

Multi-Media Communication Systems for Social Development in Nigeria: A Symbiotic Deconstruction.

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Abstract

Discourses on multimedia perceived and actual potentials in triggering and sustaining social development rent the academic platforms today. Braced with its very spectacular converge of text, sound, pictures, animation, and video components , this system of communication has evolved as a promising veritable and versatile tool for social development. Our study was set with this prospective perspective of ascertaining the symbiosis between the two variables. Using the survey method of research, urbanized cities in Nigeria were selected and data from populations of communication scholars and development experts were also tested using Pearson correlation coefficient factors. Findings confirmed a positive symbiosis that is mutual and beneficial in all aspects of social development used in the study. A rapid drive towards the effective usage of multimedia communication systems in Nigeria was recommended so that the gains from such efforts could be better harnessed.

Keywords: Multimedia, Symbiosis, Social Development.

1.0 Introduction

Communication has been identified as a veritable tool for development; while some media have been singled out as more potent and effective than the others. However, recent media campaigns in this regards, as evidenced in the streams of exposures, are suggesting otherwise in the sense that there is a declared media war costing billions in varied currencies. Several media strategies and media vehicles have been evolved in this regards which go further to bolster the position of Carol Bellamy, UNICEF Executive Director, when she echoed that “global success in combating HIV/AIDS must be measured by its impact on our children and young people” in the area of the quantum of information they need and at their disposal in finding the scourge.

Providing information in varied forms have proven a challenge that is being met especially in Nigeria by the efforts of donor agencies such as UNICEF, The Gates Foundation and countless other non-governmental organizations. Television and radio stations across the country beam signals depicting abstinences as the best approaches towards cure and prevention in much the same way as the print media carry most times free messages informing the public on how best to treat the menace. These, thus, establish that HIV/AIDS is very present in the Nigerian fabric with a zero-prevalence rate strong among the youth between 15-29 years.

From the electronic to the print media, several approaches have been used, in most cases to establish the severity of the pandemic; multi-media designs have been employed to help convey the message. Multimedia approaches, especially with the explicit characteristics of interactivity and virtualness provide tempting options at educating, informing and entertaining while not losing trace of the value of the message, instead, enhances the probability of the message being better understood, appreciated and internalized towards the goal of eliciting desired responses.

2.0 Literature Review

2.1 Multimedia Concept.

Multimedia systems involve full integration of computers into the message designing processes which involves a combination of texts, sound, pictures, animation and video. The visual accompaniment in multi-media

take varied forms and should adapt to certain characteristics. Notably, the larger, sharper, and more colourful an image is, the harder it is to present and manipulate on a computer screen. This differentiates the multi-media concepts from others, hence the need to convert to format that the computer can easily read and manipulate.

Ditto (2007) explained that bit-mapped graphics store, manipulate, and represent images as rows and columns of tiny dots. In a bit-mapped graphic, each dot has a precise location described by its row and column, much like each house in a city has a precise address. Some of the most common bit-mapped graphics formats are called Graphical Interchange Format (GIF), Tagged Image File Format (TIFF), and Windows Bitmap (BMP). He maintained further that vector graphics use mathematical formulas to recreate the original image. Since the dots are not defined by a row-and-column address in the vector graphics, but by their spatial relationships to one another; and that their dot components are not restricted to a particular row and column, vector graphics can reproduce images more easily and are better visualized on most video screens and printers. Common vector graphics formats are Encapsulated Postscript (EPS), Windows Metafile Format (WMF), Hewlett-Packard Graphics Language (HPGL), and Macintosh graphics file format (PICT).

Obtaining, formatting, and editing video elements require special computer components and programs as a result of their large nature and distinct qualities; hence the need to reduce them to manageable proportion and quality through the process of compression. Compression is a technique that identifies a recurring set of information, such as one hundred black dots in a row, and replaces it with a single piece of information to save space in the computer's storage systems. Common video compression formats are Audio Video Interleave (AVI), Quicktime, and Motion Picture Experts Group (MPEG or MPEG2). These formats can shrink video files by as much as 95 percent, but they introduce varying degrees of fuzziness in the images.

