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# A Critical Analysis of the Uses and Gratifications experienced by the Users of Digital Doorways

Dr. Abraham G. van der Vyver
IT School
Monash, South Africa

Mario A. Marais
The Meraka Institute
CSIR
Pretoria, South Africa

***Abstract*—the researchers performed content analysis on transcripts of 200 interviews conducted with users in disadvantaged communities where access to electronic information and entertainment is problematic. They found that the need for scholarly information overrides all other informational and gaming needs.**

***Keywords*—digital doorways, learning, games, information, uses, and gratifications.**

## I. Introduction

The digital doorway is a unique South African artefact that was designed to facilitate the bridging of the digital divide. According to Herselman et al. [1] "the Digital Doorway (DD) project, which was initiated by the CSIR Meraka Institute together with the Department of Science and Technology (DST) as part of the Government of South Africa's strategic mandate for ICT development, articulated by President Thabo Mbeki in 2002, is one project which endeavoured to minimize the digital divide and provide access to technology for skills transfer." The secondary objective is to provide access to electronic resources, games and other selected applications to disadvantaged communities.

Most users start to use the DD out of curiosity. They are often forced to engage in 'unassisted-learning' experiences which include self-learning through experimentation and 'peer-assisted' learning. The fact that very little content is in the user's mother tongue has in the past been perceived as problematic. Without connectivity the updating of content is expensive and time-consuming [2]. At present the network of more than 200 DDs is distributed in disadvantaged communities all over South Africa.

## II. Digital doorways

The Digital Doorway terminal (hereafter referred to as the DD) is "a robust digital kiosk with up to four screens, and keyboards with touch-pads, built to withstand the rigors of the African climate as well as physical vandalism" [2]. It is securely bolted to the ground or floor.

It can provide both cached and direct internet experiences in public locations to underserved, poor populations. Its implementation is based on the principles of informal learning [2]. The digital doorway concept has been developed to overcome the major deficiencies in the South African school system. "South Africa has a high-cost, low-performance education system that does not compare favorably with education systems in other African countries, or in similar developing economies [3]. The South African Department of Education (DOE) acknowledges that a shortage of teachers, underqualified teachers and poor teacher performance are among the root causes of the dismal state of education in this country [3]. Proof of this crisis surfaced recently in an international study when the quality of South Africa's mathematics and science education was ranked last in a survey of 62 countries by the World Economic Forum [4].

## III. Research methodology

### A. *Narrative enquiry*

The project was conducted in two stages namely a narrative inquiry and a content analysis procedure. The narrative enquiry method was conducted in the following manner.

The field work for the project was partially outsourced to The Narrative Lab (TNL), a South African partner of the Cyber Edge Network, an international research and training concern that is headquartered in Singapore. They used SenseMaker®, a software tool, developed by Cognitive Edge to act as a narrative database and analytical tool for monitoring the social patterns associated with the Digital Doorways [5].

The data collection process is designed to gather narrative material (qualitative input). Interviewees are asked to signify (index) their stories using a set of questions that form an interpretative framework for assessment. The interviewer also asks each interviewee to give each story a title. A purposive sampling method, specifically heterogeneity sampling, was used to select specific Digital Doorway sites for collection of data.



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### B. *Content analysis*

The researchers conducted content analysis on the transcripts of the 200 interviews that were included in this study. They used the constant comparative method that Glaser developed as a precursor to grounded theory. Glaser [6] identified the following 4 stages in the process: coding each incident [input or comment] in as many categories as needed; integrating categories and their properties; delimiting the theory in order to generate logical clarity; and lastly, documenting the theory. The expected end result is therefore a refinement of a theory, gaps in a theory, or just a new hypothesis that warrants further investigation.

## IV. Findings

### A. *Domains*

The researchers started with an analysis of the macro environment that applies to the DD. The stories and the comments embedded in the narratives were categorized in terms of the domain(s) to which they pertain. It was possible to allocate the content of one narrative to two or more domains. In Table 3 the researchers portrayed the representation of each domain in the narratives in percentages.

Table 1. Domain analysis

| DOMAIN | % |
|---|---|
| Education | 59.1% |
| Technological | 28.3% |
| Entertainment | 30.3% |
| Economic | 8.1% |
| Communications | 3.0% |
| Community | 2.5% |
| Informational | 28.3% |

It is clear from the table that educational usage dominates the utilization of the DDs. This finding was expected since the majority of the content on the DD is of an educational nature. The researchers realized they had to drill deeper in order to gain a deeper understanding of this phenomenon.

