iejee

International Electronic Journal of Elementary Education
June 2022, Volume 14, Issue 5, 667-678

The Transversal Competencies of Vietnamese Primary Students and The Relationship With Online Learning Activities During The COVID-19 Pandemic

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Received : 13 April 2022
Revised : 17 June 2022
Accepted : 28 June 2022
DOI : 10.26822/iejee.2022.271

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Abstract

In the context of globalization, ICT is increasingly applied in a wide range of educational activities, especially during the outbreak of the COVID-19 pandemic. In Vietnam, switching from face-to-face to online teaching has been one of the fulfilled objectives of continuing educational activities. This paper is among the first studies to evaluate primary school students' transversal competencies in this context. Through an online survey, 661 fifth-grade students self-assessed their transversal competencies, e.g. problem-solving skills, creative skills, ICT skills, and social and cross-cultural skills. ANOVA analysis revealed that the use of ICT skills and Social and cross-cultural skills among students in private schools is greater than that of students in public schools. In addition, the results of the Pearson correlation analysis pointed out that students' transversal competencies have a strong positive correlation with online learning activities. These findings not only contribute to supporting Vietnamese educational institutions and educational policymakers to adjust online teaching activities to enhance transversal competencies for primary school students but are also a valuable reference for countries with similar backgrounds.

Keywords:

Transversal Competencies, Problem-Solving, Creative Thinking, ICT Skills, Social and Cross-Cultural Skills, Online Learning

Introduction

Context in Vietnam

In the context of the 21st century, the rapid development of science and technology, the knowledge economy, and globalization have required education systems to train human resources to meet the needs of the labor market and the citizens of the global society. Workers of the 21st century need to be able to apply knowledge and skills in flexible contexts (Mann & Huddleston, 2017), as well as skills in communication, critical thinking, problem-solving, working effectively in groups, self-awareness, creativity, and lifelong learning (Economou, 2016; Suarta et al., 2017). Those skills are

transversal competencies and core competencies which are important for human development. Many organizations and countries around the world have researched and developed frameworks on core competencies with concepts related to "transversal competencies" and "transversal skills" (Al-Twairqi & Al-Salmi, 2017; Economou, 2018; OECD, 2019a, 2019b; Visible skills of adults, 2017; Whittemore, 2018).

Vietnam is a developing country with drastic socio-economic changes in recent years. Human resource development and education in line with the new context is becoming a major concern of society, the Party, and the Government, as shown in Resolution No. 29-NQ/TW on Fundamental and comprehensive reform of Education and Training (Communist Party, 2013). The reality also shows that there are gaps between the capacity of Vietnamese workers and the needs of the labor market, especially in critical thinking and problem solving, organizational and management abilities, and adaptability (Le et al., 2020). This shows the inadequate response of education to the needs of employers as well as workers. Therefore, in recent years, Vietnamese education has also begun to pay attention to capacity development for learners, especially soft, adaptive and transversal competencies. The most obvious demonstration of this trend is the promulgation of the 2018 General Education Curriculum, which emphasizes developing learners' competencies (MOET, 2018). This program has mentioned some common competencies needed for students in the 21st century such as Autonomy and self-study; Communication and collaboration, Problem-solving and creativity; Technological competence, and Informatics competence (MOET, 2018). Some schools have incorporated 21st-century skills education programs into their activities (Phenikaa-School, 2021; Vinschool, 2018).

The outbreak of the COVID-19 pandemic has drastically changed educational activities, in which the application of information and communication technology (ICT) has become widespread (Bikse et al., 2021). Online teaching during the pandemic has become a common solution in many countries, including Vietnam. Since Vietnam recognized the effects of the COVID-19, the Ministry of Education and Training (MOET) has rapidly transformed teaching methods to respond to the pandemic. Switching from face-to-face to online teaching has met the purpose of continuing education activities and ensuring safety during the pandemic. However, many challenges are also posed, including the quality of education, the physical and mental health of students, as well as other implications for teachers and families (UNICEF, 2020a). In that context, education requirements for transversal skills and 21st-century skills for students become even more challenging (Latorre-Cosculluela et al., 2021).

Online teaching is conducted via software and applications such as Zoom, Google Meet, Microsoft Team (Nguyen et al., 2021), Zalo, Viber, Zoom chat, Gmail, or Facebook Messenger (UNESCO & UNICEF, 2021) in a way such as giving lectures in class, combined with sending learning materials to students. In addition, some other software is also used to organize activities such as games and competitions to stimulate students' interest such as Quizizz, Kahoot, and Google Forms (Dau, 2022). Online teaching during the COVID-19 pandemic in Vietnam have also faced many challenges, such as limitations in access and quality of learning device and the Internet broadband (UNICEF, 2020b), student health problems and learning interest, teachers' online teaching experiences and skills, and family support (UNICEF, 2020a). Those challenges have had impacts on students' online learning activities and their learning outcomes, especially for primary school students (Dau, 2022).

