

LANGUAGE OF INSTRUCTION
AND
ACHIEVEMENT
-
A REVIEW OF THE LITERATURE

QUALIFYING PAPER
SUBMITTED BY
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This paper
is dedicated to
the memory of
Francisco Meneses

TABLE OF CONTENTS

<u>INTRODUCTION</u>	page 1
PART ONE: THE STUDIES	page 4
1. Selection Criteria	page 5
2. Characteristics	page 5
PART TWO: OUTCOMES	page 9
Aa Language	page 9
Ab Mathematics	page 18
Ac Other subjects and unspecified	page 20
B Pedagogical Benefits	page 22
S School efficiency and beyond	page 24
PART THREE: LANGUAGE RELATED INTER-DEPENDENT VARIABLES	page 29
<u>A (Mainly) Policy Variables)</u>	page 31
1. Type of program	page 31
2. Actual use of language(s) in the classroom	page 37
3. Teachers	page 38
4. Test/Examination language	page 41
<u>B (Mainly) Conditioning Variables</u>	page 42
1. Student characteristics	page 42
2. Parents', Teachers', and Community's attitudes	page 44
3. Language role in society	page 46
CONCLUDING CONSIDERATIONS	page 48
Notes	
References	
Appendix	

ABBREVIATIONS

IN THE TEXT

m.t. : mother tongue

L1 : first language

L2 : a second language

ESL : English as a second language

IN THE OVERVIEWS (APPENDIX ONE)

L : longitudinal

p/L : part of a longitudinal evaluation

n/L : not longitudinal

AF : additional features

Introduction

1. Topic and Context

Many countries in the world have long been multilingual. Others have only recently become acquainted or confronted with multilingualism. However, they all have in common that their educational systems have to deal with multilingualism in one way or other.

Educational language policies usually translate into the choice of a language or languages as the medium/a of instruction, and to a lesser extent the teaching of languages as subjects. The role of vernaculars as languages of instruction has become increasingly important, particularly in the Third World after decolonization, but also in Early Industrialized Countries where immigration has been and still is changing population patterns. Countries with established language minorities constitute a third group.

Different language of instruction policies have been adopted, and different results achieved. The focal question is if and then how achievement varies as a function of language of instruction (i.e. use of mothertongue vs. a second or third language as instructional medium).

There is a vast amount of evidence from many countries that large numbers of language minority children underachieve at school. This holds true for "educationally disfranchised" minorities in the US such as Indians, Chicanos and Puerto Ricans; "educationally deprived majorities in Creole-speaking countries," "...linguistic minorities in [Third World countries such as] Peru, India, Guatemala and the Sudan," "...as well as

other "dispossessed minorities, such as the eighteen million migrant laborers in European countries" (Ford Foundation, 1975, p.25). This has worried educators and policy makers, and together with researchers they are looking for causes for this deplorable and persistent state of affairs.

Many language minority children have, of course, been bilingual to various extents (#1) since their childhood (i.e. before becoming so as a result of a school program). In earlier times, this bilingualism itself was considered a culprit for low achievement. It was believed that bilingualism had negative consequences on cognitive functioning. This view has since been thoroughly refuted by a substantial body of evidence gathered from studies utilizing more controlled procedures than did the earlier studies of this century. In fact, the majority of studies of the last twenty years report positive cognitive consequences associated with bilingualism (Kessler and Quinn, 1982).

Whether (already) bilingual or not -or to what extent bilingual, the children from all the aforementioned groups have one thing in common: their mothertongue is not the major official language of instruction of the mainstream school system to which they belong, at least not throughout all levels of schooling.

Perhaps because of the strikingly lower school achievement of so many language minority children, awareness of the role of the languages of instruction has increased so dramatically.

The debate over language of instruction policies has not subsided even after some twenty years of discussions, plans,

laws and regulations. What Hakuta and Gould (1987) write about the situation in the U.S. is equally appropriate for other countries:

"Passions run high in the debate on bilingual education. Unfortunately, political static has often blocked the lines of communication between researchers and educators. Much confusion persists over both the phenomenon of bilingualism itself and the goals and methods of bilingual education. Until the terms of the debate are clarified, the policy debate will continue to be dominated by political rhetoric and folk notions"(p.39).

I hope that with my paper I can add to the clarification of terms and a better understanding of the relation between language(s) of instruction and achievement in school.

The kind of analysis presented here, is intended to

- a) synthesize the main findings of a large body of diverse literature and draw policy relevant conclusions if possible (the main text), and
- b) present as much detailed information for the reader who is interested in particular aspects of the main issues and/or wants to draw his/her own conclusions (the tables and appendices).

2.Scope

In this paper, I attempt a comprehensive review of literature of the last fifteen years. It is not intended as a formal meta-analysis or a "best-evidence synthesis" in Slavin's sense (Slavin, 1986). In both these kinds of research reviews, the

use of effect size is paramount. Most of the available material on language of instruction issues, however, does not include data necessary to estimate effect sizes. This paper, then, is a more informal review of available material to determine

- a) what is available,
- b) what seems to be missing,
- c) what -if any- conclusions can be drawn.

PART ONE: THE STUDIES

The literature I reviewed varies in focus and quality. Among the forty studies I reviewed in detail are true experiments, ethnographic observational studies, brief summaries of reevaluations and others. Some studies investigate specifically one issue, e.g. one age-group in a particular setting, whereas others deal with a much wider range of topics. A number of studies and more so some of the more theoretical literature on the topic decry the lack of consistent quality in the field of language of instruction/bilingual education research. Some examples are: inconsistencies in the use of research terminology; failure to do pretests (on the other hand failure to acknowledge the mortality effect in pretest-posttest designs)(de Bot et al., 1985); inclusion of under- and over-aged pupils in enrolment data (Mbamba, 1985); failure to discern confounding variables (Engle, 1975).

However, more serious than these criticisms are in my view charges of questionable assumptions (Paulston, 1975), use of culture-unfair testing (Cummins, 1984), lack of local knowledge (Okoh, 1981), and ethnographic bias in general (Connor, 1983;

Extra and Vallen, 1985; Stanfield, 1985), a cause or result of the latter. It is hoped that a substantial increase of input from local/indigenous researchers will help remedy this situation.

