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Brief research report: development of codes of conduct in online classrooms for Vietnamese high school students

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Background: In today's digital age, online education helps eliminate certain barriers faced by traditional education, however, it also presents challenges, including issues related to the culture of conduct among high school students in their relationships with instructors and peers. Therefore, developing Codes of Conduct in Online Classrooms is necessary to create a healthy, fair, and engaging learning environment.

Method: A procedure consisting of three stages is used, namely: (1) Item generation; (2) Theoretical analysis; and (3) Psychometric analysis. This study involved surveys of 923 participants, including 321 teachers and 602 students from high schools in Vietnam. One of the outcomes of this research is a dataset comprising six files related to the scale development process. From the collected data, we conducted analyses to explore the Codes of Conduct in Online Classrooms of Vietnamese High School Students using Exploratory Factor Analysis and Confirmatory Factor Analysis.

Results: The analysis results indicate that the Codes of Conduct in Online Classrooms of Vietnamese High School Students include four aspects: (1) Students' attitudes toward teachers and classmates; (2) Students' communication conduct toward teachers and classmates; (3) Students' conduct in using the camera; and (4) Dress Code, Sitting Posture and Learning Location Regulations.

Conclusion: The codes of conduct in online classrooms play a crucial role in creating a positive, effective, and culturally rich learning environment. This article partially contributes to establishing fundamental guidelines on the conduct of high school students in online classes, thus providing an important foundation for forming appropriate behavior between all stakeholders.

KEYWORDS

code of conduct, online learning, online classroom, scale development, high school students, Vietnam

1 Introduction

With the Fourth Industrial Revolution, the world is accelerating the process of digital transformation across all aspects of the economy and society (Van Veldhoven and Vanthienen, 2019). In the field of education and training, the application of digital technology in teaching and learning is becoming increasingly common (Peters and Romero, 2019; Nguyen et al., 2021). Online learning has emerged and brought many

positive changes to teaching and learning. Online learning refers to the process of teaching and learning through digital platforms via the Internet, allowing learners to access materials, interact with content, instructors and peers, and receive support in acquiring knowledge, developing personal thinking, and growing from learning experiences without being constrained by space and time (Ally, 2004; Rosenberg, 2001). Online learning is the process of teaching and learning through digital platforms on the Internet. It allows learners to access materials, interact with content, instructors and peers, and receive support in acquiring knowledge. Additionally, it fosters critical thinking and personal growth without being constrained by space and time (Ally, 2004). Similarly, UNESCO (2016) defines online learning as the use of digital technologies to support distance learning, allowing learners to access knowledge flexibly, without spatial or temporal limitations. According to, online learning is categorized into two types: synchronous and asynchronous online learning (Singh and Thurman, 2019). Synchronous online learning requires learners to participate in learning activities at the same designated time, with direct guidance from the teacher and interaction among class members through video conferencing tools such as Zoom, Microsoft Teams or Google Meet (Picciano, 2021). In contrast, asynchronous online learning allows learners to participate at flexible times, enabling them to adjust their learning pace according to their abilities through tools such as email or discussion boards (e.g., Google Docs, Padlet). These modes of learning helps address geographical distance issues and allows learners to study anytime and anywhere (Dichev et al., 2013). In this paper, we focus on synchronous online learning through online classrooms where teaching and learning take place simultaneously. In this setting, teachers and students, located in different places (e.g., at home, in cafés, libraries or public spaces), can interact using technological tools such as video, audio, virtual whiteboards and other support features.

Notably, when the COVID-19 pandemic spread globally, to prevent disruptions in teaching and learning due to measures aimed at curbing the virus's spread, many countries, including Vietnam, widely adopted online learning as an urgent and mandatory solution based on an internet connection through Wifi or mobile networks (3G, 4G) (Lu et al., 2021). This approach enabled students to continue their education without physically attending schools, minimizing the impact on their learning (Tan and Chua, 2022). In Vietnam, during the complex developments of COVID-19, online learning completely replaced in-person instruction across all educational levels. This shift brought several benefits, such as flexibility and high accessibility, but also posed challenges related to classroom etiquette in virtual learning environments. These challenges included maintaining discipline, ensuring respect, and fostering effective communication between teachers and students (Xu and Jaggars, 2014; Ogunmola et al., 2021). Some common issues in online classrooms are: students not turning on their cameras, which disrupts the connection between learners and instructors; interruptions during learning because students do not turn off their microphones, causing audio disturbances; students lacking respect in online discussions or using inappropriate language, etc. These issues can negatively impact students' psychology and learning effectiveness (Enbeyle

