

Mathaesthetics in Flower Arrangement of the Third Agers

MERCIDITA S. VILLAMAYOR
ORCID NO. 0000-0003-2846-0116
merciditavillamayor@yahoo.com

Bukidnon State University
Malaybalay City, Bukidnon, Philippines

ABSTRACT

This study assessed the mathaesthetics in flower arrangement as a wellness activity of the third agers from the Barangay Nine Senior Citizens Association (BaNiSCA). Mathaesthetics is a coined word referring to mathematics and aesthetic activities like flower arrangement. Assessment of different activities considered the three spheres of the results chain framework, together with flower arrangement evaluation for demonstration and return demonstration outputs. This evaluation utilized the mathematics concepts in the 7 Principles of Floral Design. Training evaluations on the other hand followed the guidelines of Bukidnon State University (BukSU) extension form EU-F-014. Quantitative and qualitative data from a total of 19 participants composed of the demonstrator, third agers, and assessors were utilized. Among the principles applied in the flower arrangement, rhythm ranked first while the scale was the last. Intellectual, emotional, and occupational wellness of the third agers were found to have been influenced by the flower arrangement activity provided by the extensionists of BukSU under the wellness program. The mathaesthetics was rated best by the participants of the training.

Keywords: Mathaesthetics, flower arrangement, wellness of third agers, assessment

INTRODUCTION

Change on wellness during aging is an inevitable part of human life. Because of aging, emotional, and psychological changes may occur (Borrigo and Arias, 2018). It is good that in the Philippines, a tradition of taking care of the third aged - members of the family, as Abejo (2004) emphasized, is considered as a duty of the children by providing physical, social, and financial support. However, schooling, work, and migration of younger members of the family are some of the reasons that cause the third agers to be taken care of by helpers or care-givers. However, house-help is hard to find nowadays, and salaries of care-givers are also expensive, which most of the families with third agers cannot afford. For the marginalized Filipino elderly, the majority of them continue to work and push their bodies to the extreme in order to eat, live and provide for those who are still depending on them with the little income that they are earning (Sanchez, 2008). Even if Filipinos are known to be tightly knit, but the changes in the society, as Abejo (2004) further expressed, caused the third agers to seek other alternatives on living arrangements. Some third agers decide to live on their own or invite a neighbor to stay with them if no member of the family is available to accompany them.

Whether the third agers live alone or with companions, they have to look into their whole-person wellness. Based on the research conducted by Torres (2017), universities can design and develop programs that foster wellness. It is recommended to increase further the life expectancy of every Filipino. Savella (2017) also recommended that the support group given to the elderly should be improved. She further stressed that the elderly must have the right to access the services and opportunities that will help them achieve a productive, wholesome, and satisfying life. Corollary to the said recommendations, the Wellness Program for the Third Agers was implemented as an extension activity of Bukidnon State University (BukSU). This is in line with its four-fold functions as mandated in RA 9456. Specifically, the members of Barangay Nine Senior Citizens Association (BaNiSCA) are the recipient of this extension activity. This program aimed to provide support to the third agers and positively affect the lives of the people in at least one of the holistic wellness dimensions based on the model of Hettler (McMahon and Fleury, 2012): intellectual wellness, social wellness, emotional wellness, spiritual wellness, occupational wellness, and physical wellness. Various activities were designed and implemented under the wellness program, one of which is the mathaesthetics in flower arrangement.

Mathaesthetics is a coined word referring to mathematics and aesthetic activities like flower arrangement. This activity was included in the wellness program to provide a wholesome experience for the third agers. Aesthetic work was used as a means of recalling the intellectual ideas so that the third agers would happily bring back to their minds their stock knowledge without hesitation. Aside from helping the third agers on their intellectual wellness, their emotions are being lifted with flowers. Arranging flowers may also augment their income and letting them earn through a non-heavy task.

