

Web-based e-Learning Adoptions in TVET by Linking Social Network: the Social-Affective & Cognitive Perspectives

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Abstract— *The Social Network Sites or Services (SNS) emerged as one of the strongest cultural influences in modern society. SNS system is currently absent in technical and vocational education and training (TVET) in Bangladesh. SNS would provide both challenge and potential for TVET. The objectives of the study were (i) to identify the preferred learning materials, preferred Web-links and preferred assessment tools of TVET students; (ii) to determine the preferred instructional strategies, learning preferences and learning experiences of TVET teachers' for Web-based e-Learning adoptions by linking social networking, and (iii) to show the importance SNS in TVET in terms of social-affective and cognitive perspective. One survey was conducted by the researchers with the structures questionnaires. 45 TVET institutions were visited by the researchers to collect the research data. 336 students' & 187 teachers' of TVET have given their opinion about the topic carried out by the research. The research shows significant grounds that could bridge education & social network. In the due process, the research suggests to design the curriculum and instruction to link SNS in TVET.*

Keywords- *Web-based e-Learning; TVET; Social Network; Social-affective & Cognitive perspective*

I. INTRODUCTION

The practice of social networking with Web-based e-Learning for classroom teaching is recently absent in Technical and Vocational Education and Training (TVET) program in Bangladesh. The challenge and potential of Web-based e-Learning learners encounter are low levels of motivation to participate and feeling of isolation. The reason is in part the fact that all contacts are electronic with minimal face-to-face interactions [1]. Isolation and the uncertainty of co-presence with others can make students feel lost and uneasy [23].

Despite the relatively short history of Social Network Sites or Services (SNS), it has quickly gained popularity with more than ten million users all over the globe. SNS is based on computer mediated communication (CMC) but it is more focused on users' social-emotional needs compared with CMC which is focused on information sharing and exchanging such an on-line community, blog, and so on [43] [31]. SNS can also affect the extent to which a person feels lonely. SNS may provide people with a sense of connection [43]. Especially as the affective domain of learning is given

as much significance as the cognitive domain, SNS can be used to manage the affective domain of learning and increase motivation from learners.

According to Korea Internet Security Agency [30] SNS is the internet based maintenance and management services which is 'connecting people, information sharing, social networking, and self-expressing' mechanism. The basic premises of SNS are the formation of relationships between people and the sharing of knowledge and information [24] [29] [26] [41]. Nowadays SNS allows the users to have reciprocal communication and provides specified process of communication. Not only does SNS offer a variety of information, but also delivers information to users almost immediately as it transcends the spatio-temporal restrictions. For instance, TV as a medium delivers information to people in one direction, but Facebook allows its users to engage in the communication process itself, create threads of information, and thus understand also the context of information.

The four aspects of learning spaces (information acquisition space; information application space i.e., personal use of information gained; learning discourse space; and knowledge construction space) are expanded in distance education [46]. Such expansion of learning spaces was made possible by Web-based e-Learning, but with SNS acting as affordance, learning spaces are enlarged rapidly. The formal learning is highly institutionalized, bureaucratic, curriculum driven, and formally recognized with grades, diplomas, or certificates [40]. On the other hand, informal learning is oriented towards autodidactic and self-directed learning and places special emphasis on the self-definition of the learning process by the learner [35].

Studies of informal learning, especially those asking about adults' self-directed learning projects, reveal that upwards of 90% of adults are engaged in hundreds of hours of informal learning. More efforts are needed to go beyond the territory of traditional school education and to include informal learning as another domain of education. And SNS can provide meaningful means to facilitate informal learning to extend what learning is. The view of education seems to be shifting from formal school education to include informal learning as a result of SNS. SNS has potential to bring learning to learners whenever and wherever they are [47].

The quality of social network's educational effect-either positive or negative will be determined by the people who create networks. Furthermore, emphasizing the value of learning through social network, the researchers insist that effective learning should foster "network" learners [52]. The media would not stay limited to personal uses, but would continue to cultivate social relationships [39]. The nature of electricity is to connect things, even beyond the spatial dimension. It connects a machine to a machine and a person to others. So it seems that social network has emerged as a product of people's basic social needs and computer communication technology [47].