1. Selection Criteria

Taken as a whole, the research documents reviewed here had to

a) provide adequate coverage of diverse geographical, social, and political situations;

b) include a mix of different types of research, i.e. primary studies, as well as reanalyses of survey data and previous reviews;

c) contain the expected information, i.e. measurable data on achievement as a function of language of instruction. The amount, type and presentation of this measurable data vary greatly from study to study. In view of a serious lack of specific and detailed research studies on the issue, particularly in Third World Countries, I included even scant information found in larger surveys or more general contexts, as long as it was based on empirical data.

With these criteria in mind, I included 40 studies. (#2)

2.Characteristics

a) Geographical, social, political situations

There are 18 studies for group one (indigenous peoples), 9 for group two (established language minorities) and 12 for group three (immigrants/recent arrivals).

Grouping the studies first according to types of bilingual communities (Lewis, 1980; Rist, 1983) is based on the idea that

the political/social and linguistic environment in which any bilingual or multilingual endeavor is set is one of the fundamental factors determining the language planning policies behind it and its outcomes.

The distinction of three groups is a crude one, but should suffice for the purposes of this paper: it contains the crucial dimensions of diversity of language minority groups (Churchill, 1983): length of establishment (with indigenous peoples by and large the longest established), geographic containedness (a positive factor for stable, established language minorities), and cultural isolation (as often observed among immigrants/recent arrivals). To the last, I would add, as the opposite side of the coin, forced assimilation.

Under "Others" I added two studies that address two different populations not covered by groups one to three in order to give as comprehensive a picture as possible. (#3)

Nevertheless, with 11 studies from the Americas and 7 from Africa in group one, and one third of group three studies addressing basically the same population, the coverage is not as comprehensive as one might wish. Instead, we see clusters of studies within a particular country or area or for a specific population. Moreover, we note the absence of studies from Asian countries (#4) and the USSR (#5).

The representation of different language contact situations is also quite limited with an overwhelming amount of studies dealing with English (12) and Spanish (14) as first or second languages (henceforth abbreviated as L1s and L2s).

b) Different types of research

25 of the 40 documents are primary studies, including among others: detailed observational studies (e.g. study 8), experiments with elaborate statistical analyses (e.g. 20), survey type reports (e.g. 37), analysis of parts of an existing data set (e.g. 29), situational descriptions (e.g. 13), and combinations of the above.

15 are reevaluations or reviews from secondary sources. These range from short summaries (e.g. 31) to comprehensive reevaluations (e.g. 4). I have consulted as many secondary sources as possible for each of these 15 studies and incorporated the diverse (sometimes contradictory) information in the so-called "overviews" in Appendix One.

Table One (between pages 8 and 9) lists the studies by given number and name and by primary author(s)/researcher(s) and/or secondary author(s)/reviewer(s), and year(s) of publication. Information from a meta-analysis is included in the text. (#6)

The studies also vary greatly in (sample) size and as to the time span they cover (the "overviews" and Table Four in the Appendix provide detailed information on these characteristics). All studies included involved some kind of comparison group, but only some chose their subjects randomly.

These differences in research design and in the kinds of evaluations reviewed here should be kept in mind when looking at the outcomes. The outcomes are not strictly comparable and their generalizability is therefore limited. However, they give an indication of what there is. The appendix "overviews" give

the reader details that cannot be summarized in the text and thus a chance to retrace specifics.

Group one: Indigenous peoples

No.	Name	Author/s and year
1	Alaska-Eskimo	Orvik(1975)
2	Rough Rock	as reported in Delpit (1982)
3	Rock Point	Dutcher (1982)
4	Chiapas	Modiano (1973) as reviewed in Engle(1975) Delpit(1982), Dutcher(1982); also see Paulston,C.B.(1975' and Garcia(1984)
5	Montana de Guerrero	Weller (1986)
6	Guatemala	Newman (1985)
7	Ecuador	Ortega (1978) as reported in Larson and Davis(1981)
8	Puno,Peru	Hornberger (1985); also see RAE#3.201 (Lopez) and Frankfurter Allgemeine Zeitung,Dec 30, 1982
9	Jungle, Peru	Larsen and Davis (1981)
10	Paraguay I	Rivarola; Corvalan and Zuniga (1978)
11	Paraguay II	Veron (1982)
12	Tunisia	Fitouri (1984)

No.	Name	Author/s and year
13	English Medium Zambia	Munungwe (1982)
14	PEIP (Nigeria)	Omojuwa (1978)
15	Six-Year Primary Pro- ject(Nigeria)	Afolayan(1976); Ansre(1978); Yoloye(1977), Cziko & Ojerinde (1975), Ojerinde and Cziko (1978), Ojerinde (1978) as reported in Bamgbose (1984) Dutcher(1982); Delpir(1982); also see Taiwo(1976)
16	*(Nigeria; also see Cross- cultural Study)	Okoh (1981)
17	Ghana (Concept Formation)	Collison (1974)
18	Uganda	Lagefoged et al (1971) as reported in Engle (1975)
<u>Group two: Established Language Minorities</u>		
19	Early French Immersion Canada	Harley, Hart & Lapkin (1986)
20	French Immer- sion Canada (Math)	Fu and Edwards (1985)
21	Wales 1978	Schools Council Wales (1978) as evalu- ated in Fris (1982); also see Evans (1976); Khleif (1980)
21a	*(Wales; also see Cross- cultural Study)	Okoh (1981)
22	Spoken Irish	Harris (1983)
23	South Jutland	Byram (1985)
24	Catalonia 1970	University of Barcelona study as summarized in Siguan (1984)

No.	Name	Author/s and year
25	Catalonia 1982	Department of Education study as evaluated in Siguan (1984)
26	Yugoslavia	Mikes (1984)
<u>Group three: Immigrants/Recent Arrivals</u>		
27	Mexican-American 1980	Curiel, Stenning and Cooper-Stenning (1980)
28	Mexican-American 1985	Valenzuela de la Garza and Medina (1985)
29	Hispanic	Chan and So (1982)
30	Santa Fe	Leyba (1978) as reported in Valenzuela de la Garza (1985)
31	Edmonton Ukrainian	Cummins (1981) summarizes Edmonton School Board (1979) and Cummins & Mulcahy (1978)
32	Olofstrom and Gothenburg	Skutnabb-Kangas and Toukomaa (1976) as reported in Dutcher (1982); Kerr (1983); Tosi (1984) and attacked in Ekstrand (1982)
33a and 33b	Original FISK (Sodertalje)	Hansen (1979) a) as reported in Skutnabb-Kangas and Toukomaa (1979) and Dutcher (1982); b) as evaluated by Ekstrand (1982)
34	Extended FISK	Hansen (1982) as reported in Skutnabb-Kangas (1983)
35	England Multi-Racial	Mc Ewen, Gipps & Sumner (1975)
36	Holland/Pilot	Galema and Hacquebord (1985)

