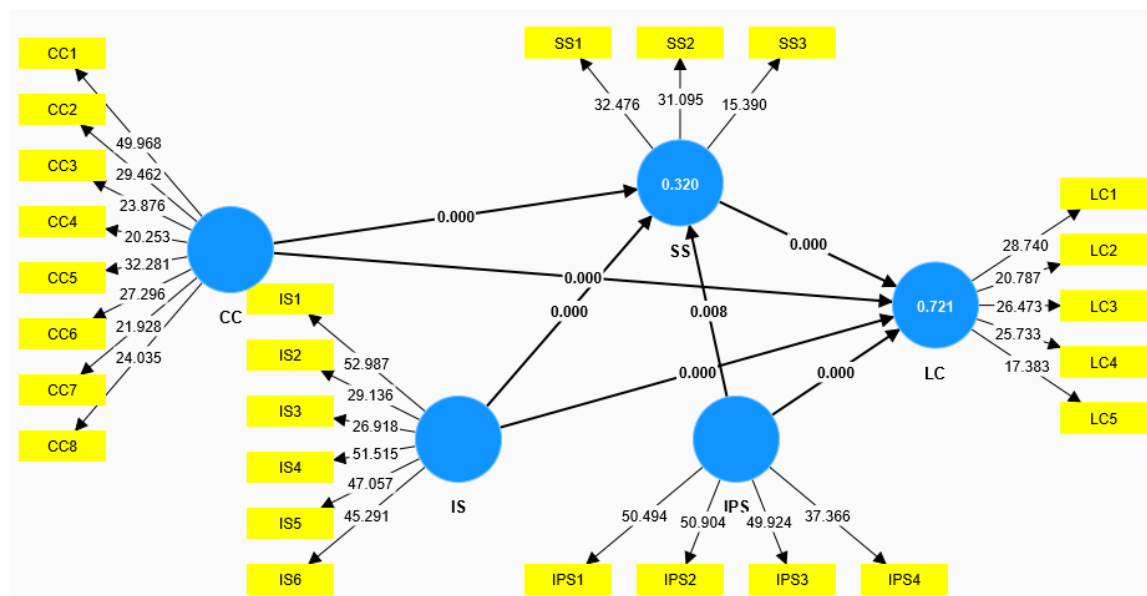| Relationships	Beta	Standard Deviation	T statistics	P values
CC -> SS -> LC	0.063	0.022	2.858	0.004
IPS -> SS -> LC	0.032	0.015	2.188	0.029
IS -> SS -> LC	0.041	0.015	2.802	0.005

Figure 3: Structural Assessment Model.

5. Discussion

The study results show that interpersonal skills have a positive association with the learning capabilities of students. These results are supported by **Mahanal *et al.*** (2019), which highlight that students who have interpersonal skills like emotional intelligence, self-efficacy, positivity, and activeness have better interaction with their tutors and classmates. They can better understand what the tutors share with them, remove their misconceptions, and learn better about the topic. Hence, such interactions improve students' interpersonal skills. These results are also in line with an empirical study, **Kyaw *et al.*** (2019), which reveals that students with good interaction opportunities develop confidence and capability to exchange ideas and learn more efficiently, and thus improve their interpersonal skills.

The results also revealed that communication capabilities have a positive association with the learning capabilities of students. These results are supported by **Lytras *et al.*** (2022), which indicates that communication is the way to learn about others' ideas, exchange ideas, and know about the new things. The communication capabilities of the students decide to what extent they can acquire, process, and innovate knowledge. Thus, they may develop the learning capabilities. These results are also in line with **Arini and Wahyudin** (2022), which implies that if students have communication capabilities, they are able to conduct effective communication with tutors, mates, or seniors. They can know about the ways or learning resources through verbal or non-verbal communication with them. As a result, they develop learning capabilities.

Another result evident from this study shows that information system has a positive association with the learning capabilities of students. These results are supported by **Aldiab *et al.*** (2019). Authors in this study present the views that if there is an effective information system in an education institution, the students who are there to acquire education can attain information on the concerned issues or topics. This improves the learning capabilities of the students. These results are also in line with **Abbad** (2021), which proclaims that an effective information system wherein students have interaction will facilitate their access to learning resources and communication with seniors, and develop their learning capabilities.

