We demonstrate strong light-matter coupling at room temperature in a GaN microcavity using simultaneous reflectivity and photoluminescence measurements. At 10 K strong coupling is also observed in both measurements despite the well-known dominance of GaN emission at low temperature by localized neutral donor bound excitons. In addition, the strong light-matter coupling regime is studied as a function of temperature with the tuning of the polariton modes, in this case a result due to the dominant redshift of the excitonlike branch with increasing temperature.