SNS integrated with social media has become the most talked about subject of modern society. Considering the trend for the past few years, it feels as if social network and SNS have become a part of the main source of every day's information. It is probably because it is the tool that best realizes and expresses the very social nature of human. SNS creates immediate information and rapid expansion through online social networks [5]. The emergence and influence of SNS could not escape from the attention from the field of education in which shares the essential interest in information [45].

Recognizing the limitations of Web-based e-Learning in social-affective and cognitive areas, many studies have been conducted to mitigate the negative impacts and to provide alternatives to enhance the effectiveness of Web-based e-Learning [38] [16] [18] [48] [51]. Recently along with the exponential growth of SNS such as Facebook and Twitter, researchers and educators have begun to consider their educational potentials. Despite the rapid expansion of SNS, educators have been slow in exploring the affordances and integrating these burgeoning technologies into their learning environments [15].

The objectives of the study were (i) to identify the preferred learning materials, preferred Web-links and preferred assessment tools of TVET students for Web-based e-Learning adoptions by linking social networking; (ii) to determine the preferred instructional strategies, learning preferences and learning experiences of TVET teachers' for Web-based e-Learning adoptions by linking social networking, and finally (iii) to show the importance of Social Network service (SNS) in TVET in terms of social-affective and cognitive perspective. The research questions are (i) what are the learning preferences of TVET students' and teachers' for SNS; (ii) what are the potentials and advantages of using SNS in a learning context?; (iii) what are the challenges and limitations of using SNS in a learning context?

II. LITERATURE REVIEW

The first social networking sites or services (SNS) were launched in 1997. SNS initiated with SixDegree.com in 1997. In 2002, Friendster lunched. Friendster recognized the common pattern among people to form a network of online friends with those whom they already knew in person or with friends of friends' technology [47]. Thus, Friendster built a system to help users find friends, acquaintances, and

friends of friends' [5]. As social networking slowly became to be the cultural norm, more SNS sites that connect people with common interest began to appear. Some of these newly launched SNS tried to differentiate themselves from others by focusing on certain interest groups; for example, Passion-centric, Care2, Couchsurfing, and MyChuch are SNSs for special interest groups. Adding on to casual networking were those sites involving professional social networks like LinkedIn, Visible Path and Xing. Flickr is a well-known SNS for sharing pictures, Last.FM for sharing music, and YouTube for sharing videos [5].

Then, in 2005, MySpace was at the center of attention when it was acquired by News Corporation BBC. MySpace became popular in USA and other countries as was Friendster is Southeast Asia, Orkut in Brazil, Mixi in Japan, LunarStorm in Sweden, Hyves in Netherlands, Grono in Poland, Hi5 in Central America, and Bebo in China [47]. The lunch of Facebook, which now dominates SNS industry, has made the society to pay more close attention to SNS. Found in 2004, Facebook was originally limited to Harvard students. It expanded service first to other college students and then eventually to anyone aged 13 and over [5].

Cyworld, a South Korea's most popular site launched in 1999, has 25 million Korean users as of February 2011. The user can create a personal mini-webpage, register others as friends or first degree relative called 'Ilchon' post short personal notes and pictures, and share with friends. Between 2004 and 2005 an average of 700 million notes, 4.5 million pictures, 8 million posts were created and read everyday [27]. Cyworld also has operations in China and USA. Twitter launched in 2006 also has rapidly gaining new users. As of April 2010, three hundred thousand users joined everyday [33]. Twitter is similar to other SNS in that it also allows building connections with other users and leaving short messages online via mobile phones, however, there are some distinct differences.

Users on typical social networking sites, like Facebook, build reciprocal relationship with Facebook users whom they usually know offline. On Twitter, however, a user can form unidirectional relationship simply by 'following' the other person without the person's permission [33]. It is unique characteristics of Twitter that permits unidirectional following relationship pattern. And such feature of Twitter has made it to have exportability of information [33]. Twitter's not only having the social relationships with the persons but also have the ripple effect. For instance, when US Airways flight made an emergency landing at Hudson River in 2009, the news quickly spread through Twitter. After the earthquake in Japan in 2011, Twitter users tried to locate their families and friends on Twitter [47].