Animation can also be included in multimedia applications to add motion to images, to simulate real-world situations, to enhance existing graphics and video elements, and add special effects such as morphing - the blending of one image seamlessly into another. For the sound elements to have good recording and formatting in the computer for quality presentations, it has to equally change format. Two common types of audio format are Waveform (WAV) and Musical Instrument Digital Interface (MIDI). WAV files are normally large and store actual sounds, much as music CDs and tapes do. These may require compression. MIDI files on their part do not store the actual sounds, but rather instructions that enable devices called synthesizers to reproduce the sounds or music. MIDI files are much smaller than WAV files, but the quality of the sound reproduction is not nearly as good.

Various forms of multi-media storage designs include CD-ROM and online encyclopaedias. Large store of texts that would have formed greater libraries are now compressed into CD-ROM. In organizing the multimedia elements, a framework that encourages the user to learn and interact with the information is necessary; these include pop-up menus, small windows, scroll-bars, hyperlinks which comes in different colours, and underlined text or icons. Ditto (2007) in underpinning the importance of multimedia approaches towards designing and dissemination of messages noted that it has got enormous impact on education as multimedia stimulated operations help in getting things done more appropriately, hence could be adaptable with these characteristics feature for social development purposes in course of networking and sharing of information.

2.2 Development Concept.

Development is multi-faceted and indicative of an increase or improvement for both the individual, the society, the community, the state, the nation and the wider societal dimensions. Besides, characterizing development is not a fortuitous exercise as these characteristics are very germane to the capitalist system. In his well published treatise, Rodney (2005, p.1) argues that development “implies increased skill and capacity, greater freedom, creativity, self-disciplined, responsibility and material well-being” which when articulated and entrenched into the holistic frame of the individual becomes the basis for the society and the nation to develop. There is the further conceptions of development by Rodney (2005) as an “increase in the ability to guard the independence of the social group and indeed to infringe upon the freedom of others”, an increase of members of a society to jointly deal with their environment and fully utilize their economic potentials; a marked capacity for independently increasing their ability to live a more satisfactory life through exploiting the resources of nature; a universality of economic expansion and a differing level among societies in experienced developments. These no doubt conspired to make development a difficult subject to breach. However, there are conceptual implications which are supported by Rodney (2005, pp.11, 14) to conclude “that all phases of development are temporary or transient” and it could be social, economic, cultural, political or infrastructural developments.

To Crocker (1993, p.62) the term development should be better conceptualized when it is replaced by words

as 'progress', 'transformation', 'beneficial change', 'liberation' or revolution'. His argument is hedged on the assumption that development is the process of providing valuable opportunities for disadvantaged people to realize and improve their knowledge, attitude and skill, to utilize, sustain and improve their productivity of available resources within their environment in order to improve the quality of their life and the society where they belong. Besides, N'Bow (1976) sees development in the purview of cultural, educational, scientific and technological aspects of a people and their country, which subsists that a developed people must remain true to itself, draw its strength from its own culture and ways of thought and actions.

Ibeanu (2007, p.10) sums up the process of development as that of "improving the conditions in which human beings live". Earlier Rodney (2005) had located development within the realms of improving man's understanding of the laws of nature; applying these understandings to better man's working conditions and improved living conditions; and equitable organization of work and reward. If these be the case, Nwosu (1983) views that when development process is static in the capacity of the people and their society to control and manipulate their physical environment as well as themselves for their own benefits, then underdevelopment sets in.

