

Integrating Rhythmic Syllable with Tonguing Drills in Elementary Brass Instruments Instruction

Khor, A. K.^{1*}, Chan, C. J.¹ and Roslan, S.²

¹*Faculty of Human Ecology, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia*

²*Faculty of Educational Studies, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia*

ABSTRACT

Various rhythm syllable systems that are based on the concept that prioritises ‘sound before symbol’ are known to be able to enhance students’ ability to read music notations. To date, these systems are yet to be integrated with basic brass instrumental skills such as tonguing. This research examines the effect of the rhythm syllable system when it is applied as an integrated teaching approach for novice brass instrument learners by combining rhythm learning with articulation. A teaching experiment was conducted with 90 elementary trumpet students assigned randomly into three groups. Each group underwent five weeks of intervention with a single content but using different approaches of rhythm learning. Data analysis showed significant differences among the groups, and the group that used the adapted rhythmic syllable approach achieved the highest both in rhythm accuracy and articulation clarity, followed by the group that used Kodaly syllables and the control group that did not apply any particular syllable system. The integrated rhythmic syllable reduces the time of learning the brass instrument while eliminating the redundancies resulting from compartmentalised teaching. This research has extended the scope of application of the rhythmic syllable system beyond musicianship training. It indicates that methods in musicianship training can be localised for specific purposes in instrumental learning.

Keywords: Instrumental teaching, rhythmic syllable, integrated learning, brass instrument, articulation clarity

ARTICLE INFO

Article history:

Received: 21 July 2015

Accepted: 18 June 2016

E-mail addresses:

akkhor@yahoo.com (Khor, A. K.),

chanupm@gmail.com (Chan, C. J.),

samsilah@upm.edu.my (Roslan, S.)

* Corresponding author

INTRODUCTION

The acquisition of musical instrumental skills requires long hours of efforts and a strong sense of self-determination in the learners. It takes months of training before one becomes competent enough to perform as a member of the ensemble on

stage. Bands, orchestras and ensembles in secondary schools have to juggle this need to train competent players and to ensure a smooth succession process of the graduating players every year. To be able to train students within the limited time frame of the school year is among the biggest challenges faced by music instructors and administrators.

The severity of poor succession is more prevalent with an ensemble of a smaller size, or a band/orchestra that has fewer student players. One of the consequences of poor succession is fluctuation of performance quality. In addition, supplementary education like general music classes is not widely available in Malaysian secondary schools. Students' music practices are also distracted by their tuition and other extra-curricular activities. Many school bands have suffered from poor succession and displayed little development over the years.

Our earlier investigation of the widely used method books for wind players (Feldstein et al., 1988; Lautzenheiser et al., 1999; Hickman, 2006; Arban, 2007; Harnum, 2008) revealed music skills are arranged in a compartmentalised manner. For example, lessons for rhythmic pattern hardly mention the need to maintain a stable pulse and other aspects that need to be considered together in playing the blowing instrument. As for drills for tonguing, the technique of multiple tonguing was introduced separately after the chapter that focuses on rhythm patterns. Compartmentalising the learning component is understandably an effective way of presenting information, but it invites

redundancies in the learning process, as mentioned by Hartzler (2000) that it is not advisable to teach skills in isolation. This is because music is integrative in nature and it is impossible to play music in certain aspects only without involving the other aspects.

Many researches have been done to compare the rhythm instruction using different types of rhythm syllable systems, but no conclusion has been made on which system is the best (Varley, 2005). In addition, Varley's survey showed that Kodaly syllable system and the '1e&a' system were the two most popular system used in America while the Gordon syllable system was less popular (Varley, 2005, pp.84-171). However, a recent study done by Pearsall (2009) showed that the Kodaly syllable system and Gordon syllable system achieved significantly higher than the conventional '1e&a' in rhythm instruction. A research conducted by Earney (2008), also related to rhythm instruction, shows that dictation on rhythmic pattern gives some positive impacts on the sight reading test.

Therefore, this study examines an approach in music learning, which could bring some musical elements to be conducted in an integrated manner. Hence, students could see the relationship of these musical elements clearer, in order to learn it easily.


APPROACHES IN RHYTHM LEARNING

Learning to read and play rhythm patterns is one of the fundamental lessons for beginner instrumentalists, alongside others musical elements. Music notations are meaningless

until they are decoded and transformed into the action of sound production. Competency in reading music notations is essential for a player to be able to play in an ensemble. Conventionally, music notation is introduced to the learners through calculation before the rhythmic patterns are made audible. This is done using metric counting. Pulses are numbered in ascending manner beginning with 1 in every bar. The quarter subdivision of the pulse is read as ‘e’, ‘&’, and ‘a’, while the half subdivision of the pulse is given ‘&’ (Figure 1).

In conventional teaching, students are first required to perform the cognitive process of mathematical thinking in order to understand the rhythmic pattern. This system helps students in recognising the musical notes’ position in the bar. As Varley (2005) points out, the ‘1e&a’ system is an approach widely used in the United States.

