

Affinity Analysis:

A Strong Visual Tool for Synthesizing Large Number of Language Data

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A Hypothetical Case: One Students' Quality Circle (SQC) team of a higher secondary school in Kathmandu wanted to solve a problem on curriculum which lacks teaching on life skills. The team desired to collect life skills components which are most essential for students to enhance leadership personality to grow individually as well as to help the society to develop. The team asked all of their classmates to write on a piece of paper (or post-its) their individual ideas or opinions on important and required life skills components that must be learned in school, and handover the team by next Monday. Surprisingly, the team received one hundred and twenty five opinions on life skills from their classmates as follows.

1. Able to discover causes of the problems	31. Cope with conflicts well	60. Make a decision carefully	95. Select what is beneficial to oneself
2. Able to work in teams well	32. Expand thoughts in various ways	61. Please one's own success	96. Prefer learning new things
3. Feel bad with colleagues for their problems	33. Not sit in only one situation	62. Stop performing in case of problems occurred	97. Accept the other's opinions
4. Have positive thinking on problems	34. After spoken it's easy to understand	63. Able to estimate results	98. Develop oneself through the others' comments
5. Leave garbage at the right place	35. Care the other's feelings	64. Discover causes of problems	99. Express emotion properly
6. Not commit negative effects towards public	36. Have related thinking and reasonable thinking	65. Think carefully	100. Express un satisfaction properly
7. Able to tell one's own weaknesses	37. Not over pessimistic	66. View the life as it's valuable	101. Accept the individual differences
8. Be trusted by friends	38. Prefer thinking differently from previous thoughts	67. Accept the results occurred	102. Be responsible for one's own deeds
9. Feel sympathy for others with obstacles	39. Able to deny the others	68. Satisfy what oneself have	103. Keep feeling well
10. Have stable emotion with hard varying	40. Continue thinking from one's own thoughts	69. View the subjects in various dimensions	104. Perform the work for public
11. Not create harmful events to the others	41. Listen and well get the concept	70. Be confident on one's own deeds	105. Tell the causes of one's own emotion
12. Not to break the laws	42. Not make a decision based on friend's influence	71. Do things carefully	106. Accept what the others do different from oneself
13. Aid the others while having opportunity	43. Provide data of estimating solutions	72. Not to believe in anything easily	107. Dare to express opinions
14. Be beloved of friends	44. Have the work plan	73. Please to improve if the results out with problems	108. Not over afraid of upset
15. Follow the regulations	45. Prefer changing	74. Able to tell what is liked or disliked	109. Not to be selfish
16. Not destroy public property	46. Prefer contacting and making friends with others	75. Have one's own ideas	110. Tell one's own Strengths
17. Prefer to do original activities	47. Solve problems beforehand well	76. Plan for various alternatives	111. Able to observe the other's emotions
18. Aid the others without any advantages	48. Think carefully before conducting	77. Rely on oneself	112. Be punctual
19. Be interested in any things surrounded	49. Create relationships fast	78. Always realize one's own emotion	113. Judge the other's opinion reasonably
20. Be simple	50. Prefer the others getting happy	79. Believe that all problems have their ways out	114. Not worry about failure
21. Offer oneself for public	51. Risk reasonably	80. Feel good on oneself	115. Care the other's needs
22. Perceive that oneself must be responsible for public	52. Set up questions over former plan	81. Tell one's own weaknesses	116. Dare to speak with strangers
23. Prefer doing new things	53. View things in different dimensions	82. Able to tell one's own needs	117. Not fix with the past
24. Be lively and have good emotions	54. Always provide opportunity to the others	83. Dare to consult the others before making a decision	118. Perform the work on duty successfully
25. It is agreeable after spoken	55. Discover causes and sources of the problems	84. Realize one's own ability	119. Rely on oneself
26. Not over proud	56. Prefer thinking by challenging	85. Realize one's own ability	120. Be responsible for the work results
27. Please to see the success of the colleagues	57. Prefer to have own decision more than to follow orders	86. Able to evaluate one's own potentiality	121. Be self disciplined
28. Propose new ideas	58. Show off sincerely	87. Adjust emotion fast	122. Care the problems of colleagues
29. Always selected as a speaker	59. Analyze what has been done	88. Believe in one's own ability	123. Dare to face the sorrow
30. Being supported for the colleagues		89. Work in accordance with one's own ability	124. Work with the others well
		90. Able to judge one's own deeds	125. Realize the others' needs
		91. Assess one's own deeds	
		92. Be intent not withdrawn	
		93. Control emotion well	
		94. Cool and hard angry	

