IMPACT OF TELEVISION VIEWING HABIT ON DEVELOPMENT OF BASIC VERBAL REASONING SKILLS BY PRIMARY SCHOOL CHILDREN

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Abstract
The impact television viewing habit (TVHa) may have on development of basic cognitive skills among children is indeterminable. Television viewing habit here refers to the average daily viewing hour of a primary school age child. This study investigated the impact of TVHa on the development of basic verbal reasoning skills among primary school children. The study employed Ex-Post Facto design. The study was carried out in Nsukka Urban, Enugu state using primary 5 pupils as the target population. The sample of the study was 429 pupils composed as follows: intense viewers-187; moderate viewers-128 and low viewers-114. The instrument was a 20-item multiple choice Test of Acquisition of Basic Verbal Reasoning Skills (TABVRS). Data were analyzed using means, standard deviation and one way Analysis of Variance statistics while Scheffe test was done to determine the direction of the significant difference. The results of the study revealed that there were significant mean differences in the TABVRS scores among the three study groups in favour of the moderate television viewing group followed by the low and then the intense viewing groups. Children who showed moderate TVHa exhibited superior performance on the TABVRS, while intense TVHa impacted negatively on children’s development of basic verbal reasoning skills. The educational implication is that unfettered access or low access to television viewing may hamper the development of verbal reasoning skills which serve as a precursor to other aspects of general development. It is therefore recommended that parents, care givers and all who are concerned with child development should strive to see that children develop proper TVHa early in life.

Introduction
Verbal reasoning skills are some of the cognitive skills needed by children for proper functioning and life-long development. These skills include reading proficiency, word
meaning and word usage. Generally, the development of basic cognitive skills begins at birth and continues throughout all stages of development. Cognitive skills development is a process engendered by the simultaneous mutual interaction (SMI) between the child and the physical environment. The child acts on some aspect of the environment. His/her actions produce consequences. The consequences in turn inform and modify the child’s perception of reality. Therefore what goes on within the child’s physical and socio-psychological environment has tremendous impact on the child’s cognitive skills development.

Verbal reasoning skills are anchored in language. The language of any child involves semantics, phonemes, grammar, pragmatics, vocabulary, syntax, and morphology among others. Phonology for instance enable infants to understand other people by understanding sounds of speech even before they understand language. This helps children to identify the voice signature of significant people in their lives such as their parents (Studdert–Kennedy, 1993). Semantics and grammatical development help the child to be better understood and to be able to effectively satisfy his/her needs.

Although an innate language acquisition device (LAD) which every normal child is born with helps the child in developing language, Bruner (1983) maintained that the child’s innate language acquisition device (LAD) is supplemented by language acquisition support system (LASS). The LASS according to Bruner included all the social interaction that in infancy provided a cognitive foundation for language development. This includes a wide spectrum of the practices of parents ranging from object naming to story books reading that contribute to semantics and grammatical development in early childhood. In other words, social interactions and transactions are very important aspects of cognitive skills development in general and verbal reasoning skills in particular.

When adults talk face-to-face with young children, children do a kind of lip reading, watching how the adults place their tongue and mouth when making different sounds. This according to Studdert–Kennedy (1993) may enhance the child’s speech production. The implication is that parents who actively engage their babies and young children in reading, singing and playing with them on a regular basis are building a foundation from which the child can flourish intellectually.

Children of primary school age are within the concrete operational stage. Though Robert and Aman (1993) asserted that a concrete operational child could give directions such as left or right, and Ngwoke and Eze (2004) also averred
that a concrete operational child could show some understanding of basic distance-time, distance-speed relationship and depth perception, these operations are on concrete objects and events and not on verbally expressed hypotheses. Children within the early and middle childhood are characteristically active and playful, playing with every object around them and asking unlimited questions. A healthy, stimulating and supportive environment permits needed interpersonal interaction that would help children develop the needed skills at this stage.