Rhythmic syllables, as an alternative to the metric counting approach, was found to be effective in teaching rhythm patterns (Ester et al., 2006). Based on the concept that prioritises ‘sound before symbol’, that is the core principle of Pestalozzi in music learning (Feldman et al., 2011, p. 7), it capitalises inner hearing in the learning process. The rhythm syllable system was found to be effective in enhancing learners’ ability in decoding musical notations into sound.

Kodaly’s system remains as the most popular rhythm syllable system used in the US. (Bacon, 1993; Varley, 2005) as well as in others countries including Malaysia. In Kodaly’s system, each note value is represented by a different syllable. The crotchet value is read as ‘ta’, whereas the quaver value is read as ‘ti’. Syllabus for the grouping of semiquavers  was

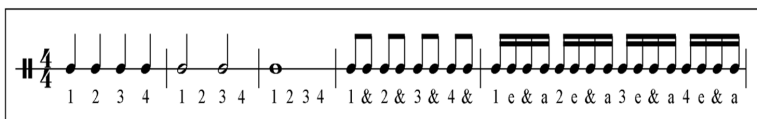


Figure 1. Conventional ‘1e&a’ system of counting rhythm patterns

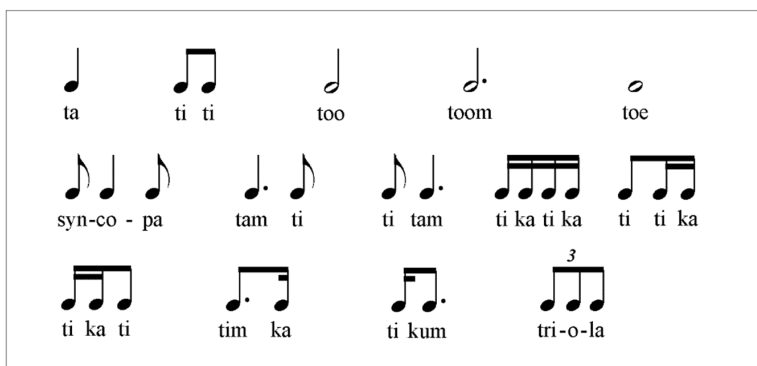



Figure 2. Kodaly syllable system
Source: Choksy (1988, p. 255)

originally ‘ti-ri-ti-ri’, but was modified to ‘ti-ka-ti-ka’ later in the English speaking region due to the difficulty in pronouncing ‘ri’ unlike in Hungary, the birthplace of the Kodaly system (Choksy, 1988, p.93). Figure 2 illustrates the Kodaly rhythm syllable system.

The use of consonants /t/ and /k/ for the semiquavers’ group  is in accordance with the principle for double tonguing drills (Sletto, 2011). Nevertheless, rhythm syllable systems are usually used in general music classes, and not in instrumental classes. Recognising and counting the notation values are seen as the usual practice in instrumental lessons. According to Gordon (1993, p.143), most of the instrumental method books starts the rhythm learning at a high level of learning in understanding it theoretically .

Besides Kodaly’s, the Takadimi system devised by Hoffman, Pelto, and White (Hoffman et al., 1996) also contains features that are coherent to the tonguing drills.


Figure 3 illustrates the syllables used in Takadimi system.

The Takdimi system uses ‘ta-ka-di-mi’ for the semiquavers’ group. The consonants /t/ and /k/ are useful in tonguing drills as mentioned. However, the second half of the syllables ‘di-mi’ does not have any relation to tonguing drills. Thus, the adaptation for this system has been made for the purpose of this research, to compare the integration effect of rhythm learning and tonguing drills. Figure 4 provides an illustration of the adapted syllable which uses ‘ta-ka-te-ke’ instead of ‘ta-ka-di-mi’ for the fundamental syllable used.

Although both the Kodaly system and the adapted system have the syllables that relate to tonguing drills, there are some differences between these two systems. The syllables in the Kodaly system are vocalised based on the type of musical notes, namely ‘ta’ for crotchet note, ‘ti’ for quaver note, and so on whereas the adapted system which emphasises the pulse, uses ‘ta’ for all



Figure 3. Takadimi system
Source: Ester et al. (2006, p. 62)

the macrobeats with the vowel /a/ for the down beats and /e/ for the up beats. Both systems use the same consonant /t-/k-/t-/k/ for reading the grouping of semiquavers ; however different vowels are applied for both systems.

There are some other syllable systems for rhythm learning, such as Gordon's sets of syllables and the chanting name system. These systems however, have little relations with the tonguing structure and will not be covered in detail in this paper.

LEARNING OF BRASS INSTRUMENTS

Unlike other instruments in the orchestra, the sound production of brass instruments involves a technique called buzzing in which the players vibrate their lips on the mouthpiece while blowing. A new student is required to make the sound with the mouthpiece alone before attempting it with the instrument. Fundamentals of brass learning include the aspect of breathing, posture, fingering, embouchure, and articulation. The progress of mastering

these fundamentals depends largely on the teaching approaches adopted.

