The emergence of ‘non-traditional’ classrooms has presented challenges for educational leaders across the spectrum of leadership. Classrooms teachers are challenged with responsibility for leading others in the development and delivery of curriculum in ways in which the walls of the traditional classroom did not necessitate. Whilst school leadership teams are challenged to ensure that staff are prepared, managed through the processes of change, and supported to not merely teach within the new spaces, but to transform teaching and learning. Layered through the challenges of movement to non-traditional learning spaces are the complexities of demands around improved literacy and numeracy outcomes and shifting demands of the ‘Twenty-first century’ learner. This paper reflects on the experiences in three primary schools that were part of a larger study of non-traditional learning spaces and considers the implications for educational leaders within these environments. It proposes that effective educational leadership in these spaces needs to be a truly distributed model with higher levels of trust evident amongst staff, as well openness to failure and support for risk-taking as a point of transformation, innovation and learning. This model of leadership is quite different to that which was observed as occurring within the sites of this research, despite the good intent of the leaders. The paper considers the implications of changing spaces upon the nature of effective educational leadership, and the barriers to the realisation of this desired practice.