This article is one of the first studies to evaluate the primary school students' transversal competencies in Vietnam in the context of online teaching during the COVID-19 period. The research aims to examine students' transversal competencies, especially focusing on the competencies stipulated in the 2018 General Education Curriculum, such as problem-solving, creative thinking, information and communication technology skills (ICT skills), and social and cross-cultural skills. At the same time, the research investigated the relationship between those competencies and online teaching activities during the COVID-19 period in Vietnam.

Transversal competencies

As mentioned above, there are many different terms and interpretations related to transversal competencies. Transversal competencies, key competencies, or "transformative competencies" are the knowledge, skills, attitudes, and values (OECD, 2019a; UNESCO & RBE, 2016) that are necessary for all individuals and are developed through a variety of environments (European Commission, 2019), and applicable in many life contexts (OECD, 2005). These are also competencies that enable learners to adapt quickly to the changes and challenges of learning and society (Care et al., 2019). In the same view, Economou (2018) believes that transversal competencies are soft skills that help people to communicate, work in groups, share and cooperate, and solve problems effectively. Vietnam's 2018 General Education Program defines core competencies as those necessary for everyone to live, learn and work effectively (MOET, 2018). These are also the competencies needed by citizens in the 21st century, also known as the 21st-century skills (Erdem, 2019; Griffin & Care, 2014).

Similarly, transversal competency frameworks are pretty diverse. European Commission (2019)

outlined eight core competencies in Literacy; Multilingual; Mathematical; Science, technology and engineering; Digital; Personal, Social, and Citizenship; Entrepreneurship; Cultural awareness and expression competence. UNESCO offered six domains: critical and innovative thinking, interpersonal skills, intrapersonal skills, global citizenship, media and information literacy, and others defined by countries (UNESCO & RBE, 2016). From a teaching and assessment perspective, The Partnership for 21st Century Learning (P21) has developed the P21 Framework in three areas: learning and innovation skills, information, media and technology skills, and life and career skills (P21, 2019). Learning and innovation skills include Critical Thinking and Problem Solving, Creativity and Innovation, Communication, and Collaboration. Information literacy, Media Literacy, Information, and communication technology (ICT) Literacy belongs to the group of information, media, and technology skills. The life and career skills are flexibility and adaptability, leadership and responsibility, initiative and self-direction, productivity and accountability, and social and cross-cultural skills. This framework for transversal skills is used by the research team to develop the research tools. The research team focused on Problem-solving, Creativity, Information & communication technology (ICT), and Social and cross-cultural skills. These competencies are emphasized in Vietnam's 2018 curriculum.

Problem-solving skills

Problem-solving is understood as the ability to apply the counseling process to confront and solve an unfamiliar, actual or multidisciplinary situation to find a solution that is not immediately available in the conventional or innovative ways (OECD, 2003; P21, 2019). Problems can solve through the step theory of Polya (1957) is to understand the problems, develop a plan, execute the plan, and evaluate the problems solving process (Maulyda et al., 2019). The framework of P21 enables problem-solving through identifying and asking important questions, clarifying differences, and providing better solutions (P21, 2019).

Creative thinking

"Creativity" or "creative thinking skills" can be understood as a way of thinking that leads to new products, concepts, approaches, or possibly questions or problems in a different way (Eragamreddy, 2013). Besides, creative thinking skills also include flexible thinking, generating new and original ideas, and developing ideas (Anwar et al., 2012; P21, 2019). P21's framework states that creative thinking includes thinking creatively to generate new ideas and improve existing ones, working creatively to implement and communicate new ideas, being open to diverse perspectives, and creating new products from those ideas (P21, 2009).

ICT skills

ICT skills are understood as proficiency in information and communication technology. Nikitakis (2007) defined ICT skills as the ability to recognize, detect, evaluate and use information effectively (Oguguo et al., 2020). More specifically, Anyim (2018) argued that ICT skills are associated with ethically finding, accessing, managing, sharing, and creating information using digital tools (Onyebinama, 2021). This interpretation also shows agreement with the framework of P21. According to P21 (2009), ICT literacy effectively uses technology in communication. In particular, the use of technology to successfully research, access, evaluate, create information, and communicate using information. In addition, ICT skills also emphasize applying ethical principles and confidentiality in the process of use.

