Chapter III

SURVEY OF RELATED STUDIES

The review of related literature is an important pre-requisite to actual planning and execution of any research work. It is a very significant aspect of the research process. Hence a careful survey of the previous studies related to the investigation is needed.

A. INDIAN STUDIES

I. Indian Studies Related to Music Education

Sukumaran Nair (1965) was one of the earliest in India to tackle this area scientifically in his Master’s dissertation in the University of Kerala. He developed *An Aptitude Test in South Indian Music* on the lines of Seashore’s Musical Aptitude Test. A preliminary validation study showed that the following three sub-components of Seashore tests (pitch, rhythm and tonal memory) may be used as reasonable predictors of musical ability under Indian conditions. The tests, after the usual item analysis procedures were standardised on a sample of 1338 covering three representative districts of Kerala. The sample was distributed almost equally (around 133) among the age groups, 10,11,12,13,14,15,16 and 17, with 288 in the group of 18 and above. Percentile as well as Mean/Standard deviation norms were provided. The test was validated with external criterion of eminent musicians (N=12) whose percentile scores were clearly higher than those of the sample on each of the dimensions. The test-retest reliability ranged between 0.84 to .93
for the three sub-tests. The split-half reliability was almost identical, with a range of 0.83 to 0.93. Valuable suggestions for further research in the field were offered, which, however, were not taken up in the country.

The area was taken up after ten years in Kerala under the guidance of Dr. Vedamani Manuel, and this school has contributed the bulk of music education studies in Kerala.

Chandrakumari’s M.Phil study (1982) on the *Potentials of Music for Enrichment of Hindi Education* showed that simple songs in Hindi and particularly Hindi film songs helped to create interest in learning as well as in helping to master words and structures. The study used a variety of analytical procedures, depth interviews with experts, an attitude scale and a judgement scale. The attitude scale and judgement schedule were also used along with the experimental procedure which involved rendering of various types of Hindi songs in their pedagogic setting. The attitude scores revealed favourable approach of the participants towards the approach of teaching Hindi through songs. Individual item scores and correlation of the total scores with certain criterion measures indicated very interesting results. Close analysis of Lata Mangeshkar’s Meera Bhajan *neend na ave*, Jesudas’s film song *Gori tera gav bada pyara*, and P. Susheela Devi’s special recordings (specially made for this experiment) of Hindi classic songs from pre-degree texts brought out revealing findings pertaining to enrichment of poetry through music, and delicate shades in *raga, rasa and bhava*. The judgement scales showed how the participants received them and reacted to
them. Several distinguished persons spent hours to state their views on the subject. K.J. Jesudas recalled that when he was a student, film song lines helped him to construct sentences in Hindi and even to get an insight into its grammar. He endorsed several advantages of using Hindi songs as pedagogic devices. He was however against imposing the fine nuances of Urdu sounds characteristic of many film songs on Kerala children, for whom the Sanskrit base would be a greater help to enter Hindi with greater confidence. He explained how he himself acquired these nuances with difficulty, and demonstrated the Persian-Urdu sounds in *khya* and *ghair*, which were very different from the Sanskrit sounds corresponding to *kh* and *gh*. The head resonance produced by the maestro in *ghair* without blocking the glottal passage showed the distinct beauty of Urdu as well as the difficulty in acquiring the sound perfectly.

Venugopu’s Master’s dissertation (1980) was on *A Task Analysis of Certain Teaching-Learning Situations in Music*. The conceptual complexities of the Carnatic raga system were simplified through this analysis. He tested Manuel’s seven-step formulation of the 72 Sampurna ragas of Carnatic music through vocal recording of L.Vasantha and flute recording by himself. Another area taken up for analysis was the difficulties faced by he beginners in learning to play the flute. Incidentally his experiments with improvising the flutes and treating ‘sa’ (the tonic) as the position with all the holes closed helped to correlate some elements of physics in a facile manner.
Jacob Idicula (1981) conducted a Task Analysis of different Schools of Violin Playing for his Master’s dissertation. He conducted an elementary analysis of the schools of Honeyman, Spohr and Berthold Tours. The first (British) school was a more psychological approach starting with the scales easier to play on the violin and introducing songs very early. The other two (by a German and a French composer) were more logical and rigorous, but would pay off in the long run for students who persist. Idicula also analysed one North Indian and one Carnatic school of violin playing.

Suri and Suri (1960) conducted a study on “Musical Discrimination of School-going Children in relation to Cognitive and Non-cognitive Variability,” using a sample of 200 high school pupils of the urban areas of Jammu District. They concluded that an individual possessing musical ability, which is a constituent of intelligence, can better grasp and discriminate the basic concepts of rhythm, pitch, harmony, notes phrase and sequence. “Personality patterns have not been recognised as the sole base for musical discrimination and musical preference” (sic.)

The first doctoral study in music education was conducted by L. Vasantha (1984) on Comparative Music Education. She analysed the teaching systems and textual material in South Indian Music, Hindusthani Music and Western Music. The texts analysed included Sambamurthi’s texts on South Indian Music, Vishnu Digambar’s on North Indian Music, school texts from the UK and the USA and some specialised tutor books for violin and piano. She also analysed the broader concepts and practices with
reference to music education in a comparative perspective. The Western books analysed represented different schools, but most of them could contribute something unique to music education in India. The American school texts reflect a clear analysis of the different components of musical experiences such as singing (the core of the music programme), listening, playing, rhythmic activities and creative activities. They also take the students to much higher levels in listening and appreciation as compared to their level of performance. The books are profusely illustrated and the wide thematic coverage facilitates interdisciplinary learning. Sambamurthi’s texts are systematic and comprehensive combining Indian music with insights drawn from Western analysis. But he has had to condense his presentation on economic grounds, and could not afford the profuse illustrations used in American books. The traditional studies in Indian music have an inbuilt task analysis in a logical order. Indian texts generally give a heavy loading of abstractions, metaphysical discussions and generalisations. Concrete pedagogically processed illustrations to clarify deep concepts are generally lacking. Most of the students tend to memorise the theory texts. In many schools the practice part tends to become mechanical. But the best teachers try to introduce a lot of flexibility and creativity.

Vasantha also analysed textual and analytical materials available from the Soviet Union; some of their approaches and those of other socialist countries could be of interest for countries with a history of discriminations in the past and now struggling to provide equalisation of opportunities. These include universalisation of music education, raising the level of mass
education through music, innovative approaches in music helping to improve other curricular areas, through rhythm, creative composition (Kodaly, Asafiev, Yavorsky), approaches to explaining complex musical ideas in a way which children can comprehend (Kabalevsky), have been brought out. Some of these ideas are prevalent in Western democracies also. Special innovations from Japan (Suzuki), Germany (Orff) and the U.K. (improvisations from simple materials and a lot of flexibility) were also analysed. Vasantha interviewed some of the greatest South Indian musicians, such as M. Balamuralikrishna, M.S. Gopalakrishnan and S. Ramanathan, and analysed the cases of some innovations by creative Carnatic music teachers and brought out some significant findings.

