EXPLORING UNIVERSITY STUDENTS’ USE OF ONLINE LANGUAGE LEARNING STRATEGIES FOR ENGLISH AUTONOMOUS LEARNING

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This research focused on the use of online language learning strategies (OLLS) by Chinese students from Yuxi Normal University in Yunnan, China. A mixed-method sequential exploration design was used as a research method. A questionnaire survey composed of five dimensions with 30 items and a semi-structured interview were used as instruments. This study was supported by three research objectives: RO1: to identify the online language learning strategies preferred by Chinese university students in online English courses. RO2: to investigate Chinese university students’ use of online language learning strategies to develop English autonomous learning and RO3: to identify the advantages and disadvantages of online language learning strategies used by Chinese university students for developing their English autonomous learning. The findings of RO1 showed that the students' preference for OLLS was neutral. Affective and management strategies were preferred, but few social strategies were used. RO2 showed that for learner autonomy, the students used mainly effective strategies for recognizing goals, cooperating, planning, and structuring knowledge and less on dealing with feelings and motivation. Also, students used most types of OLLS in choosing materials and managing their learning. However, they only used one type of OLLS that dealt with their emotions or feelings. The RO3, however, suggested there were advantages and disadvantages in using OLLS as other students found OLLS distracting, and instead of acquiring knowledge holistically, this becomes a tool for just accomplishing a certain task.

Keywords: learning strategy; online language learning strategy; learner autonomy

Introduction

Online learning has been popularized since Chinese Universities MOOC was established in 2014. The issues that teachers and students meet have shifted from a technical
aspect to learning itself. University students who already had the experience of online learning still meet problems with their online English learning.

First, some students have no idea about how to learn English online autonomously and learn inefficiently.

Second, it is hard to choose appropriate platforms or applications, courses, and other materials from the internet for some students. Learning online tends to be student-centered as this requires learners to be autonomous with their learning (Cao et al., 2012; Wen, 2012).

Third, private institutions or individuals offer more personalized online courses than universities to help students teach autonomously (You, 2021). The study therefore would like to investigate the OLLS used by students from Yuxi Normal University to develop their learning autonomy. Consequently, this study might help teachers to know more about OLLS so they can offer training and develop more personalized platforms that cater to different learners' different needs.

**Research Objectives**

There are three research objectives as follows:

RO1: To identify online language learning strategies preferred by university students for English autonomous learning.

RO2: To investigate the university students’ use of online language learning strategies for English autonomous learning

RO3: To identify the reasons that university students do not use certain online language learning strategies for English autonomous learning.

![Conceptual framework of the study](image-url)
Literature Review

Online language learning strategies

Researchers consider it necessary to classify online language learning strategies separately from general language learning strategies. Through a pilot survey, Tsai (2007) developed the LASSI with seven dimensions (anxiety, attitude, time management, study aids, self-awareness, internet literacy, and concentration) and 36 items. Tsai's scale was frequently used by other researchers.

Marimuthu et al. (2012) used Tsai’s Online Language Learning Scale (OLLS) self-administered questionnaire, which included five variables (motivation, self-monitoring, internet literacy, internet anxiety, and concentration) and 20 items.

Wang (2006), referring to the Learning and Study Strategies Inventory (LASSI) (Weinstein, 1978), developed a new scale incorporating three categories (cognitive strategies, metacognitive strategies, and resource management strategies), seven dimensions (study aids, information literacy, time and task management, reflection, cooperation, communication, test strategies, and emotion control), and extended their subcategories based on China's distance learning situation.


There are five dimensions and fifteen sub-dimensions of OLLS.

Metacognitive strategies refer to the skills that learners use for learning and managing learning, such as planning, monitoring, and evaluating. Context strategies refer to the skills that learners use to fully understand the meaning of authentic English learning materials according to cultural knowledge, nonverbal communication, and so on. Management strategies refer to the skills that learners use to guide, plan and improve their English autonomous learning on time, resource, tool, and environment. Affective strategies refer to the skills that learners use to manage feelings, emotions, and motivation. Social strategies refer to the skills that learners use to interact with others and ask for help from others during their English autonomous learning process.

Learner autonomy

The concept of learner autonomy was first proposed by Holec (1981). According to Holec, "autonomy is the ability to take charge of one's learning" (1981: 3). Based on this, the concept of "learner autonomy" has been developed.