Despite the enormous evidence on the need for healthy stimulating environment and healthy supportive family interactions for the growing child, television viewing (TV) seems to be replacing family interpersonal interactions. Television viewing according to Van (1990) refers to the art of spending time in front of a television screen while participating actively or passively in what is being displayed. Television viewing habit refers to the amount of time an individual spends viewing television programmes, the nature of such programmes, the age of the viewer and the viewing hour (Jason and Johnson, 1995). In this study, television viewing habit (TVHa) refers to the average daily viewing time of primary school age children.

Television viewing habit may impact positively or negatively on the child’s cognitive development. Viewing television programmes for about 1-2 hours daily on the average may enhance children’s cognitive skills development while a habit of 3 hours or more of television viewing of general audience programmes or cartoon shows according to Wiecha, Sobol, Peters, and Gortmaker, (2001) may reduce the time children would spend engaging verbally and socially with family members and significant others which are prerequisite for effective cognitive skills development. In this study, an average daily viewing habit of three hours and above was classified as intense, one-two hours as moderate while an average daily viewing of less than one hour was classified as low viewing habit.

Television viewing is not condemned completely in the life of children. It has some merits if well censored by parents and other adults. A study by Rosenberg (1994) showed that television has been the most effective of all mass media in making people aware of a wide range of human problems ranging from pollution to homelessness and increasing awareness and acceptance of various kinds of illness both physical and mental. Evra (1998) in his study noted that television viewing can promote pro-social behavior, stimulate the imagination, teach letters and numbers and enhance pre-reading and voluntary reading skills.
Despite the above merits of television viewing in relation to the development of basic cognitive skills, television viewing may have some deleterious impact on development of verbal reasoning skills by children. Excessive television viewing may steal away time children need for active and stimulating interaction with people and objects. Zimmerman and Christakis (2008) concluded that excessive television viewing could cause frontal lobe damage in children which may cause such cognitive problems as attention deficit hyperactivity disorder, depression and increase of appetite which are inimical to healthy cognitive, social and physical development.

Children think and reason in the language of their immediate environment. By exploring and interacting with the environment, children effectively engage actions like trial and error, object naming, repetition and questioning to enlarge their world of experiences. These actions engender systematic learning of reading, writing and arithmetic. This according to American Academy of Pediatrics (2008) is especially true at young ages when learning to talk and play with others is so important. Unfortunately, television viewing which appears to be taking the centre stage in the life of children is like no other experience for the young child. Although television viewing may elicit a response from the child, for example reading along, it is still not interactive for the child’s response whether right or wrong, complete or incomplete, makes no difference to what follows on the screen. This therefore makes the child highly passive. The problem associated with excessive television viewing may be minimized if parents co-view and censor what children view on the screens of television. Incidentally, in the contemporary Nigerian society, children appear to be on their own as parents and other significant adults seem to be too busy and are rarely available for the growing child.

Statement of the Problem
Childhood is a delicate stage in human development when a solid foundation for the development of basic life skills is laid. Children are naturally active, playful and demanding answers to unlimited questions. Development of verbal reasoning skills may be guaranteed when children are played with, talked to and objects named for them as early as possible within their immediate environment. Unfortunately, in the contemporary Nigerian society, television and other information and communication technological gadgets appear to be replacing the critical role of the family in child upbringing. Television viewing is not completely bad for the growing child. However
the impact of television viewing habit may not be easily estimated as parents and other significant adults appear to be too busy and rarely available either to censor what children view on screen or to moderate their viewing habit. The impact unfettered television viewing habit may have on the development of basic verbal reasoning skill in children is indeterminable. The problem of this study, therefore is, what would the impact be of television viewing habit on primary school children’s development of basic verbal reasoning skills?

Research Question
One research question guided the study:
What is the mean score of intense, moderate and low television viewers on a Test of Acquisition of Basic Verbal Reasoning Skills (TABVRS)?

Hypothesis
One null hypothesis was tested at 0.05 probability level:
There is no significant difference in the mean scores of intense, moderate and low television viewers on the TABVRS.