SNS is a Web-based service that allows posting personal information of user within a designated boundary of a network, forming social networks, and accessing other users and networks through common friends to expand one's network of friends [5]. Social media is a kind of media produced by measureable publishing technology to facilitate the diffusion of opinion through social interaction [50]. In fact, social network and social media are different in their

function and purpose. SNS focuses on network whereas social media helps the user to both produce and consume information. However, both involve openness and sharing of information.

It is estimated that there are more than seven hundred million SNS users up to year 2011. Facebook alone had more than five hundred million users as of July 2010 [32]. Twitter had one hundred six million as of May 2010 [34]. Friendster one hundred fifteen million users [13] and Cyworld had twenty five million global users.

III. METHODOLOGY

The aim of the study is to investigate the opinions of TVET students and teachers about Web-based e-Learning adoption for linking the social network in the arena of TVET to enhance the teaching-learning process. The problem statement is thus: “does Web-based e-Learning by social networking favorably affect the students’ involvement in TVET or not?” The research design has adopted for the study was sample survey research. “A sample survey research design is the type of research design that a group of people is studied by collecting and analyzing data from such a group of people who are considered to be the representative of the entire people” [42].

Area of study: The study has carried in Government technical and vocational education and training (TVET) institutions in Bangladesh. 45 TVET institutions were there. All the TVET institutions have more or less Internet facilities but not used the social networking in the class teaching. Despite the fact that most of the institutions are sited where they have access of electricity and internet facilities.

Population and sample: The population for this study was made students’ and teachers’ of TVET in Bangladesh. 336 students and 187 teachers from TVET institutions were participated by providing the information about their preferred teaching-learning process by Web-based e-Learning basis. The teachers’ and students’ were expressed their opinions and needs about Web-based e-Learning in TVET by predict the benefit of social networking.

Method of data collection: The researchers have used two questionnaires for data collection. The instruments were administered by the researcher. The first questionnaire was for the TVET students’ about Web-based e-Learning to link with social networking. Out of 350 questionnaires, 336 were returned that is 96% return rate. The other questionnaires were distributed among the TVET teachers’. Out of the 187 questionnaires given out, 187 copies were returned that is 100% return rate.

Validation of the instrument: Two experts (from USA) and one expert (from South Korea) in Kongju National University were involved to prepare the research instrument. Their suggestions were used for drafting the final copy of the questionnaires.

Method of data analysis: The collected data were analyzed in line with the research questions using frequency

count and percentage. The study has shown the value (in percentages), in quantitative ways.

IV. RESULTS AND DISCUSSIONS

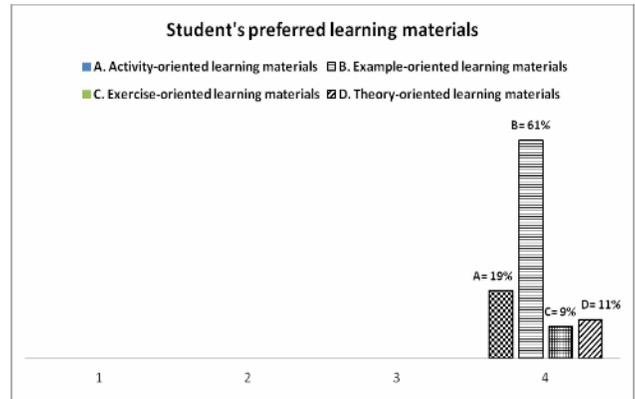


Figure 1. Preferred learning materials of TVET Students’

TABLE 1. STUDENTS’ PREFERRED LEARNING MATERIALS (NUMBER OF RESPONDENT, N=336)

Types	Preferred materials	Number	Percentage
A	Activity-oriented	64	19%
B	Example-oriented	205	61%
C	Exercise-oriented	30	9%
D	Theory-oriented	37	11%

TABLE 2. TVET STUDENTS’ PREFERRED WEB-LINKS (NUMBER OF RESPONDENT, N=336)

Web-Links	Site names	Ordering
http://www.unsscobkk.org	UNESCO	1 (114),34%
http://www.unevoc.unesco.org	UNEVOC	2 (50),15%
http://www.Amazon.com	Shopping	3 (47),14%
http://www.filehippo.com	Software	4 (40),12%
http://www.wikipedia.com	Encyclopedia	5 (27),8%
http://www.google.com	Internet search	6 (20),6%
http://www.youtube.com	Video-sharing	7 (17),5%
http://www.facebook.com	SNS	8 (10),3%
http://www.academicjournal.org	Journal	9 (7),2%
http://www.educationboard.org	MOE, BD	10 (4),1%