Social and cross-cultural skills

Social and cross-cultural skills are related to human behavior in societies and cultures. Argyle (1994) argued that social skills govern human behavior in verbal and non-verbal interactions among individuals according to different cultures (Sozen et al., 2020). Because of the diversity in human behavior across cultures, a globalized society requires skills to adapt to different cultures. The framework of P21 assumes that a socially and cross-culturally competent person knows how to interact with others and work in diverse groups effectively. Social competence focuses on effective communication through being able to listen and express opinions at the right time and showing respect for self and fellow communicators. Cross-cultural competence focuses on communicating and working with people from different cultures, reacting openly and respecting differences, and utilizing these differences to generate new ideas (P21, 2009).

The COVID-19 pandemic and online teaching have raised the issue of education quality. Thus, the research team has been interested in the online learning activities of primary school students, their transversal competencies, and the relationship between those online learning activities and those competencies. Therefore, this study has focused on clarifying two research questions:

- What is the current status of the Vietnamese primary school students' transversal competencies? Do these competencies vary among groups of students in different types of schools?

- How is the relationship between the online learning activities of Vietnamese primary students and their transversal competencies?

This article begins with the Introduction that introduces the context of Vietnamese primary education,

education during the COVID-19 pandemic, and an overview of research on transversal competencies. In the next section, the research methods are presented in detail. The results of the data analysis are described in the Findings section, and the interpretation is presented in the Discussions. Finally, further studies are proposed in the Conclusion.

Methods

The research team took that quantitative approach to investigate the status of transversal competencies of primary school students in Vietnam and at the same time, examine the relationship between these competencies and their participation in online learning activities. Statistical analyses were used to determine the children's performance in online learning activities and skills-related activities to answer the first research question. The range of mean scores was compared with the mean level (see Table 1) to determine the overall assessment level of the group. Furthermore, the ANOVA analysis method was applied to determine the difference among student groups in different types of schools for the above activities. In the second research question, the Pearson correlation analysis method was used to find out the relationship between 5th graders' online learning activities and their transversal competencies. The data analysis methods were carried out in SPSS software.

Table 1
Ranges of mean score

Range of mean score	Mean level
1.00 – 1.80	Never/Strongly Disagree
1.81 – 2.60	Rarely/Disagree
2.61 – 3.40	Sometimes/Neutral
3.41 – 4.20	Often/Agree
4.21 – 5.00	Always/Strongly Agree

Instrument

The survey tools were designed to collect 5th graders' evaluations of their online learning activities as well as their performance levels in transversal competencies. The research team based on teaching activities, teaching methods, and skills to be formed specified in the 2018 Vietnam Curriculum to specify the factors and their items. First, online learning activities of Vietnamese primary school students were referenced, such as playing games, using interactive applications, group activities, discussions, and project-based learning (see Table 9). We also matched the required skills of the 2018 Vietnam Curriculum with the 21st-century skills framework (P21, 2009), from which four groups of skills are selected, which were Problem-solving skills (see Table 5), Creative skills (see Table 6), ICT skills (see Table 7), Social and cross-cultural skills (see Table 8).

The questionnaire was designed in three parts. The first part provided information about the research, including the research purpose, research content, and the research team contacts. In addition, terms related to the participation of students were also required to be answered (see Table 2). The second part included information related to the student's gender and the student's school name (coded according to the type of school as shown in Table 3). The third part consisted of 27 items on the 5-Likert scale, from 1 (Strongly disagree) to 5 (Strongly agree). These items were synthesized from five factors, experiencing online learning activities (7 items), Problem-solving skills (5 items), Creative skills (4 items), ICT skills (5 items), and Social and cross-cultural skills (6 items). The research team used the Google Forms application to design the survey forms and share the questionnaires with the survey respondents through online platforms.

Table 2
Agreements to participants

ID	Agreement	Respondent
1	I understand the information about participating in the study	Student
2	My parents agreed to let me participate in the survey	Student
3	I participate in the survey voluntarily	Student
4	I have been informed and have understood the information about participating in the study	Parents of student
5	I consent to my child taking part in the survey	Parents of student

Participants

The study applied a convenient sampling method. The study respondents are 5th-grade students who have participated in online learning activities in Vietnam. There are two types of primary schools, which are public and private. The public primary schools were chosen to represent schools in urban or rural areas. The research team also selected representatives from private primary schools. The three schools represent different types of schools urban public schools, rural public schools, and private schools. Grade 5 students at these schools were contacted and invited to participate in the online survey voluntarily with the consent of their parents. A total of 726 attendances were recorded. Sixty-five records were excluded due to failure to fully accept the five terms of consent to participate in the survey with three provisions for students and two provisions for students' parents. Therefore, the remaining data set of 661 records (see Table 3) is used to answer the proposed research questions.