Synthesizing all these ideas in a concrete form was an arduous work to the SQC team members. One of the team members suggested for using a QC management tools called the **Affinity Analysis**, which he has learned from his SQC facilitator. The SQC team applied the affinity analysis and drew a visual diagram called affinity diagram with consensus and thus could draw a conclusion for addressing the problem of improving curriculum for learning life skills by understanding the accurate life skills components at their schools. The affinity diagram they have drawn is shown in Affinity Analysis figure 1, 2 and 3 attached herewith. The diagram clearly depicts that at least 9 components of life skills are necessary for the students which are: (1) Critical thinking- ability to analyze critically the situation, (2) Critical thinking- ability of divergent thinking purposefully, (3) Self-awareness, (4) Empathy, (5) Self-esteem, (6) Social responsibility, (7) Interpersonal relationship and communication skills, (8) Decision making and problem solving skills, and (9) Coping with emotion and stress skills.

The chaos situation of divergent and huge language data was thus properly handled by the SQC team and came out with a concrete output. Students! Do you want to learn what it is and how it can be used?

Introduction: An Affinity Analysis and its output called Affinity Diagram is a tool that synthesizes large amounts of language data (ideas, opinions, issues) and organizes them into sub-groupings and groupings based on their natural relationships. It is a bottom up approach of first gathering all data on any issues and then structuring them into few understandable and working conclusions on these issues.

Origin: It was created in 1960's by Dr. Jiro Kawakita, Professor Emeritus of Tokyo Institute of Technology. He developed this tool which is also called as KJ method from the experience he gathered in Nepalese remote places where he collected numerous verbal data and valuable information from illiterate villagers and he needs to synthesize to come out for conclusion.

Purpose: The Affinity process is a good way to get people to work on a creative level to address difficult issues. It may be used in situations that are unknown or unexplored by a team, or in circumstances that seem confusing or disorganized, such as when people with diverse experiences have incomplete knowledge of the area of analysis. Affinity diagram allows large numbers of ideas to be sorted into groups for review and analysis. These, simple to produce, diagrams are particularly useful where ideas which are generated require to be organized at a fast pace.

Construct: Affinitizing is a process performed by a group or team, here by SQC teams. The idea is to meld the perspectives, opinions, and insights of a group of people who are knowledgeable about the issues. The process of developing an Affinity Diagram seems to work best when there are no less than four, or maximum of ten participants. Before we go over the steps used to create an Affinity Diagram, we need to look at some unique features of the Affinity process that are important to its success:

- **Affinitize silently:** The most effective way to work is to have everyone move the displayed ideas at will, without talking. This is a new experience for many people. It has two positive results: It encourages unconventional thinking (which is good), while it discourages semantic battles (which are bad). It also helps prevent one person from steering the Affinity.
- **Go for gut reactions:** Encourage team members not to agonize over sorting but to react quickly to what they see. Speed rather than deliberation is the order of the day, so keep the processes moving.
- **Handle disagreements simply:** The process provides a simple way to handle disagreements over the placement of ideas: If a team member doesn't like where an idea is grouped, he or she moves it. This creates an environment in which it is okay to disagree with people having a different viewpoint. If consensus cannot be reached, make a duplicate of the idea and place one copy in each group.

Step 1- Generate ideas.

Copy each of the ideas generated or collected onto post-its or small piece of cards, one idea to a card. The facilitator can do this in advance, or the participants can do it at the beginning of the exercise.