As detailed in the communication campaign model, a communication building capacity will no doubt underscore development. Fair and Shah (1997) estimate individual or personal characteristics, interpersonal and family relations, literacy, educational status, state of the polity, poor media infrastructure and limited media availability as determinants for development, while Rogers (1976) recognized social structure, interpersonal networks, accessibility of communication hardware and software, as well as quality of messages as some others. Inherent in all these is that they define the frame of multimedia systems. This view sees communication as "truly dynamic, continuous, interactive and a transactional process of meaning sharing", hence its channels must align itself appropriately.

Soola (2003, p.22) stated that media choice must be predicated on a sound knowledge base of: What is needed, what each available medium can do, what combinations of media is/are complementary, how much it costs to deliver messages through the media, and of primary importance, what the culture and characteristics are of those we are trying to reach.

The focus of the position of Soola (2003) above is sacrosanct of not just the availability of a medium to use for developmental purposes, but what combinations of media is complementary. Pushed further this rotor could give thrust to advantage that multimedia systems bring to bear on developmental processes. Multimedia communication systems are not just complementary of each other, but harness the resources of all media in one stroke.

Consequently, radio, television, print, billboard, oramedia and very recently, multimedia systems could lend themselves to development purposes. Soola (2003, p.22) proposition that radio, particularly in developing countries, is "man's most potent communication innovation" and has recorded "varying degrees of successes" is supported by the position of FAO (1988, p.11) which acknowledges the fact that radio, is more relevant to the needs of the rural, marginalized and disadvantaged poor. The report noted that radio is an important mechanism for rapid diffusion of development information in a diversity of languages, and its contributions in addition to its strength are unparalleled. This made it suitable for development agenda. In a study by Mbachu (2006, p.43), it was concluded that radio is best suited for development communication in the region, while over 70% of the respondents in that study maintained that they have radio sets at home thus enforcing the views that if properly used, the medium of radio will do more for development purposes.

Bovee and Arens (1992, p.496) in the analysis of TV viewing trend, maintained that "middle-income, high school- educated individuals and their families are the heaviest viewers of broadcast television", while on the average, people spend, from as low as 23 hours per week to as high as 36 hours viewing TV. This statistics only buttress the urban nature of TV and subsequent use for urban social development. Television medium must be commended for significantly tackling the needs of the urban dwellers. If programmes directed at the development needs of both the rural and urban dwellers are crafted, and with improved transmission of signals, TV is the medium to beat.

The prints provide a very strong base for redirecting the needs of the people, influencing development policies and engendering development. A recent survey however revealed a near dearth of sustainable print media for development purposes. This becomes more worrisome when we are faced with the fact that over 88% of the print referred to as 'credible' and 'sustaining' are geared towards providing parochial and sectarian needs (Obukoadata, 2003). Its use for social development is fractured by several parameters such as illiteracy, space, editorial policies and the likes.

Benchmarks for appraising these sets seem difficult to negotiate, but it should be mentioned that it provides the best complement to the contemporary media. Infact, usage for developmental purposes is abysmal. The only aspect of it that catches the fancy of development communication designers is the language factor. Summarizing the weaknesses and failing of contemporary media in development communication, ADEA (1994, p.4) says:

Newspapers, which have made great efforts to develop editorial independence, still remain overwhelmingly political and personality- oriented. News agencies remain, in most cases, government departments or agencies. Television is handicapped by the lack of equipment and poor local production capacities. The private media, motivated by what will sell, are not interested in covering development issues. News tends to be defined in negative terms, as what does not work, what is going wrong. There is much superficial treatment of information with very little attention given to issues of education and development.

It is the option provided by detailed treatment of information and given much attention to issues that focuses on development that multimedia communication system addresses. However, Akinleye (2003, p.70) views of adopting a media mix approach positively gives credence to the functionality of the multimedia communication systems, which is not only complementary to all the media discussed, but effortlessly seam the strengths of all the other media together, and provides the extra touch of interactivity and 'virtualness'. He noted that:

The interaction between two complementing media brings out something greater than what both of them could have achieved had they worked separately. The TV, Cinema, radio and Newspapers should transmit indigenous knowledge. The contemporary media have the reach and speed, while the indigenous ones have credibility, communal ownership and popular participation.

