

Teachers' Conceptions and Obstacles to Sex Education in Primary and Secondary Schools in Cameroon

Lawrence N. NCHIA¹, George E. FONKENG², Joseph L. TAMESSE³, Pierre CLEMENT⁴

¹Corresponding Author: (Ph.D. Student); Didactics of Sciences; Postgraduate School of Social and Educational Sciences, University of Yaoundé I; BP 47, Yaoundé, Cameroon

²Department of Psychology, Faculty of Arts, Letters & Social Science, University of Yaoundé, Cameroon

³Department of Biology, Faculty of Sciences, University of Yaoundé 1, Cameroon

⁴ADEF, GestePro, University Aix-Marseille, France

Abstract: *Despite the relevance of sex education in schools its teaching is inadequate. This work seeks to identify and analyse the conception of 523 pre-service and in-service primary and secondary school teachers in Cameroon which may promote or hinder its effective teaching. We used a questionnaire of the European project Biohead-Citizen. Multivariate analysis reveal teachers' conceptions differ most on value than on practice and knowledge on what, when, and who to teach certain psychosocial aspects of sex education. Their conception favours the transversal approach suggested by government. More than 70% of respondents: prefer sex in a stable relationship than safer sex to prevent HIV; wish homosexual should not have same rights as heterosexual couples; feel abortion is unacceptable if mother not at risk of dying; do not avoid teaching sex education because of taboo reasons; do not accept to teach psychosocial aspect of sex in primary school and early secondary; and strongly disagree that STI and psychosocial aspect of sex education be taught mainly by biology teachers or health professionals. Some of these conceptions act as didactic, psychological and sociocultural obstacles to the effective implementation of sex education especially in primary schools.*

Keywords: Sex Education, Conception, In-service teachers, Pre-service teacher, Primary & Secondary school

1. Introduction

A comprehensive Sex education should concern not only the prevention of HIV / STIs, sexual abuses and adolescent pregnancies but also interpersonal relationships and psychosocial issues^[1].

In Cameroon, the implementation of comprehensive sex education has been a difficult process until the Joint Ministerial Decision No. 281/07 of 18/01/2007 introduced Family Life Education, Population Issues, and HIV in the programme of primary, secondary, and teachers' training schools in Cameroon using a trans-disciplinary approach. This was an outcome of the Educational Orientation Law No.098/004 of 18th April 1998 in Cameroon which emphasised the competence based approach. Despite these administrative efforts, its field implementation remains inadequate.

The consequences of the ineffective teaching of sex education are overwhelming and greatly account for the inability for Cameroon to attain the MDGs scheduled for 2015, and may inevitably impede her vision of an emerging nation by 2035 if not resolved promptly. The UNFPA 2012 Cameroon report ^[2] shows that the objective to improve quality of life through access to reproductive health (MDGs 5 & 6) is unattainable given that: the prevalence of HIV among population aged 15-24 years stood at 5.3%^[1]; the maternity mortality rate at 669 for every 100 000 births with 40% due to unsafe abortion complications; teenage pregnancy at 7% , with those within 15-19 years already sexually active, and 23% of this group already mothers; and

the Contraceptive prevalence rate was 29% in 2004 and only 13% for modern methods of contraception used.

Generally 79.3% of adolescences between 16-19 years do not use contraceptive methods. 34.5% of girls between 15-24 years had their first sexual intercourse before 15 years as against 23% of boys, and 53% of girls did not use contraceptives during their last sexual intercourse^[2].

Also, given that youth below 20 years (constitute 50% of the Cameroon's population) are exposed to HIV/STIs, there is fear of eventually compromising their good health and education required to work in order to alleviate poverty (MDG 1) and attaining Vision 2035 as stated in the government Growth & Economic strategic Paper^[3].

The teaching and learning of a controversial socio-scientific and important subject like sex education cannot be effective without investigating teachers' conception from the constructivist point of view^[4, 5, 6, 7]. As Giordan & De Vecchi (1987)^[8] recommended, taking into account of learners' conceptions must imperatively become the starting point of any educational projects as this will reveal certain unforeseeable obstacles to by-pass. More so, Selmaoui et al, 2010^[9], showed that teachers' beliefs and values have a direct influence on the way of understanding and teaching a topic. These beliefs must be taken into account in the content and strategy of teacher's training. Hipkinset al (2002)^[10] also argue that teaching science is effective when students' existing ideas, values and beliefs, which they bring to a lesson, are elicited, addressed and linked to their classroom experiences at the beginning of a teaching programme.