et al., 2022). Given these challenges, it is essential to establish clear a code of conduct for online classrooms to ensure an effective learning environment. Such a code of conduct helps maintain a respectful atmosphere, encourage student discipline (Salmon, 2000), promote information security awareness (Gardner and Davis, 2013) and foster appropriate interactions with teachers and peers (Balida, 2023). Additionally, they support positive learning attitudes and minimize conflicts (Kamraju et al., 2024), while also helping students develop communication and collaboration skills (Kolm et al., 2022). Additionally, behavioral guidelines help students develop responsibility and self-discipline in their learning process (Bates, 2015; Tate and Warschauer, 2022). An important factor in online education is the diversity of students' learning environments. Not all students study in a fixed classroom with a stable internet connection. Instead, many participate in classes remotely, using smartphones or personal computers with varying internet quality. Therefore, this code of conduct should take this factor into account, ensuring that students—whether studying from home, a café, or a public space—can still apply appropriate principles to maintain discipline and learning effectiveness.

The development of a code of conduct for online learning has become an important topic in educational research, especially in the context of the rapid digital transformation driven by the COVID-19 pandemic. Salhab et al. (2021) proposed an ethical code for online learning during crises, specifically within the Palestinian education system, to uphold transparency, privacy and learner responsibility. Similarly, in the Palestinian education context, Shweiki et al. (2021) focused on teachers' attitudes and perspectives regarding the establishment of an ethical code for online learning, emphasizing the role of stakeholders in enforcing and maintaining ethical values in the digital environment. Additionally, Brooks (2010) approached the issue from a practical perspective in online classrooms in the United States, developing an ethical code to help students connect ethical principles with the challenges of information technology, particularly in protecting privacy, ensuring academic integrity and fostering personal responsibility. In the United Kingdom, Sclater (2016) developed a code of practice for Learning Analytics, highlighting the need for the ethical and transparent use of learning data while safeguarding student privacy. Likewise, Summerville (2005) proposed a code of conduct for online classrooms, focusing on guiding communication behavior, managing inappropriate actions and maintaining discipline in technology-based learning environments. Overall, these studies emphasize the importance of establishing a clear and comprehensive code of conduct for online learning, outlining the rights and responsibilities of both learners and educators.

In Vietnam, to regulate the behavior of students, teachers and social media users, the Vietnamese government has issued two important codes of conduct: (1) The Code of Conduct in Schools (Circular 06/2019/TT-BGDĐT), issued by the Ministry of Education and Training (MOET); and (2) The Code of Conduct on Social Media (Decision No. 874/QĐ-BTTTT), issued by the Ministry of Information and Communications (MIC). These documents play a crucial role in guiding user behavior on social media, aiming to create a healthy and civilized online environment. Both codes seek to establish a positive learning and interaction environment while ensuring compliance with legal, cultural and

ethical norms. However, there is still a need for more specific regulations on the online learning behavior of Vietnamese high school students. This study aims to develop a code of conduct for online learning for Vietnamese high school students, contributing to the creation of a sustainable digital education environment that aligns with Vietnam's practical conditions. This brief research report introduces the development of a code of conduct for high school students participating in online classes, following a three-stage measurement development approach. The validity and reliability of these rules were assessed using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). The code of conduct for online teaching is developed with the goal of maintaining discipline in learning, cultivating a sense of responsibility and ensuring civilized behavior in the digital space. It can be applied to all high school students in Vietnam (grades 10 and 11) who engage in learning activities on official online platforms and in digital spaces related to education—during class, while doing homework and when participating in online study groups. Additionally, this code can serve as a useful reference for high school students in other countries with similar teaching and learning conditions as Vietnam. The code not only helps establish an effective online learning environment, but also contributes to enhancing skills for working in digital spaces, helping students better adapt to modern educational trends.

2 Materials and methods

2.1 Procedure of developing codes of conduct

A process consisting of 03 stages for developing CCOCVHSS is based on the overview of scale development studies by [Morgado et al. \(2017\)](#). The stages are: (1) Item generation; (2) Evaluation of items; (3) Psychometric analysis.

First, the study establishes a set of items using a deductive method, which is a scale development approach based on theoretical definitions of the concept, as well as theoretical and empirical studies related to the central concept. This method is used to create an “items pool”. This approach is widely used in research to develop a set of items suitable for the study [with 84.7% of the 89 studies evaluated by [Morgado et al. \(2017\)](#) using this method].

