A quantized Schur duality between the quantum group of type A and the Hecke algebra of type A has been discovered by Jimbo in 1986. In this talk we describe a generalization of Schur-Jimbo duality to a duality between a coideal subalgebra of the quantum group of type A and the Hecke algebra of type B. A new theory of canonical basis arising from such a coideal subalgebra is developed which allows a new formulation of Kazhdan-Lusztig theory of type B. As a main application we provide a formulation of Kazhdan-Lusztig theory for the category O of the ortho-symplectic Lie superalgebras for the first time. This is joint work with Weiqiang Wang. (Received January 26, 2014)