Venugopu (1992) conducted a doctoral study of Youth Festivals and Institutional Music Climate in Schools and Colleges of Kerala. The investigator adopted the survey method, using questionnaires administered to purposive samples of 315 school pupils, 350 college students, 230 accompanying teachers (schools only). The data were supplemented through interviews and observation. He also conducted an elaborate documentary analysis. The consistency between different modes of data collection provided a measure of validity of the findings.

Though music is provided as a curricular subject for all in the time table, the school provides formal music instruction only for a very small percentage of talented ones. In this sense, the music festivals provide a kind of opportunity for music education of students. But the festivals have a very
high component of competition-orientation – to win prizes for the individuals and the institution. Though the schools celebrate the cups and prizes, the chief factor which accounts for success is the home (and within the home, tuition master and parent constitute the dominant influences), self-learning with various kinds of appliances come next. The extent of training got at school is less than half of the home training and much lower than self-learning. Training in the ‘fringe of the institution’ (peer group, interaction with interested teachers and artists) comes close. Semi-participant observation showed that a healthy music climate provided in the ‘fringe of the school’ in informal music practice and a number of ordinary pupils without the benefit of home training do benefit by these. Many schools encourage music practice by potential prize-winners just before the music festival, but this encouragement stops immediately after the festival, and the ‘Back to the Book’ climate is resumed. In some schools a kind of informal music club is present. In some cases the Old Boys (past prize-winners) organise such musical training. In some cases, community leaders and temple musical festivals provide the impetus.

Shukla (1987) constructed and standardised a *Musical Aptitude Test for Gujarati Children* drawing a sample of pupils from classes 5 to 9. He concluded that pitch discrimination, tonal length [?], tonal memory and rhythm discrimination are the key components in determining musical aptitude.
Manuel (1981) analysed the *Hidden Curriculum in Work Experiences and Folk Art Forms* as one of the themes in his UGC National Lectures in Education. The inbuilt mathematics and physics in music and other arts, and the mutual enrichment dimension with poetry were the important aspects touched. In this presentation ‘hidden curriculum’ is used in a positive sense – of the deutero-learning (Bateson), a kind of working knowledge which ordinary people possess, without explicitly spelling it out in formal or verbal terms. But this is a potential resource, which can be recalled, tapped out and associated at the appropriate stage with verbal and symbolic forms, which alone count as learning in the formal system.

The ideas presented in the National Lecture were given a concrete shape in a collaborative project at the Centre for Educational Research, Innovation and Development (CERID) in a workshop conducted with NCERT-aid (Manuel, 1990). The philosophical frames drawn from Tagore, Gandhiji, Dewey, Marx and Freire and the psychological constructs drawn from Piaget, Bruner, Gagne, Maslow and Vygotsky are ‘read’ in the various work experiences in Mitraniketan such as tailoring and embroidery, tie and dye, batik, weaving, woodwork, plastic wire patterns, art and cultural activities. Instead of applying the philosophical and psychological frameworks ‘forward’ in work and art, the theory is read ‘backward’ from the accomplishment of the worker or artist. Hence the workers and artists were shown as co-workers in the paper.
The technique of this extraction of theory from practice in work/art was spelt out clearly in a paper (Manuel, 1989) presented in the Asian Regional Conference on Educational Technology:

The analytical task was applied not only to the units of Mitraniketan, but also to individual art and craft phrases, e.g., the fingers of a craftsman working patterns in mat-making or basket weaving, or of a veena vidwan performing a niraval in Carnatic music may be intuitively working with a ‘logic’ which, superimposed with certain mathematical symbols, can be seen as working problematically with complex arithmetic/algebraic tasks. Compared to the skills, sequences and problem-identifying and problem-solving approaches already achieved intuitively, this symbolic superimposition is a relatively easy task, comparable to the lower orders of the Gagnean hierarchy. A large number of workers and artists who performed these physical (concrete) operations are co-researchers of the paper, while the verbal presenter of the paper is only reading the formal operation in them. … The educational technology products take the form of bridge materials in enactive, iconic and symbolic forms. They can be used in different ways for those who have mastered the art or craft form and wish to acquire formal education and for those who have verbally got a formula without understanding it. For the former, the bridge tasks will be to make explicit what has been implicit (sometimes by slowing down and deliberating on the process), to form associations with symbols and to follow up with operating on the symbols alone (backed by the activity to reinforce meaning). For the latter, liberation from verbalism can be achieved by ‘descent’ into the enactive/iconic form and then moving up to genuine symbolic experience.

Manuel, in collaboration with Vasantha Srinivasan (1991) conducted a qualitative study of the potentialities of music and allied arts in education. This project has several dimensions – theoretical, analytical, constructive, and try-out of constructs, and cuts across many disciplines. The historical
preamble recalls the mathematical significance of the quadrivium, which includes music among the four sciences – arithmetic, geometry, astronomy and music. The justification is that geometry studies static figures, astronomy studies bodies in motion; arithmetic deals with numbers standing, while music deals with numbers in motion. The Italian literary critic Tommasio brings out the relation among poetry, song and music: “Il verso è calcolo; il calcolo è conto, e fà cantare; l’aritmetica è una Poesia reinforzato” (Verse is calculus and calculus is song and makes us sing; arithmetic is reinforced poetry) (In Wellek, 1965, p. 298 Notes). Similar and even deeper constructs are drawn from Sanskrit, Tamil and other Indian languages.

In South Indian musical expositions, the mathematical form of elaboration is plainly called ka,akku. In western music the mathematical forms of composition like the sonata and fugue are being used by some music educators as a model for lesson planning. Though this complex model was not attempted in the project, simpler models like intersection of musical rhythm, mathematics and poetry were attempted. The Malayalam vrttamanjari rules were made clear through the enactive-iconic –symbolic sequences. Apart from mathematics emerging from the talas, the mathematics of the 72 complete ragas of Carnatic music was analysed, and the 72 ragas which music students memorised with difficulty could be presented in just 7 steps – in a 6 x 6 matrix for the first 36 ragas, followed by a single mapping of the first 36 ragas (pvrmela) into the second (uttaramela) (vide infra).
Varghese (1991) conducted a doctoral study on *Folk Arts as a Medium for Nonformal Education*. His methods included documentary analysis, interview, observation, questionnaire to headmasters (N=100), opinionnaire, construction of pedagogic art forms and experimental tryout. He analysed about forty folk arts of Kerala, some of which had music as the dominant aspect, and some in which music was auxiliary to dance/drama, and extracted some educational potentialities. The newly introduced lower primary textbooks (1984) in Malayalam (*Bhasha Paricchayam*) were analysed to identify the folk art component in them – riddles, debating songs, children’s folk songs etc. - and some of these were pedagogically analysed. But the questionnaire answered by headmasters showed that though the textbooks and the songs were taught by all, lower percentage of affirmative answers were obtained with reference to questions relating to higher objectives, suggesting that teachers did not draw out the full potentials. The interviews with some prominent experts in folk artists also helped to extract some educational values of folk arts.

