Development and validation of an LMOOC Quality Evaluation Scale: A large-scale mixed-method approach

**Appendices**

**Appendix 1**

**Table A1.** Initial item pool for the LQES (43 items generated from an open-ended questionnaire and literature review)

|  |  |
| --- | --- |
| **1** | The LMOOC provides clear teaching objectives. |
| **2** | The LMOOC chapters are well-organized with close logical connections. |
| **3** | The LMOOC provides clear chapter outlines and teaching schedules. |
| **4** | The LMOOC is suitable for my current cognitive level. |
| **5** | The LMOOC helps to improve my L2 knowledge and skills. |
| **6** | The LMOOC recommends related textbook resources. |
| **7** | The LMOOC chapters are set at a reasonable length. |
| **8** | The content of the LMOOC chapters is easy to understand. |
| **9** | The LMOOC provides professional L2 knowledge and skills. |
| **10** | The LMOOC highlights key points and identifies difficult points. |
| **11** | The LMOOC provides rich multimedia language learning materials, including videos, images, and audio materials. |
| **12** | The LMOOC provides a wide range of supplementary materials. |
| **13** | The LMOOC provides up-to-date teaching content for L2 learning. |
| **14** | The LMOOC teaching videos provide clear and accurate bilingual subtitles. |
| **15** | The LMOOC provides various forms of exercises and tests. |
| **16** | The LMOOC teaching group informs learners of scores of quizzes and tests. |
| **17** | The LMOOC exercises are closely linked to the course content. |
| **18** | The LMOOC tests reinforce learners’ understanding and mastery of the content. |
| **19** | The LMOOC provides timely and constructive feedback to us about our performance. |
| **20** | L2 teacher(s) of the LMOOC speak fluent and proficient English (or other foreign languages). |
| **21** | L2 teacher(s) of the LMOOC are familiar with teaching content. |
| **22** | L2 teacher(s) of the LMOOC are friendly and energetic and easy-going. |
| **23** | L2 teacher(s) of the LMOOC have professional knowledge in this field. |
| **24** | L2 teacher(s) of the LMOOC use appropriate body language to communicate with learners. |
| **25** | L2 teacher(s) of the LMOOC use effective teaching methods in conveying L2 knowledge and skills. |
| **26** | L2 teacher(s) of the LMOOC often use short sentences in explanations, avoiding complex and difficult sentences. |
| **27** | The LMOOC teaching group responds to our questions promptly on the discussion forum (or other channels). |
| **28** | The LMOOC platform has implemented strict anti-cheating measures for online testing, such as camera monitoring and page switching prevention. |
| **29** | The LMOOC teaching group informs learners of scores of quizzes and tests timely. |
| **30** | The LMOOC teaching group releases course information and related announcements at regular intervals. |
| **31** | The LMOOC teaching group clearly informs us of the instructor’s Q&A time, the instructor’s email and grade release time. |
| **32** | The LMOOC has a module specifically for answering frequently asked questions (FAQs). |
| **33** | The LMOOC keeps track of our online learning pace and academic performance. |
| **34** | We can clearly view our learning progress and task completion rate of the LMOOC. |
| **35** | The LMOOC has a module specifically for answering frequently asked questions (FAQs). |
| **36** | After the LMOOC is over, learners can still browse the content. |
| **37** | The LMOOC offers technical support for troubleshooting common issues with video playback. |
| **38** | The LMOOC can be accessed from all sorts of digital devices, such as computers, cell phones, tablets and other mobile devices. |
| **39** | Our online access to the LMOOC is stable (even if many users are logged in, the speed does not slow down). |
| **40** | The LMOOC platform provides a clear navigation for us to have access to modules easily. |
| **41** | The LMOOC allows us to retrieve and download learning resources easily. |
| **42** | The LMOOC releases important course information, such as chapter updates and quiz deadlines on time. |
| **43** | The LMOOC provides us with convenient customization service. |

**Table A2.** 4 items added after the focus group interview

|  |  |
| --- | --- |
| 44 | The LMOOC teaching videos provides built-in pop-up questions or challenge tests. |
| 45 | L2 teacher(s) of the LMOOC frequently review or summarize the content in the teaching videos. |
| 46 | The LMOOC teaching group has clear penalty rules for students’ misbehaviors, such as copying, pasting and plagiarizing other students’ work. |
| 47 | The LMOOC teaching team provides post-class multi-platform interactive cooperation services between teachers and students (such as WeChat, DingTalk, etc.). |

