

COLLEGE ADMISSION USING EXPERT SYSTEM

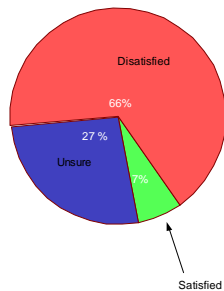
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EXTENT OF SUSTAINED SATISFACTION WITH CAREER

- In a survey carried out in 2007, to estimate the level of professionals' satisfaction with the tasks and nature of their careers, 314 professionals were interviewed.

EXTENT OF SUSTAINED SATISFACTION WITH CAREER



FACTORS INFLUENCING CAREER CHOICE

- A study done by a Ministry of Education (Kenya) official in collaboration with researchers from a Canadian university in, 2000, concluded that, among all agents that influence career choice by high school students in Kenya, career guidance counselors have the least influence from the fact that they are too few and poorly trained.

CAREER GUIDANCE PRACTICES IN KENYAN HIGH SCHOOLS

- In a second survey, 2007, Ministry of Education (Kenya) officials and career guidance teachers in 22 randomly-sampled high schools across the country were interviewed in an attempt to determine what career guidance practices are carried out in Kenyan high schools.

CAREER GUIDANCE PRACTICES IN KENYAN HIGH SCHOOLS

1. **Private Academies** - Trips to university fairs; Individual attention to students; Career debates among students
2. **High Cost Public Schools** - Counselor discusses with interested student. No full time counselor as each counselor has teaching load too
3. **Other Public Schools** (nearly 90% of all Kenyan high school students). No real counseling done, only instruction on use of the careers booklet, which contains a list of college courses and their cut-off points

PROBLEM STATEMENT

- Due to poor career guidance in high school, college admission in Kenya largely places students in college courses not best suited for them.
- As a result, there is mismatch between occupations most professionals have and the occupations they would have felt most comfortable in.
- There is need of an appropriate College-course Admission Model to solve the above problem.

RESEARCH QUESTIONS

- What factors most appropriately determine one's most suitable career?
- What is the most appropriate design of a KBS model that integrates Knowledge from necessary knowledge sources and recommends suitable college courses in a specific?
- What is the most appropriate prototype that can demonstrate the functionalities of the above model?

OBJECTIVES

- Determine factors that most appropriately determine one's most suitable career.
- Design a model that integrates Knowledge from necessary knowledge sources and recommends suitable college courses in a specific college.
- Design and develop a prototype to demonstrate some of the functionalities of the above model.

RELATED APPROACHES

1. Personality Analysis

- The premise for the use of the personality analysis to diagnose one's natural career is that human performance in a job situation is primarily dependent on;
- One's ability to comprehend certain unique cognitive concepts demanded by a job situation.
- One's natural disposition toward certain tasks and environments and not others

2. Personality Test models and the most appropriate

- **Big 5 model** – Defines 5 traits; Extroversion/Orderliness / Emotional stability /Accommodation / Inquisitiveness; each measurable in five degrees. Too many groupings (125 different ways to respond) which are hard to model.
- **Enneagram model** - Theological and defines 3 attributes;
 - which of 9 personality types one is
 - the nature of the conflicting forces of each personality
 - the cycle of change that is constant in human natureHighly controversial and not grounded on solid science.

Personality Test models and the most appropriate Cont'd

- **Astrology Sign model** – Analyses personality by determining which planet rules one's sign of zodiac and which of the four elements (air, earth, water and fire) one most relates to, to show how that element affects one's sign's predisposition. Also controversial.
- **Aura Color model** – Based on color psychology. Each person has a natural inclination toward certain colors and a natural dislike towards others, and that one's favorite color points to their personality. Controversial

Myers-Briggs Personality model

- Measures 4 significant human attributes;
- Personality - extroverted or introverted.
 - Outlook - sensory or intuitive.
 - Temperament - thinking or feeling.
 - Lifestyle - judgmental or perceptive.

Appropriate questions are presented to a test-taker. His/her responses used to evaluate personality type (the 16-Personality Type model).

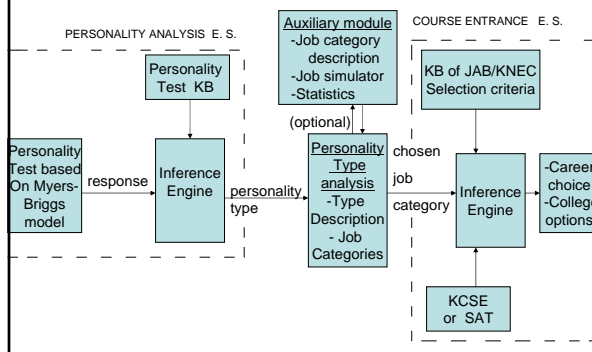
Each of the 16 personality types has been competently linked, after decades of research, to a set of related job categories.