Some literacy songs composed by Varghese, Joshi and Sivarajan (on the themes of workers’ education, women’s education, agriculture, overcoming superstition, anti-alcoholism, development education, forest protection, happy family norms etc.) were tried out and appraised. Joshi’s literacy potential analysis of some of the songs are insightful. One special feature of the study was pedagogic composition and singing by the investigator himself to test the educational potentiality of folk art forms. One of these was a pedagogic song accompanying girls dancing *Tiruvadirakkali*
for teaching Malayalam vibhaktis (post-positional particles). Another was a strongly rhythmic song accompanying a vigorous kolkali (stick dance) by four tribal boys. The third was a kathaprasangam (musical discourse), a popular art form performed by the investigator himself, with several educational objectives inbuilt. The discourse was taped, subjected to close analysis, and judged by experts.

Vasundhati (1977) analysed the folk songs of Kerala in terms of (a) theme (b) form (c) geographical regions. One set of classification is in terms of: occupational, recreational, ritualistic, devotional, heroic, philosophical, mythical, love, mystic, lyrical, riddle, vadakkan (northern), tekkan (southern), lullaby, warding off evil etc. Another scheme of classification is more pedagogical: poetical, rhetorical, prosodic, linguistic, moral, historical, political. She concludes that folk songs reveal the life of the common people, including the existing social system and relationship. They show a regard for nature, many songs give injunctions – do’s and don’ts. Many of them teach children good habits. They have a great fascination, particularly for the lower strata of society whose life experiences were closely connected with music and songs. They made work in the fields and other settings enjoyable. Many deal with indigenous medicines. Analysis of these songs show that our unknown and perhaps illiterate ancestors who composed these songs had made a deep study of emotions like jealousy, love, inquisitiveness, false pride, fear etc.
Madhavan Nair (1981) conducted a study on *The Potentialities of Malayalam Film songs in Teaching Malayalam*. He analysed about four hundred film songs according to certain pedagogic criteria. He found that these songs cover almost all types of major learning components prescribed for study in prose as well as verse, including imagery, figures of speech, meters, synonyms, antonyms, difficult words, different forms of poetry, riddles and proverbs. He concludes that the use of film songs as aids in learning will increase pupils’ interest in language learning and help them to appreciate poetry. They can be helpful in non-formal, informal as well as formal education.

2. Foreign Studies Related to Music Education

Several studies in Western music education have shown that various dimensions of music are able to enhance education in different ways. Here focus is given to the role of rhythms, which are most relevant for the teaching of poetry, though other facets are also touched incidentally. Zoltan Kodaly of Hungary and Carl Orff of Germany (later USA) have been prominent in exploiting the potentialities of rhythm in education. Many of the studies reviewed here were dense in terms of concepts too. Hence it was a problem whether to place certain studies/segments of analysis in Chapter II or III. If the empirical testing predominates it was placed without doubt in this Chapter. Where the conceptualisation and intellectual analysis predominate the placement was in Chapter II.
Rosbach presents an approach in which the teaching of music could reduce mistakes in orthography. Linguistic and musical abilities develop in children at the same time. Indeed, the way information is processed is the same in language and music. A presumption, therefore, arises. Perhaps music can help elementary school children overcome deficiencies in orthography. Instructional material for such an attempt is presented.

Amchin investigated the effects of teacher-led verbal interactions with modelling techniques on students’ creative musical responses in melody-completion activities and tasks involving creative uses of sound based on teaching materials from the Margaret Murray edition of *Orff-Schulwerk*, Vol I, and Orff-related teaching procedures. A pilot study of fourth-graders (N=40) indicated that limited instructional treatments had no effect on creative thinking scores, as measured by Wechsler’s Measure of Creative Thinking Version 2 (MCTM-II) and the research-designed Measure of Instrumental Creative Musical Response (MICMR). The main investigation, a test-retest design, included a 23-week instructional treatment with 129 fourth- and fifth-grade students. The study indicated that teacher-student interactions neither aided nor hindered students’ creative musical responses as assessed in melody-completion activities, measured using MICMR and creative use of sounds, measured by MCTM-II. MICMR scores and music aptitude, as measured by Gordon’s Intermediate Measures of Musical Audiation (IMMA), showed significant positive relationship. Instructional treatments had no significant effect on IMMR scores. There was an apparent increase of students’ interest in music as a result of the treatments.
Benes-Lafferty created musical activities to teach geometry, measurement and the concept of money to 22 second graders and compared the results with 22 other second graders instructed using a traditional method. Students were found to enjoy learning music through musical activities. The Aikin Attitude Scale did not reveal significant differences between the two groups, but the daily record showed significantly higher positive attitudes for the experimental group. All the mathematical standard tests showed significantly higher scores for the experimental group.

Bondurant-Koehler investigated the effects of selected modes of instruction (Orff, Kodaly and traditional) grade level and gender on music preferences in third- and fifth-grade elementary school children. The subjects were 30 teachers and 1370 students, classified by mode of instruction. A researcher-designed Music Preference Measure consisting of 18 Likert-scale items covering six categories was used. It was found that overall preferences for the six style categories differed significantly among mode of instruction, grade level and gender. Orff instruction yielded significantly higher preferences for avant-garde and country-western; Kodaly instruction yielded significantly higher preferences for art, ethnic, jazz improvisation and pop/rock. Third graders revealed significantly higher preferences than fifth graders among the six musical style categories. Males preferred avant-garde; females preferred art and country-western.
Bradford investigated the aural and oral difficulty levels of selected rhythm patterns among kindergarten children (N=102), Shawnee, Oklahoma, considering the effects of gender and age, as well as the relationship between aural and oral abilities. The subjects' echo performances of the patterns were taped and evaluated by three independent judges (inter-judge reliability was 0.97). Subjects were most successful in aurally discriminating usual triple macro/microbeat patterns and unusual paired division/elongation patterns, and least successful in duplicating unusual paired division/elongation patterns, lending support to the idea that aural discrimination accuracy and oral reproduction abilities are not strongly related at the kindergarten level. Subjects were capable of aurally discriminating and orally reproducing the selected rhythmic patterns. No significant correlations were found between the subjects' scores and ages or between aural discrimination and aural abilities by gender.

Cook developed a ‘cultural metaphor’ with music in describing a multicultural approach to music education that uses Navajo holistic world view to teach Western classical music concepts to Navajo students in Tuba City, Arizona. Navajo culture and music are inseparable. Songs are viewed as re-enactments of the mythic past, and have the absolute power of restoring wholeness from imbalance. By relating the composition of fugues to the Navajo process of rug weaving, the Navajo holistic view may be applied to teaching music. Fourteen students composed fugues using the insights gained from the comparison of the Western fugue with an art form central to their own Navajo culture. By means of this exercise two seemingly
disparate artistic expressions are shown to be linked, just as modern education and traditional philosophy may be combined holistically.