Secondly, the study assessed the items identified in the first step using an expert judge method, based on the recommendations of [DeVellis \(2017\)](#). This tool is commonly used to evaluate the face validity of items, which provides a basis for eliminating unsuitable items from the scale ([Kapuscinski and Masters, 2010](#); [Ladhari, 2010](#)).

Finally, with the items identified in the second stage, the study proceeds to collect data to determine specific aspects of CCOCVHSS. This process is carried out sequentially through two steps as follows EFA and CFA.

2.2 Instrument

With 32 items developed, we designed a questionnaire to collect data from high school students and teachers. The questionnaire

TABLE 1 Demographic data of the survey participant.

Characteristics	Amount	Percentage (%)
Respondent	923	100.0
Teacher	321	34.2
Student	602	65.8
Gender	923	100.0
Male	356	38.6
Female	567	61.4
Province/City	923	100.0
Hanoi	335	36.3
Nghe An	354	38.4
Ho Chi Minh City	234	25.4
Living place	923	100.0
Urban	516	55.9
Rural	407	44.1

consists of three parts. The first part provides information about the study and includes a consent statement from participants regarding their involvement in this research. The second part is designed to gather demographic information such as (1) Province/City; (2) Living place; (3) Gender; and Subjects, without collecting personal information like name, age, address, or the name of the school attended. The final part, which is the main content of the questionnaire, consists of 33 items presented with the question: “Please indicate your level of agreement with the following codes of conduct in online classrooms of high school students.” These items are rated using a 5-point Likert scale with the following specific values: 1—Strongly disagree; 2—Disagree; 3—Neither agree nor disagree; 4—Agree; 5—Strongly agree.

2.3 Sampling

This section provides a description of the data distribution according to demographic information to give the audience a general overview of the research context. [Table 1](#) below presents the demographic characteristics of the study sample. The survey participants include both teachers and students, with the proportion of students nearly double that of teachers (with a difference of 31.6%). These participants are individuals who have engaged in teaching and learning in synchronous online classrooms at various locations, both in the past and present, using devices such as desktop computers, laptops, smartphones and tablets. Teachers manage their classrooms through features provided by online teaching applications or video conferencing tools to perform tasks such as taking attendance, requesting students to turn on their cameras, controlling microphones and monitoring student participation.

The research sample was selected from high schools in three provinces/cities of Vietnam, including Hanoi (36.3%), Nghe An (38.4%), and Ho Chi Minh City (25.4%). Among them, Hanoi and Ho Chi Minh City are the two largest cities in Vietnam, economic

and social development centers that respectively represent the northern and southern regions of the country. Nghe An is one of the provinces with a high population, particularly known for its long-standing tradition of education in Vietnam. Additionally, the research sample was also classified into two regions with differing levels of economic-social development and telecommunication infrastructure: rural (55.9%) and urban (44.1%). Meanwhile, the distribution across different living areas shows no significant disparity.

2.4 Data collection

With the items developed as described above, the study proceeded to collect data. Regarding the survey sample, the study targeted high school teachers and students in Vietnam using a convenience sampling method. This method involves selecting individuals who best meet the research requirements and continuing the selection process until the necessary sample size is achieved (Cohen et al., 2012). Vietnam is one of the countries with the highest internet and mobile network (3G, 4G) coverage in the world (VNA, 2024). Additionally, the ownership of internet-connected devices among both teachers and students in Vietnam is relatively high, thanks to government support policies in recent years aimed at accelerating digital transformation across various sectors, including education. Therefore, the data collection was conducted through an online survey to facilitate data gathering and optimize research costs. After obtaining permission from school administrators, the research team distributed the online questionnaire to two target groups: teachers and students. For teachers, the research team directly sent the online questionnaire link to the teachers of the school. For students, the research team distributed the survey through their homeroom teachers in an online format designed using Google Forms. All questions in the questionnaire were mandatory, ensuring that no missing data existed once the form was completed. The survey link was sent to participants via internet platforms such as email, Facebook Messenger, and Zalo.

Data collection took place from February 18 to March 22, 2024, with 1,014 responses, including 244 teachers and 670 students. The data were then downloaded in *.csv format and cleaned based on the recommendations of Hair et al. (2014) to remove records according to specific criteria such as: (1) Providing the same answer for all questions; (2) Responses following a descending or ascending pattern; (3) Leaving all answers blank. The final result was a dataset with 923 records that met the requirements for Exploratory Factor Analysis. This file was then imported into SPSS software for data analysis.

