COLLABORATION WITH A GROUP OF TEACHERS

TEACHING WORKSHOPS

The theoretical phase used a lecture format and was conducted in plenary session. The contents of the lecture were outlined in advance, in note form, on newsprint and affixed on the walls of the lecture hall. The following topics formed the agenda:
-PEGITOSCA Criterion
-Periodic System of Conceptual Elements; Conceptual Calculus
-Concept Transformation Rules.
-Marking of Scientific Concepts in European (i.e. mainly Greco-Latin) and in Luganda.
-Extrapolation of Expression Formation Rules in Luganda. Some time (evidently not enough) was set aside at the end of each topic for comments, questions and discussion with the tone being set by the resource persons, notably Dr. Kasalina Matovu.

On PEGITOSCA Kiingi explained that terminologists differentiate between a term, a concept and an expression. A term is made up of an expression plus the concept.

PEGITOSCA was embraced very well judging by comments in the discussion. Some examples given to demonstrate how it has been applied in practice when coining certain terms; drew criticism from some specalists in Luganda/Linguistics particularly on grounds of transparency and acceptability. But the criticism did not carry the weight of participants' opinions because, it was pointed out, it was founded on an inadequate appreciation of a scientist's *logical* quest either to balance all the elements in the Criterion or to emphasize one at the expense of all the others if his or her hands were tied, for example, by international conventions.

The Periodic System of Conceptual Elements and the *Conceptual Calculus* as developed by Kiingi were explained with regard to their theoretical roots which were given as logic, metaphysics, philosophy of science, participant role theory and the theory of translation and systematic nomenclature. The purpose is to enable a terminological elaborator to formalise concepts or to look deeper inside them by developing a conceptual taxonomy.

It was explained in response to questions from participants that the determination of which role is more complex than the other is arrived at by looking at the Concept Transformation Rules and working out Conceptual Equations. In the equations letters and symbols are used to stand for conceptual predicates.

Although the participants understood and appreciated the value of Conceptual Calculus as a method or tool for looking further into the structure of concepts and defining roles, it was agreed that it is still a matter of some debate as to how many groups there actually are.

Questions as to why some slots in the table or system are empty led to some heated discussion between the linguists and the scientists whether the Table was not faulty and inadequate because it did not cater for idiomatic and poetic expressions.

In such expressions, many objects or entities to which a scientist would not logically ascribe Will, Desire or Perception are assigned precisely such groups as for example in the case of the sun or plants. Eventually it was agreed that there are valid conceptual reasons to leave such slots empty.

There were two other interesting points that emerged. First some linguists contested the claim that we can at all speak of *forming* concepts in Luganda when these are already in existence as *universal* entities which recognise no language borders. Our task according to these linguists would seem to be one of translation rather than terminological elaboration. The position taken by the overwhelming majority was that it is the *conceptual elements* rather than the concept as such which are universal. Our task therefore is to use the elements to form concepts in Luganda.

The second point was whether in our quest for terminological elaborateness through the use of conceptual calculus we do not run the risk of overlooking the fact that there are limits to how far a language can be formalised. Again here agreement was reached that useful as the *calculus* is, *it is simply a tool to show the elaborator's mind where to look for help in coining words:* it is not intended to replace the natural speaker's intuition.

In order to demonstrate to the participants that they need not be overawed by the sheer number of Greco-Latin affixes and affixoids in the scientific lexicons of European languages, the contents of Sec.II. 3 were displayed with extensive anglicised exemplification and each participant obtained a copy of the list of 1550 Greco-Latin affixoids (Appendix B). I argued that if some extrapolation of Luganda expression formation rules were to be accepted, then Luganda would not have to regard any language as a dependable mine of specialised expressions to a degree comparable to that of European with respect to Greco-Latin or Kiswahili with respect to Arabic.

Furthemore, and most important, copies of Chapter IV and V were made available to each participant. This measure was meant to facilitate the work in group sessions.