Table 3
Student groups according to the school types

Characteristic	Participant	Percentage
School types	661	100.00
Private school in urban	246	37.22
Public school in rural	237	35.85
Public school in urban	178	26.93
Gender	661	100.00
Male	342	51.74
Female	319	48.26

Surveying

The research proposal was proposed by the Vietnam National Institute of Educational Sciences (VNIES) and evaluated by SEAMEO INNOTECH. This study was implemented in two phases. In the first stage, survey tools were developed based on a literature review. The research team review literature in the area and specified the factors and their items. Then, a pilot survey of 44 primary students was conducted, and the test results were used to refine the toolkit. For the second phase, the research team coordinated with the schools to conduct the survey. School administrators assessed the relevance of the survey's content and supported the research team in connecting with students and their parents. Surveys are sent to students through internet-based applications. The children responded to the questionnaire with the consent and support of the student's parents. Data collection was carried out over two months, from September 30 to November 30, 2021.

Findings

Transversal competencies of primary students

A survey of 661 primary students showed that they regularly perform activities related to transversal competencies during online learning (*Mean* = 3.93, *SD* = .53). Similar to transversal competencies, component skills were also shown on a regular level. In which, creative skills had the lowest average rating (*Mean* = 3.76, *SD* = .68), in contrast, social and cross-cultural skills have the highest average rating (*Mean* = 4.03, *SD* = .61).

Table 4
Perspectives of Vietnamese primary students on their transversal competencies

Variable	N	Min	Max	Mean	Std. Deviation	Mean level
Transversal competencies	661	1.96	5	3.93	.53	Agree
Problem-solving skills	661	1	5	3.96	.61	Agree
Creative skills	661	2	5	3.76	.68	Agree
ICT skills	661	1	5	3.97	.59	Agree
Social and cross-cultural skills	661	1	5	4.03	.61	Agree

Problem-solving skills

The 5th graders regularly perform activities related to problem-solving skills. Table 5 presented their assessment of skills in the group. The data showed similarity between activities in the problem-solving process, ranging from problem identification (*Mean* = 3.92, *SD* = .75), finding supporting information (*Mean* = 3.93, *SD* = .76), sharing, discussion (*Mean* = 3.96, *SD* = .77), to the application of knowledge, skills, experience (*Mean* = 4.05, *SD* = .73), problem solving (*Mean* = 3.95, *SD* = .78).

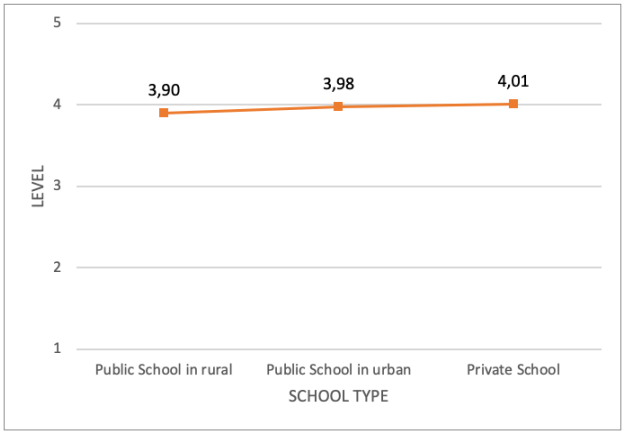
Table 5
Perspectives of Vietnamese primary students on their problem-solving skills

Variable	N	Min	Max	Mean	Std. Deviation	Mean level
Problem-solving skills (Cronbach's Alpha = .87)	661	1	5	3.96	0.61	Agree
I can identify problems that need to be solved in my study and life.	661	1	5	3.92	0.75	Agree
You can find relevant information to help with problem-solving.	661	1	5	3.93	0.76	Agree
I discuss with others to find a way to handle the situation when necessary.	661	1	5	3.96	0.77	Agree
I use my knowledge, skills, and experience to develop solutions to handle situations and problems.	661	1	5	4.05	0.73	Agree
I can handle problems in my study and life.	661	1	5	3.95	0.78	Agree

Figure 1 shows the levels of assessment of problem-solving skills by student groups in different types of schools. Overall, there was a slight difference in the assessment of problem-solving skills between the public school in the rural group (*Mean* = 3.90, *SD* = .63) and the public school in the urban group (*Mean* = 3.98, *SD* = .61) and the private school in the urban student group (*Mean* = 4.01, *SD* = .59). The results of the ANOVA test ($F_{(2, 658)}$ = 2.17, *p* = .11) showed that there was no statistically significant difference in problem-solving skills among groups of students in other types of schools. However, when comparing each group, the research team found a statistically significant difference between the public school in the rural group and the private school group (*Mean difference* = .11, *p* = .04).