The control of the tongue in order to articulate is much emphasised in blowing instruments. Tonguing is trained through specific drills from the elementary stage of learning. Brass pedagogue advocate, Claude Gordon, regards the consonant /t/ as most relevant for teaching single tonguing, and the combination of /t/ and /k/ for multiple tonguing to ensure a non-stop air-flow into the instrument (King, 2004, p.70). These two consonants are commonly applied in established method books for brass instruments. Figure 5 contains excerpts of tonguing drills taken from a well-known method book 'Arban Complete Method for trumpet'.

Mastering the fundamentals of an instrument is an initial but essential step for the long term development of students' musicianship and sensitivity towards sound. It is therefore, vital to have the fundamentals taught thoroughly during the elementary stage of lessons for trumpet. Besides the fundamentals for tone production (that

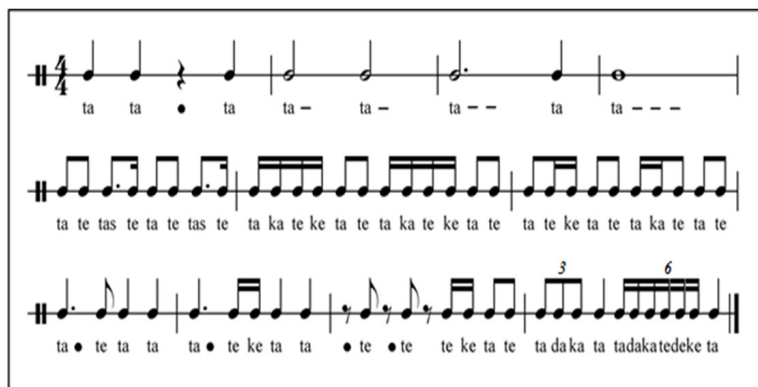


Figure 4. Adapted syllables

include breathing, posture, fingering, embouchure and articulation), the ability to read and play rhythm patterns from notations is necessary before the aspects of pitch and intonation in a melody can be introduced.

INTEGRATED LEARNING

The potential for an integrated approach arose from the similarities observed between the rhythmic syllables and tonguing drills. Researchers have proven the efficacy of integrated learning in various areas. Students showed better ability in receiving knowledge when they are taught 'integratedly' compared with those who used compartmentalised learning. Students in the conventional compartmentalised approach were less skilful in applying knowledge integratedly for understanding a new concept (Beane, 1995). Integrated teaching brings closer different elements in increasing the understanding of concepts, skills and values of the elements (Goodlad & Su, 1992). Integrated learning helps students grasp the overall relationships and connections among different subjects (Ignatz, 2005).

Regardless of the idea of integration that could bring much benefits to the learning process, the effectiveness of this approach is much dependent on the details of implementation. The lack of resources is the factor which need to be considered (Wallace et al., 2001). Besides this, the constraint of time for collaboration between elements or subjects is also a challenge in producing successful integrated lessons (Flowers et al., 2003). To date, no studies on integrated skills learning of music instrument is traceable.

RESEARCH OBJECTIVE

The objective of this research is to examine whether rhythm syllable system can be used in an integrated way in elementary trumpet instruction which involves the learning aspects of rhythm accuracy and articulation clarity. The experiment will see into the efficacy of rhythm syllable system in rhythm accuracy and the efficacy of rhythm syllable system in articulation clarity in an integrated manner. In an effort to create holistic teaching in the elementary brass instruments instruction, this study explores the potential of integrating rhythm syllable system with

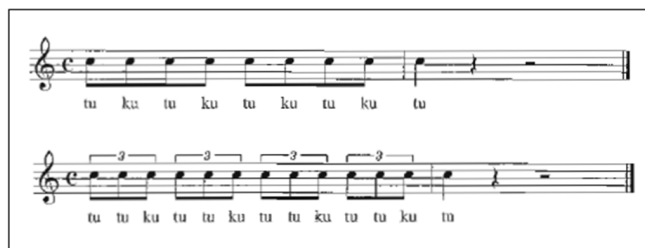


Figure 5. Syllables used for double tonguing and triple tonguing
Source: Arban J.B. (2007, p. 170)

articulations. Conventionally, the two elements are taught separately. This study intends to examine if the integration of the two elements lead to a better understanding of the relationship between the two. Integration is done by devising an adaptation of the existing rhythm syllable system and applying it in a teaching experiment. The effectiveness of the rhythm syllable system is examined in three aspects: 1) rhythm accuracy; 2) articulation clarity; and 3) when rhythm accuracy and articulation clarity are combined.

RESEARCH QUESTION

With the consideration of the problems in practical and academic aspects mentioned, this study will answer the research question: Is rhythm syllable system an approach for creating an integrated instruction for elementary brass learning which improves few basic skills learning (rhythm and articulation) simultaneously?