<u>No.</u>	<u>Name of study</u>	<u>Author/s and year</u>
37	Turkish Adolescents	Mehrländer (1986)
38	Offenbach Greeks	Zografou (1982)
<u>Others:</u>		
39	Norra Real Stockholm	Beebe & Fägerlind (1978)
40	Half-Day French Cincinnati	Holobow et al. (1987)

PART TWO: OUTCOMES

Table Two (between this and page ten) presents an overview of outcomes measured in each study. They are categorized as follows:

A Academic Achievement

Aa Language

Ab Mathematics

Ac Other subjects or unspecified (i.e. academic achievement in general)

B Pedagogical Benefits

A/B A combination of (unspecified) A and B

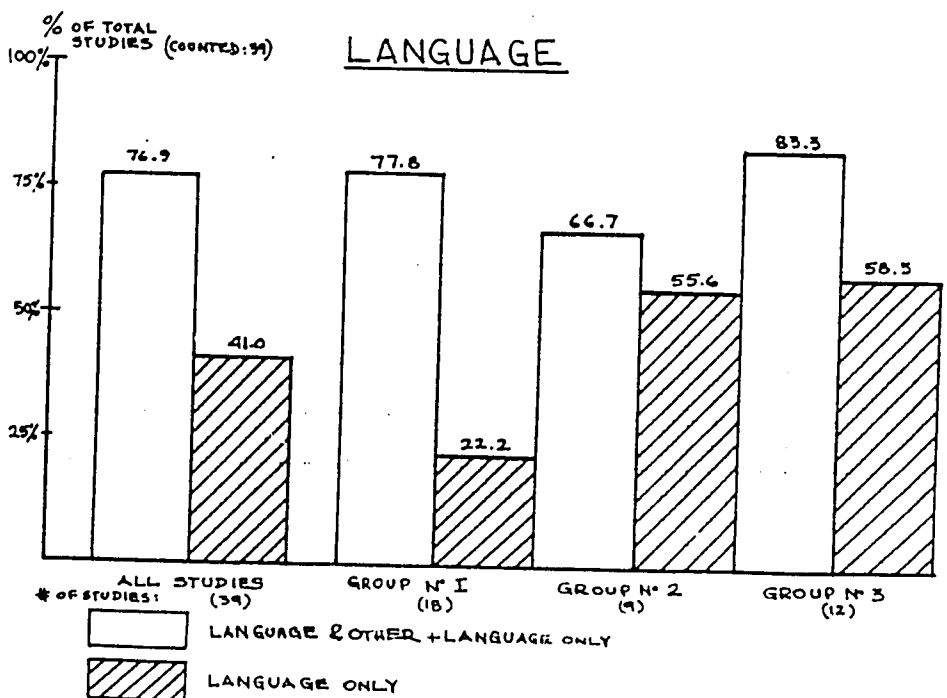
S School efficiency and beyond (e.g. drop-out-and promotion rates; entrance to secondary/higher education; employment chances).

In the following, I look at the outcomes for each category:

Aa Language

The large majority of studies measures language outcomes, and many of these take this as their only outcome measure as

Figure One shows:



<u>Group one: Indigenous peoples</u>			<u>Outcomes</u>					
<u>No.</u>	<u>Name of study</u>	<u>Languages</u>	<u>Aa</u>	<u>Ab</u>	<u>Ac</u>	<u>B</u>	<u>A/B</u>	<u>S</u>
1	Alaska-Eskimo	Yupik, English	*	*				
2	Rough Rock	Navajo, English	*		*	*		
3	Rock Point	Navajo, English	*	*				
4	Chiapas	Various Indian lgs., Spanish	*					*
5	Montana de Guerrero	3 Indian lgs , Spanish	*					
6	Guatemala	4 Indian lgs , Spanish	*	*	*			*
7	Ecuador	Quichua, Spanish	*	*	*			
8	Puno, Peru	Quechua, Spanish	*			*		
9	Jungle, Peru	Various Indian lgs., Spanish	*					
10	Paraguay I	Guarani, Spanish	*		*			
11	Paraguay II	Guarani, Spanish	*					*
12	Tunisia	Colloquial Arabic, Formal Arabic, French				*		*

Table two continued

No.	Name of study	Languages	Aa	Ab	Ac	B	A/B	S
13	English Medium Zambia	Various African lgs., English					*	
14	PEIP (Nigeria)	Various African lgs., Hausa, Arabic, English					*	
15	Six-Year Primary Pro- ject (Nigeria)	Various African lgs., Yoruba, English	*	*	*			*
16	*(Nigeria; also see Cross- cultural Study)	Yoruba, English	*					
17	Ghana (Concept Formation)	Ga and Twi, English				*		
18	Uganda	Various African lgs., English	*					
<u>Group two: Established Language Minorities</u>								
19	Early French Immersion Canada	English, French	*					
20	French Immer- sion Canada (Math)	English, French		*				
21	Wales 1978	Welsh, English	*	*				
21a	*(Wales; also see Cross- cultural Study)	Welsh, English	*					
22	Spoken Irish	Irish, English	*					
23	South Jutland	German, Sonderjysk, (Dan. dialect) Danish (standard)				*		
24	Catalonia 1970	Catalan, Spanish	*					

No.	Name of study	Languages	Outcomes						
			Aa	Ab	Ac	B	A/B	S	
25	Catalonia 1982	Catalan, Spanish	*						
26	Yugoslavia	3 'nations' lgs. and 9 'nationali- ties lgs.'							*
<u>Group three: Immigrants/Recent Arrivals</u>									
27	Mexican- American 1980	Spanish, English	*						
28	Mexican- American 1985	Spanish, English	*						
29	Hispanic	Spanish, English	*	*					
30	Santa Fe	Spanish, English	*	*					
31	Edmonton Ukrainian	Ukrainian, English	*						
32	Olofstrom and Gothen- burg	Finnish, Swedish	*						
33a and 33b	Original FISK (Sodertalje)	Finnish, Swedish	*						
34	Extended FISK	Finnish, Swedish	*						
35	England Multi- Racial	Various European and Asian lgs , English	*						
36	Holland/Pilot	Turkish, Dutch	*		*				*

gd

end of table two

No.	Name of study	Languages	<u>Outcomes</u>					S
			Aa	Ab	Ac	B	A/B	
37	Turkish Adolescents	Turkish, German						*
38	Offenbach Greeks	Greek, German						*
<u>Others:</u>								
39	Norra Real Stockholm	Several lgs , English, Swedish	*		*			
40	Half-Day French Cincinnati	English, French	*					

Looking at the "language" outcomes for each group separately, two results stand out: proportionately, group three has the lowest number of positive outcomes, whereas group three has no negative outcome.