Figure 1

Mean comparison of problem-solving skills among student groups based on school types



Creative thinking skills

Regarding the creative skills, Vietnamese 5th graders regularly perform the related activities as listed in Table 6. The data showed similarity of opinion among activities in the creative skills, includes thinking about new ideas (*Mean* = 3.76, *SD* = .68), testing new ways (*Mean* = 3.85, *SD* = .80), creating new own product (*Mean* = 3.77, *SD* = .87), change personal opinion (*Mean* = 3.64, *SD* = .89).

Table 6

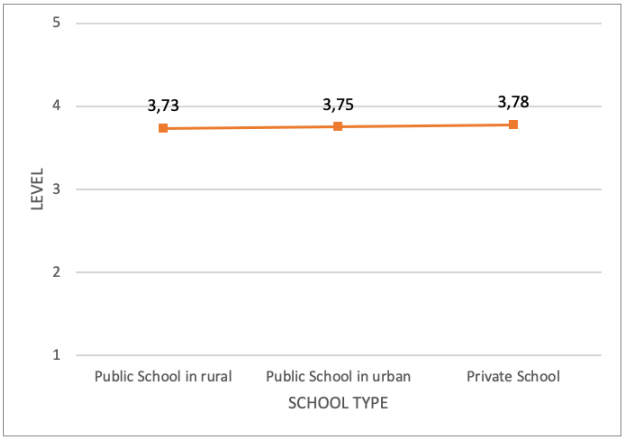
Perspectives of Vietnamese primary students on their creative thinking

Variable	N	Min	Max	Mean	Std. Deviation	Mean level
Creative skills (Cronbach's Alpha = .82)	661	2	5	3.76	.68	Agree
I often think about new ideas, new ways to solve tasks, problems.	661	1	5	3.85	.80	Agree
I often try new ways and ideas.	661	1	5	3.75	.84	Agree
I often create my own works in my study and life.	661	1	5	3.77	.87	Agree
I often easily change my personal opinion to get new solutions.	661	1	5	3.64	.89	Agree

There was a similar level of perception among groups of different types of schools in these skills. Figure 2 shows the mean values of the survey groups, *Mean* = 3.73, *SD* = .68 for public school in rural, *Mean* = 3.75, *SD* = .67 for public school in urban, and *Mean* = 3.78, *SD* = .69 for private school. ANOVA test method among groups of students was applied, and the results showed no statistically significant difference among these groups ($F_{(2, 658)}$ = .28, p = .76).

Figure 2

Mean comparison of creative skills among student groups based on school types



ICT skills

The ICT skills of Vietnamese primary students consist of five contents, and they self-assessed the frequency of regularly performing these activities (*Mean* = 3.97, *SD* = .59). Table 7 describes the results of the statistical analysis of the ICT skills and each specific activity. The data show that the skills of finding information on digital platforms are most proficient (*Mean* = 4.19, *SD* = .67); in contrast, the activity of creating information products on the internet platform was used less in the group (*Mean* = 3.67, *SD* = 1.02). The remaining three activities, including evaluation of searched information, use of searched information, and protection of personal information safety on internet platforms, have similar ratings (see Table 7).

Table 7

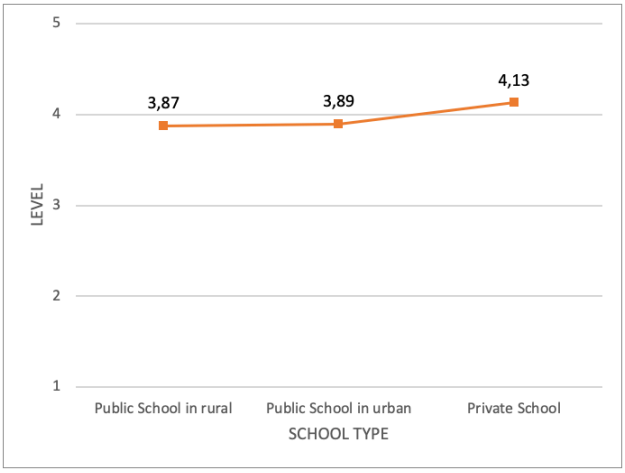
Perspectives of Vietnamese primary students on ICT skills

