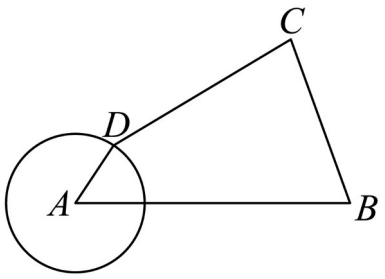
10. 摇杆机械装置，如图，A，B为定点，C，D是动点，$AD=1$，$CD=3$，$BC=\frac{5}{2}$，$AB=4$，则$\cos\angle ABC$的取值范围（　）



A. $[\frac{5}{16},\frac{53}{80}]$

B. $[\frac{5}{16},\frac{73}{80}]$

C. $[\frac{5}{12},\frac{53}{80}]$

D. $[\frac{5}{12},\frac{73}{80}]$