**INSTRUMENT/QUESTIONNAIRE**

**Technological Pedagogical Content Knowledge Self-Efficacy Scale (TPACK-SeS)**.

Please rate your degree of confidence regarding statements below.

|  |  |
| --- | --- |
|  | **Technological Knowledge (TK)** |
| 1. | I can explain the differences between hardware and software.  |
|  | Very Low Low Medium High Excellent |
| 2. | I can fix hardware problems.  |
|  | Very Low Low Medium High Excellent |
| 3. | I can install software |
|  | Very Low Low Medium High Excellent |
| 4. | I can use software.  |
|  | Very Low Low Medium High Excellent |
| 5. | I can choose appropriate technological tools for teaching (e.g. interactive board, LCD, …) |
|  | Very Low Low Medium High Excellent |
| 6. | I can explain the similarities between hardware and software. |
|  | Very Low Low Medium High Excellent |
|  | **Knowledge of Teaching with Technology (KTT)** |
| **7.** | I can utilize technological tools (e.g., pH meter, ammeter) to gather scientific data.  |
|  | Very Low Low Medium High Excellent |
| 8. | I can use technological tools (e.g., spreadsheets, computer) to analyse scientific data.  |
|  | Very Low Low Medium High Excellent |
| 9. | I can explain advantages of using technology in science education.  |
|  | Very Low Low Medium High Excellent |
| 10. | I can determine technologies that are appropriate for students’ grade level.  |
|  | Very Low Low Medium High Excellent |
| **11.** | I can explain how to use technologies in my lesson plan.  |
|  | Very Low Low Medium High Excellent |
| 12. | I can explain how to manage a classroom that is equipped with technologies  |
|  | Very Low Low Medium High Excellent |
| 13. | I can answer students’ questions about the technology use in my classroom.  |
|  | Very Low Low Medium High Excellent |
| 14. | I can utilize technological tools to make teaching processes more productive.  |
|  | Very Low Low Medium High Excellent |
| 15. | I can explain how technology affects student learning.  |
|  | Very Low Low Medium High Excellent |
|  | **Technological Pedagogical Content Knowledge (TPACK)** |
| 16. | I can use technological tools to determine students’ misconceptions about science.  |
|  | Very Low Low Medium High Excellent |
| 17. | I can use technological tools to assess student learning of science.  |
|  | Very Low Low Medium High Excellent |
| 18. | I can apply my technological knowledge, content knowledge, and pedagogical knowledge all together to create an effective learning environment.  |
|  | Very Low Low Medium High Excellent |
| 19. | I can develop quality lesson plans using my technological knowledge, content knowledge, and pedagogical knowledge together.  |
|  | Very Low Low Medium High Excellent |
| 20. | I can use technological tools to assess students’ prior knowledge about science topics.  |
|  | Very Low Low Medium High Excellent |

**THE SOCIAL NETWORKING SITES USE (SNSU) FREQUENCY SCALE IN ACADEMIC SETTING FOR PRESERVICE TEACHERS**

Please rate your frequency of using Social Networking Sites (SNS)

|  |  |
| --- | --- |
| **A** | **Searching and Studying (SS)** |
| 1 | How often do you search information related to your coursework from any social networking sites? |
|  |  Never Rarely Sometimes Often Always |
| 2 | How often do you search current news related to your coursework from any social networking sites? |
|  |  Never Rarely Sometimes Often Always |
| 3 | How often do you search image or animation related to your coursework from any social networking sites? |
|  |  Never Rarely Sometimes Often Always |
| 4 | How often do you watch online videos related to your coursework (such as video of laboratory experimentation) from any social networking sites? |
|  |  Never Rarely Sometimes Often Always |
| 5 | How often do you integrating image, animation, or videos that you search into your assignment? |
|  |  Never Rarely Sometimes Often Always |
| **B** | **Download Media (DM)** |
| 6 | How often do you download video related to your coursework? |
|  |  Never Rarely Sometimes Often Always |
| 7 | How often do you download image or animation related to your coursework? |
|  |  Never Rarely Sometimes Often Always |
| 8 | How often do you download document such as Journal articles related to your coursework? |
|  |  Never Rarely Sometimes Often Always |
| 9 | How often do you download learning apps/software that useful for your study? |
|  |  Never Rarely Sometimes Often Always |
| 10 | How often do you download learning apps/software that useful for your teaching in the classroom? |
|  |  Never Rarely Sometimes Often Always |
| **C** | **Sharing Media (SM)** |
| 11 | How often do you share your files or document related to your coursework using any social networking sites with other students? |
|  |  Never Rarely Sometimes Often Always |
| 12 | How often do you share picture and video using any social networking sites with other students? |
|  |  Never Rarely Sometimes Often Always |
| 13 | How often do you share your thought or ideas using any social networking sites with other students? |
|  |  Never Rarely Sometimes Often Always |
| 14 | How often do you collaborate with other students in a group work using any SNS? |
|  |  Never Rarely Sometimes Often Always |
| 15 | How often do you share current news using any SNS to other students? |
|  |  Never Rarely Sometimes Often Always |
| **D** | **Professionalism Development (PD)** |
| 16 | How often do you use SNS to learn computer hardware? |
|  |  Never Rarely Sometimes Often Always |
| 17 | How often do you use SNS to learn computer software? |
|  |  Never Rarely Sometimes Often Always |
| 18 | How often do you use SNS to learn new technological tools for teaching? |
|  |  Never Rarely Sometimes Often Always |
| 19 | How often do you use SNS to create learning media? |
|  |  Never Rarely Sometimes Often Always |
| 20 | How often do you integrate e-Learning platform (such as Moodle, Edmodo, etc.) in the classroom? |
|  |  Never Rarely Sometimes Often Always |
| 21 | How often do you use SNS to update information related to current new technology for teaching? |
|  |  Never Rarely Sometimes Often Always |
| 22 | How often do you use SNS to learn integrating technology into your lesson plan? |
|  |  Never Rarely Sometimes Often Always |
| 23 | How often do you join distance learning workshop such as online short course? |
|  |  Never Rarely Sometimes Often Always |
| 24 | How often do you chat in social media with professional teachers to get information about ICT integration using social media? |
|  |  Never Rarely Sometimes Often Always |
| **E** | **Entertainment and Motivation (EM)** |
| 25 | How often do you read online news for entertainment? |
|  |  Never Rarely Sometimes Often Always |
| 26 | How often do you listen to music during studying? |
|  |  Never Rarely Sometimes Often Always |
| 27 | How often do you play Educational Games in smartphone or laptop during studying? |
|  |  Never Rarely Sometimes Often Always |
| 28 | How often do you watch online video for entertainment purposes during studying? |
|  |  Never Rarely Sometimes Often Always |
| 29 | How often do you chat in Social media to improve learning motivation from others? |
|  |  Never Rarely Sometimes Often Always |