Holmes and Romas (1991) argue that learners can benefit from learning strategies by controlling their learning process. The project of Holmes and Romas was devoted to classroom practice. "Autonomy is a capacity - for detachment, critical reflection, decision-making, and independent action……the learner will develop a particular kind of psychological relation to the process and content of his learning" (Little, 1991: 4).

Little paid attention to adult education and schooling. He discussed autonomous learning outside of school and at school. It is important for adults to feel free to make decisions about learning materials and processes, and they need expert assistance in determining what is best for them.
For young learners who are still in the full-time education system, their interests and learning goals are age-related. According to Little (1991), young learners' autonomy is determined more by the relationship between the material and their learning than by the material itself. Based on Holec's definition of autonomy, Benson & Voller (2014) gave the five ways to use learner autonomy: a) situations in which learners study entirely on their own; b) for a set of skills that can be learned and applied in self-directed learning; c) for an inborn capacity which is suppressed by institutional education; d) for the exercise of learners' responsibility for their learning; and e) for the right of learners to determine the direction of their learning.

A dynamic model of learner autonomy developed by Tassinari (2010) was applied in this study. There are four components: cognitive and metacognitive component, affective and motivational component, action-oriented component, and social component in this model. Structuring knowledge is a cognitive and metacognitive component of the model including cognitive and metacognitive knowledge, awareness, and learner beliefs.

Dealing with my feelings includes the learner's feelings, emotions, and willingness. Motivating myself refers to motivation. The two dimensions are the affective and motivational components of the model. Planning, choosing materials and methods, completing tasks, monitoring, evaluating, cooperating, and managing my learning involves skills, learning behaviors, and decisions.

They are action-oriented components. The last component is the social component, cooperating, and it involves learning and negotiating learning with partners, advisors, teachers, and native speakers.

**Related research on online language learning strategies and learner autonomy**

Learner autonomy has been explored in studies carried out from 2010 to 2020. Online resources, instructors' roles, online interaction, creating a good online learning environment, and online activities were the key issues raised in these studies. Choosing online resources should be based on learners' levels and related to classroom knowledge, according to Zhang (2010).

Huang (2020) found that the students had more responsibility and capability to choose learning materials after finishing the online course.

Wen (2012) thought that the role of teachers should be redefined, and Cao et al. (2012) and Shen (2014) found that the top two roles of teachers that the students expected were facilitator and counselors in an online course. Ribbe and Bezanilla (2013) noticed the relationship between teacher role and learner autonomy. Lee's research (2016) indicated that the use of scaffolding can help students learn autonomously.

**Methodology**

**Research design**

A sequential exploration research design was used in this study. Quantitative methods were used as a first step. Using Wenjuan Xing, the Use of Learning Strategies in a Web-based Environment Questionnaire (Wang, 2018) was inputted and shared with the teacher who was responsible for the college English course, who then sent it to the students' WeChat groups. After that, 16 participants participated in four semi-structured interviews. The last two research questions were answered.
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Population and sample
The population is 14,000 full-time students from Yuxi Normal University in Yunnan, China. The students have experience with online English learning due to the requirement of the school. According to the grade of the English proficiency test, before they start university education, the students are separated into three levels.

Purposive sampling was used in this study, and the sample size was 250. There are 80 students from level A, 90 students from level B, and 80 students from level D. For an interview, 16 interviewees were chosen from 250 participants who had submitted questionnaires and accepted the interview. There were 6 level A students, 5 level B students, and 5 level D students.

Data Collection and analysis

Questionnaire
The data from the questionnaire was collected for research question one.
Step 1: The questionnaire items were input into Wenjuan Xing. The researcher created a link that students could use on their mobile phones or computers to complete the questionnaire.
Step 2: The researcher sent the consent to the university teachers who were in charge of the English course.
Step 3: After getting the approval, the teachers helped share the questionnaire link to the classes’ WeChat groups. The collection automatically stopped when 250 questionnaires were collected.
Step 4: The researcher coded and grouped the questionnaire by dimensions using Wenjuan Xing.

The semi-structured interview
Data from the semi-structured interview was collected for research questions two and three.
Step 1: The researcher selected 16 students who agreed to the interview and asked them for a convenient time.
Step 2: One day in advance, the researcher sent 16 interviewees' survey questions and asked for their consent to record their voices.
Step 3: Interviewees were allowed to answer in English or Chinese during the interview. The voice was recorded simultaneously.
Step 4: The researcher transcribed the text of the answers. Answers in Chinese were translated into English.
Step 5: The researcher coded and categorized the English text.