Variable	N	Min	Max	Mean	Std. Deviation	Mean level
ICT skills (Cronbach's Alpha = .77)	661	1	5	3.97	.59	Agree
I know how to find information on the Internet with digital devices.	661	1	5	4.19	.67	Agree
I know how to select and evaluate information found on the Internet	661	1	5	3.98	.76	Agree
I can use the information I find on the Internet to solve my academic and life tasks	661	1	5	3.98	.77	Agree
I know how to protect personal information and safety when using the Internet.	661	1	5	4.04	.82	Agree
I can create digital products (articles, videos, images posted on the Internet)	661	1	5	3.67	1.02	Agree

Figure 3 illustrates the comparison of the level of ICT skills among student groups by type of school. The data show that there is a similarity in ICT skills of student groups between public school in rural (*Mean* = 3.87, *SD* = .60) and public school in urban (*Mean* = 3.89, *SD* = .59). Besides, the assessment of these groups is different from that of the group of students at private school (*Mean* = 4.13, *SD* = .54). The results of the ANOVA test ($F_{(2, 658)}$ = 13.94, *p* = .001) show that there is a statistically significant difference in the level of proficiency in ICT skills among student groups in different types of schools. Specifically, there is a statistically significant difference in the perceptions of student groups on ICT skills between Public school in rural and Private school (*Mean difference* = .26, *p* = .001), and between Public school in urban and Private school (*Mean difference* = .24, *p* = .001).

Figure 3

Mean comparison of ICT skills among student groups based on school types



Social and cross-cultural skills

Social and cross-cultural skills of Vietnamese primary students were self-assessed at the level of frequent performance activities (*Mean* = 4.03, *SD* = .61). Table 8 describes the performance of activities related to these skills. The data show that the items treated equally, regardless of cultural background or gender were rated the highest by students, at Strongly Agree (*Mean* = 4.23, *SD* = .81). Other items were self-assessed at Agree, including respecting differences (*Mean* = 4.17, *SD* = .73), sharing and helping friends (*Mean* = 4.04, *SD* = .73).

Figure 4 shows the general performance levels for social and cross-cultural skills by student groups by types of schools. The data show that there is a small difference in social and cross-cultural skills among different student groups, in which the Public School in the rural group has a *mean* = 3.97, *SD* = .58, Public School in urban has a mean = 4.01, SD = .62, and Private School student group has a *mean* = 4.11, *SD* = .63. The results of the ANOVA test analysis ($F_{(2, 658)}$ = 3.33, *p* = .03) show that there is a statistically significant difference among these three groups of students, there is a difference between the public school in rural students and Private School students (*Mean difference* = .14, *p* = .03). In contrast, there is no statistically significant difference between Public School in urban and Public School in rural groups (*Mean difference* = .04, *p* = .85), and with Private School (*Mean difference* = .10, *p* = .31).

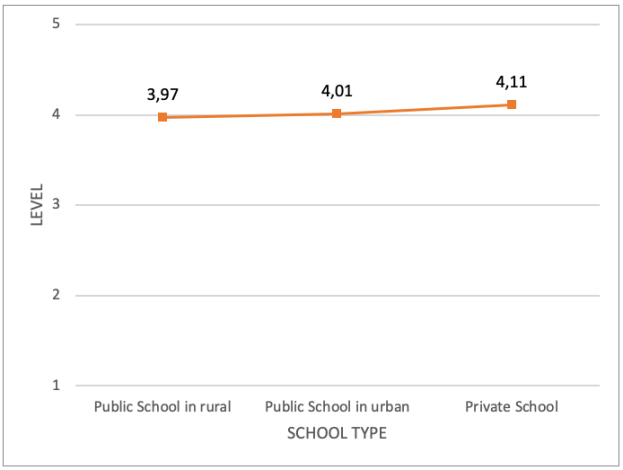
Table 8

Perspectives of Vietnamese primary students on social and cross-cultural skills

Variable	N	Min	Max	Mean	Std. Deviation	Mean level
Social and cross-cultural skills (Cronbach's Alpha = .88)	661	1	5	4.03	.61	Agree
I respect people's diversity and individual differences.	661	1	5	4.17	.73	Agree
I share and help my classmates with learning and life issues.	661	1	5	4.04	.73	Agree
I can communicate with people with different personalities and backgrounds.	661	1	5	3.97	.77	Agree
I can work with people with different personalities and backgrounds.	661	1	5	3.90	.78	Agree
I am comfortable communicating with people from other regions or countries.	661	1	5	3.89	.84	Agree
I treat everyone equally, regardless of cultural background, gender.	661	1	5	4.23	.81	Strongly Agree