Methodology
The study employed an ex-post facto design. The population of the study comprised all the primary school children in Nsukka Urban, Enugu state. Ten schools (6 public and 4 government-approved privately owned primary schools) were randomly selected from the study area to make for in-depth study. Children in primary school class five fall within the middle childhood stage, the stage of interest to the researcher. It was assumed that pupils within this developmental bracket could also give valid information that enabled the researcher to classify them into the different levels of television viewing habit (low, moderate and intense). Diary for personal television viewing profile (PTVP) was used to determine the three groups of intense, moderate and low television viewers in the selected schools. A copy of the PTVP was administered to each of the primary 5 pupil in the schools selected. The same PTVP was also given to the parents of the pupils. The average of the two profiles (the pupil and the parent) was taken to represent the average daily viewing time for the child. Children whose parents did not return or complete the diary were excluded from the study. A total of 639 copies of PTVP were distributed to the pupils and 639 copies were also distributed to the parents. Only 429 copies of PTVP were validly completed and returned by the parents. The 429 pupils whose parents properly completed the diary and returned formed the sample of the study. After analysis of the PTVP, three groups of viewers were composed as follows: Intense viewers – 187; Moderate viewers – 128 and Low viewers – 114. Intense viewers
were those who had average daily viewing hour of three hours and above. Moderate viewers were those who had average daily viewing hour of one-two hours while the Low viewers had average viewing hour of less than one hour.

The instrument for this study was a Test of Acquisition of Basic Verbal Reasoning Skills (TABVRS). This was constructed by the researcher using primary four verbal reasoning texts and the curriculum as approved by the Federal Ministry of Education (FME, 2007). Primary four texts and curriculum was used because the pupils were still in the first half of the session at the time of this study and primary five texts may be above their developmental level and that could affect the validity of the result of the study. The TABVRS was made of 20-item multiple choice questions which were dichotomously scored. Each question carried 5 marks giving a maximum score of 100 for the test.

The PTVP and TABVRS were face validated by one childhood educator, one educational psychologist from the University of Nigeria, Nsukka and two primary school teachers in Nsukka Urban. The validates were required to assess the diary and the test to ascertain that the wordings and statements were unambiguous, that the questions were appropriate to the age of the respondents, testing what they were meant to test and that the model answers for TABVRS were accurate and reflected the purpose and problem of the study. The comments of validates were used to modify the instrument. The TABVRS was trial tested using a representative sample from schools not sampled for the study, but within Nsukka Urban. Forty primary five pupils were used for the trial testing. The essence of the trial testing was to ensure that the pupils understood the questions in the TABVRS, that the items in the instrument were appropriate for the age of the pupils. The internal consistency reliability of the TABVRS was estimated using K-R 20 formula because the multiple choice items test was scored dichotomously. The calculated K-R 20 estimate was 0.89. The individual class teachers helped in the administration and collection of PTVP and TABVRS to the respondents. The research question was answered using descriptive statistics while the hypothesis was tested at .05 probability level using the Analysis of Variance statistic.
Results

Table 1
The Mean Score and Standard Deviation of Intense, Moderate and Low Television Viewers on a Test of Acquisition of Basic Verbal Reasoning Skills (TABVRS).

<table>
<thead>
<tr>
<th>TV_habit</th>
<th>X</th>
<th>N</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intense viewers</td>
<td>54.1016</td>
<td>187</td>
<td>19.20252</td>
</tr>
<tr>
<td>Moderate viewers</td>
<td>74.4063</td>
<td>128</td>
<td>12.96114</td>
</tr>
<tr>
<td>Low viewers</td>
<td>64.693</td>
<td>114</td>
<td>15.55756</td>
</tr>
<tr>
<td>Total</td>
<td>62.9744</td>
<td>429</td>
<td>18.66182</td>
</tr>
</tbody>
</table>

Data in Table 1 show that the intense television viewers had a mean score of 54.10 and standard deviation of 19.20 on the TABVRS. Moderate television viewers had a mean score of 74.41 and standard deviation of 12.96. Low television viewers had a mean score of 64.69 and standard deviation of 15.56.

