An investigation into the interaction between multiple intelligences and the performance of learners’ in open-ended digital learning tasks.

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Declaration

I declare that this research report handed in herewith for the degree of Doctor of Philosophy at the University of Pretoria is the researcher’s independent work. It has not been submitted for a degree or examination before in this or any other university.

Eugenia J. Kafanabo.

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Dedication

This work is dedicated to my parents Mr. Joseph Kafanabo and Mrs. Ziphorah Kafanabo who inspired and motivated me to get educated and believed in the power of education for the betterment of the families.
Key Words

Authentic assessment
Authentic tasks
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Curricula
Information Communication Technology (ICT)
Intelligence profiles
Learner-centred instruction
Multiple intelligences
Open-ended digital learning tasks
Performance assessment
Scoring rubrics
Abstract

In this study, I investigated the interactions between multiple intelligences and performance of learners in open-ended digital learning tasks, and to suggest possible approaches to the teaching and learning process using computers in Tanzania.

With the current introduction of computers in the education system in Tanzania, the qualities of instruction and learner participation in learning computer application skills and achievement have not necessarily shown improvement (Nelson, Post, & Bickel, 2003; Tilya, 2003). It is imperative for computer teachers to know the pedagogical strategies that can help them use the current technology effectively. Researchers in instructional design have suggested instructional methods that incorporate methods that encourage the use of learner-centered instruction, incorporating activity oriented methods, and problem solving that are designed around real-world problems (Huba & Freed, 2000). Learners will be able use their knowledge effectively, reveal their uniqueness as learners, and learn computer application skills in a social setting (Gardner, 1983; Wiggins, 1993, 1998; Teele, 2000; Huba & Freed, 2000).

The theory of multiple intelligences by Howard Gardner (1983) was used as the theoretical framework for this study. The theory postulates that that everybody has at least eight intelligences which reflect different ways of interacting with the world. In an effort to achieve quality learning, learning must be based on multiple approaches with a series of activities which are authentic in nature and have to be completed by the learners.

The study was conducted in Tanzania using a qualitative research design. Four secondary schools were selected and 40 learners doing computer studies course participated in the study. Four intelligences from the theory of multiple intelligences were assessed: logic-mathematical, verbal-linguistic, visual-spatial and interpersonal intelligences. Assessment was done using performance assessment procedures.
The findings indicated that there are distinctive intelligence profiles apart from the four intelligences that were investigated in this study. Despite the intelligence profiles of the learners, didactical issues that will enhance ICT adoption in the education environment are important. These include the use of authentic tasks, performance assessment to acknowledge learners unique performance abilities across several intelligences and teachers familiarization in the use of performance assessment procedures.
# Table of Contents

## Chapter 1 – Introduction

1.1 *Introduction*  
1.2 *Aim of the study*  
1.3 *Background of the study*  
1.3.1 Current use of technology in schools  
1.3.2 Why are schools not using computers effectively  
1.4 *Tanzanian context*  
1.4.1 ICT status in the education system in Tanzania  
1.4.2 Introduction of computers in Tanzanian secondary schools  
1.4.3 Why has the use of technology failed to improve the quality of instruction or learner achievement?  
1.4.4 Science education in Tanzania – the current situation  
1.4.5 Current practices of assessment in computer studies in Tanzania  
1.5 *Purpose of the study*  
1.6 *Statement of the problem*  
1.7 *Critical research question*  
1.8 *Design of the study*  
1.9 *Significance of the study*  
1.10 *Delimitation of the study*  
1.11 *Limitation of the study*  
1.12 *Preview of the study*  

## Chapter 2 – Literature Review

2.1 *Introduction*  
2.2 *History of human intelligence and measurement procedures*  
2.3 *Theoretical framework*  
2.3.1 Theory of multiple intelligences  
2.3.1.1 Origin of the theory – diverse sources of evidence for multiple intelligences  
2.3.1.2 Definition of intelligence in the theory of multiple intelligences  
2.3.1.3 Summary of eight intelligences and their definitions  
2.4 *Implications of multiple intelligences in schools*  
2.4.1 Implementation of multiple intelligences in schools through the use of projects  
2.5 *Multiple intelligences and assessment*  
2.5.1 Multiple intelligence theory and performance assessment  
2.5.1.1 Authentic context to enhance multiple intelligences  
2.5.1.2 Use of rubrics in assessing multiple intelligences  
2.5.1.3 Multiple intelligences assessment tools – MIDAS and TIMI  
2.5.1.4 Reliability of the instruments  
2.5.2 Standardized tests and their problems  
2.6 *Multiple intelligences and technology*  
2.6.1 How can computers in schools be effectively integrated into teaching and learning so that they reflect multiple intelligences  
2.6.1.1 Integrating technology and multiple intelligences
Chapter 3 – Research Design and Methodology