Whereas it is not within the scope of this paper to look at each specific language outcome separately (the interested reader is referred to the Appendix), it is warranted to look for evidence concerning the following questions:

1. Does learning reading in L1 enhance learning reading in L2?
2. Does learning through (or partly through) L1 enhance those language skills in L2 which are necessary for achievement in school?

1. Learning reading in L1

As Paulston (1975) states quite simply, "no one has really claimed that it is not easier and faster to teach children to read in their mother tongue" (p.383). However, the question remains if the child will learn to read more rapidly in L2 if taught to read in his/her first language.

This is of central importance to all children who have to learn to read in a second language (be it because their first language is not of wider communication or not the official language or not the language of secondary/tertiary education).

It is of particular importance to those children who for a variety of external factors (e.g. poverty, illness, distance to school, employment in agriculture) cannot continue their

schooling beyond a few years, a wellknown phenomenon, particularly in the Third World.

Of course, internal - i.e. school related - factors such as educational contents, methods, quality of instruction also contribute to this educational wastage (Gajardo, 1986; Mbamba, 1985). Among these endogenous factors, those related to language of instruction are of primary concern, and the choice of language in which the child learns to read seems of crucial importance.

James (1981) illustrates the case of multilingual Nigerian children who require the use of three to four languages in order to function well within their society, and for whom learning to read in yet another language (this may be Yoruba or in remote schools in some States still English) constitutes a handicap which contributes to the high drop-out rates.

Similarly, on another continent, Heysen (1978) largely blames monolingual Spanish education and alphabetization for school drop-out of monolingual Quechua children which causes them "psychological damage" and is the reason that they do not learn to read and write (p. 301) .

Moll and Diaz (1985) who conducted a microethnographic study in two fourth grade ethnically mixed Spanish/English bilingual classrooms in Southern California, were concerned that Spanish L1 children were usually put into lower level English reading classes regardless of their reading ability in Spanish, and purely on the basis of their perceived oral language performance

(i.e. as a result of confounding reading and oral language proficiency on the part of the assessors). However, when using instructional intervention methods in L1 (during the process of their research), they found that these children when allowed to read English at their Spanish reading level showed that they could very well master it in terms of understanding. They had grade appropriate reading skills and read for comprehension rather than decoding. According to the researchers, they were merely behind in the "lower order English phonetic skills" (p.148). Moll and Diaz conclude that their interventions (using L1 with the goal of reading for meaning) could only have been so successful because the children had strong preparation in their native language, and thus, they reason, their research provides strong evidence to support programs which develop strong reading skills in their native language.

In the 40 studies there is evidence in favor of learning reading in L1 explicitly in studies 3, 4, 9, 24, 28, and 34. In these, learning reading in L1 is specifically mentioned as a policy variable.

In other studies which show positive effects of "bilingual treatment through primary school" (e.g. 6, 8, and 21), we can only assume that this treatment includes learning reading in L1. There are three studies which investigate the impact of learning in L2: of these, one study (10), is not, the other two (18 and 19) are in favor.

These three investigate so-called immersion programs in contrast

to the others which evaluate transitional and maintenance bilingual programs. What these are, how they differ from each other, and what effect the differences seem to have on the outcomes will be discussed in Part Three under 'policy variables'.

Leaving aside the policy and conditioning variables and looking only at the outcomes, it seems safe to say that there is more evidence that learning reading in L1 does have positive effects on language achievement rather than negative effects.

Perhaps during the decade that has passed since Paulston's statement that there is "as yet no conclusive answer to this simple question" (Paulston, 1975, p.373) there have after all been advancements in the area of m.t. and bilingual instruction.

2. Does learning through (or partially through) L1 enhance those language skills in L2 which are necessary for achievement at school?

In a number of the studies reviewed here, we find as language achievement outcomes some non-specific language outcomes under terms such as "English progress/French progress (40)", "English proficiency"(35), "Spanish ability"(24), "Language proficiency" (16/21a).

But what do these terms mean? What constitutes "language proficiency"? There is a lot of debating going on about this and similar questions. As Cummins (1984) puts it, "Disagreement about appropriate ways of conceptualizing the nature of language proficiency underlies many quite diverse controversies, and

language proficiency and the nature of its cross-lingual dimensions" [lie] "at the core of many hotly debated issues in the area of bilingual education (p.130)."

Cummins' initial work has been instrumental in constructing a theoretical framework for conceptualizing the relationship of language proficiency and academic achievement. He distinguishes between two different aspects of language proficiency which in his earlier work (Cummins, 1979) are called the BICS and the CALP. (#8) The so-called Basic Interpersonal Communicative Skills involve primarily phonological, syntactic and semantic skills, whereas the Cognitive Academic Language Proficiency involves literacy-related skills such as reading comprehension, vocabulary/concept knowledge and writing ability.

This basic framework has over the last decade been refined by Cummins himself (Cummins, 1981) and by other language acquisition researchers. Along with the new emphases the terminology has changed so that nowadays communicative competences are seen in terms of cognitively demanding/undemanding or most recently "contextualized" and "decontextualized" (Snow, 1987).

Taking these later developments into account, the case for distinguishing between the two basic kinds of language proficiency is made even stronger. It is an obvious conclusion that what counts for school achievement are the more "academic" language skills (the CALP, desembedded, cognitively demanding, decontextualized skills).

It is important to note that native speakers have largely

acquired conversational language skills by the age of six, and L2 learning children master them within a few years. (In the case of immigrant children exposed to English-speaking peers, TV and schooling within about two years (Cummins, 1981). On the other hand, acquiring academic language skills will take a much longer time for the native speaker and, of course, longer for L2 learners. (#9)

Not many of the studies investigate the older (here: beyond grade 3) age group. Of those that do (e.g. studies 3, 8, 10, 15, and 27) at least three (3, 15 and 27) seem to support the claim that academic language skills are acquired later.

In study three, (the Rock Point study carried out among Navajo children in a bilingual Navajo/English program), language outcomes in general were 'equal' or 'negative' in grades two and three, but reading English (and English language) were positive in grades four to six, where they were moreover accelerating with each year.