In the practical phase, a learning-by-doing format was used in working groups. Participants were given texts (see Appendix C) – mainly past examination questions at primary, secondary and tertiary level - and asked to translate them, solve the problems and demonstrate in a simulated classroom how they had arrived at the answers. Four groups were formed by the participants. All primary level science and Luganda teachers came together in one Group (A). Mathematicians, physicists, computer scientists and statisticians came together in a combined Group (B and C).

Chemists, Biologists, Geologists and Zoologists came together in yet another Group (D). Linguists and Luganda lecturers also formed a separate Group (E) which mostly critiqued the system of terminological elaboration and evaluated the three workshops.

Using what they had picked up from the theoretical phase plus their experience as teachers and their intuition as native speakers of Luganda, the participants approached their task in a very systematic way. The exercises were not too hard. What was being

tested was their capacity to articulate scientific concepts in Luganda, whether and how far they had accommodated the system of terminological elaboration introduced to them, and whether they felt confident in articulating science in Luganda. On all these accounts the outcome was very impressive.

The task of critiquing the system of terminological elaboration and evaluating the workshops was also carried out by the three Science Groups. All the groups through their chosen spokespersons reported back to the general session.

Before presenting the elicited data from the questionnaire, the answers to the exercises and the group reports, it should be pointed out that of the 43 possible respondents eight (8) of them did not submit or complete the questionnaire. It is also interesting to note that 19, 15 and 9 respondents are employed at the tertiary, secondary and primary levels of education respectively (cf. Lists of Participants in Appendix C).

The following were the responses to the pre-workshop questionnaire. Only responses to Questions 3-21 (Q3-21) are recorded, for the name of the participant and the date of completion of the questionnaire are not relevant to the issue of the questionnaire. The number of responses is in brackets..

Q.3 21-30 years (10)
31-40 years (16)
41-50 years (7)
51-60 years (1)
61-70 years (1)

Q.4 Male (24)
Female (11)

Q.5 Teachers (31)
Computer specialist (2)
Statistician (1)
Geologist (1)

Q.6 Urban (22)
Rural (12)

Q.7 Secondary (9)
Tertiary (24)

Q.8 Study outside home region: "yes" (15)
"no" (20)

Q.9 Work outside home region: "yes" (12)
"no" (23)

Q.10 Luganda (33)
English (26)
Others (8)

Q.11 Was taught science in Luganda (11)
Up to primary Two (2)
Primary Three (1)
Primary Four (5)
Primary Six (1)
Primary Seven (1)
Was taught science but not in Luganda (23)

Q.12 Studied Luganda as a subject:
"No" (10)
"yes" (24)
Primary Leaving
Primary Leaving Examination (12)
Senior Two (1)
Senior Three (1)
Uganda Certificate of Education (6)
Uganda Advanced Certificate of Education (4)
Master of Arts (1)

Q.13 Luganda (23)
English (13)
Others (4)

Q.14 "Yes" (29)
Because of communication (21)
Because it is the vehicle (medium) of thought (15)
"No" (2)
Terms are the same everywhere (1)

Q.15 "Yes" (24)
"No" (11)

Q.16 Primary level (35)
Secondary level (22)
Tertiary level (11)

Q.17 "Yes" (28)
Historical neglect of local languages (13)
Lack of interest (13)
Lack of competence (6)
"No" (1)

Q.18 "Yes" (11)
"No" (28)
Ethnolinguistic conflict in Uganda (22)
Only English can be a
medium for science and technology (5)
English is an international language (1)
Luganda is difficult (3)

Q.19 "Yes" (31)
Advantage
Better understanding of science and technology (26)
Disadvantages
A lot of preparatory work (1)
Monolingual school intakes in a multilingual society (7)
Bad translation into Luganda (1)
No Luganda books in science and technology (2)
Switching to English as a
medium of instruction (after Primary Four) (1)
"No" (7)

Q.20 "Yes" (27)
"No" (1)
"Perhaps" (5)

Q.21 "No" (35)
English is the official language in Uganda (3)
English is international (19)
English nourishes Luganda (7)
English has a lot of scientific literature (6)

The answers to the problems and the group reports (see Appendix C) were produced within a period of less than 1 1/2 hours; consequently, they were submitted to us before they could be rendered into a neater form.