Hoffman examined the possible transfer of cognitive skills gained through a comprehensive, sequential, keyboard-based music education (KBME) programme to achievement in reading, mathematics, and language skills. The subjects were 2331 fifth grade students in 26 South Carolina schools. Subjects in the treatment group were taught music via the KBME programme. Subjects in the control group received traditional text-based musical instruction. The schools were matched on 1992 Stanford Achievement Test scores and demographic information. The eleven subtests score averages were submitted to a matched pairs t test, with the school mean as the unit of analysis, and to an independent t test using the individuals as the unit of analysis, to determine if the scores of the KBME students increased significantly. The results do not seem to indicate that “insofar as academic achievement is concerned, the KBME programme is superior.”

Hickey compared the intonation accuracy of elementary school children when singing diatonic major and pentatonic melodic patterns in ascending and descending forms in familiar and unfamiliar music. Subjects from grades one to six in a singly elementary school (N=128) were tested on eight melodic patterns that ranged from four to eight notes. The combination of test patterns included pentatonic and diatonic major patterns, ascending and descending patterns, and familiar and unfamiliar music. Intonation
accuracy was measured in Hertz on a Visi-Pitch computer as the deviation of the sung response from accepted pitch frequency standards. Data were presented: A: as the mean deviation of three definitive pitches of each pattern, B: as the mean deviation of three definitive pitches of each pattern, and C: as a Likert ranking of recorded samples based on a music educator’s aural assessment. Statistical analysis of the data included paired t tests of combinations of test patterns, t tests of independent samples of gender by test patterns, with pentatonic patterns showing greater accuracy of intonation than diatonic patterns in all significant cases. The consistency of accuracy was higher in the case of pentatonic patterns. Accuracy in descending and ascending patterns and results by gender showed inconclusive results.

Johnson investigated Ausubelian approach with three and four-old children attending two university-based pre-school programmes of 19 weeks of music instruction. Control (13) and treatment (33) groups received twice-weekly instruction in understanding dynamics, tempo, pitch, and rhythm. The treatment group instruction was based on Ausubel’s subsumption approach to learning with advance organiser presentations. The control group received traditional classroom music instruction without advance organiser presentations. Pre-and post-tests were administered and the musical backgrounds of the subjects’ parents were determined from survey responses. ANOVA analysis of results found no statistically significant group differences. However, percentage gains were higher in the treatment group for all musical concept areas. Significant correlations were found between pre-test scores and parents’ musical backgrounds in the concept areas of
dynamics and tempo. These correlations disappeared, however, at the post-test assessment. This finding implies that Ausubel music instruction can compensate from less advantaged backgrounds.

Keenan-Takagi examines the effect of ‘mental rehearsal’ during observational learning on chorister’s critical listening achievement and concludes that this type of rehearsal is logically connected to musical cognition. High school choral ensembles in western New York involving over 300 students in seven intact classes participated in the project. Students completed Weymuth’s Choral Music Achievement Test (ChorMAT) as both pre-test and post-test, and evaluated their performances using Larkin’s Five Dimensions of Achievement in Choral Music rating sheet.

Ortner studied the effectiveness of a computer-assisted instruction programme in rhythm using a pre-test-post-test control group design with 40 high school music students randomly assigned evenly to the experimental groups. Over a six-week period, the experimental group used the Magic Piano Rhythm Game programme (on the Apple II computer) for a minimum of 40 minutes per week in addition to their normal music instruction. The control group subjects received no additional instruction. The criterion measure, a rhythm reading test (RRT), used rhythmic patterns extracted from the Watkins-Farnum performance scale. The RRT pre-test accounted for more than 97% of the RRT post-test variability, and there were no statistically significant differences between the experimental and control groups on the RRT post-test. Low correlations among the influence variables suggested
that the variables (rhythm aptitude, gender, principal instruments played, years of instrumental study, private lessons, performance ensembles, and amount of composer experience) were heterogeneous, and that other than the RRT pre-test, none of the variables provided significant predictive power for improvement on the RRT post-test.

The study of the effect of music on plants has been documented (Tame. pp.141-48). In one experiment conducted by psychologists, rats were given the free run of two separate but connected boxes. Music was being piped through two separate but connected boxes in which rats were given free run. Bach was piped into one, rock into the other. Though otherwise the two boxes were identical, the rats spent their time in the Bach box. When the music was changed between the boxes the rats moved into the Bach box. Other experiments showed that certain types of music (e.g., Strauss’s Blue Danube) caused hens to lay more eggs and cows to give more milk. Two independent series of experiments in the Soviet Union and Canada showed that the seeds of wheat treated through tones grew faster. Tame’ own experience showed that geranium plants treated with Bach’s Brandenburg Concertos grew faster. Another side experiments showed that the full Brandenberg Concerto’s had better effect than just the dominant parts of them: “This suggests that while the individual tones of Bach’s music exert a certain regenerative influence upon plant life, the effect is greater if the frequencies are played in the precise and beautiful rhythmic, melodic and harmonic orders in which Bach actually placed them.”
Platt (In Stanley Hall, pp. 99-100), a poet and musician, observed his own children, reared in a musical atmosphere, in their dreamy moods, crooned melodic sketches which were utterances of sheer emotion. He inferred that the drawings of the child are whimsical oddities. But the true evolution of the child’s soul from within is found in song. The second boy, at seventeen months, uttered a distinctly musical call, imitated a trumpet and showed a distinct preference for key, with leanings towards plagal cadences. The second child was quite as musical as the first but less prone to dreamy soliloquies. Some of these songs showed tonality; others were in very marked cantabile style. The real minor is rare. The spontaneous music of these children was easily more in tune than music that they had learned. The author believes that canon, instead of being a late refinement of musical art, is one of its earliest developments, and is led to this view by observations of his own children. When children were inventing in unison it was difficult to tell which one was the leader. So when the father invented tunes, the children followed with startling ease, as though all three were inventing the same thing at once. Hall comments that in the history of the race, the plagal cadence is earlier, and children redevelop it for themselves, but in the history of concerted music, canon is an early feature, and this children rediscover.

Koerte concluded from a number observation of cases that children could early learn to combine tones in melody, with the same degree of creativeness that they can mould sand. Some of his other observations are also interesting. Preyer’s child was quieted by music at the age of six weeks. Strümpell found a child who was interested in the piano at the age of twelve
weeks. Rhythm comes very early. Preyer observed tact movements at eighteen months. Mystics have thought that a child might hear ‘divine sighs in the air which it breathes’. Of course the music must be very simple and not polyphonous. According to Groos, primitive music is connected with war. Speech and music give to hearing its first significance and lift man into the psychic sphere. [pp. 100-101]

Hofer says self-activity, spontaneity, self-expression, play spirit, must be the watchwords in music as in all things; inceptive work, which recognises native impulses, needs more attention. Unmusical teachers do great injury. …Language should be more inflected and not hurried or chattered. Song should be musical conversation, and speech, music and language should blend. Musical good mornings and perhaps simple original creations with imitative songs, help the child to appreciate the music of nature. The child can understand what occurs to the ear and mind long before it can produce. Music ought to be a means of communicating ideas.