RESEARCH FRAMEWORK

Based on Pestalozzian principle of the music system, a concept for music learning which emphasises sound before symbol has been derived. This concept enables the musical notation to be linked to sound. Thus, rhythm syllable systems are introduced, especially for rhythm pattern learning. It uses various syllables for reading the rhythm patterns. The process of decoding musical notation could be done through inner hearing due to the syllables which are linked to the symbols.

To expand the application of the rhythm syllable system beyond mere rhythm learning, tonguing-based syllables are incorporated to cater to the needs for tonguing drills, specifically focused on trumpet learning. The integration applied the “nested model” in Fogarty’s approach to integrated learning (Fogarty, 1991), which targets multiple skills within each subject area. The completed teaching approach requires a learning outcome where the student is able to display rhythm accuracy and the articulation clarity at the same time while playing a given music notation.

Figure 6 shows the conceptual framework of this research.

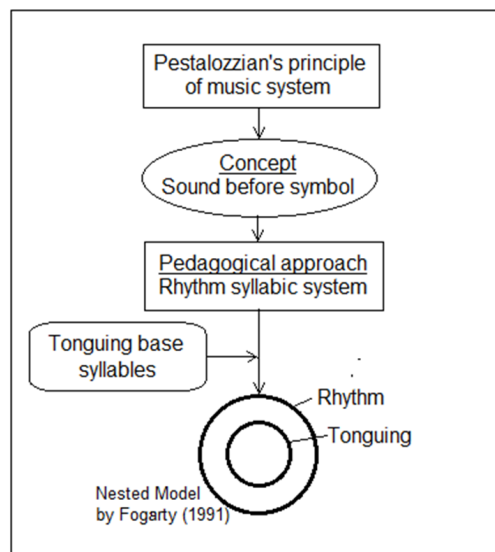


Figure 6. Conceptual framework

RESEARCH DESIGN AND METHODOLOGY

Experimental design was used in this research. A pre-test was conducted before the five-week intervention, followed by

post-test. The control group that learned in the '1e&a' conventional way of rhythm learning (C) as Group 1; Kodaly syllable system (X₁) as the Kodaly Group, or Group 2, and the adapted syllable system (X₂) as Group 3. The research design involves pre-test, intervention, and post-test.

	Group	Pretest	Intervention	Posttest
(R)	Conventional '1e&a' System	O ₁	C	O ₂
(R)	Kodaly Rhythm Syllable System	O ₁	X ₁	O ₂
(R)	Adapted Rhythm Syllable System	O ₁	X ₂	O ₂

Figure 7. Experimental research design

Homogeneity of the respondents' instrumental ability was proven through the result of pre-test. All respondents were secondary school students who had begun with trumpet for several months and have merely done buzzing. Independent variables consist of the three approaches for rhythmic learning used in the intervention while dependent variables consist of 1) rhythm accuracy and 2) articulation clarity. (Figure 8) Intervention is spread over a period of five weeks with a 40-minute lesson given in each week. The learning content are rhythm patterns which consist of ♩, ♪, ♫, ♬, and ♮ for lesson 1; followed by ♩, ♪, and ♫ for lesson 2; ♩, ♪, and ♫ for lesson 3; ♩, ♪ and ♫ for lesson 4; and ♩ for lesson 5.

Assessments of learning outcomes were divided into two parts. The first part was Sight Playing Test on 12 questions of 6-8 beats rhythmic patterns which assessed

rhythm accuracy and articulation clarity simultaneously. The number of questions tested was adequate for rhythm assessment (Geringer et al., 1992; Gordon & Martin, 1993/1994). In order to avoid the possibility of stopping during the assessment due to fatigue lip (Budde, 2011, p.167) which will then affect the assessment, a short two-bar (6-8 beats) rhythmic pattern was used. Furthermore, the two-bar rhythmic patterns were based on the studies conducted by Palmer (1974) and Bacon (1998). The musical notations used were in accordance with the content used in the related studies (Palmer, 1974; Colley, 1984; Rohwer, 1997; Bacon, 1998; Budde, 2011).

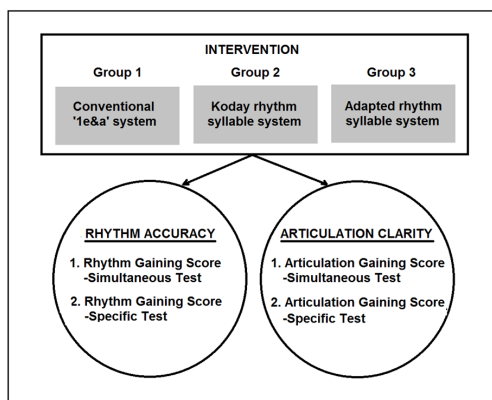


Figure 8. Research framework

The second part was specific tests done separately for rhythm and articulation. The specific test on rhythm accuracy consists of 12 questions of 1-bar rhythm pattern that were shown using flash cards. This specific test on articulation required the students to play rhythm patterns of repeated notes ♩ in the tempo of 60, 90, and 120 crotchets per

minute. Rhythmic patterns used in specific tests for articulation clarity were adapted from the study conducted by Budde (2011).