It is at this point that the study was conducted to assess the mathaesthetics in flower arrangement on the wellness of the third aged members of BaNiSCA. Results chain framework of Montague and Birch-Jones (2017) and (Kinyuira, 2019) was used in monitoring and evaluating the activities which consisted the three spheres: direct control, direct influence, and indirect influence. Results chain or pipeline logic models represent a program theory as a linear process with inputs and activities at the front and long-term outcomes at the end (Funnell and Rogers, 2011).

FRAMEWORK

To assess the mathaesthetics in flower arrangement on the wellness of the third agers, the study used the results chain framework. Results chain is an appropriate way of monitoring the progress and evaluating the program periodically to ensure that planned activities are implemented considering the value of time and money. According to Jordan (2014), results chain can guide an organization to develop an approach to performance measurement that would bring the organization to the right path. The framework relates to measuring and tracking results through a simple and convincing picture starting from its goal until it could recognize the impact. For this study, the expanded Results Chain of Montague and Birch-Jones (2017) was utilized as it distinguishes the interconnectedness of the three overlaying spheres.

According to Dewey (1934), aesthetics plays a crucial role in the cognitive development of individuals, further on supported by Sinclair's paper (2004) wherein this aesthetics plays a fundamental role in the development and appreciation of knowledge in students. In addition, aside from emerging aesthetics following mathematical principles, artworks found in museums, including artifacts affects the general mood and well-being of the elderly, with emphasis on self-worth (Chiang, et al., 2009). Considering that mathaesthetics is a form of art, this study extends these claims by examining the responses of third

agers and how this type stimulation impacts their over-all well-being.

Impact, as defined by Roche (1999), is the lasting or significant change, be it negative or positive. It may also be intended or not intended. Action or series of actions may also be an impact. The inputs and activities refer to the planned work or process, while the outputs, outcomes, and impacts refer to planned results (Foundations of Success, 2007).

As shown in Figure 1, the spheres are getting larger because of the indirect influence. The impact of the program portrays the ultimate target. Sphere 1, which contains inputs, activities and outputs, includes the transfer of knowledge from the flower instructor to the extensionist, the preparation of training design, and the orientation on the mathematics principles to be used in the flower arrangement session. The second sphere of influence in order to reach the third agers was the demonstration during training, and the short-term outcomes were the arranged flowers by the third agers during their return-demonstration. In the wellness program, the indirect influence is considered as the impact. The dimensions from among the whole person are identified, and the long-term outcomes would be the hopes and aspirations they look forward to attain.

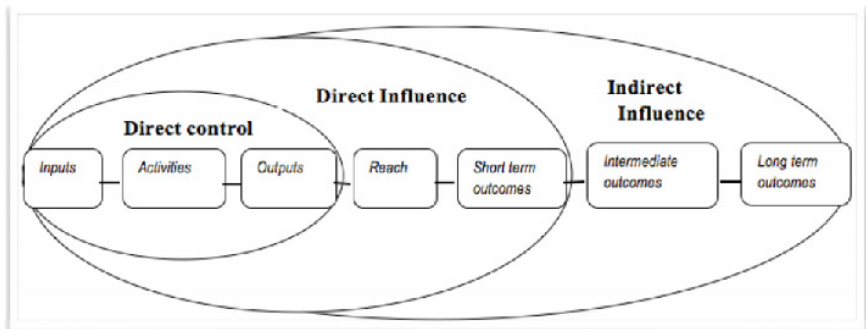


Figure 1. Results Chain with three spheres of influence by Montague and Birch-Jones (2017)

Hettler's Model of Wellness (Torres, 2015) was used in determining the dimensions of wellness among the third agers. The model presents six dimensions, namely: emotional wellness, occupational wellness, physical wellness, social wellness, intellectual wellness, spiritual wellness, and emotional wellness. Jones (2001) pointed out that third agers performed higher on everyday memory tasks

and experienced enriched personal memories in the presence of flowers. It was further posited that those who have a close relationship with flowers are known to have positive emotional feelings and a healthy disposition towards other people and life in general. Poor or marginalized families have elderly who feel pressured to help in any way they can, especially if they are living with their children who are also supporting their own family (Savella, 2017).

