The graph illustrates the functions $f(x)$ and $f_{\text{quad}}(x)$, with $f(x)$ represented by a solid red line and $f_{\text{quad}}(x)$ by a dashed blue line. The points $x_k$ and $x_k + d_k$ are marked on the x-axis, indicating the change in position along the x-axis from $x_k$ to $x_k + d_k$. The graph visually compares the original function with its quadratic approximation.