If the responses to Q. 16 and Q. 20 of the questionnaire are considered in conjunction with the answer to the problems and the group reports, a very interesting attitudinal change comes into focus. This is borne out by translated and edited extracts from the group reports. Let us consider the extracts below.

Ground A (Primary level Science/Mathematics Rapporteur-Mohammed Kaboggoza

> *The workshops have demonstrated that it is possible to teach science and mathematics effectively and creatively in Luganda.*

The workshop has enabled us to overcome the lack of confidence in our language as a medium with a capacity comparable to that of foreign (European) languages in conveying scientific knowledge.

The time has been too short to cover everything we wanted.

The level, pace and examples used in the theoretical work were rather too high for primary level teachers.

Group B (Mathematics and Physics Secondary/Tertiary)
Rapporteur: Pauline Ndwadde

The invitation to the workshop did not give us sufficient time to prepare ourselves for effective participation. The choice of venue, transport arrangement and our reception and welfare have all been excellently catered for.

We have learnt a lot in the workshops but the time was not enough. The course (project) Director was good and displayed a remarkable mastery of his subject.

Most of the content taught in the workshop was new but very attractive to us. The working documents given to us are invaluable and much appreciated.

We suggest that similar workshops in the future be of a longer duration and more time be allocated for discussion and practical work. We need more examples of translated texts.

The way forward should be to organise more intensive workshops for us, the first participants as a core group. We would then become the multipliers to diffuse this knowledge into not only our institutions but also to others within our reach. But if we are to be effective multipliers, the issue of providing some initial financial support needs to be addressed.

D (Group Chemistry and Biology: Secondary and Tertiary)
Rapporteur: Petronella Nakitolo

Time pressure did not allow for comprehensive coverage of the agenda. The course Director was very good but due to lack of time he tended to skip some points. Nevertheless, the workshops have been good and whatever we have learnt here is useful and necessary.

We would welcome the opportunity to learn and do more of the same.

Future workshops should cover the same contents more intensively but also provide for more grounding in the Luganda language.

Group E: (Luganda/Linguistics – Makerere University)
Rapporteur: Zinunula Vincent

We came into these workshops with the expectation of learning about the system of terminological elaboration and the marking of scientific concepts in Luganda. We knew very little about PEGITOSCA and so we wanted to gain more knowledge about it, its application and its present status. We also wanted to satisfy ourselves whether it is really possible for science to be taught in Luganda from primary to tertiary levels.

On the whole we have gained the following from these workshops:

(1) We now understand PEGITOSCA very well.

(2) Its usefulness extends beyond concept formation to translation, interpretation and word borrowing.

(3) The system of terminological elaboration make possible the teaching of science and technological education in Luganda.

(4) Utilising the criterion of generativity, Kiingi has made a positive contribution to the development of Luganda by showing that concepts can be built on nouns instead of verbs only.

On the critical side we feel that though Kiingi has made his presentations very effectively, he has tended to be rather intolerant of our criticism. We commend Mukasa's moderating role which has facilitated the exchanges between us and Kiingi to be productive. We wish to reiterate the point that some of the terms coined by Kiingi are not transparent enough, while there are some indigenous terms which he has inexplicaby left out although in our opinion they fulfill the PEGITOSCA criterion.

Some of the terms which have been coined seem better suited for conceptualisation of science at a higher level than at the primary level. That leaves a gap which needs to be addressed with regard to simplification and transparency.

The thinking that scientists should take the lead in terminological elaboration and linguists should only give advice and be consulted is problematic because quite often the two do not talk the same language. Nevertheless the workshops here have shown it is possible and we are grateful for the opportunity to have been invited.

We would like to conclude by recommending the following:

(1) Kiingi's work deserves the highest academic honours.