Results and Discussion
To address objective one, qualitative data were analyzed by mean value and standard deviation.
As Tab. 1 shows, the mean values of all dimensions are between 2.5 and 3.49. It shows the students' preference for each dimension is neutral. Among these dimensions, social strategies had the lowest mean value (M = 2.602) but the highest standard deviation (SD = 0.937). It means there were quite different views of social strategies. Management strategies
had the highest mean value ($M = 2.991$) and comparatively low standard deviation ($SD = 0.709$). The result reveals that the students preferred to choose management strategies and did not try many social strategies.

Table 1 - The students' preference for online language learning strategies
(made by the author)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Mean Value (M)</th>
<th>Standard Deviation (SD)</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metacognitive strategies</td>
<td>2.808</td>
<td>0.709</td>
<td>Moderate</td>
</tr>
<tr>
<td>Context strategies</td>
<td>2.905</td>
<td>0.801</td>
<td>Moderate</td>
</tr>
<tr>
<td>Management strategies</td>
<td>2.991</td>
<td>0.74</td>
<td>Moderate</td>
</tr>
<tr>
<td>Affective strategies</td>
<td>2.967</td>
<td>0.809</td>
<td>Moderate</td>
</tr>
<tr>
<td>Social strategies</td>
<td>2.602</td>
<td>0.937</td>
<td>Moderate</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td><strong>2.854</strong></td>
<td><strong>0.964</strong></td>
<td><strong>Moderate</strong></td>
</tr>
</tbody>
</table>

Table 2 - The students' preference for metacognitive strategies
(made by the author)

<table>
<thead>
<tr>
<th>Item</th>
<th>Question</th>
<th>Mean Value (M)</th>
<th>Standard Deviation (SD)</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I will make a plan for online learning.</td>
<td>2.612</td>
<td>0.968</td>
<td>Moderate</td>
</tr>
<tr>
<td>2</td>
<td>I have a clear goal when learning online.</td>
<td>2.764</td>
<td>0.955</td>
<td>Moderate</td>
</tr>
<tr>
<td>3</td>
<td>I will concentrate on online learning without distraction.</td>
<td>2.676</td>
<td>0.92</td>
<td>Moderate</td>
</tr>
<tr>
<td>4</td>
<td>I think online autonomous learning is a good way.</td>
<td>3.116</td>
<td>0.913</td>
<td>Moderate</td>
</tr>
<tr>
<td>5</td>
<td>I think online autonomous learning is more efficient than traditional classroom learning.</td>
<td>2.82</td>
<td>0.912</td>
<td>Moderate</td>
</tr>
<tr>
<td>6</td>
<td>I think online English writing website such as Pigzi helps me a lot in writing.</td>
<td>2.95</td>
<td>0.993</td>
<td>Moderate</td>
</tr>
<tr>
<td>7</td>
<td>After learning online, I will reflect on my learning in order to make progress.</td>
<td>2.78</td>
<td>0.963</td>
<td>Moderate</td>
</tr>
<tr>
<td>8</td>
<td>I can find appropriate online English learning resources.</td>
<td>2.732</td>
<td>0.972</td>
<td>Moderate</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td><strong>2.808</strong></td>
<td><strong>0.709</strong></td>
<td><strong>Moderate</strong></td>
<td></td>
</tr>
</tbody>
</table>

The students' preference for metacognitive strategies (items 1-8) is shown in Tab.2. All items got a "moderate" interpretation according to their mean value.
Item 4, with $M = 3.116$ and $SD = 0.913$, was the most preferred strategy in metacognitive strategies. While items 1 ($M = 2.612$) and 3 ($M = 2.676$) had the two lowest mean values, the results show that the students thought online autonomous learning was good but hard to implement. Comparatively, items 6 and 8 had a high standard deviation. It indicates that the student's preferences for these items were different. The students had different views on using online learning tools and choosing online resources.