A pilot test was conducted to examine the reliability of the judges, the reliability of the research instruments and the process of intervention. The number of respondents during the pilot test was 15 students (n=15), which was adequate for examining the reliability of instrument through test-retest method (Gouveia, 2013, pp.245-246), and they were randomly assigned into three groups using lottery method (Rajagopalan et al., 2009). During the field test, everything went through the same process as the pilot test with 90 (n=90) as the figure for the respondents. The reliability of the instrument was obtained with the test-retest method and a high intraclass correlation coefficient of .997 to .999 for every component in the test was achieved. The reliability of each question in the test which uses the Likert scale was obtained positively with the Croanbach Alpha coefficient of .994, which is more than the accepted reliability value .6 (Zaidatun, 2003, p.345; Chua, 2006, p.285). In addition, all possible threats in the experiment were controlled and successfully reduced to a minimum level by dividing the respondents randomly into groups. These respondents were purely the beginners without any formal music class outside of school. In addition, every step in the intervention was handled by the researcher himself.

The assessments were done by three judges who have been band instructors for more than 20 years. The inter-rater reliability

was scrutinised through the results of pilot test. The marks given by the judges for each component of the assessment during the pre-test and post-test panel was compared with intra class correlation coefficient, a method suggested by L. Rajmil et al. (2010, pp. 255-256) and Samuel et al. (2005, p. 375), and has recorded the coefficient from .719 to .999 which was more than the minimum reliability coefficient .65 (Ebel & Frisbie, 1991).

The intervention used in this research was basically an instruction for rhythm learning which uses the same syllabus of learning (Figure 9), and there was no articulation instruction or explanation during the intervention. The only difference was the approach used for teaching rhythm. This was to examine whether the rhythmic syllables could bring any impacts to the articulation clarity, besides the rhythm lessons. Kodaly syllable system was chosen because it could give some degrees of challenge to the adapted syllable system. This is due to the same consonants of syllable /t/ and /k/ in both system that are usually used for the tonguing drills (King, 2004, p. 70; Arban, 2007, p. 170).

The respondents went through three tests which were judged on rhythm accuracy and articulation clarity. The first test was sight-playing which tested rhythm accuracy and articulation clarity simultaneously (Figure 10).

The second test was tested on rhythm achievement specifically. It was done by sight reading at the one bar rhythm (Figure 11).



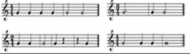












Lesson	Content	Outline
1		- play the following notes and rest with the correct value:  - play the following rhythm correctly: 
3		- play the following notes and rest with the correct value:  - play the following rhythm correctly: 
5		- play the following notes and rest with the correct value:  - play the following rhythm correctly: 
2		- play the following notes and rest with the correct value:  - play the following rhythm correctly: 
4		- play the following notes and rest with the correct value:  - play the following rhythm correctly: 

Figure 9. Syllabus for the intervention



Figure 10. Samples of Sight Playing Test



Figure 11. Samples of Rhythm Reading Test



Figure 12. Articulation Test

In order to affirm the achievement of clarity of articulation, playing on the rhythm pattern which consists of semiquaver groups in slow (60 bpm), moderate (90 bpm), and fast tempo (120 bpm) was conducted (Figure 12).

FINDING AND DISCUSSION

In order to examine the achievement of these two dependent variables simultaneously, data analysis was done using MANOVA. First, the analysis for sight playing test


showed a significance difference for the rhythm accuracy achievement among the groups, $F(2, 87)=257.42$, $p=.000.$, with a partial eta squared value of .855, showing a large effect size. In Table 1, the post-hoc test with Turkey HSD indicates that Adapted group recorded the highest achievement ($M=45.93$, $SD=3.859$), followed by the Kodaly group ($M=31.73$, $SD=4.690$), and the Conventional '1e&a' group ($M=20.20$, $SD=4.604$).

Results of the specific tests for rhythm (the second part of assessment) is shown in Table 2. The result shows significance differences among groups for the rhythm accuracy achievement, $F(2, 87)=303.90$, $p=.000.$, with a partial eta squared value of .875. Again, Adapted group obtained the highest achievement ($M=49.37$, $SD=3.718$), followed by Kodaly group ($M=36.50$, $SD=4.392$), and Conventional '1e&a' group ($M=21.07$, $SD=5.132$).

The result revealed that trumpet students who learn rhythm patterns using syllable systems performed better than those who learned in conventional way. The metric counting of '1e&a' used in the conventional teaching, which is based on the cognitive process of mathematical thinking, was found to be more time consuming. The verbalisation of symbols contained in syllable systems had assisted students in recognising rhythm patterns through sound reference. The process of decoding musical notes happened smoother by transferring the symbols into sound assisted by inner hearing compared with by transferring the symbols into mathematical values. The syllable

system enables the rhythmic pattern learned to be heard internally, and to be recalled and played back in future applications.