**Appendix 2**

**Table B.** 41 items refined after experts review and pilot survey

|  |  |
| --- | --- |
| **Construct** | **Items** |
| Course Objectives | Item 1 The LMOOC provides clear teaching objectives. |
| Item 2 The LMOOC chapters are well-structured, with clear and logical connections between them. |
| Item 3 The LMOOC provides clear chapter outlines and teaching schedules. |
| Item 4 The LMOOC is suitable for my current cognitive level. |
| Item 5 The LMOOC helps to improve my L2 knowledge and skills. |
| Item 6 The LMOOC recommended relevant textbook resources. |
| Course Content | Item 7 The LMOOC chapters are set at a reasonable length. |
| Item 8 The content of the LMOOC chapters is easy to understand. |
| Item 9 The LMOOC provides professional L2 knowledge and skills. |
| Item 10 The LMOOC highlights key points and identifies difficult points. |
| Item 11 The LMOOC provides rich multimedia language learning materials, including videos, images, and audio materials. |
| Item 12 The LMOOC provides a wide range of supplementary materials. |
| Item 13 The LMOOC provides up-to-date content for L2 learning. |
| Item 14 The content of the LMOOC reflects new developments in this field. |
| Item 15 The LMOOC provides a big variety of topics for L2 learning. |
| Item 16 The LMOOC teaching videos provide clear and accurate bilingual subtitles. |
| Assessment | Item 17 The LMOOC provides various forms of exercises and tests. |
| Item 18 The LMOOC teaching videos provides built-in pop-up questions or challenge tests. |
| Item 19 The LMOOC teaching group informs learners of scores of quizzes and tests timely. |
| L2 Teachers’ Competence | Item 20 L2 teacher(s) of the LMOOC speak fluent and proficient English. |
| Item 21 L2 teacher(s) of the LMOOC are familiar with teaching content. |
| Item 22 L2 teacher(s) of the LMOOC are friendly and energetic. |
| Item 23 L2 teacher(s) of the LMOOC have expertise and professional background in this field. |
| Item 24 L2 teacher(s) of the LMOOC use appropriate body language to communicate with learners. |
| Item 25 L2 teacher(s) of the LMOOC use effective teaching methods in conveying L2 knowledge and skills. |
| Item 26 L2 teacher(s) of LMOOC often use short sentences in explanations, avoiding complex and difficult sentences. |
| Item 27 L2 teacher(s) of the LMOOC frequently review or summarize the content in the teaching videos. |
| Teaching Implementation | Item 28 The LMOOC teaching group responds to our questions promptly on the discussion forum (or other channels). |
| Item 29 The LMOOC has a module specifically for answering frequently asked questions (FAQs). |
| Item 30 The LMOOC platform has implemented strict anti-cheating measures for online testing, such as camera monitoring and page switching prevention. |
| Item 31 The LMOOC teaching group releases course information and related announcements at regular intervals. |
| Learner Support | Item 32 The LMOOC teaching group clearly informs us of the instructor’s Q&A time, the instructor’s email and grade release time. |
| Item 33 The LMOOC has a module specifically for answering frequently asked questions (FAQs).Item 34 The LMOOC keeps track of our online learning pace and academic performance. |
| Item 35 We can clearly view our learning progress and task completion rate of the LMOOC. |
| Technical Environment | Item 36 The LMOOC can be accessed from all sorts of digital devices, such as computers, cell phones, tablets and other mobile devices. |
| Item 37 Our online access to the LMOOC is stable (even if many users are logged in, the speed does not slow down). |
| Item 38 The LMOOC platform provides a clear navigation for us to have access to modules easily. |
| Item 39 The LMOOC allows us to retrieve and download learning resources easily. |
| Item 40 The LMOOC releases important course information, such as chapter updates and quiz deadlines on time. |
| Item 41 The LMOOC provides us with convenient customization service, such as after-class chat groups on other social media such as WeChat and QQ. |

**Appendix 3**

**Table C.** Exploratory Factor Analysis results (41 items and factor loadings)

|  |  |  |
| --- | --- | --- |
| **Factors** | **Items** | **Factor loading** |
| **Instructional Design** |  |  |
| Item 3 | 0.720 |
| Item 2 | 0.716 |
| Item 7 | 0.711 |
| Item 1 | 0.686 |
| Item 4 | 0.653 |
| Item 5 | 0.625 |
| Item 12 | 0.516 |
| Item 17 | 0.501 |
| *\*Item 8* | *0.498* |
| *\*Item 9* | *0.480* |
| *\*Item 10* | *0.466* |
| *\*Item 11* | *0.456* |
| *\*Item 6* | *0.303* |
| *\*Item 14* | *0.283* |
| *\*Item 15* | *0.274* |
| *\*Item 16* | *0.189* |
| **L2 Teachers’ Competence** |  |  |
| Item 22 | 0.741 |
| Item 21 | 0.717 |
| Item 20 | 0.707 |
| Item 24 | 0.692 |
| Item 23 | 0.681 |
| Item 25 | 0.598 |
| \**Item 26* | *0.426* |
| *\*Item 27* | *0.294* |
| *\*Item 13* | *0.264* |
| *\*Item 18* | *0.241* |
| **Teaching Implementation** |  |  |
| Item 29 | 0.709 |
| Item 28 | 0.616 |
| Item 32 | 0.594 |
| Item 33 | 0.586 |
| Item 30 | 0.560 |
| Item 19 | 0.527 |
| *\*Item 31* | *0.311* |
| **Technical Support** |  |  |
| Item 36 | 0.732 |
| Item 34 | 0.680 |
| Item 37 | 0.678 |
| Item 38  | 0.674 |
| Item 39 | 0.648 |
| Item 35 | 0.644 |
| *\*Item 40* | *0.429* |
| *\*Item 41* | *0.458* |