The data suggest that moderate television viewers had the highest mean score while low viewers had higher mean score when compared to the intense viewers. The data therefore suggest that there was a difference in the performance of the three levels of television viewers on the test of acquisition of basic verbal reasoning skills.

The standard deviation ranged between 12.96 and 19.20. The range is low suggesting low variability among the scores.

Table 2
Summary of one-way Analysis of Variance (ANOVA) on the Impact of TVHA on TABVRS

<table>
<thead>
<tr>
<th>Sig</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>BVR skill</td>
<td>Between Groups</td>
<td>31786.519</td>
<td>2</td>
<td>15893.260</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>117270.20</td>
<td>426</td>
<td>275.282</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>149056.72</td>
<td>428</td>
<td></td>
</tr>
</tbody>
</table>

Table 2 reveals that TVHα had significant impact on development of basic verbal reasoning skills. This is shown by the calculated F value of 57.73 which was significant at 0.000, and also significant at the pre-elected probability level of 0.05. This
suggests that the observed differences among the means of the three study groups were not due to chance factor but to the impact of TVHa. Therefore, the null hypothesis of no significant impact of TVHa on the development of basic verbal reasoning skill was rejected. Since there were significant differences among the three groups on the impact of TVHa, a post-hoc analysis using Scheffe test was done to determine the direction of the significant difference. The result of the multiple comparison analysis is presented in Table 3.

Table 3
Results of Scheffe Test of Mean Scores of the Intense, Moderate and Low Television Viewers on TABVRS.

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>(i) television viewing habit</th>
<th>(j) television viewing habit</th>
<th>Mean difference</th>
<th>Std. error</th>
</tr>
</thead>
<tbody>
<tr>
<td>BVR skills</td>
<td>Intense viewing</td>
<td>Moderate viewing</td>
<td>-20.30465*</td>
<td>1.90335</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low viewing</td>
<td>-10.59138*</td>
<td>1.97151</td>
</tr>
<tr>
<td></td>
<td>Moderate viewing</td>
<td>intense viewing</td>
<td>20.30465*</td>
<td>1.90335</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low viewing</td>
<td>9.71327*</td>
<td>2.13668</td>
</tr>
<tr>
<td></td>
<td>Low viewing</td>
<td>intense viewing</td>
<td>10.59138*</td>
<td>1.97151</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moderate viewing</td>
<td>-9.71327*</td>
<td>2.13668</td>
</tr>
</tbody>
</table>

*the mean difference is significant at the 0.05 level.*
Data in Table 3 reveal that there was a significant difference in the mean score of the intense viewing group relative to the moderate viewing group with a mean difference of -20.30465 and the low viewing group with a mean difference of -10.59138. The mean difference which was significant at 0.000 was also significant at 0.05 probability level and the negative sign indicated that the significant difference was in favour of the moderate viewing group followed by the low viewing groups.

The result of the comparison indicated that the TVHa of the moderate and low viewers explained the source of the significant difference in the mean TABVRS scores. The observed significant means differences among the three groups of viewers favoured the groups in the following increasing order: intense viewers < low viewers < moderate viewers (54.1016 < 64.6930 < 74.4063).

**Discussion**

In this study, the result of the analysis of variance (ANOVA) indicated that the differences among the mean scores of low, moderate and intense television viewers on the TABVRS were significant. The post Hoc multiple comparison analysis indicated that the significant difference followed the decreasing order of Moderate viewers > Low viewers > Intense viewers. What this suggests is that intense viewing habit had a deleterious impact on the development of verbal reasoning skills among the subjects of this study. Also low viewing habit had a negative impact though not as deleterious as the intense viewing habit. The findings of this study are supported by the findings of Zimmerman and Christakis (2005). Zimmerman and Christakis did a longitudinal analysis of children’s television viewing and cognitive outcomes and found out that children who spent more than three hours of television viewing per day at the mean age of 10-14 years were at risk for poor homework completion, negative attitude towards school, poor grades and long term academic failure. The findings of the study also agrees with that of Johnson, Cohen, Kasen and Brook (2007) who investigated the effect of extensive television viewing habit and the development of attention and learning difficulties in children and found that children who were frequently exposed to entertainment and general audience programmes performed poorly in school.