In view of developing an effective didactic strategy for the effective teaching of sex education using the trans-disciplinary approach, we intend to find out if teachers' prior conceptions will facilitate or act as obstacles (didactics, epistemological, psychological, cultural, and ontogenic) to its teaching and learning. From the obstacles identified, we shall eventually develop objective – obstacles – objective and appropriate didactic strategies to overcome them and bring about the desired conceptual change in teachers and eventually in their students^[11, 12]. Thus our research question to guide this work is:

What are teachers' conception of sex education in primary and secondary schools in Cameroon, and do they facilitate or act as obstacles to the effective teaching of sex education?

Our hypothesis is that teacher's conceptions are deeply rooted not only in their scientific knowledge, but equally on their personal values and social practices.

2. Literature Survey

Two main theoretical frameworks orientate this work: the KVP Model of conception; and didactic transposition^[7, 12]. Here, conception is seen as an interaction between Knowledge (K), Values (V) and Practices (P). Didactic transposition involves not only scientific knowledge^[13], but also social practices^[14] and system of values^[15]. This model is useful for didactic transposition and for conceptual change in the constructivist model of teaching and learning controversial topic like sex education.

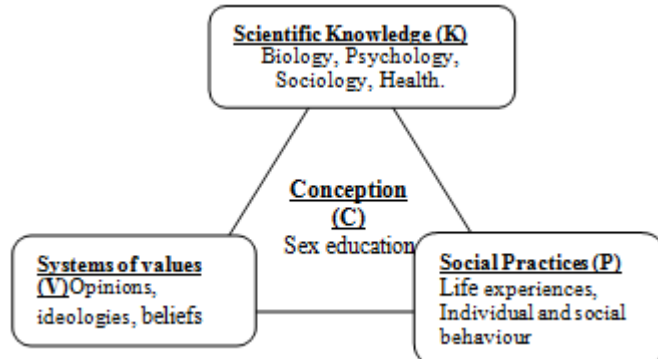


Figure 1: A KVP Model. Conceptions can be analysed as interaction between the three poles K, V, & P, Clement, (2006)^[10].

3. Methodology

The research design used is a non-interventional descriptive and analytical cross sectional study as it only seeks to describe, analyse and quantify variables.

The research instrument used to collect data is a questionnaire designed and elaborated during the Biohead-Citizen project in Europe between 2004 and 2008 and extended to Cameroon. Twenty four Variables were selected:

a) On Values

- Opinion about homosexual couples having same rights as heterosexual couples (A41),

- Opinion about possible situations to accept abortion (A57, A58, A59, & A65),
- most relevant behaviour to be considered in school sexual education to prevent spread of HIV/AIDS (A60),
- when should the following topic be first introduced at school by teachers and/or external specialists: Pleasure organs (A85); Contraception (A86); Sexually transmissible diseases (STIs) (A87); Abortion (A88); Homosexuality (A89); Paedophilia (A90); Pregnancy and birth (B37); Sexual intercourse (B38); Incest and sexual abuse (B39); Orgasm and sexual pleasure (B40); and Eroticism and pornography (B41)

b) On Biological Knowledge:

- When women stop taking the contraceptive pill, menstruation occurs, due to the absence of progesterone and oestrogens hormones. (B13);
- After ovulation, the follicle changes into corpus luteum which produces high levels of progesterone and oestrogens. (B17)

c) On practice of teachers:

- Who should teach about STI and psychological and social aspects of sex education (B3, B5, B19, B24);
- Teachers avoid teaching sex education because these topics are private (B18).

Two parallel independent translations of the questionnaire into French from the original English version were done, then compared with a third person. A back-translation where the French version is translated back to English by an independent person and compared to the original English version was equally done.

A purposive sampling method was used to sample 523 teachers in Cameroon representing in-service and pre-serve primary, Biology, and language teachers as shown on Table 1 below.

Table 1: Distribution of respondents according to group of teacher and subsystem of education in Cameroon

Sample	English Sub System	French Sub System	Total
Primary school teachers in-service (In P)	34	22	56
Primary school teachers pre-service (Pre P)	69	67	136
In-service biology Secondary school teachers (In B)	41	52	93
Pre-service biology Secondary school teachers (Pre B)	46	47	93
In-service Secondary Language teachers, (In L)	36	35	71
Pre-service Secondary Language teachers, (Pre L)	37	37	74
Total	263	260	523

The main outcome measured were teachers' conception as an interaction between three variables: knowledge; Values; and Practices. Computations were performed mainly with the statistical software "R" with the multivariate analysis package ade4^[16, 17], after coding the questionnaires.