3.0 Theoretical Framework

Nowak and Warneryd (1985) Communication Campaign model is adapted in that it has a normative character that suggests how to work systematically in order to carry out an effective campaign for development.

According to McQuail and Windahl (1993, pp.184-185)

An important idea underlying this model is that its elements are closely interrelated. Such that a change in one element may cause change in others. This holds true especially when it comes to the intended effect (the aim) of the campaign. When the campaigner changes the aim, all or some of the other elements will be altered.

What the model suggests is that elements in developmental process are synergetic and should be closely related in objectives. One of such elements in the process of development is communication which has been argued to provide the catalyst; and very relevantly the thrust provided by contraptions of the multimedia communication systems.

In this regards too, the argument that communication facilitates is stressed within the purview of what added advantage would come from a change in the communication designs is emphatic. Multimedia communications systems come with it varieties such that have given communication the feature of multiplex. Hence appraising the change in communication designs is argued could engender change towards effective development. Bringing in multimedia systems, will it further the spectrum or reduce the schemata of development especially among humans since the strength of multimedia approaches is interactivity!

4.0 Problem Statement

New technologies in communication imply that the established roles of communication in development should be heightened. With the contribution of multimedia designs, it is expected that development along the social sphere would be synergetic and contributive. Thus the preoccupation of this study, based on the dictates of the communication campaign model, will find out if the use of multimedia communication systems has a direct mutually beneficial relationship with social development in Nigeria?

5.0 Hypothesis

1. There is no significant symbiosis between the use of multimedia communication systems and social development in Nigeria?

6.0 Methodology

The cross-sectional survey was used. The population persons resident in Nigeria, but due to the widely

dispersed nature of the population, sample for the study was drawn from three randomly selected cities of Lagos, Port-Harcourt and Kano because they are ethnically mixed. A multi-stage probability sampling method was used for the selection of the samples; these involved the random selection of cities and subjects for the work; assigning of quota to these cities and purposive selecting respondents according to the assigned quota. Each city was assigned a quota of 60 respondents and these were drawn purposively on the basis of exposure to multimedia communication systems and knowledge of development process.

180 individuals ages 30 - 60+ were administered copies of the questionnaire. All copies were duly filled and found valid for analysis using the simple percentage and Pearson Moment Correlation Coefficient. The questionnaire, which was administered with the aid of research assistants, contained structured items directed at eliciting responses on the hypothesis stated above. Analysis were done at a significant level of $p < 0.05$ which gives room for variability and reliability

7.0 Discussions

Table 1: Percentage distribution of respondents' socio-economic characteristics

In terms of sex distribution, 60.6% of the respondents are males which indicate a strong point in engendering development within the African milieu, where males are seen more as agents of development than female. Besides, 83.9% of the respondents who are aged between 31 and 55 are veritable instruments for development since this same category of respondents are among those with a high premium for multi-media communications system and had attained a minimum of secondary education education. They are equally among the high income earning group which suggests and points to the fact that multi-media designs are not a prerogative of the poor or low level income earners; that the system itself as an enclave for the high income groupings makes it a dragnet for development which must be enduring and all encompassing.

Nevertheless, all the respondents attest to a degree of exposure to multimedia communication systems albeit of varying degree and levels. This thus necessitated the need to find out how the respondents use these systems available to them. Instructive is the issue that these respondents have identified varied forms for multimedia designs that squarely bear on the position as presented by Ditto [2007] above.