If we remember that in many Third World Countries children drop out after grade three, (some even earlier), this finding is -to say the least- disturbing.

In terms of evaluations, this largely developmentally conditioned 'time lag' between acquiring the two types of language proficiency skills has at least two implications that are noteworthy here:

1. Children in bilingual educational settings who have already acquired the conversational skills well enough to function

adequately in L2 are often misjudged as "dumb" when they fail to do just as well in the academic language skills in L2. Why? Because as they "talk so well" it cannot be L2 language problems that hold them back, but must be some general cognitive deficiency (or even stubbornness)- or so the argument goes.

2. Because of the above mentioned 'time lag', many evaluations of programs and projects do not really evaluate what they are supposed to: they are done a) too early in the life of the program and b) only at one (may be two) point(s) in time, instead of later and over a longer time span.

The lack of but need for evaluations that start after the program has been in progress for a number of years and that are longitudinal is frequently mentioned in the literature (e.g. Delpit, 1982; Galema and Hacquebord, 1985; Swann, 1985; Weller, 1986; and Tucker and Cziko, 1978 who talk about the "pressure to evaluate"(p.430) and decry the "unfortunate tendency for administration to regard initial results as a major criterion for continuing or terminating a proposed lengthy project" (p. 431)).

A study on Turkish children in Holland (36) shows that reading comprehension (i.e. one of the academic language skills) is adversely affected by a monolingual L2 program for (conversationally proficient) Turkish/Dutch bilinguals.

As the authors of this study point out, "(t)exts play an important role in education (and) a considerable part of the

contents of school learning appears in the form of texts." Obviously, then, "a limited text comprehension level will have negative consequences for success at school.

(Galema and Hacquebord, 1985, p.199)."

Concluding these pages on language achievement outcomes, I would like to explain why I have discussed them in such great detail:

1.. Language achievement (in its various forms) is most often chosen as an outcome measure for studies investigating the effect of language(s) of instruction.

2. According to Cummins' well established and supported interdependence hypothesis (Cummins, 1979), literacy-related aspects of a bilingual's proficiency in L1 and L2 are common or interdependent across languages.

3. Learning to read is one of the early activities in school and thus one which the majority of even those children participate in who drop out from school early. If it is to be meaningful to them, the greatest efforts must be made to -at least- teach these children to achieve a literacy standard at school which will allow them to use their literacy skills later outside of school so that they do not become functional illiterates. Falling back into illiteracy does not only cause great personal frustration, but is a great waste of effort and money, and a significant contributor to overall educational wastage, even though it is rarely measured or statistically

represented as are other indicators of wastage.

Language is related to other cognitive processes (#10), and there has for a long time been interest in (and controversy about) the relationship between bilingualism and cognitive functioning.

Although the majority of related studies deal with child bilingualism (i.e. bilingualism acquired through circumstances in childhood), there are quite a few which investigate how bilingualism as a result of school programs affects cognitive processes. Kessler and Quinn (1982) reviewed numerous studies and came to the conclusion that the majority of studies of the last 20 years which utilize more controlled methodological procedures (including, for example, language proficiency measures and relevant background characteristics such as SES, age, gender) reported positive cognitive consequences associated with school-related bilingualism (#11). It is not difficult to see how positive cognitive consequences might affect academic achievement. Clearly, to take an example, divergent thinking (please see note #11) is useful for -among other things- problem solving in subjects such as mathematics and science.

To these we draw our attention now:

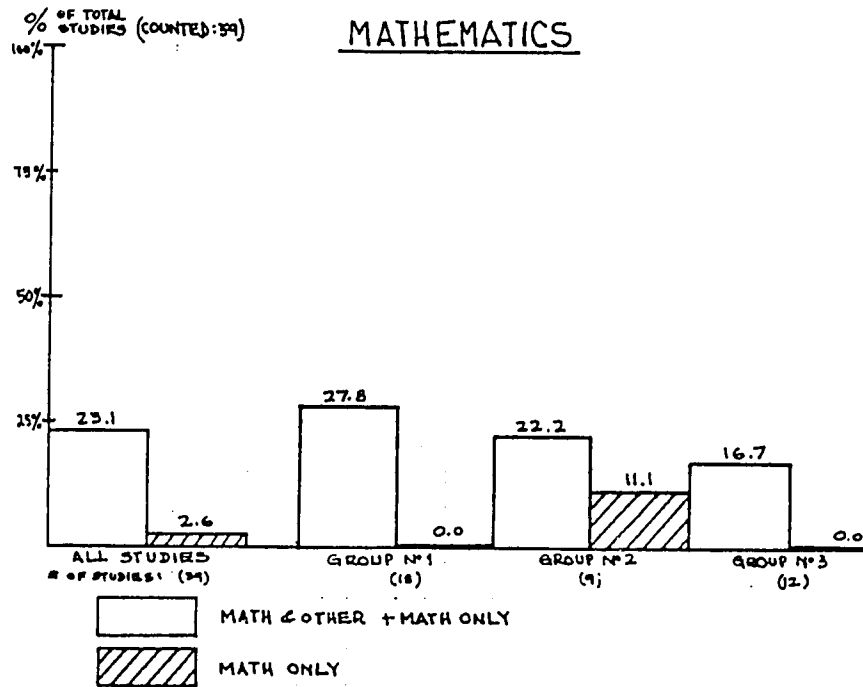
Ab Mathematics

Ten of the 40 studies investigated the effect of language(s) of instruction on mathematics. Only one of them had mathematics as the only outcome measure.

Proportionately most were of group one, followed by group two,

then group three, as is illustrated in the following figure:

Figure Two



A total of 26 "mathematics" outcomes were counted from the data in the "overviews". The outcomes are as follows: 10 are positive (+ or ++), 12 are equal (=), and 4 negative (- or --). This means that some (as yet unspecified) m.t. or bilingual treatment had more positive than negative effects on mathematics achievement. However, the 12 measured outcomes that showed no effect mean that whether or not there was m.t. or bilingual treatment did not seem to make a difference on mathematics achievement. This is quite different from what happened in the language category. There we had found proportionately far less 'equal' than 'positive' outcomes. This indicates that an m.t. or bilingual treatment seems to have less positive effect on

mathematics than on language achievement, or, in other words, might be less necessary for mathematics achievement.

Collier's findings, reported in a recent article (Collier, 1987), corroborate this result: "Relatively recent" immigrant students in American ESL programs (they did not receive any formal instruction in their L1 at school) reached classmates' levels in mathematics achievement in a very short time, whereas it took them considerably longer to achieve such levels in reading and social studies.