(2) There is a need to create simplified scientific terminology suitable for use in primary level science.

(3) Future workshops should be more intensive but not rushed.

(4) Dr. Kiingi should collaborate more closely with the Institute of Languages at Makerere.

Since there was no time to discuss the findings of the questionnaire I cannot exactly characterise (with documentary evidence) the attitudinal change which certainly occurred in the course of the workshops. However, during my informal discussions after the third workshop, it transpired that all the participants held the view that Luganda would or could be a medium of scientific and technological discourse even at the tertiary level of formal education.

Groups A, B/C and D complained about insufficient time in view of the agenda of the workshops. That I considered all levels of education entailed a relatively heavy load on the primary school teachers. Unlike Group D, Group B/C advanced more translated texts probably because nomenclatural systems in mathematics and physics are not as pronouncedly systematic as those in chemistry and biology. Consequently, they would need more extensive and intensive exemplification before gaining considerable confidence in the articulation of mathematics and physics in Luganda. In the light of my massive application of extrapolated, expression formation rules to biological nomenclature, Group D felt that grounding in the Luganda language was in fact imperative. This sentiment strengthens my contention that the task of elaborating the scientific lexicon of any language should ideally be in the province of the scientists themselves. Once they have been adequately exposed to the linguistic structure of their language and to that of prompting languages such as English, German, French, Russian, Japanese, Greek and Latin, they hardly need any assistance of professional linguists or language specialists. Group E echoes the same problem of bringing scientists and linguists together with a view of term planning and generation.

Group E explicity approves of the extrapolation to generate verbs from nominal stems. Generation of verbs from nouns is becoming a commonplace particularly in scientific Kiswahili. Here are some examples taken from TUKI 1990.

(1) *ku + sumaku +ish+a → kusumakisha*
'magnet' 'magnetise'
ku + sumaku + u + a → kusumakua
'demagnetise'
ku + oksidi +ish +a → kuoksidisha
'oxide' 'oxidise'
u + oksidi + ish + aji → uoksidishaji
'oxidation'

u + rutuba + ish + aji → urutubishaji
'fertility' 'fertilisation'
i + li + yo + kwanta + ish + w + a → iliyokwantishwa
'quantised'

During the workshops I proposed that not only *–wal* (already in Present-day Luganda) but also *–wIr, -(a) GAn, -wUk, -wUl* and their acceptable compounds be used in order to generate verbs from nominal stems. The participants received my coinage for *desalination plant.* Ger. *Entsalzungsanlage* with keen interest. The concept was fairly alien to them probably because Lake Victoria (Lgd. *Nnalubaale*) has fresh water! The scientists did not meet with any difficulty in the informal explication of the concept.

The process of coining a Luganda equivalent of desalination plant afforded me the best opportunity of demonstrating how powerful my theory of scientific terminology is. For the sake of exposition, I took steps shown in (2)–(6).

(2a) The water is salty.
M h Q

(3a) The salty water becomes fresh.
(M h Q) v (M h Q')

(4a) The plant desalinates the water.
R c ((M H Q) v (M h Q'))

(5a) A human agent uses the plant to desalinate the water.
Hc (R c ((M h Q) v (M h Q')))

(6a) H c (R c ((M h Q) v(M h Q'))) 6 Q_oR h Q_o 6 R(Q_oo) h

Proceeding to conceptual marking , I obtain

(2b) *-nnamunnyo*
(3b) *-nnamunyowok-*
(4b) *-nnamunnyowos-*
(5b) *-nnamunnyowoses-*
(6b) *ekinnamunnyowoseso*

I note that the prompting effect in (7) is a welcome side-issue

(7)

English	German	Luganda
salt	Salz	omunnyo
salty, saline	salzig	nnamunnyo
to desalinate itself)	sich entsalzen	-nnamunnyowok-
to desalinate something	entsalzen	-nnamunnyowos-
to desalinate with	entsalzen mit	nnamunnyowoses-
plant	anlage	eki-…-o
desalination plant	entsalzungsanlage	ekinnamunnyowoseso