Among the two syllable systems used in the intervention, students who learnt with the adapted syllable system (group 3) performed better than the Kodaly syllable system (group 2). This is due to the different characteristics of these two syllable systems. The adapted syllables emphasised the beats of the rhythm within each bar. Every macro beat was consistently read as 'ta', but not for the Kodaly system. The Kodaly system did not use the same syllables for the macro beat each time, and the syllables were based on musical notes. It will be read as 'ta' when there is crotchet note, but it will be read as 'ti' for quaver note, and so on, which means the syllable for macro beats is not same all the time (Figure 3 and Figure 4).

The Kodaly system uses 'tri-o-la' for a triplet. At least for Malaysian students, this is difficult to pronounce compared with 'ta-da-ka' in the adapted system. During the intervention, the reading of 'tri-o-la' seemed harder than reading 'ta-da-ka' among students. Therefore, students did better in the 'triplet' rhythmic pattern for the adapted system. In addition, students performed better in reading  using 'tas-te' for the adapted system than using 'tim-ka' for the Kodaly system.

Although the syllables were pronounced correctly by respondents in the Kodaly group, the rhythm patterns were at times inaccurate. This is due to the fact that much attention was put in differentiating the type of musical notes rather than its rhythm




pattern during the decoding process. As for the Adapted group, rhythm patterns were more accurately performed as the pulse orientated syllables by themselves implied the grouping for each beat within a bar.

As for the variable of articulation clarity, the result of the same sight playing test showed significance differences among groups, $F(2, 87)=158.04$, $p=.000$. with a large effect size (partial eta value $=.784$). In Table 3, the result of post-hoc test with Turkey HSD showed that the Adapted group recorded the highest achievement ($M=49.30$, $SD=4.692$), followed by the Kodaly group ($M=40.23$, $SD=5.374$), and the Conventional '1e&a' group ($M=25.33$, $SP=5.701$).

Results of the specific test for articulation also shows significance differences among groups, $F(2, 87)=74.27$, $p=.000$ (partial eta squared value $=.631$). As showed in Table 4, the Adapted group obtained the highest achievement ($M=17.80$, $SD=3.022$), followed by the Kodaly group ($M=15.10$, $SD=2.383$) and the Conventional '1e&a' group ($M=10.07$, $SD=1.964$). With this, findings from the sight playing test is affirmed. The control group with its '1e&a' approach that did not have any drills for tonguing, performed the lowest in the test.

The vowels /a:/ and /e/ used in the adapted syllable system enables the 'ta-ka-te-ke' to be read with the differentiation between down beat /a:/ and up beat /e/. With the imagery of a down-up circulation, this system assists in securing a steady beat count with all the 'ta's falling on macrobeats. In contrast, the Kodaly syllables use 'ti-ka' for both the down beats and the up beats.

Comparing the 'ta-ka-te-ke' and 'ti-ka-ti-ka', the Kodaly syllable does not assist in the position of macrobeats, although 'ta-ka-te-ke' and 'ti-ka-ti-ka' both are the appropriate syllables for tonguing drills.

When note groups of  are to be read in fast tempo, 'ti-ka-ti-ka' would not give the sense of pulsation. Students may face the risk of tongue slips in the Kodaly rhythm pattern which involves  and , compared with the adapted syllable system which has the controlling for every pulse.

The finding of this study proves that the integration of the rhythm syllable with tonguing drills is successful in producing higher achievement in elementary brass instruction. Without using any rhythm syllable, the control group achieved the lowest assessment. The adapted syllable system has resulted in the highest achievement for both rhythm accuracy and articulation clarity. Rhythm syllable modified to the need of a particular instrument is a viable alternative to the existing teaching method to instrumental instruction. The adapted rhythm syllable system devised in this study has the following advantages compared with the existing approaches: 1) the syllables are orientated to pulsation, 2) ease in pronouncing the syllable, 3) the consonants catered for tonguing drills, and 4) the imagery guidance for down and up beat positions.

Although the syllable system adapted from the Takadimi syllable system achieved the best result in this study, this finding is different from Fust's study (2006) which compared the Takadimi system (the original

system before adaptation) with the '1e&a' system on the rhythmic achievement. The study by Fust did not show the significant difference between the Takadimi approach and the '1e&a' system on the rhythm achievement, while this study has shown the significant difference between the Takadimi adapted system and the '1e&a' system. Fust allowed respondents to use different blowing instruments whereas this study only used trumpet, which means the factor


of musical instrument was controlled in this study. In addition, the consonants used in this study /t/ and /k/ are simpler compared to the Takadimi's /t/, /k/, /d/, and /m/ which involves more consonants. Furthermore, the understanding in subdivision of beats is required to read  as 'ta-mi' under Takadimi system, compared with the adapted system which used 'tas-te' that extend the sound of dotted quaver note naturally, without even understanding the note value. The

