FIG. 5.3.2. The concentrations of a component i across an interface in a mixture (a) can be plotted and will generally show rapid changes through the interfacial region (b). The Gibbs model (hatched regions in (b)) ascribes constant compositions to both phases up to an arbitrarily defined interface. The excess material (dotted region in (b)) is ascribed to the infinitely thin Gibbs surface GG' (c). A different arbitrary choice of Gibbs surface (d) can reduce the surface concentration to zero (note equality of dotted and hatched areas in (d)) or even make it negative. In practice, it is useful to choose GG' so that n_i^σ for the *solvent* is zero. The concentrations of all other components must then be referred to this same surface. Note that for curved surfaces this choice of dividing surface is very unlikely to coincide with the surface of tension (Melrose 1968), and so the model system would not be mechanically equivalent to the real one.