How does Synchronous Online English Education Impact on Learners?

Yayoi Anzai, Ph.D., International Christian University
Kanji Akahori, Ph.D., President of ICT CONNECT 21

Introduction
Synchronous online language teaching and learning has unique characteristics which can transcend time and distance. Distance education used to be carried out by specialists in technologies by using a video conferencing system. During the past few years, most language teachers have gained the skills to handle face-to-face and online modes of teaching due to the pandemic. The online mode has two forms: synchronous and asynchronous. These two forms of instructional designs can be local or international. At a local level, most English teachers at a university have experience of synchronous online teaching in their classes using such Web systems as ZOOM or Webex. As for an international level, Collaborative Online International Learning (COIL) is a great example. Academic English class at Aoyama Gakuin University, for example, has collaborated with Tokyo University of Foreign Studies, International Christian University, and University of California, Irvine asynchronously and synchronously (Anzai & Fukuda, 2021). Now English classes have opened a new door to the world. Despite the potentiality of the powerful instructional design, there is not many studies done to clarify the impacts of synchronous online English education. Thus, the aim of this study is to develop a compact scale for measuring the impacts of synchronous online English Learning on the perception of the learners. The identified factors would also serve as a guide to design effective synchronous online English education.

Methods
Research framework
The constructs of synchronous online English learning are developed based on Social Presence (Garrison & Anderson, 2003), Openness (Anzai, 2011), World Englishes, English as a Lingua Franca, Willingness to Communicate (MacIntyre et al., 1998), Self-efficacy (Bandura 1997) and discussions with university students, language teachers, and researchers in Educational technology.

Procedure
The survey was conducted online in the second semester of 2021, which consists of 91 items. The participants were 235 Japanese university students. They responded to Google Forms, an online survey tool, and the data were analyzed using SPSS.
Results
Exploratory factor analyses were conducted to decide the number of factors for synchronous online English learning. After examining the initial Eigenvalues, the Scree Plot, and applying various rotations, a five-factor model turned out to be most interpretable (See Fig. 1).

Figure 1. Scree Plot

A five-factor solution accounted for 45.5%. Those factors with seventy-six items were: Friendliness, Openness, Layer-Layer Interaction, Self-efficacy, English as a Lingua Franca (ELF). The specific items are listed on Table 1.