Step 2 - Display the ideas.

Place the post-its or small cards on a plain chart paper, pin board, or wall, in a random manner which we call as *Parking Place*.

Step 3 - Sort the ideas into related groups.

Group the ideas by moving the post-its or small cards independently. Participants should go with their gut reactions. If they disagree on the placement of a card, they are free to move it. The facilitator should remind them that affinizing is a quick process conducted in silence.

Step 4 - Create header cards.

Make sure that each header placed at the top of a group captures the essential link among all of the ideas beneath it and consists of enough words to clearly convey the meaning. Refer to attached figures for an example of header cards that have been developed by the SQC team for their exercise. For example, refer Figure 1, the first header card was created as "Ability to analyze and indicate problems" for two affinated or related idea cards- (1) able to discover causes of the problems, and (2) able to tell one's own weaknesses. Other header cards were also created similarly.

Step 5 - Draw the finished Affinity Diagram.

Make sure you write the problem statement on top of the diagram, place a header card above each group of ideas, allow the team to review and discuss points for clarification, and document the finished output as Affinity Diagram. Refer to the completed Affinity Diagram with 9 affinity cards in total with thirty six header cards as an example. But remember, it's only an example. If the participants developed their own header cards, the Affinity they create will be different.

Application: The Affinity Analysis is formalized in an Affinity Diagram and is useful when you want to;

- **Sift through large volumes of data.** Creating an Affinity Diagram might be helpful for organizing the data into groups.
- **Encourage new patterns of thinking.** An Affinity exercise is an excellent way to get a group of people to react on a "gut level" rather than mulling things over intellectually.

As a rule of thumb, if less than 15 items of information or data have been identified; you can skip the Affinity process. Instead, you can clarify and combine the ideas and then use one of the Decision-Making Tools to identify the highest priority items.

Students! You try it next time.

Affinity Diagram:

Figure 1: 3 sets (1, 2 & 3) of affinity cards developed by the SQC team on life skills

