**Table 1.4.** Relevant patterns for each learning style dimension of FSLSM (the “+” and “-“ indicate a high and low occurrence of the respective pattern from viewpoint of the active, sensing, visual and sequential dimension) (Graf 2007)

|  |  |  |  |
| --- | --- | --- | --- |
| **Active/Reflective** | **Sensing/Intuitive** | **Visual/verbal** | **Sequential/Global** |
| content\_visit (-) | content\_visit (-) | content\_visit (-) | outline\_visit (-) |
| content\_stay (-) | content\_stay (-) | ques\_graphics (+) | outline\_stay (-) |
| outline\_stay (-) | example\_visit (+) | ques\_text (-) | ques\_detail (+) |
| example\_stay (-) | example\_stay (+) | forum\_visit (-) | ques\_overview (-) |
| selfass\_visit (+) | selfass\_visit (+) | forum\_stay (-) | ques\_interpret (-) |
| selfass\_stay (-) | selfass\_stay (+) | forum\_post (-) | ques\_develop (-) |
| selfass\_twice\_wrong (+) | excercise\_visit (+) |  | navigation\_skip (-) |
| excercise\_visit (+) | ques\_detail (+) |  | navigation\_overview\_visit (-) |
| excercise\_stay (+) | ques\_facts (+) |  | navigation\_overview\_stay (-) |
| quiz\_stay\_results (-) | ques\_concepts (-) |  |  |
| forum\_visit (-) | ques\_develop (-) |  |  |
| forum\_post (+) | quiz\_revisions (+) |  |  |
|  | quiz\_stay\_results (+) |  |  |

**Table 1.5.** Recommended thresholds for patterns (Graf 2007)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Features** | **Patterns** | **Description of patterns** | **Thresholds** | |
| **Content** | content\_visit | % of visited content objects (based on the number of available content objects) | 75% | 50% |
| content\_stay | % of time spent on content objects (based on the predefined expected value) | 50% | 75% |
| **Outline** | outline\_visit | % of visited outlines (based on the number of available outlines) | 75% | 150% |
| outline\_stay | % of time spent on outlines (based on the predefined expected value) | 50% | 75% |
| **Example** | example\_visit | % of visited examples (based on the number of available examples) | 25% | 75% |
| example\_stay | % of time spent on examples (based on the predefined expected value) | 50% | 75% |
| **Self-assesment** | selfass\_visit | % of performed self-assesment questions (based on the total amount of available questions) | 25% | 75% |
| selfass\_stay | % of time spent on self-assesment tests (based on the predefined expected value) | 50% | 75% |
| selfass\_twice\_wrong | % of times a learner answers the same question twice wrong (based on the number of times a learner answered a question twice) | 25% | 75% |
| **Excercise** | excercise\_visit | % of performed excercises (based on the number of available excercises) | 25% | 75% |
| excercise \_stay | % of time spent on excercises (based on the predefined expected value) | 50% | 75% |
| **Self-assesment and excercise** | ques\_detail | % of correctly answered questions about details | 50% | 75% |
| ques\_overview | % of correctly answered questions about overview knowledge | 50% | 75% |
| ques\_facts | % of correctly answered questions about facts | 50% | 75% |
| ques\_concepts | % of correctly answered questions about concepts | 50% | 75% |
| ques\_graphics | % of correctly answered questions about graphics | 50% | 75% |
| ques\_text | % of correctly answered questions about text | 50% | 75% |
| ques\_interpret | % of correctly answered questions about interpreting solutions | 50% | 75% |
| ques\_develop | % of correctly answered questions about developing new solutions | 50% | 75% |
| quiz\_revision | % of times a student revised his/her answer before the submission (based on the number of answered questions) | 20% | 75% |
| quiz\_stay\_results | average time spent on the result page of a self-assesment test or exercise | 30 sec. | 60 sec. |
| **Forum** | forum\_visit | number of visits in a forum (per week) | 7 | 50 |
| forum\_stay | time spent in the forum (per week) | 5 min. | 30 min. |
| forum\_post | number of postings in a forum (per week) | 1 | 10 |
| **Navigation** | navigation\_skip | % of times a learning object is skipped via the navigation menu (based on the number of visited learning objects) | 1% | 2% |
| navigation\_overview\_visit | % of times a learner visited the course overview page (based on the number of visited learning objects) | 10% | 20% |
| navigation\_overview\_stay | % of time spent on the course overview page (based on the predefined expected value) | 50% | 75% |