If, on the other hand , I were to conceptually focus on the place of the desalination process, I would arrive at mutatis mutandis

(4c) A human agent desalinates the water.
Hc((M h Q) v (M h Q))

(5c) The human agent desalinates the water at a place.
(Hc((MhQ) v (Mh Q)))m L

(6c) [Hc[[M h Q] v [M h Q']]] mL ↓ Qo
L h QO ↓ L [Q_oo]h

Again proceeding to conceptual marking, I obtain

(5d) *-nnamunnyowoser-*

(6d) *ekinnamunnyowosero*

Four objections were voiced against my coinage. The first objection related to the infracriterion of antecedence (cf. the PEGETOSCA Criterion). "Don't or didn't we have something similar to this in our language?" asked one participant.

I pleaded ignorance stressing notwithstanding that the concepts which go into "desalination plant" or *Entsalzungsanlage* were already familiar to them. Secondly, they objected to the "unbearable" length of the coinage. I rejoined that my coinage was optimally long, and that I was eschewing a circumlocutory rendition. Thirdly, "Is deslination not international?" was implicitly urging me to lugandise the putatively international English term. I explained the historical fact that German scientists were not necessarily compelled to germanise English terms (at least not on as large a scale as the participants thought). However, German, French and English drew and still draw on a common lexical mine Greco-Latin for their terminologies. For example, the terms F. *chlorure de calcium* and Ger. *Kalziumchlorid* can hardly be assumed to be adoptions from English.

At any rate, as the German shows, even Eurocentric internationalily was not binding. The most vehement objection was lodged against the artificiality (Lgd. *obugingirire* (E. "concoction")) of my coinage. Granted, the scientific Luganda I am developing entails somewhat contrived expressions as those in (8)

(8)	*eminzaani wakka*	"ultramicrobalance"
	kannajjululwabbugumu	"thermodynamics"
	Ekyazinnabugulumukaaga	"Hexactinellida"
	Embiro ssukkaddoboozi	"supersonic speed"

But I invent expressions if and only if internationality is not mandatory, I find no suitably economical and precise expression in Present-day Luganda, and I am not inclined to lugandise the English expression. I did not plead with the participants to accept my coinage but, rather, to accommodate it for at least a while. Furthermore, on realising that they did not deem the English and neo-Latin terms in (8) to be artificial or concocted (Lgd. *bigingirire*), I digressed into the articulation of extremely large cardinal numbers.

(9)	English (USA)	German	(Proposed) Luganda
	10^1 ten	*zehn*	*(e)kkumi*
	10^2 hundred	*hundert*	*(e)kikumi*

10^3 thousand	*tausend*	*(o)lukumi*
10^6 million	*Million*	*(a)kakadde*
10^9 billion	*Milliarde*	*wakkadde*
10^{12} trillion	*Billion*	*wakikadde*
10^{15} quadrillion	*Billiarde*	*walukadde*
10^{18} quintillion	*Trillion*	*wakakadde*
10^{21}		*nnakkadde*
10^{24}	*Quadrillion*	*nnakikadde*
10^{27}		*nnalukadde*
10^{30}	*Quinquillion*	*nnakakadde*
10^{33}		*ssekkadde*
10^{36}	*Sextillion*	*ssekikadde*
10^{39}		*sserukadde*
10^{42}	*Septillion*	*ssekakadde*
10^{45}		*(a)kawumbu*
10^{48}	*Oktillion*	*waggumbu*
10^{51}		*wakiwumbu*
10^{54}	*Nonillion*	*waluwumbu*
10^{57}		*wakawumbu*
10^{60}	*Dezillion*	*nnaggumbu*
10^{63}		*nnakiwumbu*
10^{66}		*nnakawumbu*
10^{69}		*sseggumbu*
10^{72}		*ssekiwumbu*
10^{75}		*sseruwumbu*
10^{78}		*ssekawumbu*
10^{81}		*(a)katiiriitu*
10^{84}		*wattiiriitu*
10^{87}		*wakitiiriitu*
10^{90}		*walutiiriitu*
10^{93}		*wakatiiriitu*
10^{96}		*nnattiriitu*
10^{99}		*nnakitiiriitu*
10^{100}	*Googol*	
10^{102}		*nnalutiiriitu*
10^{105}		*nnakatiiriitu*
10^{108}		*ssettiiriitu*
10^{111}		*ssekitiiriitu*
10^{114}		*sserutiiriitu*
10^{117}		*ssekatiiriitu*