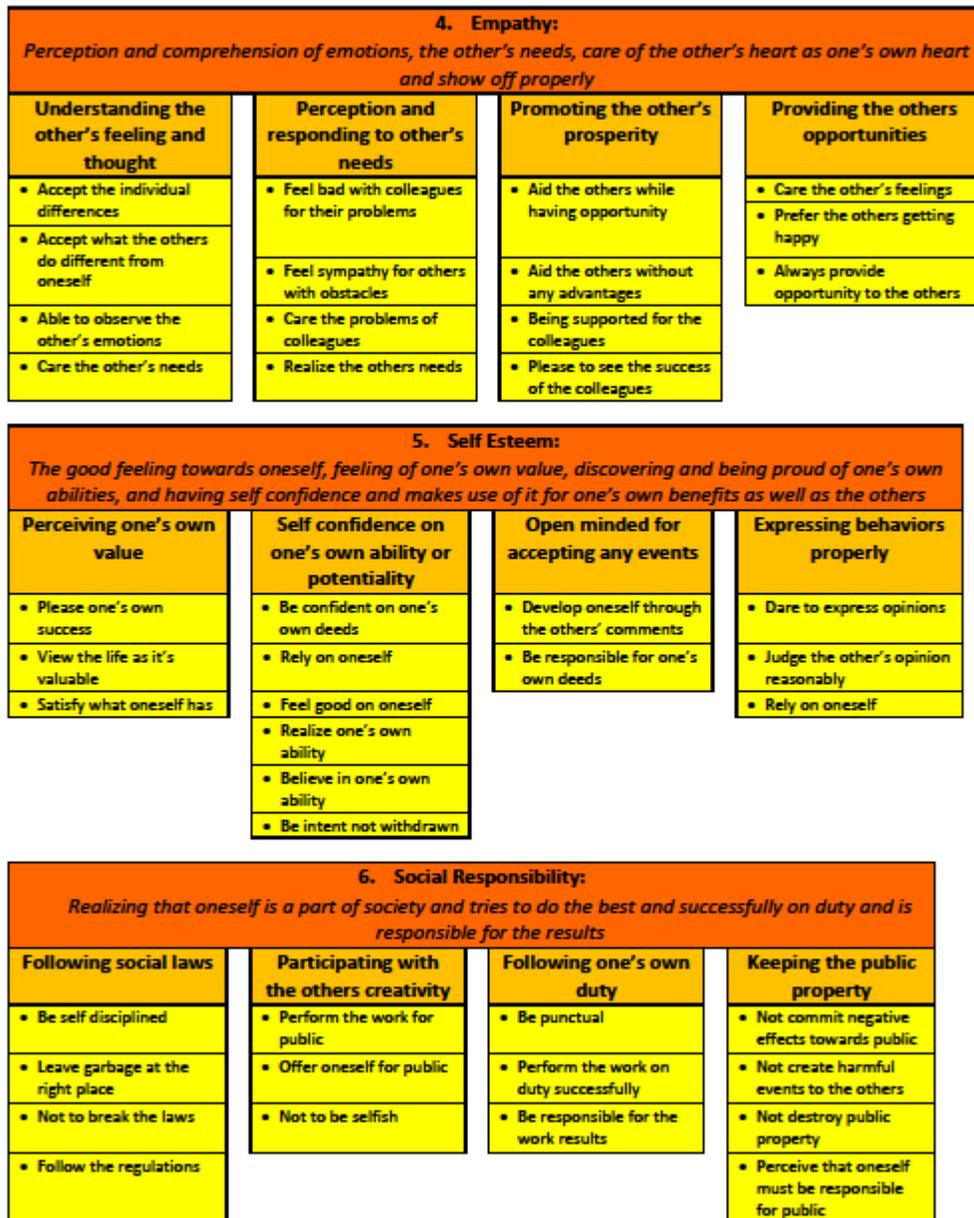
1. Critical Thinking: <i>The ability to analyze data of information, problems and situations purposefully</i>				
Ability to analyze and indicate problems	Classifying and selecting data	Constructing conclusion	Identifying hypothesis	Judging conclusion
<ul style="list-style-type: none"> • Able to discover causes of the problems 	<ul style="list-style-type: none"> • View the subjects in various dimensions 	<ul style="list-style-type: none"> • Have one's own ideas • Have related thinking and reasonable thinking 	<ul style="list-style-type: none"> • Provide data of estimating solutions • Have the work plan 	<ul style="list-style-type: none"> • Able to judge one's own deeds • Select what is beneficial to oneself
<ul style="list-style-type: none"> • Able to tell one's own weaknesses 	<ul style="list-style-type: none"> • Not to believe in anything easily 			

2. Critical Thinking: <i>The ability of divergent thinking</i>			
Originality	Fluency	Flexibility	Elaboration
<ul style="list-style-type: none"> • Prefer learning new things • Prefer doing new things • Propose new ideas 	<ul style="list-style-type: none"> • Expand thoughts in various ways • Prefer thinking differently from previous thoughts • Continue thinking from one's own thoughts 	<ul style="list-style-type: none"> • Prefer changing • Set up questions over former plan • Prefer thinking by challenging 	<ul style="list-style-type: none"> • Analyze what has been done • Think carefully • Do things carefully

3. Self-Awareness: <i>Perception and comprehension of one's own feeling, idea and emotion in reality and able to control one's own emotion and feeling</i>			
Ability to realize one's own emotion	Self-management	Self-assessment	Perception of one's own ability as well as value
<ul style="list-style-type: none"> • Able to tell what is liked or disliked • Always realize one's own emotion • Able to tell one's own needs 	<ul style="list-style-type: none"> • Adjust emotion fast • Control emotion well • Express emotion properly 	<ul style="list-style-type: none"> • Tell the causes of one's own emotion • Tell one's own Strengths • Tell one's own weaknesses 	<ul style="list-style-type: none"> • Realize one's own ability • Work in accordance with one's own ability • Assess one's own deeds • Accept the other's opinions