Table 1. The Results of Exploratory Factor Analysis

<table>
<thead>
<tr>
<th></th>
<th>Component</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<tbody>
<tr>
<td>28 I feel others friendly when they speak to me in a kind tone.</td>
<td></td>
<td>.752</td>
<td>.180</td>
<td>.180</td>
<td>.036</td>
<td>.022</td>
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<td>39 I feel others friendly when I see them smile.</td>
<td></td>
<td>.706</td>
<td>.204</td>
<td>.161</td>
<td>.184</td>
<td>.048</td>
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<tr>
<td>19 I feel closer to others when they speak in a way I can understand.</td>
<td></td>
<td>.703</td>
<td>-.008</td>
<td>.108</td>
<td>.009</td>
<td>.068</td>
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<tr>
<td>57 I feel closer to others when we have something in common.</td>
<td></td>
<td>.691</td>
<td>.162</td>
<td>.130</td>
<td>.157</td>
<td>-.085</td>
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<tr>
<td>45 I feel friendly toward others when I can sense they are willing to cooperate.</td>
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<td>.680</td>
<td>.163</td>
<td>.147</td>
<td>.071</td>
<td>-.025</td>
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<td>Number</td>
<td>Statement</td>
<td>Value 1</td>
<td>Value 2</td>
<td>Value 3</td>
<td>Value 4</td>
<td>Value 5</td>
</tr>
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<tr>
<td>47</td>
<td>I feel favorable toward others when they respect my opinion.</td>
<td>.669</td>
<td>.235</td>
<td>.086</td>
<td>-.020</td>
<td>.045</td>
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<td>50</td>
<td>I feel closer to others when they ask me questions about my daily life.</td>
<td>.665</td>
<td>.215</td>
<td>.168</td>
<td>.138</td>
<td>-.004</td>
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<td>65</td>
<td>I feel closer to others when we are empathizing with each other.</td>
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<td>.204</td>
<td>.200</td>
<td>.111</td>
<td>.073</td>
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<tr>
<td>79</td>
<td>I find others friendly when their mood is cheerful.</td>
<td>.632</td>
<td>.148</td>
<td>.203</td>
<td>.020</td>
<td>.230</td>
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<tr>
<td>18</td>
<td>I feel friendship when others are willing to answer my questions.</td>
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<td>.078</td>
<td>.116</td>
<td>.095</td>
<td>.081</td>
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<td>12</td>
<td>I feel close to others when they call each other by name.</td>
<td>.615</td>
<td>.282</td>
<td>.285</td>
<td>.003</td>
<td>.184</td>
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<tr>
<td>9</td>
<td>I feel close to others when they call me by my name.</td>
<td>.614</td>
<td>.180</td>
<td>.369</td>
<td>.081</td>
<td>.113</td>
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<td>66</td>
<td>I feel others friendly when they talk to me in a relaxed mood.</td>
<td>.585</td>
<td>.281</td>
<td>.178</td>
<td>.078</td>
<td>.000</td>
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<tr>
<td>5</td>
<td>I find others friendly when they nod to me.</td>
<td>.537</td>
<td>.103</td>
<td>.064</td>
<td>.056</td>
<td>.001</td>
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<tr>
<td>7</td>
<td>I feel friendship with others when they ask me questions about what I am saying.</td>
<td>.522</td>
<td>.233</td>
<td>.284</td>
<td>.107</td>
<td>.218</td>
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<td>23</td>
<td>I sympathize with others when they are having a hard time talking in English.</td>
<td>.501</td>
<td>.221</td>
<td>.110</td>
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<td>.129</td>
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<td>70</td>
<td>I feel at ease with others when they are not pushy.</td>
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<td>.180</td>
<td>.048</td>
<td>.181</td>
<td>.147</td>
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<td>I heard and understood others’ pitch and tone of voice by emoticons, text, or audio/video in the online classroom.</td>
<td>.456</td>
<td>.316</td>
<td>.158</td>
<td>.080</td>
<td>.205</td>
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<td>25</td>
<td>I feel close to others when there is two-way communication with them.</td>
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<td>.256</td>
<td>.259</td>
<td>.039</td>
<td>.149</td>
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<td>90</td>
<td>I can learn collaboratively with people who are geographically distant from me.</td>
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<td>.094</td>
<td>-.051</td>
<td>.251</td>
<td>-.037</td>
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<tr>
<td>Statement</td>
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<td>Item 2</td>
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<td></td>
</tr>
<tr>
<td>I read and understood others’ facial expressions by emoticons, text, or audio/video in the online classroom.</td>
<td>.350</td>
<td>.323</td>
<td>.068</td>
<td>-.092</td>
<td>.324</td>
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<td>I can learn anything.</td>
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<td>.617</td>
<td>.204</td>
<td>.284</td>
<td>.207</td>
<td></td>
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<tr>
<td>I have various choices in communication.</td>
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<td>.593</td>
<td>.117</td>
<td>.166</td>
<td>.069</td>
<td></td>
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<td>I have a variety of choices in learning methods.</td>
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<td>.571</td>
<td>.055</td>
<td>.070</td>
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<td>I can learn at anytime.</td>
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<td>.562</td>
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<td>.196</td>
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<tr>
<td>I can feel others close to me.</td>
<td>.146</td>
<td>.543</td>
<td>.207</td>
<td>.137</td>
<td>.315</td>
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<td>I can learn from anyone.</td>
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<td>.532</td>
<td>.075</td>
<td>.260</td>
<td>.000</td>
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<td>I have a wide variety of content in study support services.</td>
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<td>.522</td>
<td>.058</td>
<td>-.052</td>
<td>-.047</td>
<td></td>
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<tr>
<td>I can learn in any place.</td>
<td>.291</td>
<td>.520</td>
<td>.199</td>
<td>.251</td>
<td>-.012</td>
<td></td>
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<td>I think learners can learn individually.</td>
<td>.238</td>
<td>.518</td>
<td>.115</td>
<td>.215</td>
<td>.048</td>
<td></td>
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<tr>
<td>I can learn depending on our needs.</td>
<td>.152</td>
<td>.516</td>
<td>.325</td>
<td>.079</td>
<td>.126</td>
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<td>I felt others close to me in the online classroom.</td>
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<td>.495</td>
<td>.286</td>
<td>.108</td>
<td>.177</td>
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<td>I felt emotionally close to others in the online classroom.</td>
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<td>.460</td>
<td>.289</td>
<td>.114</td>
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<td>I have learned valuable knowledge in the online course.</td>
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<td>.455</td>
<td>.323</td>
<td>.346</td>
<td>-.008</td>
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<td>I have a wide variety of choices in the media.</td>
<td>.116</td>
<td>.455</td>
<td>-.015</td>
<td>.133</td>
<td>.069</td>
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<td>I can enjoy online international exchange in English.</td>