3 Results

3.1 Items development

The items in this study are derived from a review of research literature on the code of conduct of teachers and students in online teaching and learning. As a result of this process, 34 specific items were identified. The selection of experts for evaluating this

system of items was based on three criteria: (1) Experts must have deep expertise in one of the following fields: Social Psychology or Educational Psychology; Measurement Scale Development or Scientific Measurement; Linguistics (Vietnamese); Educational studies; or Educational Management. In this study, we also included two additional groups for feedback on the items: High school teachers and high school students, as representatives of target population opinions (Bastos et al., 2010; Uzunboylu and Ozdamli, 2011); (2) Experts must have at least 5 years of experience working or researching in their field, although this criterion was not required for students; (3) Experts must volunteer to participate and agree to certain research ethics and confidentiality conditions. We contacted 15 experts via email, Zalo, and Messenger. The results of the expert selection for the item evaluation group are as follows: (1) 13 experts responded, of whom 11 agreed and 2 declined to participate; (2) Two experts did not respond to the invitation. Therefore, a final expert group consisting of 11 members was selected.

Subsequently, the expert group will be sent a file (.doc) designed with the items on the left and the rating scale on the right. For this study, we apply the sumscore decision rule in combination with the complete rule (Hardesty and Bearden, 2004) to determine whether an item is selected or removed from the toolset. Regarding the sumscore decision rule, an item will receive evaluations from 11 experts using a 3-point Likert scale with the following specific levels: (i) Completely representative: 3 points; (ii) Somewhat representative: 2 points; (iii) Not representative: 1 point. As for the complete rule, an item needs to receive at least 50% of experts rating it as completely representative of the construct (Saxe and Weitz, 1982). Therefore, for an item to be selected, it must satisfy the two decision rules mentioned above, achieving a minimum of 16.5 points. Items that meet this point threshold will be retained for evaluation in the third stage. The evaluation results from the experts proposed 32 items, of which two were excluded: (1) C23: 'Students mute the microphone when there is no discussion related to the lesson', which scored only 16 points (below the 16.5 threshold); and (2) C30: "Students always mute the microphone when another student is speaking or discussing", which scored above 16.5 (25 points) but was rated as "completely representative" by only 36.6% of experts.

3.2 Psychometric analysis

In the first step, the EFA method was used to identify the variables and the corresponding items for those variables. Before conducting EFA, the research team checked the mean values of the observed variable C25 "Students do not engage in unrelated activities during class" and the distractor variable C29 "Students always respond to private messages from other students during online classes." The results indicated that these two items needed to be removed because their mean values were too similar ($C25 = 4.17$; $C290 = 3.18$). The requirement is that the distractor variable and the main observed variable should have opposite values, or in other words, the mean values of these two items should be at opposite extremes. Thus, the remaining 30 items were used for EFA. With Varimax rotation, the analysis results

TABLE 2 Rotated factor matrix results.

Code	Items	Component			
		1	2	3	4
C11	Students display respect, politeness, and courtesy in communication with the teacher.	0.773			
C12	Students listen to each other's opinions with respect.	0.762			
C14	Students show openness in communication with each other.	0.759			
C15	Students respect each other's differences in the online classroom (such as gender, voice, appearance, etc.).	0.744			
C13	Students actively support each other in completing learning tasks.	0.737			
C9	Students show openness in communication with the teacher.	0.729			
C10	Students complete their learning tasks consciously.	0.720			
C8	Students actively participate in learning activities organized by the teacher.	0.713			
C7	Students adhere to the rules of the online classroom.	0.667			
C27	Students always thank the teacher when receiving support.		0.756		
C26	Students always apologize to the teacher when making mistakes.		0.707		
C31	Students always apologize to classmates when they make mistakes.		0.684		
C30	Students always thank classmates when receiving support.		0.659		
C28	Students do not tease others in the online classroom in any way.		0.635		
C23	Students use online classroom software icons appropriately and as required.		0.609		
C24	Students do not share unfamiliar documents or links without the teacher's permission.		0.548		
C22	Students use their real names during online learning.		0.538		
C20	Students turn on the camera as required.			0.762	
C19	Students position the camera according to regulations.			0.756	
C21	Students use a real background throughout the lesson.			0.695	
C17	Students greet the teacher when accessing the online classroom.			0.643	
C16	Students always join the online classroom on time.			0.611	
C18	Students say goodbye to the teacher when the online class ends.			0.586	
C32	Students say goodbye to classmates when the online class ends.			0.562	
C3	While studying, students sit comfortably with an upright posture, and their face is centered in the camera frame.				0.786
C1	Students wear tidy and formal attire.				0.762
C2	Students study in a quiet location.				0.744
C4	Students use clear and understandable language when communicating with the teacher and peers.				0.702
C5	Students use body language along with words to express their thoughts and feelings.				0.686
C6	Students do not use disrespectful language toward the teacher and peers.				0.598