Table 3 - The students' preference for cognitive strategies

<table>
<thead>
<tr>
<th>Item</th>
<th>Question</th>
<th>Mean Value (M)</th>
<th>Standard Deviation (SD)</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>I will focus on video pictures and listening, rather than captions when watching English videos. I can combine cultural knowledge with language to study English through online resources. When encountering incomprehensible materials, I will listen or watch repeatedly in order to understand. I will practice the pronunciation and intonation through imitating the TV drama and songs. Meeting incomprehensible video resources, I will guess the meaning according to the specific situation and human expression and motion. I will listen to the non-standard online English materials and try to understand them.</td>
<td>2.92</td>
<td>0.928</td>
<td>Moderate</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>2.936</td>
<td>0.867</td>
<td>Moderate</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>2.972</td>
<td>0.916</td>
<td>Moderate</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>2.932</td>
<td>0.99</td>
<td>Moderate</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td>3.024</td>
<td>0.969</td>
<td>Moderate</td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>2.648</td>
<td>0.951</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

Tab. 3 presents the students' preferences for cognitive strategies (items 9–14). From the table, it can be seen that the students had a "moderate" preference for all cognitive strategies. Item 13 ($M = 3.024$, $SD = 0.969$) was the most preferred strategy in the cognitive strategy.

According to item 14, with $M = 2.648$ and $SD = 0.951$, the students least liked listening to non-standard online English content. However, students had a more common view on item 10 ($SD = 0.867$) than others.
Table 4 - The students’ preference for management strategies
(made by the author)

<table>
<thead>
<tr>
<th>Item</th>
<th>Question</th>
<th>Mean Value (M)</th>
<th>Standard Deviation (SD)</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>More than half of my English learning time is spent online.</td>
<td>2.884</td>
<td>0.989</td>
<td>Moderate</td>
</tr>
<tr>
<td>16</td>
<td>I will download some English learning resources and appreciate them in my spare time.</td>
<td>2.908</td>
<td>0.979</td>
<td>Moderate</td>
</tr>
<tr>
<td>17</td>
<td>I often search for English resources through Google or Baidu.</td>
<td>3.156</td>
<td>0.971</td>
<td>Moderate</td>
</tr>
<tr>
<td>18</td>
<td>I often learn English through App, WeChat subscription, etc.</td>
<td>3.092</td>
<td>0.996</td>
<td>Moderate</td>
</tr>
<tr>
<td>19</td>
<td>I often improve my English listening through online audiovisual materials, such as BBC, English films, etc.</td>
<td>2.98</td>
<td>1.02</td>
<td>Moderate</td>
</tr>
<tr>
<td>20</td>
<td>I often consolidate learned words by means of collection function of software.</td>
<td>2.612</td>
<td>1.021</td>
<td>Moderate</td>
</tr>
<tr>
<td>21</td>
<td>I will save useful English websites and resources for further use.</td>
<td>2.976</td>
<td>0.948</td>
<td>Moderate</td>
</tr>
<tr>
<td>22</td>
<td>I will use the learning software to help me review what I learned.</td>
<td>3.032</td>
<td>0.935</td>
<td>Moderate</td>
</tr>
<tr>
<td>23</td>
<td>When meeting difficult problems, I can find answers quickly and effectively through online searching.</td>
<td>3.3</td>
<td>0.975</td>
<td>Moderate</td>
</tr>
<tr>
<td>24</td>
<td>I think the surrounding environment and the Internet connection are good for learning.</td>
<td>2.956</td>
<td>0.884</td>
<td>Moderate</td>
</tr>
<tr>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Overall</td>
<td>2.991</td>
<td>0.74</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

The results of management strategies (items 15–25) are compared in Tab. 4. The preference for all these strategies was also "moderate," as all mean values were between 2.5 and 3.49. Item 24 (M = 3.3, SD = 0.975) was the most preferred management strategy. It shows that the students handled the way of searching for answers online.

The second preferred strategy was searching for English learning resources online (item 17 with M = 3.156 and SD = 0.971). It reveals that the students got used to searching for English learning resources online, and it was also a popular way to solve problems during their online English autonomous learning. Reading e-books or materials online (item 20 with M = 2.612, SD = 1.021) was not a popular choice for students, but their choices were comparatively different.
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Table 5 - The students’ preference for affective strategies
(made by the author)

<table>
<thead>
<tr>
<th>Item</th>
<th>Question</th>
<th>Mean Value (M)</th>
<th>Standard Deviation (SD)</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>Compared with classroom-based learning, I am more interested in online autonomous learning. When feeling tired from learning, I relax for a while by listening to music and watching a video. I am afraid of making mistakes when chatting online.</td>
<td>2.932</td>
<td>0.931</td>
<td>Moderate</td>
</tr>
<tr>
<td>27</td>
<td></td>
<td>3.312</td>
<td>0.993</td>
<td>Moderate</td>
</tr>
<tr>
<td>28</td>
<td></td>
<td>2.656</td>
<td>1.038</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>Overall</td>
<td>2.967</td>
<td>0.809</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

As it is shown in Tab. 5, the student's preference for affective strategies was "moderate," as mean (M) values were in the range of 2.5–3.49. The most preferred affective strategy was relaxing by listening to music and watching a video (item 27 with M = 3.312 and SD =0.993).