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<td>.431</td>
<td>.315</td>
<td>.417</td>
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<td>Learning is often free of charge.</td>
<td>.191</td>
<td>.423</td>
<td>.155</td>
<td>.245</td>
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<td>We can learn collaboratively overcoming time difference.</td>
<td>.275</td>
<td>.398</td>
<td>.053</td>
<td>.341</td>
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<td>My economic barriers is lowered.</td>
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<td>.372</td>
<td>.168</td>
<td>.046</td>
<td>.247</td>
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<td>I was aware of others’ presence.</td>
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<td>.351</td>
<td>.135</td>
<td>.012</td>
<td>.129</td>
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<td>I share my emotions with others by emoticons, text, or audio/video.</td>
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<td>.320</td>
<td>.186</td>
<td>.161</td>
<td>.315</td>
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<td>36</td>
<td>I found myself not treated fairly by others.</td>
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<td>.022</td>
<td>.019</td>
<td>-.299</td>
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<td>33</td>
<td>I can collaborate with other learners.</td>
<td>.251</td>
<td>.206</td>
<td>.663</td>
<td>.145</td>
<td>.073</td>
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<td>73</td>
<td>I can speak up more easily in a breakout room.</td>
<td>.291</td>
<td>.152</td>
<td>.650</td>
<td>-.013</td>
<td>.083</td>
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<td>I can speak up more often in a breakout room.</td>
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<td>-.016</td>
<td>.631</td>
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<td>I can speak more easily in a main session after the breakout rooms.</td>
<td>.146</td>
<td>.294</td>
<td>.590</td>
<td>-.019</td>
<td>.002</td>
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<td>I feel relaxed in a breakout room.</td>
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<td>.308</td>
<td>.586</td>
<td>.078</td>
<td>.136</td>
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<td>I have no feelings of being happy with others.</td>
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<td>.191</td>
<td>.528</td>
<td>.135</td>
<td>-.265</td>
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<td>8</td>
<td>I have a warm and comfortable relationship with others.</td>
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<td>.250</td>
<td>.503</td>
<td>.074</td>
<td>.231</td>
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<td>86</td>
<td>I feel less shy in a breakout room.</td>
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<td>.100</td>
<td>.490</td>
<td>.044</td>
<td>.144</td>
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<td>I often discuss learning issues with others.</td>
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<td>.094</td>
<td>.481</td>
<td>.281</td>
<td>.177</td>
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<td>I can learn about individual participants in a breakout room.</td>
<td>.260</td>
<td>.044</td>
<td>.465</td>
<td>.260</td>
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<td>89</td>
<td>I feel that we have group activities frequently.</td>
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<td>.102</td>
<td>.445</td>
<td>.257</td>
<td>-.101</td>
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<td>53</td>
<td>I feel that we can reflect the group’s opinion to the whole class.</td>
<td>.092</td>
<td>.287</td>
<td>.388</td>
<td>.267</td>
<td>.075</td>
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<td>I can reflect my own opinions to the group.</td>
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<td>.300</td>
<td>.386</td>
<td>.368</td>
<td>-.007</td>
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<td>44</td>
<td>I rarely answered others’ learning questions.</td>
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<td>-.139</td>
<td>.375</td>
<td>.301</td>
<td>-.304</td>
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<td>75</td>
<td>My understand my role clearly.</td>
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<td>.086</td>
<td>.372</td>
<td>.215</td>
<td>.198</td>
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<td>I felt alone.</td>
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<td>-.004</td>
<td>.360</td>
<td>.058</td>
<td>-.153</td>
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<td>I find myself encouraged by others.</td>
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<td>.348</td>
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<td>.189</td>
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<td>I can ask questions in English.</td>
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<td>.764</td>
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<td>58</td>
<td>I can talk with Americans and other “native English speakers” in English.</td>
<td>-.070</td>
<td>.261</td>
<td>-.020</td>
<td>.736</td>
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<td>Item</td>
<td>Loadings (Varimax)</td>
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<td>--------------------</td>
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</tr>
<tr>
<td>59 I can communicate with non-native English speakers in English.</td>
<td>-0.07 0.245 0.095 0.710 0.068</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>74 I can express my opinions in English</td>
<td>0.124 0.076 0.319 0.680 0.101</td>
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<tr>
<td>94 I can communicate with other people.</td>
<td>0.209 0.219 0.252 0.626 -0.061</td>
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<td>26 I can communicate with my teacher.</td>
<td>0.043 0.253 0.220 0.601 -0.030</td>
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<td></td>
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<tr>
<td>85 I can collaborate in English.</td>
<td>0.072 0.208 0.144 0.527 0.153</td>
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<tr>
<td>54 I can communicate with people around the world in English.</td>
<td>0.104 0.380 0.047 0.503 0.083</td>
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<td></td>
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<td>78 I can persuade a foreigner in English.</td>
<td>-0.129 0.183 0.207 0.481 0.404</td>
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<tr>
<td>55 I can achieve my learning goal.</td>
<td>0.148 0.279 0.384 0.424 0.172</td>
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<td>62 I cannot get good grades.</td>
<td>-0.017 -0.135 0.052 0.350 -0.134</td>
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<td>1 I feel others friendly when my English is understood.</td>
<td>0.183 -0.011 0.202 0.349 0.121</td>
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<td>15 I don't need to speak like a native English speaker (American,</td>
<td>0.059 -0.043 -0.064 0.037 0.666</td>
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<td>2 I think it is okay to have a Japanese accent in my English.</td>
<td>0.040 0.081 -0.017 0.142 0.651</td>
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<tr>
<td>13 I think it is okay to have a Japanese accent in my English.</td>
<td>0.159 0.257 0.133 -0.004 0.592</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>32 I think that the content of English is more important than the</td>
<td>0.229 0.030 0.162 -0.001 0.428</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>20 I think that various kinds of &quot;world Englishes&quot; such as Asian</td>
<td>0.118 0.254 0.143 0.038 0.309</td>
<td></td>
<td></td>
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<tr>
<td>and European Englishes are accepted today.</td>
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</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis, Rotation Method: Varimax with Kaiser Normalization
a. Rotation converged in 7 iterations.