### B. *Uses*

The next step in the research process was the identification of activities that the respondents talked about during the interviews. During these conversations the researchers realized that a number of categories came to the fore. Since the respondents were also quite outspoken about the gratifications they experienced as a result of their usage, the researchers identified a clear link between the categories and the recycled version of the uses and gratifications theory. They branded the activities as "uses" and create a separate category for gratifications. Table 2 contains a list of the uses as well as the frequencies in which they appear in the narratives.

Table 2. Analysis of uses

| ACTIVITY | % |
|---|---|
| Internet | 6.1% |
| Games | 26.8% |
| Research | 26.7% |
| Movies | 1.5% |
| Information | 25.3% |
| Music | 4.0% |
| Read | 0.5% |
| Photography | 1.0% |

### C. *Gratifications*

The gratifications that the users reported in the narratives are detailed in Table 3.

Table 3: Gratifications experienced by users

| GRATIFICATION |
|---|
| Pass (exams) |
| Good marks/ Improve marks |
| Watch old movies, video's, cartoons |
| Jobs (info) |
| Play keyboard |
| Future (hope) |
| Info not in textbooks/books |
| Learn from each other/other learners/ taught |
| Keep children off the street/ Fight boredom |
| Improve skills |
| Don't have to pay/free |
| Understand |
| Access = to computers/information |
| Relaxation/fun/enjoy |
| Photography/taking/saving photo's |
| Quality of life/ makes lives/life good/improve |
| To help community/community |
| Write (creatively) |
| View pictures/virtual tourism |



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The table illustrates the wide array of needs that a user can fulfill if s/he decides to experiment with the DD.

### D. *Expectations*

Another interesting dimension that the researchers discovered during the narrative analysis is that a fair amount of the respondents harbored expectations about the DD. They spoke about these expectations without being prompted to do so. Although they were not asked at what stage they developed these expectations, it was still considered by the researchers as an aspect that warrants quantification. It needs to be pointed out that 22.7% of the respondents shared the outcomes of their expectations with the field workers. Table 4 gives an outline of the reported outcomes of these expectations.

Table 5.Outcomes of expectations expressed

| EXPECTATIONS | % |
|---|---|
| Expectations exceeded | 53% |
| Expectations met | 24% |
| Expectations neutral | 2% |
| Expectations not met | 16% |

### E. *Merged categories*

In order to identify the dominant usage pattern, the researchers had to engage in the merging of those uses that could be clustered together. Table 5 portrays the dominant pattern.

Table 6. Merged categories

| ACTIVITIES | % |
|---|---|
| Learning | 26.3% |
| Research | 23.7% |
| Training | 1.0% |
| School work | 1.0% |
| Total | 52.0% |

By merging the categories for learning, research, training and school work, the new combined learning-research category showed that 62% of the respondents engaged in educational activities during their use of the DD. This revised category now clearly displayed the most dominant usage pattern. The category reflecting game playing (26.3%) and the general gathering of information (25.3%) featured prominently in the respondents' usage reports. A combined category embedding music, movies, photography and reading made up 7% of the responses. 4% of these responses pertained to the listening of music and/or the playing of musical instruments.

### F. *Specifics*

The researchers also documented the subjects that eh respondents mentioned in their narratives. The results can be viewed in Table 6.

Table 7. Users' content preferences

| Specific content | Viewed by |
|---|---|
| Mathematics | 6% |
| Maths & Science | 5.5% |
| Science | 5% |
| Astronomy | 3.5% |
| Zoology & botany | 2% |
| Economics % business science | 0% |

These findings are, with the exception of economics and business science, in line with the content mix that is offered on the DDs.

## V. Conclusion

The core theme that was distilled from the respondents' feedback is the dominant short term need for educational support. The majority of the respondents reported usage that pertains to learning and school work. This urge proved to be stronger than the needs for game playing. It does however need to be underscored that the games on offer on the DD is of an educational nature. Even with that in mind the reported responses display a strong bias favoring school-related research and studying. The short term dimension of the required educational support becomes clear when it is compared with the frequencies found in the more futuristic/idealistic responses. In only 10% of the responses mention was made of self-improvement, learning skills and making life better.

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