Monroe found that young children give to musical sounds degrees of sustained attention quite out of proportion to the normal control of their activities, and often learn to sing before they can talk. Rhythmic measures of tonal kinds very early cause pleasure and pain. From data concerning 161 children under six, he found that 29 of the boys and 49 of the girls could be taught to sing the scale. From four to five years, 34 per cent of the boys and 59 per cent of the girls could learn it. At six the proportions were: boys 41 per cent, girls 71 per cent. The memory of songs exceeds that of scales,
although it is more complex. This is due perhaps to rhythm and to
association with the concrete subjects of such sounds; 27 per cent of the
boys and 59 per cent of the girls seemed to have special tastes for music, the
male curve dropping as age advances, while girls’ interest rises. Jastrow and
Morehaus showed that women students’ hearing is more acute than that of
men. All this indicates feminine superiority in tone perception and musical
interest, although women have done little in musical composition.

Norton concludes from his analysis that music must conform to the
actual present interests of the child and to the potential adult. The best
songs are those in which most are interested and whose effects last longest.
One function is to unite child and adult and not to sever them. The earliest
songs should be simple, not complex, possibly on the five-note scale, with
bright tempo, allegro rather than adagio, the two-rhythm rather than the three
rhythm, closely related to life. The two-step rhythm arouses animal spirits,
puts vitality into motor play and subdues everything to its own form.

Höyken had devised a graphic scheme of presenting music,
particularly fugues and sonatas, to the eye, which were used by Meyer in his
studies cited. For this purpose he dispenses with all but the heads of notes
and connects these by lines, omitting all time signs, and carrying the chief
theme in a form picture…By supplementing this method with coloured dots
and lines and by the occasional use of small circles, it is possible to
represent one, or indeed, a number of parts and instruments in an orchestra.
Verbal explanations appended show the leading motive, subordinate
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phrases, elaborations, and the various other divisions. By this means those who do not read music, it is claimed, are able to follow it more intelligently and to recall the chief motives. Their attention is called to symmetry, opposition, reversal, and other aesthetic elements, and particularly for those eye-minded, and also for those who desire assistance in penetrating the mysteries of musical theory, it may be of assistance.

Hall notes that present methods isolate music too early from its broad nourishing basis of rhythmic movement, action, cadenced inflection, and feeling generally, and make it an independent cult, specialised and, worst of all, technical, before it has performed the supreme function of its nascent state in cultivating the emotional life and, if not creating, at least conserving important factors of it.

Music in the modern sense is one of the hardest and latest as well as one of the most intricate products of human culture, and this fact must be invoked in addition to lack of training in order to understand why we find children at every stage of ‘undevelopment’ and arrest, from amusia and musical idiocy up. He also cites cases of juvenile prodigies, who, though rare, are better known.

A girl of ten months beat time accurately to even complex music; another in her second year learned to sing many tunes and “had sung before she could talk”; a boy of four who had had no instruction knew and hummed some two score pieces of very different character; a girl of five sang nearly all she said, and kept it up at her play about all day, answering questions in crude
rhythmic songs of her improvisation, her converse with her doll and other children being mostly in song, etc. Some before school age acquire considerable familiarity with the scale and various tempos, and even sing solfeggios and have a highly developed sense of rhythm, this being more stressed with boys than with girls; but musical precocity in general is more common with girls...[p.111]

Hall suggests that ... children get a better grasp of pitch, rhythm, etc., if melody is not distracted and harassed by notes. Notation comes very late in the history of the race, and it is just as monstrous to teach it before the child knows many songs by heart as it would be to teach reading before the child had a vocabulary or could speak. These, the analogies between alexia and agraphia on the one hand, and the various forms of amusia on the other, bring out in the clearest way when these defects are analyzed. He follows this with a series of studies on amusia from Wallaschek and others (p.113ff. footnotes):

Noy (1963) has outlined the contributions of music to child development. They are

1. Add other understanding and enjoyment of life
2. Give understanding and appreciation of present day living in the classroom in the community in the native and in the world.
3. Make more meaningful, the history of our nation and of the world.

Noy has also analysed aesthetics and music in a comparative perspective. He says that the primary purpose of the music is to develop the capacities of children to respond to the oral beauty with pleasure and with
understanding. The musically educated man incorporates aesthetic principles with his daily living, and thereby develop a quality factor which adds to human happiness. Appropriate musical experience in the education of children should provide the means for satisfying the basic need to symbolize experiences through an art medium.

Medina (1990) conducted a study on the effects of music upon second language vocabulary acquisition. The study investigated the effectiveness of music and use of story illustration on the English vocabulary acquisition of children subjects were 48 second grades of limited English proficiency divided into four groups. One group heard a story in its sung version and another heard the oral version only. A third group the music and simultaneously viewed pictures of target vocabulary words. The fourth group heard the oral version and viewed the pictures results of pre and post-tests indicate statistically. Significant difference between groups having music and not having music. Vocabulary gain scores were higher for the groups in which music was used.

II. Studies Related to Poetry Teaching

Theodore (1957) was the pioneer who made the first study in poetry focused on the evaluation of the study of English poetry among Indian students. The study reveals that the students feel the value of studying poetry as real and aesthetic and also it enables pupils to acquaint themselves with poetic minds.

About poetry teaching Gupta (1958) suggested as follows. Poetry, more than prose, needs to be visualized and appreciated. This means that in the teaching of poetry the right association of poetry, the right association of ideas is more important than more meanings. Appreciation of poetry is an experience; it is something creative and it is primarily a critical activity. While composing a poem the poet has to select words, rhythm and sounds. The
reader creates the poem anew for himself by means of the poet’s words. The sympathetic guidance of the teacher is therefore more necessary in the teaching of poetry than of prose and it is his main business to arouse the children’s awareness on consciousness to the hiring experience, which has given birth to the poems. It will not be wrong to say that poetry is characterized by beauty, beauty of form beauty of language, beauty of thoughts, mood or feeling. In the teaching of poetry the main mission of the teacher should be not only to acquaint his children with the material of the poem but also to stimulate in them an insight into the delightful or beautiful thoughts portrayed in the poem. Thus the children should be enabled to grasp all the sides of a poem its central experiences, the images by which it presents the experience and the music of the rhythm, rhythm and words which express the tone and inner spirit of the experience.