The short version of the scale was developed taking five items from each factor in order from the item with the highest loadings. As a result, a scale was developed, consisting of five items for each of the five factors, which has become twenty-five items in total.
1. Friendliness:
1. I feel others friendly when they speak to me in a kind tone.
2. I feel others friendly when I see them smile.
3. I feel closer to others when they speak in a way I can understand.
4. I feel closer to others when we have something in common.
5. I feel friendly toward others when I can sense they are willing to cooperate.

2. Openness:
1. I can learn anything.
2. I have various choices in communication.
3. I have a variety of choices in learning methods.
4. I can learn at any time.
5. I felt others close to me.

3. Layer-Layer Interaction
1. I can collaborate with other learners.
2. I can speak up more easily in a breakout room.
3. I can speak up more often in a breakout room.
4. I can speak more easily in the main session after the breakout rooms.
5. I feel relaxed in a breakout room.

4. Self-efficacy
1. I can ask questions in English.
2. I can talk with Americans and other “native English speakers” in English.
3. I can communicate with non-native English speakers in English.
4. I can express my opinions in English
5. I can communicate with other people.

5. English as a Lingua Franca
1. I don't need to speak like a native English speaker (American, British, etc.) as long as my English is understood.
2. I think it is okay to have a Japanese accent in my English.
3. I think that the Japanese accent in my English is a kind of self-expression.
4. I think that the content of English is more important than the pronunciation.
5. I think that various kinds of "World Englishes" such as Asian and European Englishes are accepted today.
Discussion and Conclusion

A scale “Synchronous Online English learning (SOEL)” was developed based on rigid empirical studies. The scale consists of five factors: Friendliness, Openness, Layer-layer interaction, Self-efficacy, and English as a Lingua Franca. The first factor was named Friendliness because online learners would feel intimacy, closeness, and familiarity to other online learners with these items. The second factor was named as Openness because these items are key features of open learning which Bonk (2009) claims “anyone can learn anything from anyone at any time.” The third factor was named “Layer-layer Interaction” because we have a new type of interaction between individual-group, group-group, and group to the whole by using Web conferencing systems. The fourth factor was named “Self-efficacy” because items relate to the learners' perception of their English proficiency. The fifth dimension was named English as a Lingua Franca, because the items explain that English is used as a global communication tool. This study is an exploratory study to develop a short scale to measure the impacts of online language learning. The finding will serve as an evaluation of the effects as well as a guide for an instructional design.

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