Table 2: Usages of multimedia systems among the respondents

In the table above, a line is drawn between how these various designs are used and the advantages of these designs which seem to thin into each other. Not less than 55% of the respondents have defined usage and applicable advantages for the multimedia systems. Ninety-six point one percent [96.1%] of the respondents saw integration of different media designs and format as more functional than the others which were identified as enhanced quality message delivery, improved entertainment quotient, accessibility in varied forms/designs, rapidly acceptable to the consumers and an effective learning and teaching tool. This position draws on the determinants of effective communication which underlie the place of communication in development. Accessibility of the varied forms/designs that are gotten from multimedia designs account for 77.2%. The respondents approach on this issue meant that with their level of education and access to these designs, it is sure to trigger off development purposes. Improved entertainment quotient and effective learning and teaching recorded 86.1% and 61.1% responses respectively. Multimedia designs have been attested to by these respondents to make for improved entertainment; these too imply that development could be engendered by these designs. In the studies by Crocker [1993], Akinyele [2003] and Mbachu [2006], the basis of their argument was the defining quotient of what development could mean for the beneficiaries and how effective communication can contribute; but with the excellent usages of multimedia designs to enhance communication, then it could be argued to be best suited for development purposes and could be maintained to have symbiosis with development.

All of the usage forms above make for good synergy that bears on the communication model approach for the study; the usages are closely related and provide catalytically, a position of advantage that comes from variations occasioned by changes in designs and technologies. These changes and designs naturally engenders development to the extent furthering the spectrum and schemata of development among humans. The table amplifies the established roles of communication in development and could be argued to heightened development, hence the next tranche of data which seeks to establish symbiosis between multimedia designs in communication and social development.

Table 3: Multimedia communication inputs in development parameters

An analysis of how multimedia communication systems aid social development recorded significant responses. The respondents maintained an overall average of over 75% with the use of multimedia in the provision of information for the maintenance of basic social infrastructure recording 97.2%. The respondents equally maintained that multimedia communication systems helped in the provision of adequate information that will improve on social living conditions for the populace [92.2%]; helped in the provision of information on enhanced increased economic activities and participation which accounted for 96.7%; helped in the mobilization for mass participation in developmental activities [66.7%]; provision of information to help improve life expectancy at birth [71.7%] and 89.4% stressing that multimedia communication systems have enhanced the effectiveness in the education for development as against the conventional approaches of old media technologies. Consequent, it would be argued that multimedia communication systems have substantial inputs in enhancing and amplifying the effectiveness of the development parameters.

Therefore, if multimedia communications system has inputs and there are defined usages for these multimedia communications systems, it thus raises the question whether there is symbiosis between both extremes. This is tested via the Pearson correlation coefficient; that is a correlation between the data generated in tables 2 and 3 above. The correlation was done to ascertain if enhanced quality message delivery via multimedia communication systems can enhanced the quality of living; if messages in multimedia designs which are readily acceptable to the consumer can boost economic activities and participation; if the improved entertainment quotient in multimedia designs can induce mass participation; if enhanced storage devices and integration of the message designs as well as formatting can ultimately provide basic information that will improve information that will assure on life expectancy' on quality education and on an increase in GDP? The statements above as drawn from tables 2 and 3 are synergized as 'a' to 'h'.

Table 4: Significant symbiosis between usage of multimedia systems and social development in Nigeria.

The data from table 2 are categorized under the 'x' axis, while that from table 3 are presented in the 'y' column. The decision rule stated earlier was if sampled calculated correlation of r (0.8133) is equal to or larger than (\geq) critical r (0.7067), the null hypothesis (H_0) should be rejected and the alternate hypothesis adopted and vice versa. Since the calculated correlation coefficient is greater, the stated null hypothesis that there is no significant relationship between usage of multimedia communication systems and social development in Nigeria is hereby rejected for the unstated alternate hypothesis. Obviously, the study confirmed that there is very significant relationship between usage of these designs and how development are evolved among the people of Nigeria and thus suggest that there should be improve access to these multimedia designs. Recall that this study focused on those who have access to and could define these multimedia designs as the study base, and with the correlation test, there is high amplitude of symbiosis.