Figure 4

Mean comparison of Social and cross-cultural skills among student groups



The relationship between students' online learning activities and their relationship to transversal competencies

Students' online learning activities

Students actively participated in online learning activities (*Mean* = 4.03, *SD* = .59). Table 9 listed seven activities commonly used in online teaching during the COVID-19 pandemic. The data showed that familiarization with applications and software is done the most by children (*Mean* = 4.24, *SD* = .74). In contrast, problem solving activities when learning online were the least performed (*Mean* = 3.63, *SD* = .91). Similarly, the remaining activities are assessed at the frequency of use in the online learning process. It is using a variety of activities (*Mean* = 4.20, *SD* = .81), group discussions (*Mean* = 4.17, *SD* = .79), project activities (*Mean* = 3.94, *SD* = .83), speak and discuss (*Mean* = 4.04, *SD* = .81), communicate with friends (*Mean* = 3.97, *SD* = .91).

Table 9

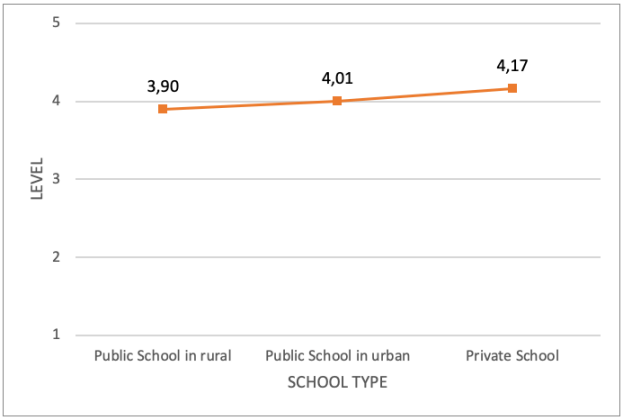
Students' opinions on online learning activities during the COVID-19 pandemic

Variable	N	Min	Max	Mean	Std. Deviation	Mean level
Online learning activities (Cronbach's Alpha = .84)	661	1	5	4.03	.59	Agree
Various online learning activities are organized (e.g. listening to lectures, playing games, using interactive applications).	661	1	5	4.20	.81	Agree
I can participate in group activities and discussions when studying online.	661	1	5	4.17	.79	Agree
I was asked to create project products such as videos, pictures, handmade products, etc. when studying online.	661	1	5	3.94	.83	Agree
I was asked to solve many subject problems when I was studying online.	661	1	5	3.63	.91	Agree
I can speak and discuss my personal opinions and solutions when studying online.	661	1	5	4.04	.81	Agree
I know software and technology applications when I study online.	661	1	5	4.25	.74	Strongly Agree
I communicate a lot with my friends when I study online.	661	1	5	3.97	.91	Agree

Figure 5 represents the ratings of student groups by types of schools on online learning activities. The results pointed out a difference in perception between the groups, in which the public school in the rural group has a *mean* = 3.90, *SD* = .66, the public school in the urban group has a *mean* = 4.01, *SD* = .56, and the group of private school students has a *mean* = 4.17, *SD* = .51. The results of the ANOVA test ($F_{(2, 658)}$ = 12.90, *p* = .001) showed that there is a statistically significant difference in the frequency of participating in online learning activities among these groups between public school in rural and private school students (*Mean difference* = .27, *p* < .001), and between public school in urban and private school students (*Mean difference* = .16, *p* = .009). In contrast, there was no statistically significant difference in this term between the public school in rural students and the public school in urban students (*Mean difference* = .11, *p* = .19).

Figure 5

Mean comparison of the participation in online learning activities among student groups



To answer the second research question, the research team conducted a Pearson correlation analysis between online learning activities and transversal competencies (Problem-solving skills, Creative skills, Information & communication technology skills, and Social and cross-cultural skills). Furthermore, this analysis was also interested in the relationship among different school types (see Table 10).

Table 10 showed that students' transversal competencies have strong positive correlation with online learning activities (*r* = .72, *p* < .01). Considering each component competency, activities have moderate positive correlation to Creative skills (*r* = .54, *p* < .01) and Social and cross-cultural skills (*r* = .56, *p* < . 01). In addition, activities have strong positive correlation with ICT skills (*r* = .61, *p* < .01) and Problem-solving skills (*r* = .68, *p* < .01). Thus, in the process of online learning in Vietnam, the enhancement of the learning activities for 5th graders show a tendency to increase the performance level of their transversal competencies.