Item 28 (M = 2.656, SD = 1.038) was not chosen by the majority of students, but its standard deviation indicates that their perspectives on this strategy differed from others. Item 26 had the lowest standard deviation, which means the students' views on online autonomous learning and classroom-based learning were quite similar, and they did not have much interest in online autonomous learning.

Tab. 6 presents the results of social strategies. Compared to the items of other dimensions, items 29 and 30 had low mean values and high standard deviation, especially item 29. The students had a "low" preference for chatting in English online and a "moderate"
preference for asking others for online learning resources and methods. The standard deviation (SD) shows that the view of these two strategies was quite different.

From these tables, it can be seen that the students from one of the public universities in China had a neutral attitude or moderate preference for OLLS. Management strategies were the most preferred, and social strategies were the least. The reasons were provided by the results of the qualitative analysis.

Qualitative data was analyzed for objective two. The answer texts to 1-3 interview questions of 16 interviewees were coding deductive coding by learner autonomy dimension theme and Wang’s OLLS classification (2018).

**Table 7 - Learner autonomy dimension and frequency of themes**

*(made by the author)*

<table>
<thead>
<tr>
<th>Learner autonomy dimensions</th>
<th>Theme</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive and metacognitive component</td>
<td>Structuring knowledge</td>
<td>12</td>
</tr>
<tr>
<td>Affective and motivational component</td>
<td>Dealing with feelings</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Motivating</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Planning</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Choosing materials</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Completing tasks</td>
<td>10</td>
</tr>
<tr>
<td>Action-oriented component</td>
<td>Monitoring</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Evaluating</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Managing my own learning</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Recognizing goals</td>
<td>12</td>
</tr>
<tr>
<td>Social component</td>
<td>Co-operating</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 7 presents students’ learner autonomy situation in online English learning.

The most frequent themes were structuring knowledge (frequency = 12), recognizing goals (frequency =12), and co-operating (frequency = 11). The students also did well in planning, choosing materials, and completing tasks.

However, the students paid less attention to dealing with their feelings and motivation (frequency =2) toward online English autonomous learning.

**Structuring knowledge**

A metacognitive strategy such as evaluating, a management strategy such as using online tools and resources, and a social strategy such as asking for teachers’ assistance or recommendations were applied by the students.

Besides metacognitive strategies, which have a direct relationship with structuring knowledge, the students also developed this dimension by managing online tools such as Baicizhan and resources such as videos.

**Dealing with feelings**

There was little attention paid to dealing with feelings by the students. One interviewee used time management strategies to relax. The other utilized resource management strategies to enhance learning content and relax.
Motivating
To motivate themselves, most students chose materials, such as movies and music that they were interested in. To make the learning process more enjoyable, they also used online tools. Additionally, the students used effective strategies, such as arousing interest, management strategies, such as managing online tools and resources, and social strategies, such as asking for help.

Planning
Baicizhan was a popular online tool used by students for planning their learning. The students applied metacognitive strategies such as planning and motivating; management strategies including online tool management and resource management; and social strategies including asking for help.

Choosing materials
By using effective strategies, such as arousing interest, context strategies, management strategies, especially online tools, and resource management, metacognitive strategies, such as adapting, and social strategies, such as asking for help, the students chose materials for online English autonomous learning. They applied various strategies in choosing materials.

Completing tasks
The students completed tasks by applying management strategies including online tool management and resource management; metacognitive strategies including monitoring; and social strategies including asking for help. The two main ways for the students to complete the tasks were by clocking in on the word memory application and reviewing and finishing assignments on Unipus, which were related to textbooks.

Monitoring
The students employed management strategies, including online tool management and metacognitive strategies, such as monitoring and planning. Most students liked to use the function called "clocking in," which requires at least 15 minutes of learning every day.

Evaluating
Some of the students applied more metacognitive strategies than others. They used metacognitive strategies including evaluating and monitoring, context strategies, management strategies including online tool management, and social strategies. There were two main points that they evaluated. One was whether online language learning was better than paper-based learning; the other was which online tool suited them more.