were as follows: The Kaiser–Meyer–Olkin measure ($KMO = 0.972$) and Bartlett's test of sphericity ($\text{Chi-Square} = 28,213.787$, $df = 435$, $p = 0.000$) confirmed the adequacy of the sample for factor analysis. The initial direct oblimin rotation yielded four factors with eigenvalues exceeding 1, which shows a dramatic slope change on the screen plot at the fourth factor, with extraction sums of squared loadings at 71.831% [as recommended by Hair et al. (2010), this value should be $>50\%$]. This indicates that the four-factor solution was highly interpretable. The analysis also showed that all items had cross-loadings >0.5 , and no item loaded on multiple factors (see Table 2). The EFA results indicate that four constructs were extracted, including: (1) Factor 1: consisting of

09 items representing students' attitudes toward teachers in online classes, the lessons, and the principles of these classes; (2) Factor 2: consisting of 08 items reflecting communication principles between students and teachers, as well as among students themselves in online classes, such as language and classroom behaviors; (3) Factor 3: consisting of 07 items describing students' behaviors when participating in online classes on aspects such as proper camera usage and the principles for starting and ending online classes; and (4) Factor 4: consisting of 06 items reflecting principles related to students' clothing, posture, and body language in online classes.

In the third step, the four factors or scales identified through EFA were tested for reliability based on Cronbach's Alpha values.

TABLE 3 Reliability testing of factors after EFA.

Factor	Cronbach's alpha	Cronbach's alpha based on standardized items	N of Items
1	0.970	0.970	9
2	0.913	0.917	8
3	0.932	0.935	7
4	0.917	0.918	6

The results in Table 3 show that the Cronbach's Alpha values for all factors are >0.6 . Additionally, all items have a Corrected Item-Total Correlation >0.3 . Therefore, the factors meet the criteria for conducting further analyses.

With 30 items explored through EFA, CFA was conducted with four constructs ($n=923$) to assess the factorial validity of the final version of the CCOCVHSS. To ensure the discriminant validity of the latent variables, 14 items were removed due to loading on multiple latent variables across CFA iterations (Hair et al., 2010). These items were: (i) Factor 1: C7, C8, C15, C11; (ii) Factor 2: C22, C23, C24, C28; (iii) Factor 3: C16, C17, C18, C33; (iv) Factor 4: C5, C6. With the final 16 items, the results indicated that the four-factor model of the CCOCVHSS fit the data well with values meeting the threshold criteria, specifically: Chi square/df = $4.353 \leq 5$ (Hu and Bentler, 1999); GFI = $0.927 \geq 0.9$ (Forza and Filippini, 1998); TLI = $0.963 \geq 0.9$ (Hu and Bentler, 1999); NFI = $0.961 \geq 0.95$ (Awang, 2012); CFI = $0.969 \geq 0.95$ (Hair et al., 2010); RMSEA = $0.06 \leq 0.06$ (Hair et al., 2010); and SRMR = $0.028 < 0.08$ (Hair et al., 2010) (see Figure 1). Inter-factor correlations were ranged from 0.39 to 0.78, all of which were below 0.85, indicating that the discriminant validity was acceptable (Kline, 2023).

Table 4 shows that all Composite Reliability (CR) values, which indicate levels of internal consistency, are >0.7 , thus ensuring the reliability of the four factors (Hair et al., 2020). To evaluate convergent and discriminant validity, this study uses the results from Fornell and Larcker (Hair et al., 2010). The results presented in this table also indicate that the Average Variance Extracted (AVE) values for all factors are >0.5 , Maximum Shared Variance (MSV) is less than AVE, and the Square Root of AVE is greater than the Inter-Construct Correlation. Therefore, the factors in the tool meet the criteria for both convergent and discriminant validity.

Thus, the CCOCVHSS includes four scales with 16 items to measure four aspects of the Code of Conduct. Based on the meaning of the items in each scale, we have named these scales as specified: (1) Students' Attitudes Toward Teachers and Classmates: 5 items; (2) Communication Conduct of Students Toward Teachers and Classmates: 4 items; (3) Conduct in Using Camera by Students: 3 items; and (4) Dress Code, Sitting Posture and Learning Location Regulations: 4 items.