Besides, the direction of mutuality and benefits in the relationship is depicted by the trend graph below. It is linear, positive, strong and mutual. The trend below indicate that as one element increases, it necessitate a corresponding increase in the other element, thus an increase in the degree of usage is most likely to induce a corresponding increase in the level of social development in Nigeria. Again, the extent of positivity and the near perfect relationship indicate that it is mutually beneficial for the purpose of development in Nigeria. This position agrees with the dictates of the communication model and other studies which highlight the essence of changes and variety in designs to the overall efficacy in the communication process. These attributes are well conveyed by the thrust of multimedia communication systems.

Fig. 1: Symbiosis between multimedia design usage and social development.

8.0 Conclusion and Recommendation

The thrust of the new media is to enhance the dictates of communication and make it more effective and purposeful. Multimedia approaches brought with it a sense of interactivity, thus redefining the borders of communication. In this study, the thrust was to establish the position that with the rave towards multimedia s against mass and group communication, there should be more benefits which could be mutual and inexhaustible, mutual in the sense that it will raise the borders in harnessing the gains of each other, that is, in terms of usages and developments. The study confirmed this symbiosis that it exists and that development will be better off from the usage of these multimedia communication designs; that there is symbiosis between both. The tenets of the communication model approach in this regards is thus upheld. The different usages and characteristics of multimedia designs as identified by the respondents come handy, and these were agreed to help very positively and strongly in

the process of social development. Communication, again, in all forms is established here as a positive catalyst for development. The study thus recommended that efforts should be put in place to ensure more effective use of multimedia communications systems among Nigerians so as to fully harness the attributes for development purposes.

9.0 References

- Akinyele, L. 2003. Indigenous knowledge system, communication and sustainable development (IKSSD) In Soola (ed.) *Communicating for development purposes*. Ibadan: Kraft Books Limited.
- Association for Development of Education in Africa (ADEA) 1999. *Communicating about education. Vol.11. No. 2.*
- Bovee, C. L and Arens, W. F 1992. *Contemporary advertising, 4th edition*. Boston: Richard Irwin Inc.
- Crocker, A.D. 1993. Toward an ethic for development, *The Courier, No 137*.
- Ditto, W. (2007). Multimedia. *Microsoft® Student 2008 [DVD]*. Redmond, WA: Microsoft Corporation.
- Fair, J. E. and Shah, H. 1997. Continuities and discontinuities in communication and development research In: *Journal of International Communication Vol. 4 No 2.*
- Ibeanu, O. 2007. Conceptualizing Peace In Gaya Best (ed.) *Introduction to peace and conflict studies in West Africa*. Ibadan, Nigeria: Spectrum Books Limited.
- Mbachu, U 2006. Radio as a tool for social change: Study of the radio serial One Thing at a Time, Unpublished research submitted to Theatre Arts Department, Delta State University, Abraka.
- McQuail, D. and S. Windahl, . 1993. *Communication models for the study of mass communication*. England: Pearson Educational Limited and Associated Companies.
- N'Bow, A. (1976). Address at the closing meeting of the 19th session of the Nairobi General Conference.
- Nowak, K. and Warneyd, K. E. 1985. *Kommunikation och asiktförändring* Stockholm: Prisma.
- Nwosu, H. 1983. *Rural information corps: Communication in Anambra State*. Enugu, Nigeria: Star Printing Press.
- Obukoadata, P. 2003. Comparative analysis of editorial contents of government-owned and privately-owned newspapers. An Unpublished research submitted to Mass Communication Department, Federal Polytechnic Auchi.
- Rodney, W. 2005. *How Europe underdeveloped Africa*. Nigeria: Panaf Publishing Inc with Permission from Howard University Press, Washington DC
- Rogers, E. M. (ed.) 1970. *Communication and development critical perspectives*. Beverly Hills, California: SAGE Publications.
- Soola, E. O. 2003. Development communication: The Past the present and future In Soola (ed.) *Communicating for development purposes*. Ibadan: Kraft Books Limited.