Terry (1974) from her survey of children’s poetry preferences summarises the findings as:

1. Children are the best judges of their preferences
2. Children’s poetry choices are influenced by poetry forms
3. Sex did not influence literary appreciation
4. There was no significant interaction between sex and environment with respect to literary appreciation. Joshi,

III. Studies related to Malayalam Prosody

Empirical studies similar to the topic chosen by the investigatory were not available in this area. Hence a few analytical, constructive and critical studies in the domain of Malayalam prosody are placed here. There may be some overlap between what is presented here and in Chapter II B. Both have an analytical dimension. But the main criteria for placing a study here is (a) whether it is constructive – TV Matthew’s study arranging vṛttams in the order 1 1 1 1, 2 2 2 2 to 1010 10 10 is perhaps the best example; (b) whether it is specifically critical, followed if possible by reconstruction – There are some studies criticising Rajaraja Varma’s framework followed by the reconstructed
frame. Kuṭikrishna Mārar and K.K. Vadyar present excellent examples. Heterodox analytical framework is also preferred for inclusion in this chapter.

(Līlatilakam) is the first book concerning manipravāla metre. The writer suggests that the poets of manipravāla give more importance to rhythm and metre. So they violate Sanskrit metre rules. The author concludes from his analysis that our songs are different from manipravāla. Rāmcharitam is an example for this. Sanskrit metre follows the rules of ganam, guru laghu, yati etc.

T.V. Mathew analyses that Malayalam songs are different from manipravāla. Rāmcharitham is an example for this. Sanskrit metre follows the rules of guru, laghu, yati and pāka.

The book vṛttalōkam contains principles of metre in poetry which were prevalent in the language. Kovunni Nedumgāi analyses the laksha, a only after deeply analyzing Sanskrit metre and Tamil metre. The Sanskrit metre has been presented in mātrākramam, varnakrama, mātravarnakramam. It is usually known in the names of Anuṣṭuppu to sragdhara within fourteen chandassukal. Then the writer has conducted the metre of poetry is not independent. It is difficult to specify its basis whether it is Malayalam or Sanskrit.

Many of the studies reviewed below were analysed in secondary form from T.V. Mathews’ work.

Dravida vṛttanaṁ avayuṁ avayu diśāpari, amaṇṇaṁ avayuṁ was the first criticism on the science of metre in poetry by Ramavarma Appanthampuran. Tail metre follows the specific rules which were specified in Leelathilakam for pāṇṭu. Malayalam poetry has completely rejected the above rules.
K.K. Vadyar’s vṛttavichāram is a criticism on vṛttamanjari. He points out the limitation of ‘Tamilmura, aimātra (five mātra) ga,am in taramgi,i, paryasta kānjis rules ardhakēka and kēsamadhyā are the same. Then he explains the ‘Uruvāya mozhi’, ‘Uttamakānti Vṛttams that he vṛttamanjari excluded in krishnagātha and kurattippūṭu. Many ūnakākalis ūnataramgi, is, athinātōnnata, ūnanatōnnata etc are explained in this book. Vanchippūṭukal, tu½tal pāṭṭukal, ki½ippūṭukal etc and all kinds of pāṭṭus in padasahithya are analysed in this study.

In this book he explains that Malayalavṛttam rules can develop through two mātra, three mātra and five mātra system. But we can see that in some places he uses more mātra ga,ams i.e. taramgi,i (4) aimātra vṛttamŋēal (5) slata kāka½i vargam (6) ēzhumātra ganamŋēal (7). He explains that two to seven mātra ga,am can be used in Malayalam vṛttam. The author has made some important contributions.

1. He corrects some of the defects of vṛttamanjari kārikas
2. He proves that three, four, five and seven mātra’s have come under one varga each or gotra.
3. He agrees that tālamātra and gānamātra are equivalent.
4. In reciting he accepts the varnam or mātra counts
5. He explains many vṛttams like ūnatarangi,i, ūnakākali different kinds of vanchippūṭukal, slathavṛttanŋēal etc.
6. He has brought to light uttamakānti, uruvāyamozhi in his book that vṛttamanjari has never touched.

O.M. Anujan’s ‘Bhashavṛttam oru paṭhanam’ is a research work. He explains vṛttam, chandas, mātra, cīr, sīli, ganam, aṭṭi, tā½am, īraṭṭi and musical ta½am. In the first chapter he analyses vedasangītam, Tamil
vṛttanṇaḥ, Sanskrit vṛttanṇaḥ, tālasangītam etc. Second chapter he explains the important study of vṛttasāstrams in Malayalam. In these he expresses his own ideas also.

The Sanskrit vṛttam in the order of vaṁ, am and Drāvidavṛttam in the order of mātra have emerged in different way. But Sanskrit vṛttasāstra has influenced Drāvidian vṛttams. The four mātra ganam tarangini includes nineteen vṛttams. But Kalyāṇi, atisanmmata, sambuditham, sthimita, atisthimita, samāsamam, vṛttams never come under Sanskrit vṛttams.

Malayala Bhāsha vṛttam has its own vṛttam rules and it is the way of tāḥam. Each pādam (line) is divided into equal ga,ams. The number of letters is not at all important, but the mātra should be counted.

Anujan first analysed 3, 4, 5 mātra ga,ams. Other can be analysed as higher order family or gōtram.

Eg: Mallika, pallavani - 3 + 4 mātra  
Samāsamam - 4 + 3 + 3 mātra  
Swatha, sumangala, sukharaham - 3 + 5 mātra  
Kēka, pāna - 3 + 2 (vaṁ, am)  
Vaktram, krsamadya - 4 + 3 + 2 (vaṁ, am)

S.K. Nair in his book ‘Bhashavṛttamanjari’ presents the criticism of vṛttamanjari. In his book he divides the vṛttams into three kinds.

1. The vṛttams that were composed by rectifying the mistakes in vṛttamanjari
2. Some in which the rules have been modified and reformulated rectifying the defects.

1. Mārakākali, Manaswani, annanada, kamala Omanakuttan) kāmini (samāsamanam) are the first kind of vṛttamṇal

2.
   a. Manikānchi and atisammata have same rules but the aim is different
   b. The rules that A.R. Rajarajavarma gave for druthakākali does not fit the vṛttam
   c. Sarppini and pāna are the same vṛttam
   d. Some of the Malayalam vṛttams given different names are really the same vṛttam.

   Eg: ūnakākali, manjari, mārakākali, manikānchi, kalakānchi

3. Abhirama, Māveli, kurathi, irathi, ganika, omana, Ambili, Radhika, Rākki½i, Prēma, ka½avā,i, khanavē,i and soma are the new vṛttams that he suggests.

   Bhasavṛttamanjari presents the new vṛttams explaining the tālaganams.

   1. Manaswani  4 4 4 4 // 4 4 4 2
   2. Mārakāka½i  5 5 5 5 // 5 5 2 2
   3. Māveli  5 5 5 2 // 5 5 5 2
   4. ga,i ka  5 5 5 2 // 5 5 5 2
   5. Abirāma  5 5 5 5 // 5 3 2 2
   6. Ōmana  5 5 2 2 // 5 5 2 2
   7. Ambi½i  2 5 5 4 // 2 5 5 2
   8. Rādhika  2 5 5 4 // 2 5 2 2
The importance of Bhashāvṛttamanjari is that it accepts the vṛttamanjari’s rules and shows the modifications. It helps the study of bhasahsāthram. This study explains the ūnam, the difference between guru, laghu and sladham.