Managing my learning
The students also applied various strategies for managing their learning. There were effective strategies including arousing interest, context strategies; management strategies including online tool management, resource management, and time management; metacognitive strategies including monitoring and planning, as well as social strategies.
Recognizing goals
There were a few strategies applied to recognizing goals. Most students said that the goal was to pass CET4 or CET6. But there were also other learning purposes and goals. Management strategies (online tool management), affective strategies (arousing interest), metacognitive strategies (planning), and social strategies (asking for help) were used for this autonomous learning process.

Co-operating
The students applied social strategies by asking for help most frequently. They also employed online tool management and resource management, which belong to management strategies, and evaluation, which belong to metacognitive. The most interesting thing is that the students did choose social strategies like asking for help, but none of them chose the social strategies called chatting online. They even did not chat offline.

Qualitative data was also used to analyze objective three. The answer texts to interview question 4 of 16 interviewees were coded inductively by reasons of not choosing OLLS.
Tab. 8 gives more information on the disadvantages. It shows why the students did not choose some OLLS. The reasons were summarized into seven themes. The most frequent reasons were unnecessary and feeling inadequate.

Table 8 - Reasons for not choosing OLLS
(made by the author)

<table>
<thead>
<tr>
<th>Theme</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unnecessary</td>
<td>9</td>
</tr>
<tr>
<td>Unhelpful</td>
<td>4</td>
</tr>
<tr>
<td>Unsuitable</td>
<td>3</td>
</tr>
<tr>
<td>Unfamiliar</td>
<td>4</td>
</tr>
<tr>
<td>Inefficient</td>
<td>3</td>
</tr>
<tr>
<td>Feeling inadequate</td>
<td>9</td>
</tr>
<tr>
<td>Unconfident</td>
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Unnecessary
Unnecessary refers to the students’ thought that OLLS they used at that time could meet their needs. One situation was that the students did not need to apply more OLLS for online English autonomous learning. The other was that the students thought online learning was inefficient.

Unhelpful
Unhelpful refers to the OLLS that the students did not choose and could not help with their online English autonomous learning. On the one hand, some students thought they had not improved by applying strategies such as chatting online.
On the other hand, the strategies such as listening to non-standard materials did not help the students with preparing for most exams at university because the American English was used in the exams.
Unsuitable
Unsuitable refers to the OLLS that did not match the student's learning goals, methods, or personal factors. There were various reasons why the students thought specific strategies did not suit them. For example, some thought they were shy, so they did not choose to chat online. Some students considered health limitations such as myopia, and some students focused on user experience.

Unfamiliar
Unfamiliar refers to students who have not known or tried OLLS before. The students did not know much about OLLS as there was no introduction or training, so they would not choose unfamiliar ones.

Inefficient
Inefficient refers to the students having difficulty with using certain OLLS so that they cannot learn efficiently.

Feeling inadequate
Feeling inadequate refers to the students having deficient English competence. Unconfident refers to the students who were unwilling to use certain OLLS due to some worries. There were two strategies that many interviewees did not choose: one was reading English e-books, and the other was chatting online in English. Taking these two strategies in case the students thought their English competence was not enough to do so (feeling inadequate). For example, they thought they did not have enough vocabulary to read English e-books or could not chat a lot online.

Unconfident
Unconfident refers to the students having no confidence to apply specific strategies. More reasons for being unconfident were "shy", "afraid of making mistakes" and similar reasons of willingness. And feeling inadequate was partly the reason for that.

Conclusion and recommendations
The study provides a perspective on developing learner autonomy with online language learning strategies in Chinese background with mixed methods. The findings present OLLS preference of the students from Yuxi Normal university in Yunnan, China, and the different ways to develop online English autonomous learning.

The indication is that it is necessary to measure students' OLLS from different perspectives, as learning is a cycling process. In this study, on the one hand, although students indicated that students are good at managing and planning their learning strategies, they seldom involve their passion in learning digitally.

With the popularity of online learning, digital literacy is needed as its multi-functionality can be an advantage to students and enable them to be aware of the right learning practices.

Thus, students especially those who are learning English as a foreign language need to reexamine their learning needs not just locally but globally as learning has already shifted its
landscape digitally where online spaces have a big role in the creation of knowledge may it be linguistically or culturally.

Therefore, to learn autonomously learners need to cultivate learning practices based on online spaces as innovative ways to facilitate new ways of learning.

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