MODEL DESIGN

Features;

- Personality Analysis
- Job simulation to enable student make informed decisions.
- Course Entrance using KNEC/JAB qualification criteria to establish one's cognitive ability.

CAREER-GUIDANCE ASSISTANT MODEL



1. PERSONALITY ANALYSIS EXPERT SYSTEM (E.S.)

Carl Jung's psychology extended by Briggs and Myers. Measures 4 attributes;

- 1. Personality – a) Extrovert (E) b) Introvert (I)
- 2. Outlook – a) Sensory (S) b) Intuitive (N)
- 3. Temperament – a) Thinking (T) b) Feeling (F)
- 4. Lifestyle – a) Judgmental (J) b) Perceptive (P)

The study reported adopted this model due to ease of grouping and its firm grounding in psychology.

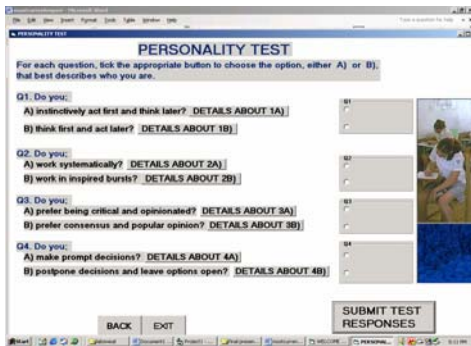
Personality type & job category

OUTLOOK	TEMPERAMENT/LIFESTYLE (HUMAN NATURE)	TEMPERAMENT/LIFESTYLE	PERSONALITY
Introspective (Intuitive), N	Idealist (Feeling), NF	Mentor (Judgmental), NFJ	Teacher/Counselor/Home Economist, ENFJ
		Advocate (Perceptive), NFP	Counselor/Teacher/Psychiatrist, INFJ
		Childcare/Secretary/Counselor, ENFP	Psychologist/Editor/Artist, INFP
	Rational (Thinking), NT	Coordinator (Judgmental), NTJ	Manager/Lawyer/Operations Research, ENTJ
		Engineer (Perceptive), NTP	Sales/Journalist/Photographer, INTJ
		Scientist/Engineer/Writer, INTP	Engineer/Scientist/Social-Scientist, ENTP
Observant (Sensory), S	Guardian (Judgmental), SJ	Administrator (Thinking), SJT	Financial Manager/Manager/Supervisor, ESTJ
		Conservator (Feeling), SJF	Accountant/Engineer/Technician, ISTJ
		Counselor/Childcare/Social Worker, ESFJ	Health-worker/Teacher/Librarian, ISFJ
	Artisan (Perceptive), SP	Operator (Thinking), SPT	Builder/Plumber/Carpenter, ESTP
		Entertainer (Feeling), SPF	Craft Worker/Statistician/Technician, ISTP
		Actor/Musician/Teacher, ESFP	Painter/Outdoor/Stock-clerk, ISFP

2. COLLEGE ENTRANCE EXPERT SYSTEM

- Many colleges have some criteria based on grades scored in selected subjects in specified examinations, for admitting students.
- For the prototype described here, the Kenya national examination council (KNEC) grading system, Kenya certificate of secondary examination (KCSE) and public university joint entrance criteria, Joint admission board (JAB) were modeled.

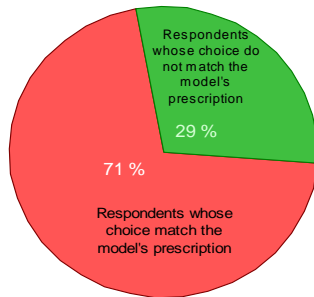
THE PROTOTYPE AND EVALUATION OF THE MODEL



MODEL EVALUATION RESULTS

	CATEGORY	NUMBER & PERCENTAGE
1.	Matching	74 (71%)
2.	Not matching	30 (29%)
TOTAL		104

MODEL EVALUATION RESULTS



CHALLENGES

- Interview of people difficult. Job satisfaction issues fairly intimate.
- The results of this study relies entirely on the honesty of the participants of the survey

CONCLUSION

1. A model based on expert system concepts can achieve effective college admission.
2. A significant percentage of professionals in Kenya are dissatisfied with the tasks and nature of their current vocations.
3. Through prototype evaluation, we have shown that if colleges in Kenya implemented a system based on this model, then it is possible to achieve a career satisfaction level of up to 71% from the current 7%.

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