They made four observations. Firstly, American usage is inconsistent with German usage. Secondly, from 10^{18} *Trillion,* German usage progresses with a geometric ratio of 10^6. Thirdly, the *Googol* 10^{100} is somewhat misplaced. Fourthly, my proposal is the most elaborate and systematic of the three "concoctions".

Due to pressure of time our exchanges with the linguists (who, to put it modestly, were at a conceptual disadvantage vis-à-vis the scientists) bordered, at times, on acrimony. But we never lost sight of our common academic goal of probing into the scientific lexicon of Luganda. In this spirit we pleaded for the juxtaposition of expressions for the users to decide on which to adopt. For instance, we suggested that *ssemasomero* be adopted, although we knew that the word *yunivaasite* is the only one used for "university" even in theses written in Luganda. Transparency is taken care of as (10) shows

(10) *sse* + *masomero* → *ssemasomero"*
"the school of schools"

It has to be conceded, though, that *yunivaasite* enjoys historical precedence of acceptability.

Before discussing the performance of the participants, it is proper to present lists of terms for key concepts in the exercises. The lists were drawn up before administering the exercises; they were not shown to the participants prior to the exercises.

(11) Group A Questions

Q.1 *nnamba* "number'
omugobereragano "sequence"

Q.2 *-merengul-* "solve"

Q.3 *olulyebulo* "diagram"
-lyebul- "divide down the middle'
nnassegeragana "parallel"
nna + *li* + *seger* + *agana* + *a*
-seger- "be at each other's side'

Q.4 *-yasanguliz- mu* "express in terms'

Q.5 *obwandiba* "probability"

Q.6 *-ddiriggan-, -ddiriragan-* "consecutive"
ekyenkano 'equation'
-enkan- 'be equal to'

Q.7 *-lojj-, -ttottol-* 'describe'
eddoboozi 'sound'
ebbanga eryereere 'empty space, vacuum'

Q.8 *ekisiikirize* 'shadow'
okuwuguka 'refraction'
okusiikirizibwa 'eclipse'

Q.9 *vndwadde* 'disease'

Q.10 *olugongo* 'backbone'
-gongo + wok + u – gongowofu 'invertebrate'

(12) Group B Questions

Q.1 *akagugubi* 'surd'
-zuul- 'determine'
omuwendo 'value'

Q.2 *ekikongozzi* 'vector'
obuwanvu 'length'

Q.3 *omuziziko* 'axis'
Ekiwandukululo 'graph'
omusittale 'line'

akatonnyeze k'okusalagana 'point of intersection'
ekikonjoboleko 'intercept'

Q.4 *-nsondassatu* 'triangle'

Q.5 *-viis-* 'derive'
ettu ly'omulabba 'quadratic formula'

Q.6 *eddaala kikulakimu* 'uniform ladder'
obuzito 'weight'
omuwendoganye 'coefficient'
obukuubi 'friction'
-seerer- 'slip'
-weweevu 'smooth'

Q.7 *-lag-* 'show'
ebitakyuka wawu 'real constants'
omwawulo gwa y nga gufa ku x 'differential'
coefficient of y with respect to x'

(13) Group C Questions

Q.1 *akagulu* 'ray'
-a kyenvu 'yelow'
-tomer- 'be incident. knock into'
empulizima ya ggiraasi 'glass prism'
-nnansondassatu 'triangular'
-enkanyanjuyi 'equilateral'
-bal- 'calculate'
ensonda ezirambiddwa 'angles marked'
-yasanguz- 'state'
-nnyonnyol- 'explain'
-keng- 'observe'
ekitangaala ekyeru 'white light'