3.1 Introduction
3.2 Theoretical framework – concepts on performance assessment
3.3 Research design
3.3.1 Research paradigm
3.3.2 Data collection strategies
3.3.2.1 Stage 1: Learner’s Multiple Intelligence Survey questionnaire
3.3.2.2 Stage 2: Open-ended digital learning tasks
3.3.2.3 Stage 3: Observation checklists
3.3.2.4 Stage 4: Focus group interviews with the learners
3.3.2.5 Stage 5: Assessment of learners performance abilities using scoring rubrics
3.4 Research methodology
3.4.1 Study profile – geographic context
3.4.2 Sampling – schools, learners and teachers
3.4.3 Implementation of the tasks
3.5 Data analysis procedures
3.5.1 Readability statistics of the open-ended digital learning tasks
3.5.2 Cohen kappa statistical measure of inter-rater scores in open-ended digital learning tasks and presentation documents
3.5.3 Analysis of the multiple intelligence survey questionnaire 122
3.5.4 Analysis of learners school progress report 123
3.5.5 The relationship between multiple intelligences and learners’ performance using a contingency table 124

3.6 Validity and reliability of the study 125
3.6.1 Credibility 125
  3.6.1.1 Triangulation of data 126
  3.6.1.2 Multiple investigators 126
  3.6.1.3 Avoiding research bias 126
  3.6.1.4 Thick and rich description 127
3.6.2 Dependability/Consistency 128
  3.6.2.1 Consistency in observations 128
  3.6.2.2 Consistency in open-ended digital learning task text documents and presentation documents 129
  3.6.2.3 Consistency in interviews 129
3.6.3 Validity and reliability of scoring rubrics 130
3.6.4 Transferability/Generalizability 131

3.7 Ethical issues 132
3.7.1 Ethical issues in data collection 132
  3.7.1.1 Gaining access 132
  3.7.1.2 Participants’ participation 132
  3.7.1.3 Interview process 133
  3.7.1.4 Questionnaires 133
3.7.2 Ethical issues in data analysis and interpretation 133
  3.7.2.1 Analysis of data 133
3.7.3 Ethical issues in writing and disseminating research findings 134
  3.7.3.1 Dissemination of research findings 134

Chapter 4 - Research Findings & Analysis 135
4.1 Introduction 136
4.2 Value of performance assessment on learning 136
  4.2.1 Computer application skills 136
  4.2.2 Preference diversity between learners 139
  4.2.3 Collaboration and interpersonal intelligence 144
  4.2.4 Social learning 145
4.3 Value of open-ended digital learning tasks in learning 147
  4.3.1 Learners motivation to learn 147
  4.3.2 Sustained attention 148
  4.3.3 Learners’ ownership of the tasks 150
4.4 Interaction between multiple intelligences and performance of the learners in open-ended digital learning tasks 151
  4.4.1 Intelligence profiles of the learners 152
  4.4.2 Results of the study 154
    4.4.2.1 Logic mathematical intelligence 154
    4.4.2.2 Verbal linguistic intelligence 155
    4.4.2.3 Visual spatial intelligence 156
    4.4.2.4 Interpersonal intelligence 157
4.4.3 Conclusion

4.5 The relationship between learners’ intelligence profiles and performance in computer application skills

4.5.1 Assessment of learners’ performance abilities in computer application skills in relation to the three intelligences

4.5.1.1 Recording, organizing and using number information (logic mathematical intelligence)

4.5.1.2 Visual spatial application skills – pictures, clip art, colours, tables and graphs, font size and style (visual spatial intelligence)