To determine the aptness of flower arrangement, mathematical principles, namely: proportion, scale, harmony, rhythm, balance, unity, and emphasis, were used.

OBJECTIVES OF THE STUDY

The objective of this study was to assess the mathaesthetics in flower arrangement of the third agers. It sought to evaluate the various activities in the different spheres of the model specifically on the direct control, direct influence and indirect influence of flower arrangement on the wellness of the third agers.

METHODS

This is a descriptive study utilizing the quantitative and qualitative data from the different steps of the mathaesthetics activities, specifically during the conduct of flower arrangement training-workshop. The Senior Citizens Building located in Barangay 9, Malaybalay City, was the venue of the activities conducted for the year 2018. The Building is a two-story edifice with a big session hall on the first floor. The hall is strategically located for the convenience of the third agers for them not to climb up the stairs. The participants were composed of 15 third agers and four assessors, a total of 19 who answered the questionnaires of BukSU EU-F-014 and the flower arrangement evaluation form for both the demonstration and the return-demonstration outputs. The first instrument is a 5-choice Likert scale while the second is in a rubric form. As to the instrument utilizing the Likert scale, it had five as the highest and one as the lowest. Thus the number of responses were multiplied to the score of the corresponding column. The rubric has a 2-step scoring, first was to determine the score from 1 to 10 and multiplied to a specified factor of every element. A perfect score would then be 100.

The statistical tools used for the quantitative data were mean, standard deviation, and ranking, while document analyses were utilized for the qualitative data such as interview, and video recording.

RESULTS AND DISCUSSION

The input of the mathaesthetics was in response to the needs of the third agers of becoming holistically well. The mathaesthetics was hoped to fill-in the intellectual and occupational wellness gap by introducing mathematical principles and occupational possibilities through flower arrangement. It started with the flower arrangement instructor of the BukSU livelihood extension, having a faculty as an understudy. Activity notes were gathered and put into slides for Power Point presentations prepared for the training workshop. The workshop was part of the university-wide program of activities for the third agers. The materials used during the transfer of knowledge was not a problem because mentoring happened when there were activities in the university needing flower arrangement. Based on the instructor's observation, the understudy already has the innate skill and aesthetic characteristics. However, the understudy was not confident having not undergone any formal training. Thus, a mathematical principles lecture was conducted. The understudy boosted his self-confidence when he was then given chairmanship on stage, hall and building decorations. The understudy then developed trust in his capability. As champion for the Kilala in Ikebana contest, he received a trophy from the Provincial Governor.

The confidence developed on the self of the understudy, made him become an extensionist. Thus, the availability of human resources to serve as the demonstrator was a plus factor. The materials were then gathered in preparation for the training to be conducted.

The conduct of the training-workshop for the third agers started with the presentation of the mathematical principles utilized in arranging flowers. Sample arrangements were shown through powerpoint slides emphasizing each principle.

The actual demonstration was conducted with two outputs presented in Table 1. These outputs were assessed by the four assessors who were part of the extension team of the Doctor of Philosophy in Education major in Instructional Systems Design.

Table 1

Evaluation of Demonstration Output

Mathematical Principles in Flower Arrangement	Qualitative Description	Demonstration (Output)		Average	Transmuted
		1	2		
Proportion 20%	Container and flowers are in proportion.	18	18.5	18.25	9.13
Scale 15%	Size relationship between the overall finished floral design piece and its setting	13.5	13.63	13.57	9.05
Harmony 10%	Component parts blend together.	9	9.5	9.25	9.25
Rhythm 10%	Shows use of rhythm. Eye moves smoothly through arrangement.	9	9.5	9.25	9.25
Balance 15%	Shows visual and actual balance.	14.5	14.63	14.57	9.71
Unity 15%	Whole composition is a complete unit.	13.88	13.88	13.88	9.25
Emphasis 15%	Has a focal point for emphasis, with pleasing and appropriate color for the occasion	12.75	14.5	13.63	9.09
Total		90.63	94.14	92.39	