Kuttikrishna Mārar wrote Vṛttasilpam by incorporating the principles of Vṛttastraratwa of Appan Thampurān and showing some defects in that work with reference to Dravidian metre. Appan Thampurān suggests that musical time should be followed in the science of metre (prosody) also. But to Mārar poetical rhythm (tāḥam) doesn’t refer to tāḥas like champa or champa-a. He just refers to a parallel repetition because parallel repetition is the basis of metre. Thus Mārar rejects the musical tāḥas in vṛttasastra and accepts the principle of periodic repetition which is the basis of both science of music and poetic metre. Appan Thampurān considered that the speed of recitation can change the vṛttam.

Kuttikrishna Mārar brings out the relation between the lines and poetic metre. Primitive man put rhythm into his utterances and hummed them into melodies in order to lighten his burden of work or recreation. So Mārar thinks that research should be conducted into the tunes and singing style to understand poetic rhythm. But gānarīti of Keralapānini and the īnam of Mārar are totally different from each other. Kēralapānini tells us about the tune (īnam) that resides in varām (letter). Mārar tells us about the tune that exist beyond Varām.
Eg:-

Māve / li- / nādu / vā- / nīnum / kā- / lam / -
Mān / sha- / rellā / ru- / monnu / po- / le- / -

Horizontal lines refer to the prolonging of the syllable to complete the musical ganam. Vēttam is given 5 5 5 2 tāṃmātra. If that is so the ganam division should be

Māvel / nāduv / nīumkā / lam /
Mānsha / rellāru / monnupo / le /

Though Mārār rejected the rhythmic divisions and time changes in metric science when he came to the practical side; he accepted most of them triśra (triple time) chathuraśhra (4); kha, ta (5) misra (7) and sankīrṇa (9).

Another peculiarity of Malayalam metre is that those poetic metres were a peculiar musical feature has to be highlighted in the middle of the line a different rhythmic pattern would be seen in the recitation. In that case the vēttam will be recited in different patterns. He asks whether it doesn’t become a different vēttam. Mārār gives a remedy for this. When metres are recited for one or tow lines, the pace and tune are to be noted down. Pāna, kummi, Thārāṭu, kurathi, cheruchi – these are not referred on the basis of metre, but they are referred on the basis of their tunes. He notes four additional features.

1. The same metre coming in many forms.
2. creating feet of equal length (in time) by giving a time value for the spaces between the feet
3. Forming vēttams according to the tune
4. When the tāṃmātra mātrās the vēttamanjari’s rules seem to give a distorted picture of the vēttam
Mārār give a refined concept of lines. He uses the term aī for line, two lines makes sīl (īra-i or padyam) Mārār follows the practice of breaking an īra-i into two or into four.

V.S. Śarma has made a study of tu½½al vṛttams. Tu½½al is a musical story poem. It also includes an element of dance. It demands variety in the musical presentation. Hence it has to use a variety of vṛttam forms. Kuñcan Namipiyār created the tu½½al combining both Dravidan and Sanskrit Vṛttams.

In Tu½½als different rāgās and different tālas are also used. According two classifications are possible vṛttaparīga,ana and sangīta sāstra parīga,ana. Starting with tarangi,i and ūnatarangi,i. Twenty nine varieties are analysed by sarma.

Sangīta parīga,ana or analyses from the musical stand point includes typical Kerala art forms like kathaka½i and tu½½al. Since tu½½al is loaded with vācikābhinayam, the musical aspects are also high. Much of it is performed in a fast tempo (drutakālam) Moderate temp is also used (Madama kālam) Slow tempo is rarely used.

Kuñcan Namipiyār uses the musical forms with clear rāgās and tā½ās marked out on occasions. But much of his work is in the ordinary poetic style. Tarangi,i, Mayuri and certain vṛttams are most common.

Kunjikriśna Menon presents many aspects of vṛttasāstram in Bhashavṛttadīpika. Menon holds that similarity of Malayalam vṛttams with Tamil and Malayalam prosody is accidental. The distinctness of Malayalam poetry is measurement by mātra groupings based on tā½a. He feels that the rules given by Rajarajavarma for many vṛttams such as kēka are putting the pupil in the doorstep to vṛttams. If a person has to enter the mansions of vṛttam a mātra analysis of the vṛttam is necessary. In this work Menon
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gives a mātra analysis 5 4 4 5 4 4 = 26 for kēka. But in a later work he has come back to the letter analysis 3 2 2 3 2 2 formula of Rajarajavarma. In the graded count are vēttams Menon analysis tarangi,i (4 mātra) paiki½ (5 mātra) manjari (by lengthening – 6 mātra) misram (7 mātra).

In addition to this he present's another kārika. He says that Malayala vēttam can be measured by 2, 3, 4, 5, 6 mātrās. Thus Menon is giving at least two standards for grading vēttams. He has also said elsewhere that when Malayalam vēttams are recited, sometimes letters are lengthened in such as way that whatever rules are framed the analyses may not be able to classify it precisely.

Menon discusses 48 vēttams which are not analysed in vēttamanjari. Some of them have been analysed by others too. A few cases worth mentioning here are

1. Vilasini (7 7 7 7) Renjini (7 7 7 7, with a variation in grouping) apparently U U – U – I) pajaga, am (4 4 4 2) Ėkataramgini (which is pañcari tālam according to Kuñcan Nambiyār) Manipaikili (apparently 5 5 5 4)

He also attempts to name the vēttams in term of lines. Dasatarangi,i (10 lines) Dwadasatamgi,i (10 + 2 lines) Ashtadasatarangi,i (10 + 8) etc.

Ramakathappāṭṭu a comprehensive work written by Ayyippi½a Āsan can he said as Rāmāya, am Irunnūti Enpathāru vēttam. Each part in it is called a vēttam. Twenty seven vēttamgal are referred in this work. In the introduction it is stated that the invocation to the function is done with the accompaniment of an instrument called Chandravalayam and use of Drāvidian vēttams and musical forms to attract people. Some of the vēttams listed in the twenty seven are commonly accepted in Malayalam pāna, misrakākali, taramgi,i, parayan tu½al, tōdakam, Ūnataramgi,i.
But more interesting is that some vāttams which are given formal 
definitions by Rajarajavarman are given other names matching with the first 
lines of popular songs and are apparently typical Dravidian metres.

Induvadana is given the name Venmanti – kalābhavanan. The rhythm 
of the line analysed by four letter five mātra ga,am in this metre is illustrated 
by the line.

\[
\text{SHxXNI EM`CW W_IK TWI}^9\text{P} \\
\text{\_NAAEKP WMIAE HNJVWP`K HM\PW P} \\
- U U - U U U - U U U - \\
TXMWXINS TXMWXINS TXMWXINS TXMWTXMW
\]

This was an enchanting Dravīdian vāttam. The vāttam commonly 
deﬁned as sankaracharitam is given the name Haraśakara. The five letter, 
six mātra ga,ams are illustrated by.

\[
\text{LCI;}\text{C LCI;}\text{C LCI;}\text{C NCNXW} \\
U U - UU U U - UU U U - UU U U - \\
\]

Some authors have grouped the letters into three letters at a time and 
given Sanskrit ga,am names, and corresponding rules which do not produce 
this musical effect. N.V. Krishnawarriar has quoted similar rhythms from 
Tamil vāttams also.