Another distinct outcome of the mathematics achievement studies is that (compared to the language studies) they showed more consistency in results within a study on 'sub-measures' (see studies 6, 20, 21, 28). I can only speculate that perhaps sub-tasks are more closely related in math and/or may be language of instruction affects different kinds of mathematics skills in a more similar fashion than it does language skills.

Ac Other subjects or unspecified

This category includes studies which measured outcomes in

- a) other (named) subjects and
- b) 'unspecified' academic achievement.

The other subjects are:

- social sciences/social and cultural studies (in 3 studies)
- natural science (in 2 studies)
- science (in 3 studies)

- religious knowledge (in 1 study).

Results for 'social sciences' are all positive, for 'science' and 'natural science' mixed and for 'religious knowledge' negative. We must keep in mind that all of the above except for one 'science' result are from elementary grades 1 through 6 where these subjects are still in their beginning stages.

The one exception comes from the "Norra Real Stockholm" study (39) which is an exception in a number of other ways: the population it researches are 16 to 18 year old international students in Upper Secondary grades I-III in one Swedish school (the "Norra Real") who were taught the Swedish science curriculum through English medium, regardless of their m.t. (in this study called home language). The crucial outcome of this study - which might have implications for other population groups - is that there was a strong relationship between reading comprehension and science achievement.

Unspecified academic achievement results are labelled in the studies as "scores", "academic achievement", "total achievement", "progress in general". There are only five 'measured' results altogether: three negative, one mixed, and one positive. Note that in this (admittedly and fortunately very small) category where measures are diffuse there are more negative outcomes! (And the only positive one is from an elaborately designed and thoroughly analyzed statistical study).

We find similar skimpy negative or no effect 'evidence'

quoted in the voluminous Swann Report (Swann, 1985) (#12) which expresses the official British government standpoint that "mainstream schools should not seek to assume the role of community providers for maintaining ethnic minority languages" but that Local Education Authorities should offer "support" (p.427).(#13)

B Pedagogical Benefits

With 'Pedagogical Benefits' I mean here those benefits which are different from the ones measured as academic achievement or in terms of school efficiency. Studies 2, 8, and 17 measure outcomes that fall under this category. In study 2, "embracing Navajo culture" was considered one of the goals of the bilingual program, but according to the evaluators not reached. Study 8 is a detailed observational study about a Quechua-Spanish bilingual program in the Andean town Puno in Peru. Positive outcomes were noted in classroom relations, teacher techniques (which improved because of the program/program participation), and transmission of educational content. (The same study also gave evidence of positive effects of the bilingual program on language achievement [please see "overviews", category Aa]).

Study 17 is somewhat misplaced under this category, but close enough to avoid creating yet another category. It is also one of its kind in that it combines a philosophical background with an elaborate experimental design and thorough statistical analyses:

It investigates the effect of the use of two Ghanaian languages (Ga and Twi) on concept formation. The author concludes convincingly that the use of the vernaculars allows better conceptualization (than the use of English). The experiment was carried out through teaching science units in the languages Ga and Twi (and in English).

This study is also of special importance, because it addresses the question of 'scientific language'. The argument has often been made that most vernaculars cannot satisfactorily be used for scientific purposes, because they lack the necessary terminology, even structures to express scientific thought and technological procedures. However, contrary to popular (mainstream) opinion, there is evidence that vernaculars can, indeed, be extended to be/come used in modern science and technology. Without researching this question in detail (as it is somewhat aside from though related to my topic) I came across this kind of evidence in three documents: the study mentioned above, further in Afoloyan's (1976) preliminary results of the Six Year Primary Project in Nigeria (study 15) (language Yoruba), and in Houis (1976) who refers to a 1975 Bulletin de l'Institut Fondamental d'Afrique Nord in which a translator (Sheik Anta Diop) "gives a Wolof translation of scientific texts (theory of sets, relativity, quantum chemistry, etc.)...[and] asserts that it is a feasible undertaking" (Houis, 1976,p.397). Houis concludes that there is no reason that he [the translator] is ^{not} right. Two authors of studies respectively on curriculum

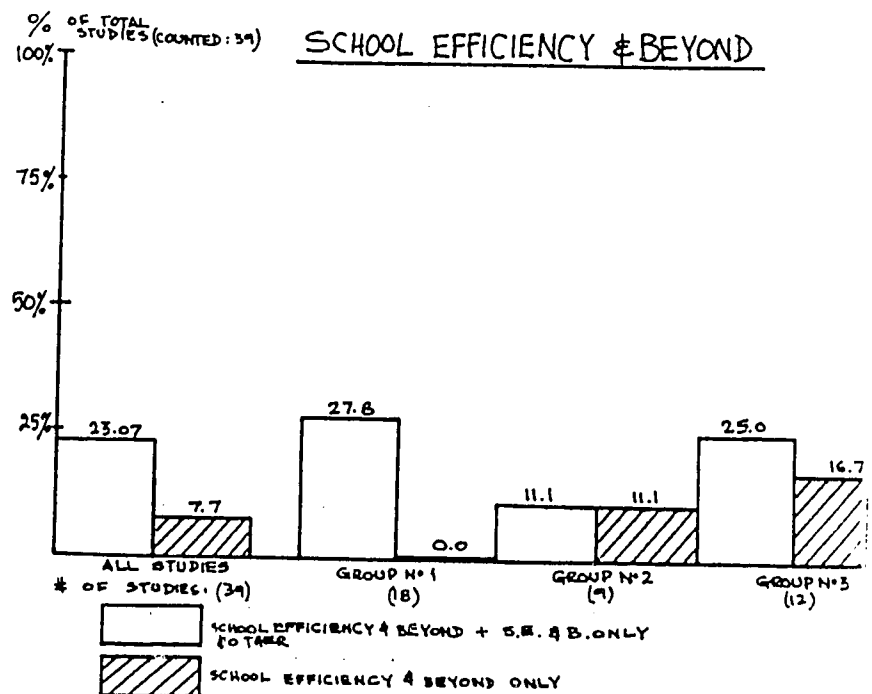
development in Upper Volta (Quedraogo, 1983) and the Moroccan language and education situation (Bentahila, 1983) decry in similar ways that the popular (ill-informed) belief still exists that French is the only possible language for science, and that this myth is an attitude problem rather than one grounded in the languages themselves. (#14)

Collison (author of the aforementioned Ghanaian study) quotes Pattison (1962) as saying that "[g]iven time any language seems to be able to cope with most of its community" (Collison, 1974, p.456). He outlines how in 1400 English was scarcely forseen to be the satisfactory medium for the proceedings of the Royal Society, a position it had achieved by 1700, and he argues that "other languages can extend their range as English has done" (ibid.). (#15)

S School efficiency and beyond

Nine studies contain outcome measures in this category, and three of these no other outcomes. Figure three illustrates how they are distributed.