4.5.1.3 Organization of ideas – paragraphs, bullets, and columns (verbal linguistic)

4.5.2 The relationship between learners intelligence profile and computer application skills in different intelligences

4.5.2.1 High/low profiles in logic mathematical intelligence and computer application skills

4.5.2.2 High/low profile in visual spatial intelligence and computer application skills

4.5.2.3 High/low profile in verbal linguistic intelligence and computer application skills

4.5.3 Conclusion

4.6 Learners’ intelligence profiles, preferences and performance abilities in four intelligences across the tasks

4.6.1 Story 1: Strong in logic mathematical, visual spatial and verbal linguistic intelligences

4.6.1.1 Logic mathematical intelligence

4.6.1.2 Visual spatial intelligence

4.6.1.3 Verbal linguistic intelligence

4.6.1.4 Interpersonal intelligence

4.6.2 Story 2: Strong in verbal linguistic intelligence

4.6.2.1 Verbal linguistic

4.6.2.2 Visual spatial intelligence

4.6.2.3 Logic mathematical intelligence

4.6.2.4 Interpersonal intelligence

4.6.3 Story 3: Strong in interpersonal intelligence

4.6.3.1 Interpersonal intelligence

4.6.3.2 Verbal linguistic

4.6.3.3 Visual spatial intelligence

4.6.3.4 Logic mathematical intelligence

4.6.4 Story 4: Strong in visual spatial intelligence

4.6.4.1 Visual spatial intelligence

4.6.4.2 Verbal linguistic intelligence

4.6.4.3 Logic mathematical intelligence

4.6.4.4 Interpersonal intelligence

4.6.5 Conclusion

4.6.5.1 Logic mathematical intelligence

4.6.5.3 Verbal linguistic intelligence

4.6.5.3 Visual spatial intelligence

4.6.5.4 Interpersonal intelligence

4.6.6 Synthesis
Chapter 5 - Discussion, Conclusion & Recommendations

5.1 Summary of the study
   5.1.1 Rationale
   5.1.2 Design of the study
   5.1.3 Methodological reflections

5.2 Discussion of the results
   5.2.1 Multiple intelligences and learners’ intelligence profiles
   5.2.2 Digital tasks and the performance of the learners in computer application skills
   5.2.3 Learner-centeredness and authentic tasks
   5.2.4 Performance assessment of open-ended digital learning tasks
   5.2.5 Teachers performances

5.3 Scientific reflection
   5.3.1 Contributions of this study

5.4 Conclusions of the study
   5.4.1 Theory of multiple intelligences
   5.4.2 Open-ended authentic tasks
   5.4.3 Varied performance profiles and preferences

5.5 Recommendations
   5.5.1 Recommendations for policy and practice
   5.5.2 Recommendations for examinations and assessment institutions
   5.5.3 Recommendations for future research

5.6 Final conclusion

References

Appendices

1.1 Computers studies terminal examination prepared by the school teacher
1.2 Computers studies national examination prepared by National Examination Council of Tanzania (NECTA)
3.1 Multiple Intelligence survey test questionnaire
3.2 Open-ended digital learning tasks (1-4)
3.3 Observation checklist for interpersonal intelligence
3.4 Learners interview schedule
3.5 Teacher interview schedule
3.6 Teacher biographic questionnaire schedule
3.7 Parents interview schedule
3.8 Parents biographical questionnaire schedule
3.9 Scoring rubrics to assess learners performance in different task documents and presentations
3.9b Scoring rubrics for computer application skills according to intelligences
3.10 Application letters for access to the schools – Clearance letter
3.11 Letter for participants participation in the study
3.12 Consent letters for parents and or guardians
3.13 Certificate of attendance for learners
4.1 Poem prepared by learners for their educational strategy
List of Tables

Chapter 2
2.1 Different intelligences and how they are assessed and measured 37
2.2 How the definition of intelligence has changed 40

Chapter 3
3.1 Schools that participated in the study 116
3.2 Summary of the information about the schools, learners, and teachers 118
3.3 Readability statistics of tasks 1, 2 & 3 121
3.4 Cohen kappa readability coefficient for all three tasks 122