Affinity Diagram:

Figure 2: 3 sets (4, 5 & 6) of affinity cards developed by the SQC team on life skills



Affinity Diagram:

Figure 3: 3 sets (7, 8 & 9) of affinity cards developed by the SQC team on life skills

7. Interpersonal Relations and Communications: <i>Ability to communicate or have relationship with the others for good change or ability to seek for cooperation</i>				
Ability to convince and motivate the others	Ability to convey information well	Ability to communicate with others	Ability to work with the others	Ability to adjust in various situations
<ul style="list-style-type: none"> It is agreeable after spoken 	<ul style="list-style-type: none"> After spoken it's easy to understand 	<ul style="list-style-type: none"> Prefer contacting and making friends with others 	<ul style="list-style-type: none"> Work with the others well 	<ul style="list-style-type: none"> Be simple
<ul style="list-style-type: none"> Always selected as a speaker 	<ul style="list-style-type: none"> Listen and well get the concept 	<ul style="list-style-type: none"> Create relationships fast 	<ul style="list-style-type: none"> Able to work in teams well 	<ul style="list-style-type: none"> Not over proud
		<ul style="list-style-type: none"> Show off sincerely 	<ul style="list-style-type: none"> Be trusted by friends 	<ul style="list-style-type: none"> Cope with conflicts well
		<ul style="list-style-type: none"> Dare to speak with strangers 	<ul style="list-style-type: none"> Be beloved of friends 	<ul style="list-style-type: none"> Not over pessimistic
				<ul style="list-style-type: none"> Able to deny the others

8. Decision Making and Problem Solving Skills: <i>Ability to perceive problems, causes, alternatives, and practice correctly as well as properly</i>			
Perceiving and comprehending problems	Making decisions	Evaluation of making decisions	Flexibly and consciously solve the problems
<ul style="list-style-type: none"> Think carefully before conducting 	<ul style="list-style-type: none"> Make a decision carefully 	<ul style="list-style-type: none"> Stop performing in case of problems occurred 	<ul style="list-style-type: none"> Plan for various alternatives
<ul style="list-style-type: none"> View things in different dimensions 	<ul style="list-style-type: none"> Able to estimate results 	<ul style="list-style-type: none"> Discover causes of problems 	<ul style="list-style-type: none"> Believe that all problems have their ways out
<ul style="list-style-type: none"> Discover causes and sources of the problems 	<ul style="list-style-type: none"> Not make a decision based on friend's influence 	<ul style="list-style-type: none"> Accept the results occurred 	<ul style="list-style-type: none"> Dare to consult the others before making a decision
	<ul style="list-style-type: none"> Solve problems beforehand well 	<ul style="list-style-type: none"> Please to improve if the results out with problems 	<ul style="list-style-type: none"> Able to evaluate one's own potentiality
	<ul style="list-style-type: none"> Risk reasonably 		
	<ul style="list-style-type: none"> Prefer to have own decision more than to follow orders 		

9. Coping with Emotion and Stress Skills <i>Ability to cope with emotions properly</i>		
Ability to control and cope with one's own emotion	Ability to relax and reduce stress	Ability to create original viewpoints for benefits of life
<ul style="list-style-type: none"> Cool and hard angry 	<ul style="list-style-type: none"> Not fix with the past 	<ul style="list-style-type: none"> Prefer to do original activities
<ul style="list-style-type: none"> Express un satisfaction properly 	<ul style="list-style-type: none"> Dare to face the sorrow 	<ul style="list-style-type: none"> Be interested in any things surrounded
<ul style="list-style-type: none"> Not over afraid of upset 	<ul style="list-style-type: none"> Have positive thinking on problems 	<ul style="list-style-type: none"> Be lively and have good emotions
<ul style="list-style-type: none"> Not worry about failure 	<ul style="list-style-type: none"> Have stable emotion 	<ul style="list-style-type: none"> Not sit in only one situation
<ul style="list-style-type: none"> Keep feeling well 		