Table 1
Mean score for the gaining of rhythm accuracy in Sight Playing Test

Group	N	M	%	SD
Conventional '1e&a'	30	20.20	33.67	4.604
Kodaly	30	31.73	52.90	4.690
Adapted	30	45.93	76.57	3.859

Table 2
Mean score for the gain of Rhythm Accuracy in Specific Test

Group	N	M	%	SD
Conventional '1e&a'	30	21.07	35.12	5.132
Kodaly	30	36.50	60.83	4.392
Adapted	30	49.37	82.28	3.718

Table 3
Mean score for the gaining of Articulation Clarity in Sight Playing Test

Group	N	M	%	SD
Conventional '1e&a'	30	25.33	42.22	5.701
Kodaly	30	40.23	67.05	5.374
Adapted	30	49.30	82.17	4.692

Table 4
Mean score for the gaining of Articulation Clarity in Specific Test

Group	N	M	%	SD
Conventional '1e&a'	30	10.07	41.96	1.964
Kodaly	30	15.10	62.92	2.383
Adapted	30	17.80	74.17	3.022

same situation is faced when reading ♪ as 'tim-ka' in Kodaly system, which does not give the metaphor of the rhythmic pattern effectively.

IMPLICATION

The concept of verbalisation of symbol as used in the adapted rhythm syllable is effective in reducing redundancies in rhythm learning. The conventional approach has an additional step in the note reading process, that is, to analyse note value before playing the rhythm pattern. Understandably, any analytical process is complex and time consuming. The additional step involves conversing visual symbols into numbers before further conversion into movement (rhythm), which was omitted altogether by using the rhythm syllable. The findings imply that teaching and learning time spent in lessons can be reduced by integrating different elements. It further implies that students may have a better understanding of the relationship between the different elements of instrumental skills when they are taught in an integrated manner.

The consonant /t/ and /k/ are the consonants which are popularly used in tonguing drills (King, 2004, p. 70; Arban, 2007, p. 170). With the integration of the consonants into rhythm syllable system, the tonguing drills could be done simultaneously along with the rhythm learning.

The consistent use of vowels /a:/ and /e/, which group the musical notes for every beat, will assist in detecting the pulse. Moreover, by using the vowel /a:/ which represents the down-beat, and /e/

which represents the up-beat, it creates a metaphor for understanding the macrobeat and microbeat better. This feature enhances the visualisation into rhythm learning which enable the down-up beats (subdivision of beats) be seen innerly, besides hearing the rhythm innerly.

CONCLUSION

This study has proven the relevance of the rhythm syllable system in instrumental teaching by associating it with tonguing drills. By modifying the syllable to the need for tonguing, a new approach of elementary brass instruction was created, and was found effective. This implies that rhythm syllable systems stand to be localised to the particular needs of instrumental instructions. Different versions of the syllable system can be created for other conditions, for example, for strings, or for some specific learning activities. Educators are reminded of the possibilities that teaching methods can be improved so that the redundancies can be reduced while the process of learning can be more holistic.

One of the advantages of an integrated approach is that it does not need to exclude certain learning content simply for the sake of clarity in the organisation of the learning content. In the case of brass instruction, the skill of multiple tonguing needs time to develop and is usually excluded in the early stage of instruction. With the adapted syllable system, multiple tonguing training could be introduced as early as the introduction of the rhythm pattern. In other words, an integrated approach

accommodates more elements of learning without causing confusion to the learner or needing more teaching time. Interestingly, research on methods of integrated learning in music has received little attention in the past decades. It is hoped that this study could stimulate more attempts in devising integrated and localised approaches in music education. Educators device and modify their approach in their daily teaching, but a research on how these modification are made will contribute to the advancement of pedagogy. A discourse that does not merely focus on how to achieve higher but also on clarifying the process of knowledge production and reproduction .