Q.2 *-zimawaz-* 'verify'
amazima 'truth'

Q.3 *etteeka lya Ohm* 'Ohm's law'

(14) Group D Questions

Q.1 *okufuufuwazibwa* "pollination"
enfuufu "dust"
ekibumbujjo 'process'

Q.2 *-w-* 'give'
obutegeke bw'embogo 'taxonomy of the buffalo'

Q.3 *ekigezeso* 'experiment'
obukyukirirakitangaala 'phototropism'
okutangaalawirira 'phototropism'

Q.2 4 cf. Sec IV.2 and V.2
Group A attempted Q.1, 2 and 7. The rapporteur's verbalisation in Q.1 and 2 was, in my view, impeccable.

Group B/C attempted Q.1 4(B) and Q.1(C). In Q.1 (B) the group skirted round the concept of a surd. But it came up with *–wendowaz-* for 'determine the value'. In Q.4(B) *ddiguli* should be the plural form of *ddiguli*. There was a slight hitch with *ensonda entobeke* 'alternate angles'. and *ensonda ezikiriziganya* 'corresponding angles". The subjunctive form *leka ABC ebeere* belongs here. In Q.1(C) *ekifaananyi* 'picture' is not quite precise. *Nnamutole omutangaavu* for 'prism' and *akamenyero* for 'refractive index' are quite off target.

Group D resorted to my biological affixes without being cued to do so. Indubitably, Group D assimilated the proposed affixes.

I now bring this Section to an end by arguing for the position that all along I was seeking the participants' accommodation (rather than their acceptance) of my proposed systems for the terminological modernisation of Luganda. My PEGITOSCA–based argument necessitates prior further particularisation of the PEGITOSCA Criterion in (15)

(15) τ = ϖ (P, E, G, I, T, O, S, C) +

Ψ(p, r, e, s, c, l, a, s*, a*)
where the terminologicality t depends on the appropriateness v and acceptability y of an expression. I define precision (P), purpose (p), receptor characteristics (r), linguistic usage (l) as the primary subcriterion and infracriteria. Next I define economy (E), generativity (G), global internationality (I) systemicity (S) consistency (C) and antecedence (a) as the secondary subcriteria and infracriterion. Thirdly, I define transparency (T), non-obscenity (O), ecology (e), social system (s) cultural system (c), style (s*) and speech-act (a*) as the tertiary subcriteria and infracriteria. Finally, I reproduce the weighting of the subcriteria and infracriteria according to Table 5.

TABLE 5
PEGITOSCA WEIGHTING

Primary 3	Secondary 2	Tertiary 1
P p r l	**E G I S C a**	**T O e s c s* a***

I take the controversial rendition of "x-ray" into Luganda as an example. (16a) is the popular adoption while (16b) is my systematic rendition of a concept cluster including "x-ray."

(16a) "x-ray" *ekisire*
(16b) "x-ray" *akagulu –x*

"a-ray" *akagulu-*α
"b-ray" *akagulu-*β
"M-ray" *akagulu-*ϐ
"light rays" *obugulu bw'ekitangaala*

In popular parlance, ekisire is unobjectionable. However, in scientific parlance, I set p = -3, G = -2, S - 2, a = + 2; hence, p + G + S + a = -5. I, therefore, accept or reject *ekisire* depending on the context. I would certainly accept it even in scientific parlance, if I were inclined to use the expressions in (17) as terms.

(17) alfare "α-ray"

betare "β-ray"
gammare "γ-ray"

An individual term or a system of terms may be

(a) appropriate and unacceptable
(b) inappropriate and acceptable
(c) inappropriate and unacceptable
(d) appropriate and acceptable

Since I was proposing what I held to be appropriate and acceptable, i.e. terminological, my role in the interaction with the participants was to teach them the v-function and plead for their accommodation of my proposals.