Let $n = (n_1, \ldots, n_m)$ be an arbitrary $m$-tuple of positive integers and let $L = W(m; n)$ denote a graded generalized Jacobson-Witt algebra over an algebraically closed field of characteristic $p > 3$. The goal of the paper under review is to use the setup of generalized restricted Lie algebras to prove that, up to finitely many exceptions, irreducible representations of $L$ with generalized $p$-characters of height at most $\min \{ p^{n_i} - p^{n_i-1} | 1 \leq i \leq m \} - 1$ can be obtained as modules induced from an irreducible representation of the distinguished maximal subalgebra $L_0$ of $L$. (Here the $L$-action on the induced modules is twisted in order to ensure that the exceptions are exactly the modules induced from the irreducible $gl_m$-modules having as highest weight some fundamental weight.) In particular, every irreducible module of $L$ with generalized $p$-character of height between 1 and $\min \{ p^{n_i} - p^{n_i-1} | 1 \leq i \leq m \} - 1$ is induced from some irreducible $L_0$-module, and the number of isomorphism classes of irreducible $L$-modules with such a generalized $p$-character $\chi$ is the same as the number of isomorphism classes of irreducible $L_0$-modules with $p$-character $\chi|_{L_0}$. The main technical tool is the concept of a $\mathfrak{C}$-category (in the paper under review called a category of $(R, L)$-modules). The definition of a $\mathfrak{C}$-category involves an $L$-module structure, its restriction to $L_0$, a module structure coming from the defining divided power algebra of $L$, and several compatibility conditions, and was introduced by Skryabin [Independent systems of derivations and Lie algebra representations, in: Algebra and Analysis, Proceedings of the International Centennial Chebotarev Conference, Kazan, Russia, June 5-11, 1994. Arslanov, M. M. (ed.) et al. Berlin: Walter de Gruyter. 115-150 (1996; Zbl. 0878.17004)] to study representations of restricted Jacobson-Witt algebras. The authors show that induced modules with generalized $p$-characters belong to such a category. This enables them to extend some of Skryabin’s arguments from $n = (1, \ldots, 1)$ to arbitrary $n$. In the case of a generalized $p$-character of height 0 and $m > 1$ the authors also realize the exceptional irreducible modules corresponding to a fundamental weight of $gl_m$ in terms of a certain de Rham complex. In particular, the number of isomorphism classes of irreducible modules with a generalized $p$-character
of height 0 and their dimensions are determined.