The findings of this study suggest that extreme of TVHa (intense or low) was inimical to proper cognitive skill development in general and verbal reasoning skills in particular as could be gleaned from the results of this study. The findings of this study agree with the research finding by Evra (1998). Evra in his study had observed that television if used in moderation could enhance cognitive skills development. Specifically, he noted that regulated and age appropriately censored television programmes can stimulate the imagination, teach letters and numbers and enhance pre-reading and voluntary reading skills.

The findings of this study revealed that intense TVHa appeared to be more deleterious than low TVHa to the development of verbal reasoning skills. It may be surmised that intense TVHa is akin to addiction. If this be the case, then intense TVHa will also engender in the television viewer negative behaviors characteristic of addiction such as compulsive behavior, withdrawal behavior and attention deficit disorder syndrome. This may not be so with low TVHa as low viewing habit may largely be the result of other contingencies within the low television viewer’s environment such as parental restriction or non availability of opportunity for unfettered television viewing. Therefore, for the case of the low television viewing child, TVHa may not significantly interfere with the development of important cognitive characteristics such as self control and voluntary attention.
The observed low variability of scores of the respondents in the study suggests that other systematic factors were not confounding the results. Such possible systematic factors as variations in school experience, location and availability of relevant public utilities like electricity were largely controlled in the study as the population was fairly homogenous. This suggests high generalizability of the findings of the study to the entire population.

Conclusion

It has been shown in this study that the average scores in a Test of Acquisition of Basic Verbal Reasoning Skill (TABVRS) of children whose television viewing habit (TVHa) is moderate is significantly superior to those whose TVHa is low or intense. It was also shown that children whose TVHa was classified as low were superior to those whose TVHa was intense. Thus while moderate TVHa has facilitating influence on the development of verbal reasoning skills in children, low and intense TVHa impact negatively on children’s development of verbal reasoning skills. Of the three identified levels of TVHa, intense TVHa impacted most negatively on the development of verbal reasoning skills in school age children. Therefore the impact of television viewing habit on the development of verbal reasoning skills is not one directional.

Generally, the influence of television on cognitive skills development depends on the TVHa. While moderate TVHa may open up possibilities for self learning for children in a global village, Intense TVHa may foreclose these possibilities by engendering negative cognitive characteristics such as impulsivity, withdrawal complex and attention deficit disorder in children who apparently become television addicts. Low television viewing habit apparently does not sufficiently expose children to the outside world of verbal intercourse to adequately stimulate the development of verbal reasoning skills.

The result of this study has some educational implications. Intense television viewing habit may steal away quality time children need for healthy interaction with parents, care givers and other significant adults in their immediate environment or time needed for homework completion and other educational activities including creative plays. Low viewing habit may limit the children’s world of experience making them myopic in thinking and acting. Therefore unfettered access and or low access to television may hamper the development of cognitive traits that engender readiness for schooling and eventual school success.

Recommendations

Children they say are the leaders of tomorrow. These future leaders should therefore be helped to develop proper television viewing habit early in life so that they will develop into skilled and responsible leaders of tomorrow. Parents, care givers, counselors and all those who are connected with child development should therefore strive to be available to children as often as possible. This will help them ensure that children develop proper television viewing habit not only in terms of time spent but also in terms of helping children view appropriate programmes at the appropriate time and age. Quality time with children engenders the needed opportunity to help them develop the needed verbal reasoning skills which serve as precursors to the other aspects of general development.
References


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