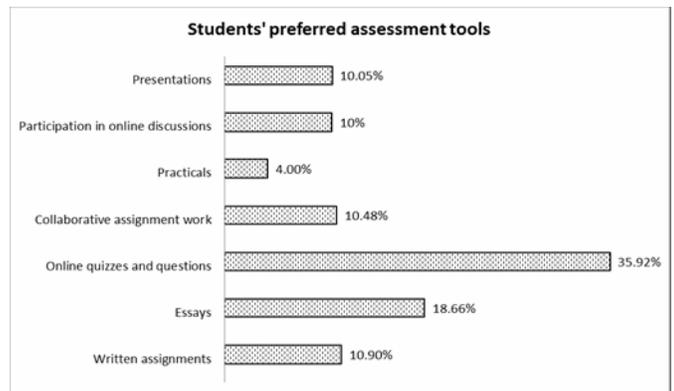


Figure 2. Preferred assessment tools of TVET Students’

TABLE 3. PREFERRED ASSESSMENT TOOLS OF TVET STUDENTS' (NUMBER OF RESPONDENT, N=336)

Preferred types of assessment tools	Percentage
Written assignments	10.90%
Essays	18.66%
Online quizzes and questions	35.92%
Collaborative assignment work	10.48%
Practical	4.00%
Participation in online discussions	10%
Presentations	10.05%

	experiment		
B	Logical approach, idea & concept, explanations	32	17.11%
A	Gather information, work in group, feedback	17	9.09%

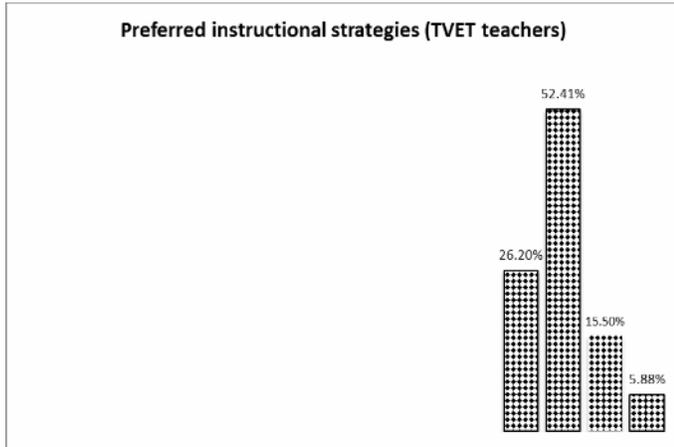


Figure 3. Preferred instructional strategies of TVET teachers'

TABLE 4. PREFERRED INSTRUCTIONAL STRATEGIES OF TVET TEACHERS' (NUMBER OF RESPONDENT, N=187)

Preferred strategies	Number	Percentage
Role playing	49	26.20%
Lecture	98	52.41%
Problem solving	29	15.50%
Group discussion	11	5.88%

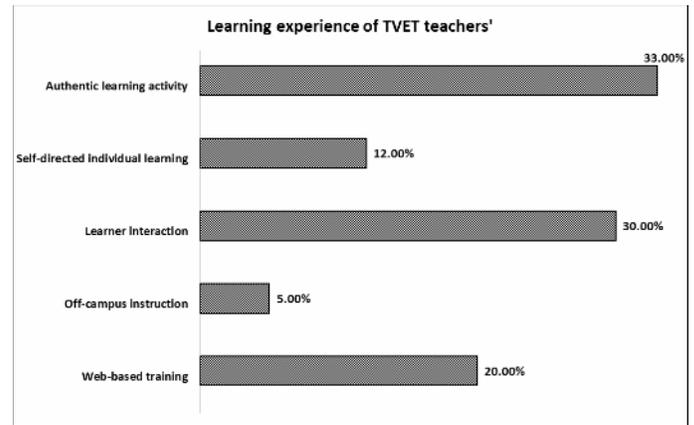


Figure 5. Learning experience of TVET teachers'

TABLE 6. LEARNING EXPERIENCE OF TVET TEACHERS' (THE NUMBER OF RESPONDENT, N=187)