Figure Three



School efficiency outcomes show overwhelmingly positive results in regard to m.t. or bilingual treatment:

promotion rates are up in two cases, repetition rates down in two (different) cases, drop-out rate is down in one case; and one study reports more success in teaching girls (and consequently better chances for enrolling more girls in the future). I found that five of these studies explicitly relate language of instruction in primary school to access to secondary school (studies 12, 15, 26, 36, 37). The findings are:

- In Tunisia (study 12), admission to middle school was after some years in an Arabic/French bilingual program most strongly related to the students SES and m.t. (here called home language), and these were interrelated (highest SES-home language French, etc.).

- The Six-Year Primary Project study (15) showed no effect on secondary school entrance examinations.

- In Yugoslavia, negligibly fewer students taught in one of the nine languages of the "nationalities" (corresponds with 'ethnic minorities') were promoted to secondary school than those taught in one of the three "languages of the nations" (somewhat the equivalent to 'official languages') (study 26).

- 10% of Greek immigrant children in one German city attended German-only primary school classes, and of these 55% went on to middle or high school, a much higher success rate than that for the 90% who went to Greek national or "bilingual" classrooms in the city. This is the only study in this category with positive

outcomes for L2 medium instruction. This seems to be partially the result of a qualitative 'pre-selection' according to the author who found that the higher the percentage of Greek children in the national or "bilingual" classes (i.e. the fewer in the regular German medium classes), the higher the achievement of those who are in the regular German medium classes (study 38).

- Turkish students in Dutch-only classes were underrepresented in the more academic secondary schools (study 38). This finding can be interpreted as negative effects of 'L2 medium only' on enrollment in more academic types of secondary schools. However, a direct causality is not established. Rather, the fact-finding in official records resulted in the observation that Turkish immigrant children who had been taught through Dutch exclusively since their first year at primary school are overrepresented in lower (less academic) types of secondary schools. This finding, together with the hypothesis that limited reading ability in Dutch might be the possible cause, led to this study (its reading comprehension results were discussed above under category Aa).

The study on Turkish adolescents in the Federal Republic of Germany (37) follows a somewhat similar route showing the employability of Turkish adolescents who had been enrolled in German-only classes. Their unemployment rate was strongly related to their command of German, and their command of German to the number of years they had attended German-only classes. It

took those students who finally did achieve a high command of German (not quite 70% of the whole group) nine and more years to get there. With a mere one and two years of school attendance, less than 50% were in the 'high' group. Years of attendance had also had a higher effect on girls' command of German, probably because Turkish girls in Germany socialize less outside of school boundaries than do Turkish boys.

Obviously, there are many more factors that determine the employability of (language)minority adolescents in the Federal Republic of Germany, but this study shows that language is a crucial one and that certain educational language policies (in this case L2 medium instruction only) do not seem to speed up L2 learning and thus have - in a complex interweaving of variables- a negative effect on employability. (#16)

I found only the five above mentioned studies investigating the relationship between primary school language of instruction and access to secondary school and none which traces a direct link to higher education. It is, however, well known that language barriers are an important factor in limiting access to secondary and much more so to higher education. Considering again the three types of bilingual communities, this is particularly -although by no means exclusively- true for countries from group one. The following few examples should suffice to illustrate the situation:

- In Zaire (as in most other countries of francophone Africa), university instruction is in French, but most children are

already insufficiently prepared linguistically to enter the (French medium) secondary school (Goyvaerts and Semikenke, 1983).

- Peru's secondary and tertiary education is exclusively monolingual Spanish. "With the passage to the higher levels of education, monolingual vernacular-speakers disappear; and all that remain are bilingual speakers and a majority of (m.t.) Spanish speakers (Alfaro Lagoria and Zegarra Ballon, 1976, p.426).

- In the Autonomous Basque Community in Spain, instruction in both languages, Euskera (Basque) and Spanish is officially compulsory now up to university level; however 70% of "experienced teachers" do not wish to learn Euskera (Bernstein Tarrow, 1985).

- In lower and higher secondary schools in Nepal, more Nepali is used than at primary schools. In colleges, only those come to attend who have passed their (...) examinations in Nepali medium (Chand, Tuladhar and Subba, 1977).

- In Israel, Hebrew is the language of instruction in all institutions of higher education. However, "as one of the two official languages of Israel, Arabic is the language of instruction for Arab students from kindergarten to twelfth grade ...and...) [t]he Arab student is thus at a distinct disadvantage with respect to higher education" (Adler, 1986, p.80).

- In U.S. higher education where instruction is in English, entrance tests are also in English. An interesting suggestion-coming out of an appreciation for the 'two-way' approach to

bilingual education in a Bostonian school- was made by Christine Russell of Boston University: while -as she contends- it may be true that bilingual students develop more sophisticated learning systems, that aptitude may not register on the standardized testing (which is done in English). One useful direction might therefore be to convince universities "to take bilingualism into account as well as standard English scores" (Boston Globe, 7/19/1987).

Relating all this back to language of instruction issues in primary school and especially to learning reading, I quote Unoh (1980) who in the context of Nigerian university students talks of the "reluctant reading syndrome" and traces it back to a poor start in learning reading. He sees a direct link between inadequate reading skills and what he calls the "higher illiteracy syndrome" (as quoted in James, 1981, p.16).

PART THREE: LANGUAGE RELATED INDEPENDENT VARIABLES

The choice of a particular language of instruction does not in itself determine a particular outcome, because "language of instruction", the main independent variable, interacts with a number of language related (and probably other) variables.

Sometimes, these might not appear language related, when, in fact, they are as I will illustrate in the following example:

In a state with a decentralized education system, a rural committee has chosen the students' m.t. as the initial language of instruction. Teachers in this area have the following

different characteristics (among others):

- from area; same m.t. as student; no teacher qualification
- as above, but with minimal qualification
- as above, but fully qualified
- fully /minimally /not qualified and from different rural area, m.t. different from students'
- as above, but from urban area.

Additional variations:

- fluent in students' m.t., but of different ethnicity
- different attitudes towards own and students' m.t.(s).