REFERENCES

- Arban, Jean-Baptiste. (2007). *Complete Method for Trumpet. Annotated and Edited by Alan Vizzutti and Wesley Jacobs*. Maple City, Michigan: Encore Music Publishers.
- Bacon, D. (1993). *Hold fast to dreams: Writings inspired by Zoltán Kodály*. Massachusetts: Kodály Center of America.p.75.
- Beane, J. A. (1995). Curriculum integration and the disciplines of knowledge. *Phi Delta Kappan*, 76(8), 616-622.
- Budde, P.J. (2011). *An Analysis of Methods for Teaching Middle School Band Students to Articulate*. (Doctoral dissertation). University of Minnesota.
- Choksy, L. (1988). *The Kodaly Method. Second Edition*. New Jersey: Prentice Hall.
- Chua, Y. P. (2006). *Kaedah dan statistik penyelidikan, buku 1*. Malaysia: McGraw-Hill.
- Colley, B. (1984). *A comparison of syllabic methods for improving rhythm literacy*. (Master thesis). McGill University.
- Earney, M. E. (2008). *The effect of aural rhythmic dictation on the sight-reading abilities of seventh- and eighth-grade band students*. Master thesis. University of Kansas.
- Ebel, R. L., & Frisbie, D. A. (1991). *Essentials of educational measurement*. (5th ed). Englewood Cliffs, NJ: Prentice Hall.
- Ester, D., Scheib, J., & Inks, K. (2006). Takadimi: A rhythm system for all ages. *Music Educators Journal*, 93(2), 60-65.
- Feldman, E., & Contzius, A. (2011). *Instrumental Music Education: Teaching with the musical and practical in harmony*. New York: Routledge.
- Feldstein, S., & O'Reilly, J. (1988). *Yamaha Band Student: A Band Method: For group or individual Instruction*. USA: Alfred Publishing Co., Inc.
- Flowers, N., Mertens, S. B., & Mulhall, P. F. (2003). Lessons learned from more than a decade of middle grades research. *Middle School Journal*, 35(2), 55-59.
- Fogarty, R. (1991). Ten ways to integrate curriculum. *Educational Leadership*. 49(2), 61-65.
- Fust, T.R. (2006). *Syllable systems: Four students' experiences in learning rhythm*. (Master thesis dissertation). University of Louisville, Kentucky.
- Geringer, J. M., Duke, R. A., & Madsen, C. K. (1992). Musicians' perception of beat note: Region of beat change in modulating tempos. *Bulletin of the Council for Research in Music Education*, 114, 21-33.
- Goodlad, J. I., & Su, Z. (1992). The organization of the curriculum. In P. W. Jackson (Ed.), *Handbook of research on curriculum* (pp.327-344). New York: Macmillan.
- Gordon, A. M., & Martin, P. J. (1993/94). A study of the rhythmic skills of musically unsophisticated secondary school students when playing the electronic keyboard with a drum machine. *Bulletin of the Council for research in Music Education*, 119, 59-64.

- Gordon, E. (1993). *Learning sequences in music: skill, content, and patterns*. Chicago: G. I. A. Publications, Inc.
- Gordon, E. (2003). *Learning Sequence In Music: Skill, Content, and Patterns, A Music Learning Theory*. Chicago: GIA Publications, Inc.
- Gouveia, O. A. (2013). *Biostatistics Decoded*. UK: John Wiley & Sons Ltd.
- Harnum, J. (2008). *All about trumpet: a fun and simple guide to playing trumpet*. Hal Leonard Corporation. Milwaukee.
- Hartzler, D. S. (2000). *A meta-analysis of studies conducted on integrated curriculum programs and their effects on student achievement*. (Dissertation of EdD). Indiana University.
- Hickman, D. (2006). *Trumpet Pedagogy: A Compendium of Modern Teaching Techniques*. Arizona: Hichman Music Editions.
- Hoffman, R., Pelto, W., & White, J. W. (1996). Takadimi: A Beat-Oriented System of Rhythm Pedagogy. *Journal of Music Theory Pedagogy*, 10, *The University of Oklahoma*. pp.7-30.
- Ignatz, M. (2005). Curriculum integration: Preparing prospective teachers. *Journal of College Science Teaching*, 34(5), 38-42.
- King, D. R. (2004). *An analysis and comparison of the brass methods by James Stamp, Donald Reinhardt, Carmine Caruso, and Claude Gordon*. (Doctor of Musical Arts thesis). The Ohio State University.
- Lautzenheiser, T., Higgins, J., Menghini, C., Lavender, P., Rhodes, T. C., Bierschenk, D. (1999). *Essential elements 2000: comprehensive band method*. Hal Leonard Corporation.
- Palmer, M. (1974). *The relative effectiveness of the Richards and the Gordon approaches to rhythm reading for fourth grade children*. (Dissertation of EdD). University of Illinois.
- Pearsall. (2009). *Investigating the relationship between tempo consistency and the rhythm syllable system used during a standardized rhythm performance task*. (Doctoral). University of South Carolina.
- Rajagopalan, S. P., & Sattanathan, R. (2009). *Business statistics and operations research* (2nd ed.). New Delhi: Tata Mac Graw-Hill.
- Rohwer, D. A. (1998). Effect of movement instruction on steady beat perception, synchronization, and performance. *Journal of Research in Music Education*, 46(3), 414-424.
- Samuel, J. B., & Benjamin, R. (2005). *Polling America: an encyclopaedia of public opinion*. USA: Greenwood Press.
- Sletto, T. (2011). *A comparison of rhythm syllables and a recommendation*. Kodaly Envoy: Spring.
- Varley, Jr. (2005). *An analysis of rhythm systems in United States: their development and frequency of use by teachers, students, and authors; and relation to perceived learning preferences*. pp. 83-90. (EdD Thesis). University of Missouri-St. Louis.
- Wallace, J., Rennie, L., Malone, J., & Venville, G, (2001). What we know and what we need to know about curriculum integration. *Curriculum Perspectives*, 21(1), 9-15.
- Zaidatun, T., & Mohd, S. A. (2003). *Analisis Data Berkomputer SPSS 11.5*. KL: Venton Publishing.