4 Discussion

With the goal of developing a code of conduct for high school students, the study followed a three-step scale development process. As a result of this process, the study identified 16 measurement

items across four aspects of high school students' conduct in online classes. These are: (1) Students' Attitudes Toward Teachers and Classmates: 5 items; (2) Communication Conduct of Students Toward Teachers and Classmates: 4 items; (3) Conduct in Using Camera by Students: 3 items; and (4) Dress Code, Sitting Posture, and Learning Location Regulations: 4 items. Below, we will discuss the four groups of conduct codes developed for online classes.

4.1 Students' attitudes toward teachers and classmates in online classrooms

Students' attitudes play a critical role in the learning process across all learning modes. Many studies have shown that students' attitudes in online learning environments, as well as in online classes, have a direct impact on their attention and academic performance. Additionally, according to the theory of planned behavior, a person's attitude predicts and motivates the occurrence of their behavior in a specific activity (Ajzen and Fishbein, 2005). For students participating in online classes, where the online learning format requires a high level of self-study skills and self-discipline, students' attitudes need to be aligned with the online learning environment. Ilyas et al. (2023) emphasize that students' conduct in online classes goes beyond merely following rules; it also involves mutual respect, active listening and the ability to respond positively. Clark and Mayer (2023) argue that maintaining respectful and friendly language is essential to creating a positive learning environment. Students feel more confident and secure when communicating with teachers if teachers show respect and listen to their opinions. Likewise, when students demonstrate respect toward their teachers and peers, it helps create a more friendly and collaborative learning space.

4.2 Communication conduct of students toward teachers and classmates

Polite communication and interaction in online classes play an important role in fostering a friendly and effective learning environment. Hodges et al. (2020) point out that simple actions like greeting others when joining a class or expressing gratitude for help received can strengthen connections among class members. Barbour et al. (2020) also highlight that online communication tools cannot fully replace gestures and face-to-face interactions. This calls for more creative use of online tools to foster positive interactions and build stronger connections between students. Barbour et al. (2020) emphasize that students should show respect for teachers and classmates by avoiding teasing or disruptive behavior, apologizing for mistakes and thanking others for their support. Bozkurt and Sharma (2020) recommend having clear online classroom conduct rules and measures for handling violations to ensure fairness and mutual respect among students. In online learning environments, students need to build relationships and cooperation with teachers and peers, as Crawford et al. (2020) note that students may feel isolated in online settings. According to Garrison et al. (1999), when students receive help from teachers and peers, they can show appreciation and respect by