Learning experiences	Number	Percentage
Authentic learning activity	62	33.00%
Self-directed learning	22	12.00%
Learner interaction	56	30.00%
Off-campus instruction	10	5.00%
Web-based training	37	20.00%

The 'example-oriented' learning materials were the most (61%) preferred learning materials of TVET students'. The UNESCO, Bangkok education Websites were the most (34%) preferred Web-links of TVET students'. The learning by using social networking is the new phenomenon for TVET in Bangladesh and so the less number (3%) of students' used those in the purpose of learning. On the other hand, most of the TVET students' (35.92%) preferred assessment tools are online quizzes and questions. The TVET teacher prefers lecture, the message delivering strategies. The learning preference of TVET teachers' are solve problems, theories, new experiment and they have the good learning experiences on authentic learning activity.

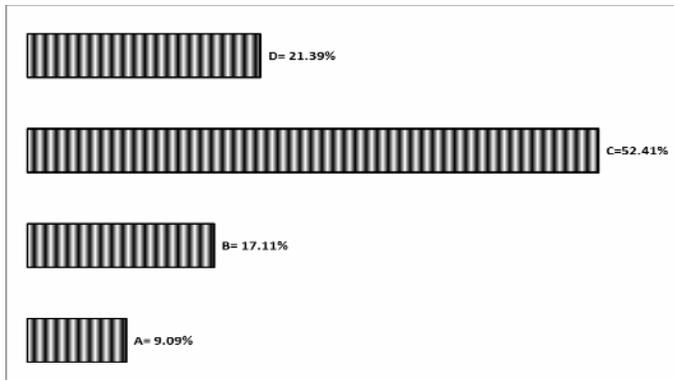


Figure 4. Learning preferences of TVET teachers'

TABLE 5. LEARNING PREFERENCES OF TVET TEACHERS' (NUMBER OF RESPONDENT, N=187)

Types	Learning preference	Number	Percentage
D	'hands-on' practice, people's analysis, experiential approach	40	21.39%
C	Solve problems, theories, new	98	52.41%

Social-affective aspect of SNS: Recently, along with the rapid expansion of SNS, this new type of communication tool has become an alternative for enhancing interactions for Web-based e-Learning platforms. People usually use SNS for gratification of their social-emotional needs since SNS enables them to be more connected and in turn improve their interpersonal relationships as well [44]. When we turn our attention to the educational field, we find that research on SNS for educational purpose is relatively rare, but we can still gleaned several advantages of using SNS from the social-affective perspective [7].

In SNS, students participate in dialogue more often and have more chance to interact with peers and instructors, seek help and collaborate with each other. SNS alleviates the

feeling of isolation, facilitates the bonding of social relationships and fosters a sense of community. These communicative and participatory behaviors can build strong ties that provide social support and a sense of community. Web-based social networking engagement is positively correlated with social acceptance by peers, which manifests in individuals developing, satisfying relationships with peers and becoming integrated and acculturated into the affiliated social circles [53].

Based on a survey conducted by McCarthy [37] which is disseminated to a group of university students in a design course, most of the students agreed that Facebook had increased their interaction with peers and helped them to develop social relationships. Students also expressed that it is useful to form online connections. SNS provides students with a more open and informal space to communicate, so that they have an avenue to talk about social, off-task and private topic [12] [25]. The indicators of social presence are expression of emotions, use of humor and self-disclosure [16]. And these types of interactions can be more easily triggered in informal communication. Above all, social-affective dialogue is significant because it can become a building block for task-oriented dialogue [7].

SNS can support immediacy in conversation and feedback similar to that of face-to-face communication [12] [21]. The absence of ‘real time’ response has been referred to as a barrier to online interaction [28]. The students in asynchronous communication complain about the delayed response time, which perpetuates frustration and affects their interest in partaking in online conversation [8].

Cognitive aspect of SNS: The students can share their knowledge and engage in individual or collective sense-making endeavors with others via SNS. According to Bandura’s social learning theory [3] there are three elements which affect individual learning outcomes: (i) individual learners, (ii) peers, and (iii) situation. In this respect, SNS can provide individual learners with effective learning environment to meet peers and instructors in authentic situations [7]. SNS exposes ideas and opinions in an open environment and subsequently students encounter other perspectives and reflect on their initial thoughts. The sustained discourse can facilitate the construction of meaning and validation of understanding within a community of students and experts [16].