**Appendix 4**

**Table D.** The Chinese version of the LQES

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Loadings** | **M** | **SD** |
| **Instructional Design 教学设计** |
| **ID1:** 该外语慕课明确说明了教学目标。 | 0.686 | 3.566 | 0.786 |
| **ID2:** 该外语慕课提升了我的外语知识和技能。 | 0.625 | 3.731 | 0.821 |
| ID3: 该外语慕课章节设置合理，逻辑关联清晰。 | 0.716 | 3.499 | 0.549 |
| ID4: 该外语慕课提供了清晰的章节大纲和教学进度。 | 0.720 | 3.362 | 0.735 |
| ID5: 该外语慕课章节设置时长合理。 | 0.711 | 3.729 | 0.986 |
| ID6: 该外语慕课适合我当前的认知水平，难易度适当。 | 0.653 | 4.007 | 0.845 |
| ID7: 该外语慕课提供了丰富的语言教学多媒体素材，包含视频、图片与音频。 | 0.556 | 3.427 | 0.723 |
| **ID8**: 该外语慕课提供了形式丰富的测试题。 | 0.501 | 3.954 | 0.734 |
| **L2 Teachers’ Competence 外语教学素养** |
| LTL1: 外语慕课教师外语表达能力好，发音地道流畅。 | 0.707 | 3.487 | 0.814 |
| LTL2: 外语慕课教师熟练掌握这门外语课程内容。 | 0.717 | 3.774 | 0.845 |
| LTL3: 外语慕课教师精神饱满，亲和力强。 | 0.741 | 3.610 | 0.812 |
| LTL4: 外语慕课教师的专业资历深厚，教学经验丰富。  | 0.692 | 3.582 | 0.754 |
| LTL5: 外语慕课教师肢体语言使用得当。 | 0.681 | 3.213 | 0.713 |
| LTL6: 外语慕课教师针对不同知识点有区别地使用恰当的教学方法。  | 0.598 | 3.411 | 0.801 |
| **Teaching Implementation 教学管理** |
| TI1: 该外语慕课教学团队定期发布课程信息及相关通知。 | 0.616 | 3.951 | 0.792 |
| TI2: 该外语慕课教学团队清晰告知教师答疑时间，电子邮件和成绩发布时间。 | 0.594 | 4.073 | 0.762 |
| TI3: 该外语慕课教学团队定期在讨论区发布讨论题，并提供及时反馈。 | 0.709 | 3.659 | 0.750 |
| TI4: 该外语慕课教学团队课程在讨论区明确设置了“常见问题答疑”版块。 | 0.586 | 3.251 | 0.892 |
| **TI5**: 该外语慕课教学团队和平台为在线测试实施了如摄像头监控、防页面切换等严格的防作弊管理措施。 | 0.560 | 3.671 | 0.851 |
| **TI6**: 该外语慕课教学团队会及时公布学习者的考试和小测试成绩。 | 0.527 | 3.859 | 0.912 |
| **Technical Support 技术支持** |
| TS1: 该外语慕课可在各类终端（各类电脑、手机、平板等移动设备）进行访问、运行与显示。 | 0.732 | 3.492 | 0.742 |
| TS2: 该外语慕课在线访问稳定(即使有许多用户登录，也不会出现速度减慢的情况)。 | 0.678 | 3.677 | 0.824 |
| TS3: 该外语慕课网站主页导航分区合理，方便学习者便捷访问各模块。 | 0.674 | 3.796 | 0.805 |
| **TS4**: 学习者可清晰查看外语慕课的学习定位标记，并清楚得知任务点完成情况。 | 0.680 | 3.864 | 0.852 |
| **TS5**: 该外语慕课平台能下载获得各类课程教学资源，如学习资料。 | 0.648 | 3.478 | 0.825 |
| **TS6**: 该外语慕课平台方便学习者查看各章节得分情况，如观看时长、测试成绩等。 | 0.644 | 3.545 | 0.817 |