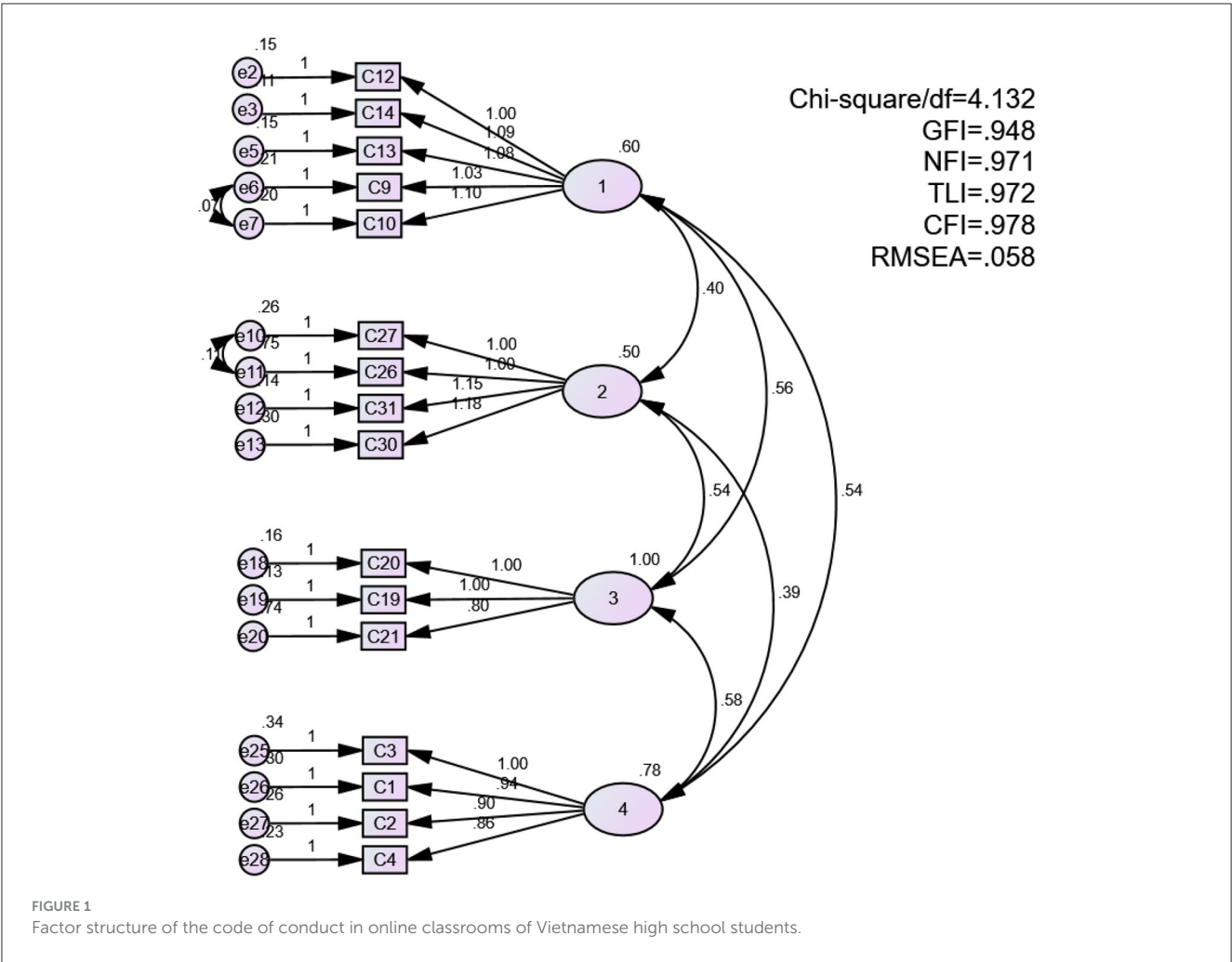


TABLE 4 Fornell and Lacker table.

Factor	CR	AVE	MSV	MaxR(H)	1	2	3	4
1	0.954	0.807	0.618	0.957	0.899			
2	0.878	0.646	0.582	0.907	0.728***	0.804		
3	0.892	0.737	0.582	0.937	0.721***	0.763***	0.858	
4	0.905	0.705	0.618	0.905	0.786***	0.624***	0.658***	0.840

***p < 0.001. Bold values indicates Square Root of AVE.

demonstrating gratitude and apologizing when they make mistakes. This not only helps establish positive relationships but also encourages mutual cooperation and cultivates respectful behavior habits among students toward teachers and peers. This is the foundation for gradually building a culture of respectful conduct, not only in online classes but also across online education settings in general.

4.3 Conduct in using camera by students

In online learning, students' use of cameras as regulated by the school or teacher is also an important behavior that helps enhance the effectiveness of students' learning. It ensures a certain

level of supervision from teachers and stakeholders regarding students' study. Online classes on platforms like Zoom, Microsoft Teams and Google Meet display videos in different ways, which affects students' decisions to turn their cameras on or off. Some reasons for turning off their cameras during online classes include feeling uncomfortable with constantly appearing on the screen (Castelli and Sarvary, 2021), or concerns about their personal space (Lowenthal, 2022). The type of device students use significantly influences their decision to turn the camera on or off, as those using mobile phones are more likely to disable their cameras due to battery limitations and inconvenient camera angles (Gherhes et al., 2021). Moreover, the quality of the internet connection is an important factor influencing the decision to use the camera. Several studies figure out that some students turn off their cameras

for the following reasons: (i) Saving bandwidth to avoid lag and ensure better audio quality in the classroom, especially for students in rural areas (Fabriz et al., 2021); (ii) Related to technical issues like weak internet connection, poor-quality devices, and unsuitable devices (Williams and Pica-Smith, 2022). The survey results of this study show that Vietnamese students tend to turn off their cameras in online classes, similar to the reasons found in previous studies in different countries around the world. In addition to technical factors, psychology and the learning environment also significantly influence students' decisions to turn their cameras on or off. Many students have to study in spaces that do not ensure privacy, such as sharing a room with family members or being disturbed by surrounding noise. Others feel hesitant to turn on their cameras due to fear of being judged on their appearance or not wanting teachers and classmates to see their living environment. Furthermore, turning on the camera can also create pressure, making it difficult for students to learn comfortably. Although some teachers and schools require students to turn on their cameras during class, if this rule is not flexible, it can create stress and have the opposite effect. In many cases, students only turn on the camera when the teacher asks but then turn it off again due to personal or technical reasons. These factors indicate that the decision to turn the camera on or off is not solely based on the student's personal preference, but is also influenced by the device, connection quality, learning environment and school regulations. Therefore, there needs to be rules that encourage, but do not mandate, turning on the camera, allowing students the right to choose based on their circumstances.

