

*Table 2. Rubric for the qualitative analysis of the depth of learning based on cmap analysis.*

<b>Depth of Learning</b>	<b>Criteria comparing final cmap to the first</b>		
	<b>Concepts</b>	<b>Linkages</b>	<b>Overall Structure</b>
<b>Deep</b>	<ul style="list-style-type: none"> <li>• Original concepts remain</li> <li>• New concepts added</li> </ul>	<ul style="list-style-type: none"> <li>• Valid</li> <li>• Explanatory</li> <li>• Evidence of meaning in the mind of the map author</li> </ul>	<ul style="list-style-type: none"> <li>• Network and/ or cycles are present.</li> <li>• Well defined organization.</li> <li>• Increased number of cross-links between branches.</li> </ul>
<b>Surface</b>	<ul style="list-style-type: none"> <li>• Significant number of new concepts but not linked with prior knowledge.</li> </ul>	<ul style="list-style-type: none"> <li>• The overall number of linkages has not changed significantly</li> </ul>	<ul style="list-style-type: none"> <li>• Chain structures are present.</li> <li>• None to few cross-links</li> <li>• Explanatory power not significantly increased</li> </ul>
<b>Non-learning</b>	<ul style="list-style-type: none"> <li>• None to few new concepts added</li> </ul>	<ul style="list-style-type: none"> <li>• Zero to few new linkages made</li> <li>• no new cross-linking between concepts</li> </ul>	<ul style="list-style-type: none"> <li>• No change in knowledge structure or significant reorganization of concepts</li> </ul>