Chapter 4
4.1 Intelligence profiles of the learners in four intelligences 153
4.2 Combined results of the intelligence profiles of the learners from Multiple Intelligences survey test instrument, school progress report and observation checklist. 159
4.3 Learners performance abilities in computer applications skills according to the four intelligences 162
4.4 Contingency table showing distribution of learners in each intelligence profile and performance abilities in computer application skills 167
4.5 Intelligences and performance responses 174
4.6 Table drawn by Coleman about MV Bukoba Tragedy 178
4.7 Table drawn by Rachael showing people who died and survived in MV Bukoba Tragedy 198

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List of Figures

Chapter 2
2.1 Increase in school scores, Farmington Elementary School 49
2.2 Collaborative learning and interpersonal skills 92
2.3 Increasing number of topics and raters in history tasks 96
2.4 Increasing number of topics and raters in mathematics tasks 97

Chapter 3
3.1 A conceptual framework of performance assessments 103

Chapter 4
4.1 A sick person being treated 139
4.2 A flyer prepared by learners 142
4.3 Intelligence profiles of the learners – logic mathematical 154
4.4 Intelligence profiles of the learners – verbal linguistic 156
4.5 Intelligence profiles of the learners – visual spatial 157
4.6 Intelligence profiles of the learners – interpersonal intelligence 158
4.7 A graph drawn by Coleman to indicate ferry disasters worldwide 178
4.8-10 Pictures Coleman used in task 1 – health and diseases 180
4.11-13 Pictures Coleman used in task 2 – landfills and its effects 181
4.14 Drawings done by Coleman showing health hazards caused by landfills & recycling process 182
4.15-16 Pictures used by Coleman in task 3 – MV Bukoba Tragedy 183
4.17 Coleman’s written transcript on Typhoid fever, task 1 185
4.18 A text prepared by Rachael to explain how landfills can be an environmental hazard to a community 197
4.19 Abigail in discussing with her team mate 200
4.20 Abigail elaborating a point 200
4.21 Abigail helping one of her friends 201
4.22 Abigail asking for clarification 203
4.23 A question addressed to Abigail from a colleague during discussion 205
4.24 Abigail elaborating a point 205
4.25 Use of word art by Abigail 205
4.26 Picture showing boiling water to prevent Cholera 205
4.27 A section of the text as sequenced by Abigail 207
4.28 A picture showing hands that needs to be washed – used by Kim in task 1. 208
4.29 Kim’s picture showing a cemetery 208
4.30 Kim’s picture showing children drinking dirty and contaminated water 208
4.31-32 Pictures used by Kim to show endangered marine organisms and waste products that destroy marine environment 209
4.33 A poster drawn on manila sheets prepared by Kim 210
## Acronyms used

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>AIDS</td>
<td>Acquired Immunodeficiency Syndrome</td>
</tr>
<tr>
<td>CA</td>
<td>Chronological age</td>
</tr>
<tr>
<td>CD</td>
<td>Compact Disks</td>
</tr>
<tr>
<td>ECI</td>
<td>Emotional Competence Inventory</td>
</tr>
<tr>
<td>“g”</td>
<td>General Intelligence</td>
</tr>
<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
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<tr>
<td>ICT</td>
<td>Information Communication Technology</td>
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<tr>
<td>IEA</td>
<td>International Association for Evaluation</td>
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<td>IQ</td>
<td>Intelligence Quotient</td>
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<td>MI</td>
<td>Multiple Intelligences</td>
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<td>MIDAS</td>
<td>Multiple Intelligences Developmental Assessment Scales</td>
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<td>MOEC</td>
<td>Ministry of Education and Culture of Tanzania</td>
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<tr>
<td>NECTA</td>
<td>National Examination Council of Tanzania</td>
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<tr>
<td>PC</td>
<td>Personal Computer</td>
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<td>SITES</td>
<td>Second International Technology in Education Study</td>
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<td>STS</td>
<td>Science Technology and Society</td>
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<tr>
<td>TIMI</td>
<td>Teele Inventory of Multiple Intelligences</td>
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<tr>
<td>TV</td>
<td>Television</td>
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<td>UDSM</td>
<td>University of Dar Es Salaam</td>
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<td>University of Pretoria</td>
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<tr>
<td>WAIS</td>
<td>Wechsler Adult Intelligence Scale</td>
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<td>WISC</td>
<td>Wechsler Intelligence Scale for Children</td>
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