When looking at closer these relationships by type of school, it was easy to see that the correlation value of the public school is higher than the correlation value of the private school in each of their relationship (see Table 10), especially in Problem-solving skills, and Creative skills. Moreover, in the public school, the correlation values of the urban public school tended to be slightly higher than the correlation values of the rural public school in all aspects.

Discussions

The study showed differences among primary students from school types in terms of online learning activities during the COVID-19 pandemic and their transversal skills. The findings explored the statistically significant difference between public schools in rural and private schools regarding students' participation in online learning activities. There is a statistically significant difference between students in public schools in rural areas and private schools. From the context of Vietnam, this result can be explained by the clear difference between educational curriculum and teaching conditions in rural public schools and private schools. Public schools in Vietnam mostly adhere to the national curriculum in the teaching process and add some extra-curricular activities according to the specifics of the schools. Meanwhile, the educational program in private schools is more flexible, including national programs and school programs based on international programs, which are suitable for school conditions (Do, 2021). Private schools are considered to be more modern in terms of equipment, and at the same time, the students' families are better off than those of public schools in rural areas. Besides, for the surveyed schools, class sizes for private schools ranged from 25 to 30 students per class, while for public schools, that number could be double. The factor of teacher quality also needs to be taken into account between private and public schools in rural areas. Some previous research showed that teachers in private schools have more professional development activities to improve their professional capacity than in public schools (Hoang et al., 2020). This leads to private schools having greater flexibility in organizing teaching, especially online teaching, and ensuring better teaching quality. The fact also shows that private schools are rated higher in terms of quality than public schools, being the choice of families with well-off living conditions (EU-Vietnam Bussiness Network, 2018).

Meanwhile, there is no statistically significant difference between public schools in rural areas and public schools in urban areas in terms of students' online learning activities and transversal competencies. This can explain that there are not too significant differences in terms of facilities, programs, and class sizes between public schools in the two regions. In general, the public schools in the two areas mainly use the national curriculum in teaching. However, urban public schools tend to pay more attention to the development of the school's extra-curricular programs and teachers' capacity. The research results also show that there is no statistically significant difference in online learning activities and students' transversal competencies between private and public schools in urban areas.

This study contributes to the promotion of the participation level of online learning activities during the COVID-19 period from primary student feedback. The results show that students often perform learning activities through many software and applications when learning online. Vietnamese teachers have tried to use a variety of software and applications in teaching and assessment to ensure learning quality (UNESCO & UNICEF, 2021; UNICEF, 2020a). Besides, the activities of discussion, gameplay, and group working are also regularly attended by students. It shows that primary schools in Vietnam have adapted to the online learning environment, although they have not yet prepared for this option.

Research results show a positive correlation between students' level of participation in online learning

Table 10

Relationship between Vietnamese primary students' online learning activities and transversal competencies

Variable	Online learning activities			
	All	Public school in rural	Public school in urban	Private school
Transversal competencies	.72**	.75**	.77*	.60**
Problem-solving skills	.68**	.72**	.75**	.59**
Creative skills	.54**	.60**	.64**	.41**
Information & communication technology skills	.61**	.59**	.66**	.52**
Social and cross-cultural skills	.56**	.55**	.66**	.47**

Note: ** Correlation is significant at the 0.01 level (2-tailed)

activities and transversal competencies. This means that students who engage in online learning activities more often have higher levels of transversal competencies. This is also consistent with the results of studies related to participation in ICT-supported learning activities and student learning outcomes. To some extent, online learning with diverse application platforms also stimulates students' interest and engagement in learning (Hermanto & Srimulyani, 2021). Students' learning motivation is considered one of the important factors in helping them achieve their learning goals, including skills development (Taurina, 2015).

Conclusions

This article is one of the first studies to evaluate primary school students' transversal competencies in online learning. Findings show that Vietnamese primary school students self-assessed their transversal competencies as good level, equivalent to a mean value of 3.93 on a scale of 5 Likert. By school type, students in private schools tend to outperform students in public schools in the same skills. Similarly, public school students in urban tend to outperform rural public-school students. In addition, the results of the Pearson correlation analysis pointed out that students' transversal competencies have a strong positive correlation with online learning activities.

This paper also has some limitations. Limited resources prevented the research team from collecting survey information according to different regions and/or socio-economic conditions, which is a possible direction for further research. Besides, investigating the relationship between transversal competencies and academic achievement of primary school students is also a future interest.

Acknowledgment

This article is a product of the project "Practices in Teaching and Assessment of Transversal Skills in Primary Schools in Vietnam" (No. ERIO/ERU 2021-11), sponsored by SEAMEO INNOTECH. The authors would like to thank the members of the research team and the collaborators who carried out the project and assisted in data collection for the study.

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