$N = 4$ Highest possible score = 100; Highest Transmuted Points = 10

Legend: 8.2–10.00 Best 6.4–8.19 Better 4.6–6.39 Good 2.8–4.59 Fair 1.0–2.79 Poor

The training workshop was evaluated by the participants. Relevance got the highest evaluation because the training was based on their needs and they considered it as relevant to the situation of the community. Objective of the activity was met and that practicality was considered having let the participants brought and utilized available materials from the community. However, they observed that participation and cooperation of the other members needs enhancement. Other members of BaNiSCA were just on-lookers during the return demonstration because they were not able to bring their materials. Some also went home ahead for some other tasks they need to do.

Their reasons of not participating corroborated with the result of Torres (2017) research which mentioned that they lack money for the return demo materials, they do not have companions or they may be busy with other economic activities. The training is considered as the activity within the direct control sphere, anything that were used and done are within the management of the extensionist.

Table 3 presents the ratings of the return demonstration arrangements. The participants of the training were able to produce eight arrangements. They were labelled A to H and were rated by the 4 assessors. Based on the transmuted average, rhythm got the highest rating while the scale was the lowest. Similar to the demonstration output, the element on scale was also the lowest considering that the arrangements were just placed on the table for display.

Table 3

Evaluation of Return-Demonstration Arrangements (Outcome)

Mathematical Principles in Flower Arrangement	A	B	C	D	E	F	G	H	Average	SD	Trans
Proportion 20%											6.43
Scale 15%	11.50	12	13.5	13	12.5	12	15.5	15.5	12.86	1.56	6.30
Harmony 10%	6.88	9.4	9.75	9.75	9.38	9	12	10.63	9.45	1.45	6.96
Rhythm 10%	6.50	6.5	7	7.25	6.75	6.5	8.25	8.25	6.96	0.74	7.07
Balance 15%	6.50	6.5	7.25	7.75	7	6.25	8.25	8	7.07	0.75	6.50
Unity 15%	8.63	9.38	10.13	10.88	9.75	8.25	11.25	10.63	9.75	1.07	6.72
Emphasis 15%	8.63	9.38	10.5	10.88	9	9.38	12.75	11.38	10.07	1.4	6.72
	9.00	9	9.75	10.13	9.38	10.5	12.75	11.75	10.07	1.35	
	57.64	62.16	67.88	69.64	63.76	61.88	80.75	76.14	66.24	7.8033	
Rank	8th	6 th	4th	3rd	5th	7th	1st	2nd			

N = 4 Highest possible score = 100; Highest Transmuted Points = 10

Legend: 8.2–10.00 Best 6.4–8.19 Better 4.6–6.39 Good 2.8–4.59 Fair 1.0–2.79 Poor

The ratings of the various elements for each arrangement were added and ranking was done. Arrangement G got the first rank followed by H and the third was D. Even if the total ratings for each arrangement were not that high, ranking the results gave them inspiration to apply the knowledge and skill they have learned.

The average and the standard deviation were computed to determine the typical assessment of the different elements of the arrangement and how dispersed the ratings are. Since the elements have varied weights, the transmuted data were also presented.

Table 4

Average and transmuted evaluations of demonstration and return-demonstration arrangements

Mathematical Principles in Flower Arrangement	Qualitative Description	Demonstration (Output)		Return Demonstration (Outcome)	
		Average	Transmuted	Average	Transmuted
Proportion 20%	Container and flowers are in proportion.	18.25	9.13	12.86	6.43
Scale 15%	Size relationship between the overall finished floral design piece and its setting	13.57	9.05	9.6	6.30
Harmony 10%	Component parts blend together.	9.25	9.25	7.13	6.96
Rhythm 10%	Shows use of rhythm. Eye moves smoothly through arrangement.	9.25	9.25	7.19	7.07
Balance 15%	Shows visual and actual balance.	14.57	9.71	9.86	6.50
Unity 15%	Whole composition is a complete unit.	13.88	9.25	10.24	6.72
Emphasis 15%	Has a focal point for emphasis, with pleasing and appropriate color for the occasion	13.63	9.09	10.28	6.72
		92.39		67.15	