SNS can create a scaffolding channel for teachers to intervene and to facilitate for deep learning. Though the timeline of SNS, teachers can monitor the learning process and intervene to stimulate students’ thinking by asking thought-provoking questions or to provide other perspectives that are often being overlooked. The positive impact of reading blogs contended that the act of reading blogs triggered students’ reflection and amplified the reflections within a community [9]. Reading in an online learning platform does not necessarily appear to be associated with active interaction explicitly, but it is neither passive because it includes a series of process such as participation, thinking, and reflection [4] [10] [22].

In Twitter, the brevity of tweets fosters students to articulate their understanding, which enables them to make tacit knowledge more explicit [19]. So, SNS functions as a scaffolding avenue for instructors to stimulate students’ thinking toward deeper understanding. A lack of instructor feedback has been a contributing factor to students’ withdrawal from online courses [14].

Many researchers support the importance of instructors’ scaffolding in online learning. Scaffolding includes providing feedback or relevant information, keeping the discussion focused and intervening when the discussion digresses [6], supporting critical and reflective thinking [20], stimulating students to generate new ideas [36], and providing good examples [49]. The role of technology is to bring authentic context into classrooms and one of the educational benefits of SNS is the utilization of authentic materials to enhance the cognitive knowledge and skill of the students.

IV. CONCLUSION

SNS changes the role of content consumer to content producer which are accelerating the knowledge, skill and experiences of the students tremendously. With elaborate inclusion of SNS in instructional design, SNS can offer practical ways for learners to actively build and engage in networks which they will use to share information, produce performance outcomes and receive feedbacks. SNS can also provide meaningful ways to benefit education with its readiness to create group intelligence. The research findings revealed the positive attitude and motivation of TVET people towards Web-based e-Learning. The TVET curriculum should be designed to link SNSs in classroom teaching.

Despite the increasing popularity of Twitter, its pedagogical impacts and educational usage have gained little attention in the literature [53]. As because, sometime it is difficult to cope up the total education if it fully Web-based or SNS. Web-based e-Learning itself has many kinds of drawbacks. Sometimes, this may cause students to drop out from the main stream. Most online environments focus on delivering information and the dynamic exchanges of ideas with peers and instructors are generally lacking. Although online discussion boards are provided, asynchronous communications often result in delayed feedback and inadequate attention to students’ messages. Therefore, online learners often feel disconnected, due to the absence of “being there” cognitively [17].

On the other hand, the Facebook, Twitter etc. can provide an authentic learning environment where real-life learning resources can become readily available. Perceived lack of authenticity is one of the contributing factors as to why students become disinterested along the course. But via social networking tools such as Twitter, Facebook, integrating students’ experience into a course can be realized [2].

SNS allows to calling students by name, greeting & wishing them, and sharing socially engenders an affective

connectedness and builds a sense of community amongst the students and instructors. Moreover, the ‘free-flowing just-in-time’ nature, [11] the SNS fosters students’ ability to build a sense of community; to form connections that develop into friendship and finally accomplishes the gratification of social-emotional needs via partaking in social activities. Furthermore, SNS is the best means of the social exchange and pleasure pursuit rather than a tool for teaching and learning itself. This study empirically supports the stand that incorporating SNS process in traditional learning environment can help students to understand the learning content, to receive timely scaffolding, and to acquire an exposure to real world materials.

V. FUTURE WORK

Even though this study found many potentials of using SNS in learning context in TVET, further research is needed to examine the process of learning in SNS, and to provide some instructional strategies for using SNS in teaching and learning contexts. For future research, it would be beneficial to analyze the content of SNS to gain deeper understanding about the learning process in SNS. After conducting the qualitative analysis, the study could identify what types of message mainly appear in SNS and what the most important roles and contributions of SNS are.

Furthermore, some study should examine in-depth how to improve social relationships through SNS may influence the process of collaboration, problem-solving, or development of collective intelligence by incorporating group activities in Web-based e-Learning platforms in TVET. Specially, it is important to know how to tap on social relationships for enhancing the cognitive aspects of learning with multiple sources of data. More studies can be conducted to delve into how to incorporate SNS in instructional design so as to bridge online and offline class more effortlessly.

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