FLORIDA STATE UNIVERSITY COLLEGE OF EDUCATION

THE EFFECTS OF ONLINE SYNCHRONOUS VERSUS ONLINE ASYNCHRONOUS ABACUS PROFESSIONAL DEVELOPMENT

By
LEANNE ELIZABETH GRILLOT

A Dissertation submitted to the School of Teacher Education in partial fulfillment of the requirements for the degree of Doctor of Philosophy

| Leanne Elizabeth Grillot defended this dissertation on March 18, 2024. |
|--|
| The members of the supervisory committee were: |
| |
| |
| |
| Robert Schoen |
| Professor Directing Dissertation |
| |
| Colleen Ganley |
| University Representative |
| |
| Sandra Lewis |
| Committee Member |
| |
| Michael Tuttle |
| Committee Member |
| |
| |
| |
| The Graduate School has verified and approved the above-named committee members and |
| certifies that the dissertation has been approved in accordance with university requirements |
| |