4.4 Dress code, sitting posture, and learning location regulations

Clothing, sitting posture and learning environment in online classrooms, which are visible on the shared screen of video conferencing tools, also play a significant role in establishing digital etiquette, fostering a sense of responsibility toward one's learning and contributing to a respectful learning environment with teachers and classmates. This is one of the fundamental principles of interpersonal communication, helping to form a system of culturally normative behaviors. With established regulations on camera use, students in online classes should also ensure they wear attire suitable for a formal setting. According to Anderson (2008), when students dress neatly, they become aware that they are participating in an important activity, which enhances their self-discipline and seriousness in learning, potentially impacting their academic performance (Volpe et al., 2023). As for sitting posture, Garrison (2016) found that when students sit with correct posture, teachers can more easily observe students' expressions, and students can focus better on the lesson. Regarding the study environment, ensuring a suitable, quiet space optimizes knowledge acquisition and engagement in learning activities (Bao, 2020). In an online learning environment, students often study from home, where they may be affected by various external factors such as noise from family, neighbors or household devices. This directly impacts the student's focus on the lesson, as well as that of other students and the teacher.

Therefore, clear regulations on attire and sitting posture within an appropriate learning environment help establish specific norms for online classrooms, fostering a class culture that promotes effective learning and teaching. Additionally, these guidelines contribute to shaping students' behaviors and habits in formal online settings, gradually cultivating professional manners and digital etiquette, fostering a cultured individual even beyond the online environment.

5 Conclusion

Codes of conduct in online classrooms play a crucial role in creating a positive, effective and highly cultured learning environment. This article contributes to presenting fundamental rules regarding the behavior of high school students in online classrooms, providing an essential foundation for establishing a suitable culture of conduct among relevant parties within this increasingly popular learning space worldwide.

The development of a code of conduct for online classrooms plays a crucial role in improving the quality of education and effectively managing online classes in Vietnam. Such a code helps students better understand their responsibilities and roles, thereby contributing to a civil, positive, and effective learning environment. For successful implementation, collaboration between the Ministry of Education and Training of Vietnam and general education institutions is essential. First, the Ministry of Education and relevant educational authorities should issue clear and consistent guidelines on the online code of conduct, while also providing resources and training for teachers. Second, high schools need to develop and apply clear codes of conduct that are appropriate to local realities. Third, teachers should integrate the content of the code into their teaching activities and strengthen collaboration with parents in monitoring and supporting students to effectively follow the rules.

While the study has successfully outlined codes of conduct for high school students in online classrooms according to its research objectives, it does have certain limitations. The research sample includes only the opinions of students and lacks input from teachers, who are key partners in establishing and maintaining conduct rules in this learning environment. Along with this, teachers' codes of conduct in relation to students' behavior in online classrooms also need to be developed to ensure the integrity of the teaching and learning process in online settings. Another stakeholder group that has not yet been considered in this research includes school leaders and administrators. These individuals play a critical role in issuing organization-wide rules and in overseeing and monitoring the implementation of these rules in classrooms to ensure compliance as well as timely adjustments to align with the practical realities of the educational process.

This suggests a direction for future research to expand this topic by exploring teachers' and administrators' perspectives on students' codes of conduct in online classrooms. Furthermore, developing a code of conduct for high school teachers in online classrooms should also be pursued. Another research direction based on this study would be to investigate factors influencing the conduct codes for both students and teachers, enabling suitable interventions to further improve these codes in online education.

Data availability statement

The datasets presented in this study can be found in online repositories. The names of the repository/repositories and accession number(s) can be found below: <https://data.mendeley.com/datasets/h7y74ygfwnw/3>.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent from the participants or the participants' legal guardian/next of kin was not required to participate in this study in accordance with the national legislation and the institutional requirements.

Author contributions

BT: Conceptualization, Data curation, Investigation, Methodology, Project administration, Resources, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. X-AN: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Software, Validation, Visualization, Writing – original draft, Writing – review & editing. NTV: Conceptualization, Data curation, Investigation, Methodology, Supervision, Validation, Writing – original draft. VT: Conceptualization, Data curation, Investigation, Methodology, Project administration, Resources, Supervision, Validation, Writing – original draft, Writing – review & editing. NTK: Conceptualization, Investigation, Project administration, Resources, Supervision, Validation, Writing – original draft, Writing – review & editing. DT: Conceptualization, Data curation, Investigation, Methodology, Software, Validation, Visualization, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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The author(s) declare that no Gen AI was used in the creation of this manuscript.

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