4. Results and Discussion

The main three discriminating principal components C1, C2, & C3 of Figure 2 showed that diversified conception were observed in responses pertaining to: teachers' values as to when to introduce sex education topics (19% of the total variance) – analysed on Table 2; teachers' practices (9% of the total variance) – analysed on Table 3; and teachers' opinion on abortion (accounts for 7% of total variance) – see Table 4. These three components are the most significant and account for 35.5 % of the variance of response from the 523 respondents. The remaining ones tend to account for only trivial variance and were thus not retained.

These components indicate individual's variance. The result is similar to that of Moroccan teachers only for the first two components^[10].

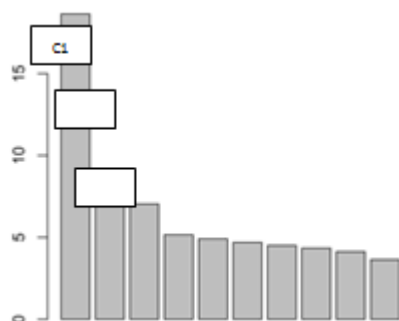


Figure 2: Histogram of the eigenvalues – PCA Sex Ed. (first three components account for 35.5% of the variance of response from 523 respondents).

The correlation circles (figure 3 & 4 below) are graphical representations of the relationship between the two axes and the variables relative to sex education. The significance of the axes is determined by projecting each sex variable on each axis. We thus obtain vectors whose lengths characterise an axis. The longer the vector obtained, the more prominent the character, that is, the highest coordinates correspond to the conceptions that characterise the axis the most. Thus the “value” component (C1) characterises the X-axis of figure 3 & 4 (A85 to A90 and B37 to B41); the “practice” variable (C2) characterises the Y-axis of figure 3 in decreasing order B5, B24, B3 & B18; and ‘opinion on abortion’ (C3) – the Y axis of figure 4 in decreasing order A59, A65, A57 & A58.

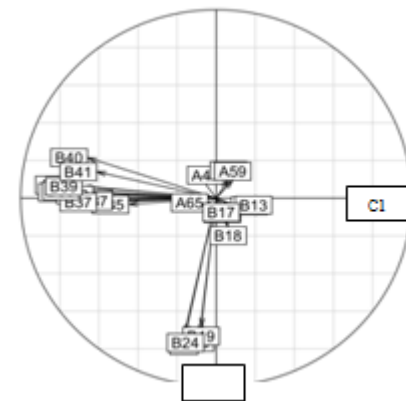


Figure 3: Correlation Circle: coordinates of sex education variables plotted on axes 1- 2 (Component 1 plotted as vectors on horizontal axis and component 2 on the vertical axis).Length of vector indicates degree of similarity in respondents answers.

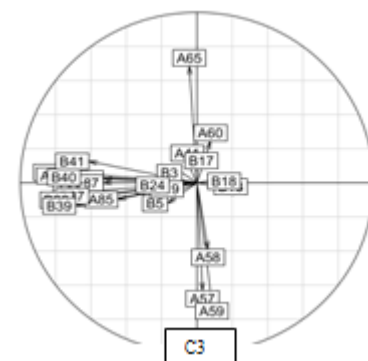


Figure 4: Correlation Circle: coordinates of sex education variables plotted on axis 1-3.(Component 1 plotted as vectors on horizontal axis and component 3 on the vertical axis).Position of vector indicates agreement or disagreement with proposal

The correlation circle (Fig 3) shows similar conception between variable related to knowledge about contraceptive pills (B13) and menstrual cycles (B17), and values linked to rights of homosexuality (A41), means to prevent HIV/AIDS (A60), and the practice of teaching Sex education (B18), as indicated by the short vector length in figure 3 . These variables show positively correlation amongst themselves. Descriptive statistics of these variables are summarized in Table 5 below.

Table 2: Analysis of the most discriminating questions for component 1 variables: Teachers' values as to when to introduce sex education topics in schools

Variable	A90 = Paedophilia	Incest & Sexual Abuse (B39)	A85 = Organs of Pleasure	A86 = Contraception	A87 =STDS	A88 = Abortion	A89 = Homo- Sexuality	Pregnancy and Birth (B37)	Sexual Intercourse (B38),	Orgasm & Sexual Pleasure (B40)	Eroticism & Pornography (B41)
	A90	B39	A85	A86	A87	A88	A89	B37	B38	B40	B41
Mean	5.58	4.66	4.04	5.72	4.15	4.86	5.56	3.63	3.51	6.15	5.63
Median	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	4.00	4.00
Mode	2	2	3	3	3	3	3	3	3	4	5
S. D.	15.7	13.5	10.0	15.1	12.3	12.2	14.6	9.2	8.2	15.6	12.7
Variance	246.4	182.8	100.3	227.8	150.4	148.2	212.6	84.07	67.4	242.5	162.6
N.B	Mode 1= less than 6 year; Mode 2= between 6 -12 years; Mode 3= between 12 -15years; Mode 4= above 15 years; Mode 5= never to be taught in schools.										