Table 1: Percentage distribution of respondents' socio-economic characteristics

Characteristics	Frequency of responses	% of responses [N=180]
Sex		
Male	109	60.6
Female	71	39.4
Age		
< 30	15	8.3
31 – 35	47	26.1
36 – 45	63	35.0
46 – 55	41	22.8
56 and above	14	7.8
Level of education		
None	1	0.6
Primary education	33	18.3
Secondary education	65	36.1
Tertiary education	81	45.0
Social-economic status		
High level income earner	60	33.3
Middle level income earner	77	42.8
Low level income earner	43	23.9
Exposure to multimedia communication systems	180	100

Table 2: Usages of multimedia systems among the respondents

Usages of multimedia systems	Frequency of responses	% of responses [N=180]
Enhanced quality message delivery	156	86.7
Readily acceptable by the consumer	147	81.7
Improved entertainment quotient	155	86.1
Effective for learning and teaching	110	61.1
Enhanced storage advantages	99	55.0
Good for formatting/editing quality	117	65.0
Integration of message designs	173	96.1
Accessibility in varied forms/designs	139	77.2

Table 3: Multimedia communication inputs in development parameters

<i>Parameters</i>	<i>Frequency of responses</i>	<i>% of responses [N=180]</i>
Improved social living	166	92.2
Increased economic activities/participation	174	96.7
Adequate basic social infrastructure	175	97.2
Mass participation in developmental activities	120	66.7
Improved life expectancy at birth	129	71.7
Adequate health systems	137	76.1
Effective educational system	161	89.4
Gross National Income per Capital	133	73.9

[Parameters and dimension for development was gotten from HDI, 2010]

Table 4: Significant symbiosis between usage of multimedia systems and social development in Nigeria.

	<i>Usages of multimedia [x]</i>	<i>Inputs in Development [y]</i>	<i>xy</i>	<i>X²</i>	<i>Y²</i>
a	156	166	25896	24336	27556
b	147	174	25578	21609	30276
c	155	175	27125	24025	30625
d	110	120	13200	12100	14400
e	99	129	12771	9801	16641
f	117	137	16029	13689	18769
g	173	161	27853	29929	25921
h	139	133	18487	19321	17689
Σ	1096	1195	166939	154810	181877

Calculated 'r' = 0.8133

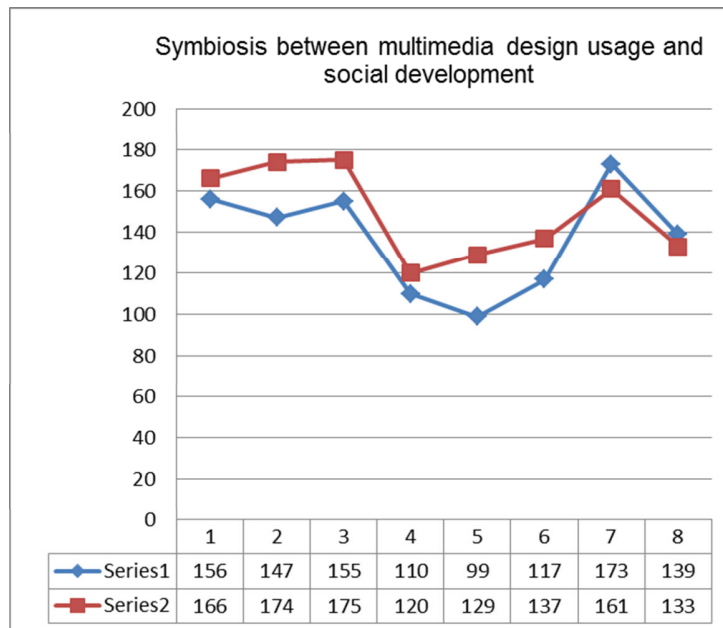


Fig. 1: Symbiosis between multimedia design usage and social development.