T.V. Mathew (1996) has made an excellent analysis about in science 
of metre in Malayalam. (Vittasathram) He has analysed the vittasathram 
of different languages i.e. Sanskrit, Hindi, Bengali, Greek, Latin and English.

He has also analysed the vittasathram among the Dravidian 
languages like Tamil, Kannada and Telugu. He analysed the science of 
music and different kinds of songs. He has coded each line by the number of 
matras per ganam in each line. Giving a number as the gana matra code as 
follows.
He has analysed absolutely, systematically starting with lines defined by ‘ganamatra code’ as follows. He gives names for each of the vrttam according to these codes. 1 1 1 1 – to 1 0 1 0 1 0 1 0
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<th>SP</th>
<th>IP</th>
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<td>du</td>
<td>1111</td>
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<td>e</td>
<td>T•M</td>
<td>A•P</td>
<td>T•M</td>
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<td>A•MS</td>
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<td>S•JMT;M</td>
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<td>\MTI</td>
<td>9999</td>
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<td>HBV;WW</td>
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<td>Murokkkanam</td>
<td>Mooke vekkam</td>
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<td>IS•N</td>
<td>I•OMW</td>
<td>IS•N</td>
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<tr>
<td></td>
<td>SJM MTCM</td>
<td>;PDPŠMTC</td>
<td>SJM MTCM;PDPŠMTC</td>
<td>M</td>
<td></td>
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</table>

These method of analyzing vattams from the shortest with four single mātra ganam to the longest 10101010 is an innovation by Dr. Mathew. This was deep pedagogical implication.

He has extended this (1.1.1.1. to 10.10.10.10.) analysed to collection of Proverb songs, Riddle songs, champu Gadyavattanjal. (Prose vattangal)

But in Thekken Pathikal the full range of 1.1.1.1. to 10.10.10.10. is not available. There gets only 4 4 4 4 and 6 6 6 6.
Dr. Mathew has also analysed with penetration the earlier works in prosody of Malayalam such as ‘Leelathilakam’, Kerala Kaumudi, Vṛttaśilppam by Kuttikrushna Mārār, vṛttavicharam by K.K. Vadyar and other famous books.

He has analysed the fundamental principle of vṛttasāstra. His critical study of vṛttamanjari is a great contribution to Malayalam prosody. He has analysed with the midieval and modern prosody.

(IN Ramacharitham 4444 and 5555 with some irregular metres. 4244, 44242 and 4555. The traditional metres for these also are identified. For example ādikeka, kurathipattu)

**Study of vṛttam in Malayalam**

1. The first mention of Malayala vrittam is founded in ‘Leela Thilakom’, a Manipravala laksna Shastra Grantham. Leelathilakom gives lakshnam for “Dravida Sangathakshara nibandham Ettuka, Mona Vrittavisheshayuktam pattu”

   Eg:  
   \[X\text{CXE} \text{`M} / \text{F} \text{`M}, \text{INF} \text{`M} \text{SJ]\text{IM`M}_{3}\text{\textendash}\n\]
   \[X\text{\textendash}ISN\text{`MÀ}, \text{HCP} \text{`MÀ} \text{IMW}_{3} \text{XST}...\n\]

   these lines bear similarity to Mishrakakali.

2. Karunakaradas’s ‘Vṛttaratnakaram’ is one Sanskrit book which mentions about Dravida Vrittams.

3. Kerala Kaumudi

   It is Kovunni Nedungadi, Kerala Kaumudi publisher who first tried to divide explain and illustrate Malayala vṛttams. He divided vṛttams into two, matra vṛttam and varnavṛttam and brought out the guru laghus as well as the different ganas formed as a result of combination. Mr. N.V. Krishna
Warrior opinions that Kovunni Nedumgadi made a mistake in making Tamil, the basis of Malayalam.

Two types of poetic methods must have evolved out of the Kerala fine arts in which observation and enjoyment mingled. One reflects Sanskrit rhythmless ecclesiastic influence and serious religious note. The second one is emotional religious movement. Such religious movements which mingle enjoyment in dance and plays evolved the poetic method which is a part of fine art forms and Rangakalas.

4. Vṛttamanjari

A.R. Rajarajavarman’s vṛttamanjari is a relevant book in the section. Vṛttamanjari mentions mostly about Sanskrit vṛttams only 20 pages are given for Malayala vṛttams. Rajarajavarman depended on Kovunni Nedungadi dividing kilipattu. The division of Thullal vṛttams is not scientific. The vṛutta number is increased artificially giving the language vṛttams. Sanskrit varna vṛttam rules created artificially. Most of the varna vṛttam names that exist today were given by A.R.

5. Dravida Vṛttams and their changing conditions

Appan Thampuran’s work is the next scientific book after vṛttamanjari on language vṛttams. Appan Thampuran states that Malayalam songs developed in form by overcoing the rules specified in Leelathilakom. He believes that the language vṛttams had an independent origin and development. Appan Thampuran gives importance to rhythm, but this sort of clarification is not practical here.

6. Vṛttashilpam

Kuttikrishna Mārār presents Malayalam vṛttam based on rhythm. Sanskrit Vṛttams which were divided into three lettered ganas by the Vṛttam experts were according to Mārār based rhythm. The voice modulation
specified by him does not help much in deciding vrittams. Syllables should be decided.

7. Vritta Vicharam

K.K. Vadhyar’s vrittavicharam is a vrittamanjari criticism. Vadhyar accepts rhythmic division for the basic Malayalam vrittams. Vadhyar believes that a poem even if read in different tunes of rhythm there would be different types of vrittam. He unnecessarily criticizes A.R. His findings on keka and manjari is scientific.

8. Bhasha Vritta deepika

Prof. P. Kunjikrishna Menon’s Bhasha Vritta deepika is noted work in Vrittasastram. He agrees that language vrittams are independent and not originated from Tamil or Sanskrit. He divides Malayala Vrittams into four – Tarangini, Manjari, Painkili and Mishram. But this is not probable.

9. Malayala Vritta charithram

N.V. Krishna Warrior’s “A history of Malayalam metre” is a remarkable book in this aspect. He divides and studies scientifically as well as historically.

10. Vrittakalpadrumam

Dr. T.V. Mathew’s Vrittakalpadrumam historically investigate the Chandasastram and vrittasastram in Sanskrit and modern Indian languages.

11. Vrittapadanam

Nilamperoor Ramakrishna Nair’s Vrittapadanam is adopts a critical approach on this subject.

The vrittams place in language could be assessed with the help of this works.