More than 70% of teachers prefer psychosocial topics be introduced in secondary schools (between 12 to 15 years) with exception of paedophilia, incest & sex abuse which have been reported in primary schools in Cameroon (between 6 to 12 years).

They have a tendency of never approaching intimate dimensions in sexuality education (sexual pleasure, orgasm and sexual intercourse, abortion, and contraception). Those who are against the early introduction of these topics in primary school or early in secondary school fear or argue that, it may provoke pupils and students to want to practice sexual intercourse. However, several studies have shown that it does not promote premature sexual intercourse amongst students but rather retards it^[18, 19, 20]. In addition, the World Health Organization (WHO) texts insist on the necessity for implementing early sexuality education, particularly in primary schools^[21].

Also, despite the exposure of secondary students to eroticism and pornography via the print and visual media, most teachers think it should never be taught. We can therefore see some sociocultural and psychological obstacles that require conceptual change. This is proof of how values interact with classroom practices and scientific knowledge.

The position by some teachers of not introducing certain topic or doing so late could be justified by the fact that the syllabus for primary and secondary schools in Cameroon^[22], do not mention anything about the socio-cultural, psychological and spiritual dimensions of sexuality. The syllabus is limited to anatomy and physiology of the reproductive systems, STIs, family planning and contraception. This creates a gap in the didactic transposition process, and is a didactic obstacle to the effective teaching of sex education.

Table 3: Analysis of the most discriminating questions for component 2 variables: Teachers' classroom practices (Variables B3, B5, B18, B19, & B24).

Variable	Mean	Median	Mode	S. D.	Variance
B3 - Sexually transmitted diseases should be taught primarily by biology teachers.	3.66	3.00	4	10.09	101.77
B5 - Sexually transmitted diseases should be taught primarily by health professionals	3.36	3.00	4	8.27	68.43
B18 - Teachers avoid teaching sex education because these topics are private.	4.38	4.00	4	10.80	116.56
B19 - Psychological and social aspects of sex education should be taught primarily by biology teachers.	4.11	3.00	4	10.83	117.33
B24 - Psychological and social aspects of sex education should be taught primarily by health professionals	4.59	3.00	4	13.54	183.30
N.B. Mode: 1=strongly agree; 2 = Agree; 3 = Disagree; 4 = strongly disagree; 99= undecided.					

A majority of respondents (74%) disagree that teachers avoid teaching sex education because these topics are taboo (B18), and to more than 52%, STI, psychological and social aspect of sexuality should neither be taught primarily by biology teacher nor by health professional (B3, B5, B19 and B24). This conception favours the trans-disciplinary approach to teaching sex education in Cameroon and the development of teaching partnership between teachers and health professionals (B24 and B5). It is supposed that the (biology) teachers should be able to teach sex education entirely and do not need the intervention by health professionals, who do not have the necessary pedagogy to teach. More so, the school textbooks used in Cameroon have treated the biomedical conceptions (STD are treated in terms of symptoms, causes and curative treatment), and teachers also studied child psychology during their training which should enable them teach the psychological and social aspects of sex education. This above conception reveals a didactic obstacle to overcome in the teaching process, for in-service teachers are expected to have the competence of applying knowledge acquired in one domain / context to solve problems in another domain in accordance with the higher cognitive skills of Klopfers' taxonomic^[23].

The conceptions of teachers on sex education have an impact on teaching practices. Teachers are confronted with the paradox of transmitting social and scientific knowledge that contradict their personal conception. This could explain why certain teachers are reluctant to handle psychological aspect of sex education and only present the bio-physiological aspect. Their personal values influence their pedagogic and didactic practices which has an impact on public health. In effect, the first level of prevention of AIDS and STI is having access to objective scientific information. The teachers who think psychosocial aspect of sex education should be taught by health officials are likely those who avoid teaching them because they consider it a taboo (against their religious beliefs).

Table 4: Analysis of the most discriminating questions for component 1 variables: Relative to situation when abortion is morally acceptable 1 = (morally acceptable) to 4 = (morally unacceptable); 99= undecided.

