A framework for learner experience (LX) design of eLearning systems in neo-tropical animal production is proposed. For assessment and design of learner experience a checklist is developed. By a ridge-regression-based model the most critical of learning experience dimensions and their checklist items are determined and relevant eLearning system improvements recommended. A case study with an eLearning system in neo-tropical animal production is carried out. By applying the framework the most critical for learner experience design checklist items and problems are allocated. LX design guidelines and improvement recommendations are defined. Further developments of the framework are suggested. By help of the framework important LX dimensions and items can be quickly allocated and thus LX-oriented design of eLearning systems in the area of neo-tropical animal production supported.