The results also reveal that student satisfaction is a significant mediator between interpersonal skills and learning capabilities of students. These results are supported by **Bickle *et al.*** (2019), which states that the interpersonal skills in students increase their focus, add to their confidence to face challenge, talk to teachers and seniors freely, and approach online educational sites. This increases students' satisfaction influencing student engagement in learning activities and student attain better learning capabilities. These results are also in line with **Xie and Derakhshan** (2021), which posits that student satisfaction is increased by practicing interpersonal skills, and imparts a favorable impact on students' learning capabilities. Hence, it reiterates that student satisfaction mediates between student interpersonal skills and student learning capabilities.

It is also evident from the results of the study that student satisfaction is a significant mediator between communication capabilities and learning capabilities of students. These results are supported by **Ohliati and Abbas** (2019), which claims that communication is the way to build contact with others, exchange knowledge, and attain assistance from educators or seniors at the time of need. This reiterates the findings of the current study that effective communication capabilities increase student satisfaction and higher satisfaction enables the students to acquire learning capabilities. These results are also in line with **Abuhassna *et al.*** (2020), which implies that students' satisfaction, enhanced by effective communication capabilities, enables students to develop effective learning capabilities.

Additionally, it was also found that student satisfaction is a significant mediator between information system and learning capabilities of students. These results are supported by **Salam and Farooq** (2020), which explains that when an education institution carries an effective information system, students have the surety to resolve their issues by attaining information and knowledge about the things, events, or concepts at any time. The resultant satisfaction helps students develop learning capabilities. These results are also in line with **Salam and Farooq** (2020), which states that effectively operated information system develops student satisfaction which further creates learning capabilities in students.

6. Conclusion

The aim of the study was to examine the impact of interpersonal skills, communication capabilities, and information system on learning capabilities of students. The study also analyzed the role played by student satisfaction between interpersonal skills, communication capabilities, and information system and learning capabilities of students. Data for the research was acquired from Chinese education system. The results drawn from the quantitative analysis depicted a positive relationship among interpersonal skills, communication capabilities, and information system with enhanced learning capabilities of students. The results demonstrated that interpersonal skills increase students' confidence, resilience, positivity and persuasiveness in their communication with tutors, fellows, and seniors within or outside classrooms. In result of effective communication with others, students may improve their learning capabilities.

The study also concluded that when students have good communication skills, they can attain knowledge and social support implementing their learning strategies. Hence, communication skills improve students' learning capabilities. The study also concluded that information system introduces novel technologies peculiar to learning and provides information about many things, events, objects, and behaviors included in the curriculum. Hence, this proved that an effective information system helps students develop learning capabilities. Moreover, the results also reiterated that student satisfaction plays a significant mediating role between interpersonal skills, communication capabilities, and information system and learning capabilities. This suggests a strong impact of students' interpersonal skills, communication capabilities, and information system on student satisfaction eventually enhancing their learning capabilities.

The present study findings are applicable in education system of China as well as of other countries where focus of education systems is on student learning, where students are seen as contributors in the nation's economy, social reformation, human capital development, government, and environmental regulation. These findings would also provide guidelines to administrators of human capital development, educators, students themselves, and parents to show how students learning capabilities can be improved. These guidelines should be crafted to develop interpersonal skills and eventually effective learning capabilities. The study also posits that effective strategies to train students to enhance their communication capabilities should be formed and implemented. In this way, they may develop higher learning capabilities. Last, but not the least, the study also reiterates that a good information system should be formed so that students can develop core learning capabilities.

The current study also carried a few limitations which require attention of future studies. First, the study framework proposed only the contribution of factors like interpersonal skills, communication capabilities, and information system

to learning capabilities of students. Future studies can examine other factors like parental support, technological innovation, and learning resources, which may also influence students' learning capabilities and can be examined. Second, this study gathered evidence only from the education system in China, the results of which may not match with those of other education systems across the world not the study results be equally valid in general. Future studies should carry out studies on multiple education systems in different geographical locations.

Based on findings, the study recommends that students should enhance their interpersonal skills to acquire higher learning satisfaction and thereby attain effective learning capabilities. Effective strategies should be formed to train students for attaining communication capabilities and to keep students' satisfaction level high and make it easier to develop high learning capabilities. Likewise, there is a need to establish a good information system in the educational institution which could enhance students' satisfaction level and help them develop learning capabilities. These findings will also guide the policymakers and administrators to customize polices adequately to enhance the learning capabilities and focus on developing students' interpersonal skills, communication capabilities and the information system of the institution.

Acknowledgement

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