N = 4 Highest possible score = 100; Highest Transmuted Points = 10

Legend: 8.2–10.00 Best 6.4–8.19 Better 4.6–6.39 Good 2.8–4.59 Fair 1.0–2.79 Poor

The overall finished floral design piece and the placement of these arrangements in a setting did not have a good size relationship. The average ratings of the arrangements during the demonstration and return-demonstration, has a difference of 25.24. This means that the demonstrator is a professional floral designer, and the participants are still amateur. Although, the third agers are considered amateur, they have at least transitioned themselves in developing their passion on flowers.

The mathematical principles have bearing in arranging flowers. According to Helgeson (2016), learning the basic principles is the core to great floral design. Some would argue that the principles are no longer relevant but with the principles, the arrangement would be more pleasing to the eyes. Some of the given mathematical principles of Helgeson (2016) are also used by McIntosh (2018). These are balance, proportion, and rhythm.

During interviews, the third agers expressed their love for flowers but were afraid to arrange because they lacked the basic knowledge on the principles. However,

when each principle was explained and presented through demonstration, they were able to grasp the concepts. Although, they had the desire to learn as they expressed it as one of their needs, they said that they did not attempt to arrange flowers because of fear to be laughed at. They just bought arranged flowers during special occasions. They know that arranged flowers were costly but forced to buy them.

As seen in the video recording, the participants were happy arranging flowers with their co-participants. They were discussing the various mathematics principles as they apply them in their arrangement. Excitement was evident through clapping, saying wow and facial expressions.

Participant D emphasized during the interview that:

“I was feeling sleepy and tired before the activity, but while I was arranging flowers, I became alert.”

This statement is an expression of an emotional upliftment brought about by arranging flowers. The experience of participant D is an evidence that there is joy in flower arrangement and relieves the feeling of being sleepy and tired,

Participant C also expressed similar feelings stating that:

“I am very happy that I finally know how to arrange flowers.”

The account of participant C is an evidence that mathaesthetics is not mainly for math learners but also for the third agers to experience the happiness of learning mathematical principles while gladly arranging flowers.

Participant E cheerfully said that:

“I am so happy; my happiness could not be paid with money”

For the third agers, money could not pay the happiness they feel after they made their own flower arrangement. This would also mean that the activity is not only for extrinsic but of intrinsic motivation. Aside from this experience the participants of the study were also glad that after learning from the activity, they will have the chance to sell their products during the All Souls Day and the All Saints Day during the month of November every year. The activity will improve the livelihood activities of the third agers. Participant A and B added that:

“We can sell.”

“We can have livelihood in November”

The actuations and narrations of the third-agers substantiate that indeed intellectual wellness was developed with the mathematics principles learned and applied in arranging flowers. Likewise, emotional wellness was evident with the happiness they expressed and occupational wellness would be beneficial when they realized that they could sell arranged flowers as an added means for livelihood.

Applying the mathematics principles in flower arrangement, leads to an output which are pleasing to the eye according to Helgeson (2016). She further stressed that outputs of amateur should also be valued and respected.

CONCLUSIONS

The outputs of the demonstrator fall inside the first sphere which is of direct control present best results. The training-workshop which is within the second sphere or direct influence had an overall rating of best. The short-term outcomes which were the return-demonstration products had an overall rating of better. As to the intermediate outcomes, intellectual and emotional wellness of the third agers were boosted while for the long-term outcome, occupational wellness is seen to be enhanced.

RECOMMENDATIONS

1. It is suggested that more trainings on flower arrangements be done for specific occasions. When these trainings be done, the element on scale may be given a greater consideration;
2. Another activity, specifically on balloon art using math principles, may also be considered since balloons could be used as an alternative material to flowers; and
3. Encourage more third agers to participate and do the hands-on activities, thus it is suggested that needed materials be provided.

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