Items	Response (%)					Inference
	1	2	3	4	99	
A57. Is abortion morally acceptable or not for a couple who already has one child and the mother is at risk of dying from a complication during her pregnancy?	59.3	14.9	5.6	20.0	0.2	morally accepted to 74.2 %.
A58. Is abortion morally acceptable for a young couple in severe economic difficulty?	7.3	5.8	14.0	72.8	0.2	To 87% highly unacceptable.
A59. Is abortion morally acceptable for a woman who has been informed of the high probability of giving birth to a severely handicapped child?	29.8	11.1	14.2	44.8	0.2	Unacceptable to 59%
NB. Response: 1=strongly acceptable; 2 = Acceptable; 3 = Unacceptable; 4 = strongly unacceptable; 99= undecided.						

Most Cameroonian respondents do not agree with abortion except when mother's life is in danger. This could be illustrated by the protest match of July 12th 2009 organised by the Christian Cardinal Tumi in Douala ^[24], against the May 28th 2009 decision to ratify Articles 6 and 14 of the Maputo Protocol, which protesters claimed legalises homosexuality and abortion, in the name of human rights. Interestingly, both Christian and Moslems participated in the match.

The fact that Islam opposes the making of children outside marriage, and some Christians and Atheist believe life begins only when the body organs are formed, could account for the 24% of respondent accepting abortion up to 2 weeks. Here too, we notice a conflict between the scientific / legal and religious views in conflict.

Table 5: Similarities in teachers' conception from Fig 2

ITEMS	RESPONSE (%)					INFERENCE
	1	2	3	4	99	
B13 - When women stop taking the contraceptive pill, menstruation occurs, due to the absence of progesterone and oestrogens hormones.	27.9	21.2	20.1	27.8	2.9	50% do not understand the role of the progesterone and oestrogens hormone in contraceptive pill production. It reveals the problem of knowledge application which an indication of didactic obstacle.
B17 - After ovulation, the follicle changes into <i>corpus luteum</i> which produces high levels of progesterone and oestrogens.	43.0	27.0	11.6	12.9	5.4	70% know correctly that progesterone and oestrogens production is increased by corpus luteum.
B18 - Teachers avoid teaching sex education because these topics are private.	12.9	12.2	19.2	54.4	1.3	73.6% disagree that teachers avoid teaching sex education because these topics are private which the favours teaching/learning of SE.
A41 - Homosexual couples should have the same rights as heterosexuals (tick only ONE answer):	7.3	5.3	10.5	76.4	0.5	86.9% of the respondent thinks homosexual couples should not have the same rights as heterosexual couples. Indicates rejection of homosexuality.
A60 - In your view, what is the behaviour you find most relevant to be considered in school sexual education that can help to decrease the spread of AIDS world-wide? Safer sex or sex in a stable relationship?	47.4	10.7	6.0	35.6	0.4	58.1 % prefer to have sex in a stable relationship (option 1 & 2) as oppose to 41.6 % who prefer safer sex as a means of preventing HIV/AIDS spread (option 3 & 4). This promotes the notion of fidelity in marriage to fight HIV/AIDS.
<i>N.B.Mode: 1=strongly agree; 2 = Agree; 3 = Disagree; 4 = strongly disagree; 99= undecided.</i>						

The Correlation Circle shows that teachers differ more on their values and practices than on their knowledge on sex education. This is indicated by the vector length in fig 3. This could be accounted for by differences in teachers' sociocultural background.

5. Conclusion

Teachers' conceptions of sex education in Cameroon are deeply rooted not only in their scientific knowledge but more in value systems and social practices. Teachers handling this topic have different beliefs or values of sex education which may be influencing their pedagogic practices illustrated by differences in opinion on when and who to teach certain psychosocial content of sex education. These differences in values can act as a psychological and sociocultural obstacle to the effective teaching of sex education thus contributing to the inadequacy in the teaching of sex educational issues. This confirms the research findings reported by Ernest, (1989) ^[25] and Thompson, (1992) ^[26] in their study of mathematics didactics. Teachers' diversified psychosocial and philosophical views make some teachers to often feel reluctant to handle these topics in class as noticed by Legardez and Alpe (2001) ^[27].

6. Perspectives

This work portrays sex education as a socio-scientific controversial topic and thus raises two main problems; firstly, how do we response to the social pressure and the development of appropriate citizenship in Cameroon? Secondly, which didactic and pedagogic approach should we

privilege in the acquisition of knowledge and competencies relative to sex education? If government, medical teams, and other stake holders in the fight against HIV/AIDS/STI could consider this interaction between knowledge, values and social practices, they will be able to develop more appropriate ways of bringing about the required behavioural change of their target populations. Work is currently on going to investigate if teachers' sociocultural and professional backgrounds influence their conception.

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