Clearly, these characteristics are language related, but they could be summarized under a) teacher ethnicity/background (i.e. a contextual/conditioning variable); b) teacher language proficiency (which can be either a conditioning or a policy variable -the latter, for example, if only teachers with a certain language proficiency level were employed in particular grades etc.); or c) teacher training (i.e. a policy variable).

Apart from showing that seemingly language unrelated variables can very well be highly language related, this example further illustrates that the same influencing factors can in some cases be policy or conditioning variables or both (in the same situation). As another example we can take "age", a policy variable where mandatory age at school entrance is concerned, but a conditioning variable when it denotes developmental age for reading development. This does not mean that we can never clearly determine whether a variable is a policy or a

conditioning variable, but it is something to be kept in mind when reading the next paragraphs and the "overviews" of Appendix One.

Although there is a great variety of influencing factors, and "many of [the] variables themselves [are] likely to be interrelated in a complex manner" (Harris, 1983,p.13), some language related variables noticeably re-occur in the 40 reviewed studies (and in related literature). At these we will have a closer look now:

A (Mainly) Policy Variables

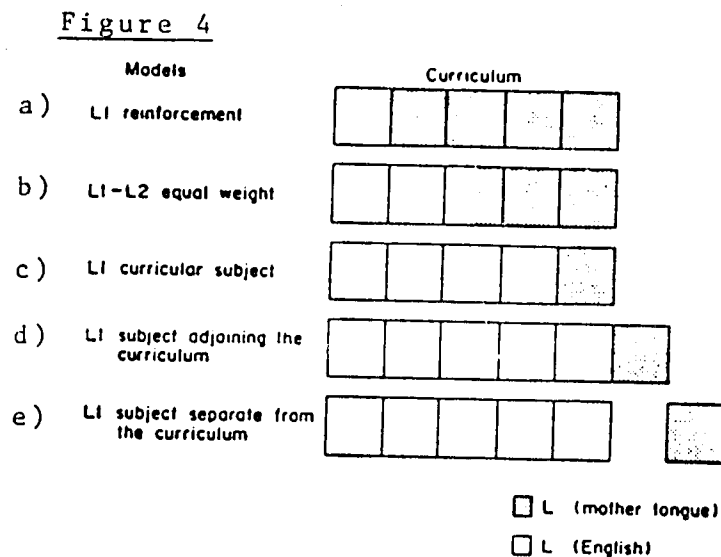
Language related policy variables most frequently and seemingly most strongly linked to outcomes are in these studies (apart from chosen language(s) of instruction)

1. the type of program (m.t.; bilingual; L2; etc.)
2. the actual use of language(s) of instruction in the classroom
3. teachers
4. test/examination language.

1. Type of program

In the pages about outcomes, I have several times referred to some "(as yet not defined) m.t. or bilingual treatment." Basically, 'treatment' here means different kinds of programs. These are distinguished first by the use of L1 and L2 (amount, when introduced, what used for), and second by not always clearly defined characteristics including teachers, materials, and methods. Their basic difference lies, of course, in their objectives.

The varieties in amount of use of L1 and L2 are nicely illustrated in Tosi's model of m.t. programs and the curriculum (Tosi, 1983, p.183) which is reproduced here as Figure Four.



Source: Tosi, 1983, p. 138

Although there is quite a variety of different programs, and different labels are used and sometimes cause confusion, there are three basic types of programs: transitional bilingual, maintenance bilingual, and immersion. We will see how each of these relates to Tosi's model.

Transitional bilingual programs

These programs have transition from L1 to L2 as their goal. In the U.S., this kind of program has been officially defined as "using the student's native language to teach subject matter

until he or she achieves English proficiency" (Navarro, 1985, p. 291, quoting from an official U.S. Department of Education document). There are many variations as to when and for what subjects or activities L2 is introduced/used, how long it is used, and if there is some kind of 'multicultural' component. In Tosi's model (Fig.4), this kind of program could be a successive move from a) through e) or part thereof. Six programs studied here are explicitly transitional (see studies 1, 4, 7, 9, 28, and 33a). Others can be presumed to be transitional (as, in fact, the majority of programs for immigrants are in the U.S.). Results here are: two 'mixed' and three 'positive' for language; one 'negative', one 'positive' and one 'equal' for mathematics; and one 'mixed' for other subjects.

Maintenance bilingual programs

These want to give the language minority child the opportunity to maintain and expand his/her L1 by using L1 as the language of instruction at least through all primary school (usually with an additional L2 component that might gain importance with successive grades).

In Tosi's model this would correspond to a) and b), depending on the language situation.

In this review, the proportion of maintenance bilingual programs is notably higher within population group two (for example studies 21 [Welsh], 22 [Irish], 24 and 25 [Catalan]). Only two of the 18 'group-one studies' are of this kind: the Six-Year Primary Project (Yoruba) in Nigeria, and the Puno, Peru project

(Quechua). Both were/are longitudinal projects, well designed and with considerable input from indigenous researchers and foreign donor agencies. Both had throughout positive results in the outcome categories academic achievement, pedagogical benefits (measured in the Peru study only) and school efficiency (measured in the Nigerian study only).(#17)

Yet, neither "made it" on the larger policy/implementation scale: the Six-Year Primary Project was after a number of years overrun by its less controversial competitor, the Primary Education Improvement Project (PEIP, study 14). According to the PEIP's evaluator, the Six-Year Project was too radical and therefore unacceptable to any government in Yoruba speaking states. The Puno project suffered a participation decline from 100 to 40 schools within a few years in spite of its great success in the classroom. And here, too, the reason that it became a larger policy failure seems to have been its too radical nature: community resistance (deriving to a large extent from negative language attitudes toward L1) was too strong, and the project was furthermore out of synchronization with national language policy.(#18)

Immersion programs

Immersion programs imply the use of the target language (L1), as the principal medium of instruction with the goal to teach it as quickly and efficiently as possible (Navarro, 1985, p.292). Except for a possible component of L1 as a subject (usually not in the first year), all teaching is in L2.

In Tosi's model this could be either c) or d). The L2 is typically an official language (although there are exceptions as will be seen later). "Immersion" has almost become synonymous with "Canada" because of the famous St. Lambert Program, the first and highly successful immersion program of its kind which has found many replications.

The Early French Immersion program reviewed here (study 19) had 'positive' and 'equal' effects on L1 outcomes. Subjects were L1 English students from kindergarten through grade 6. As in a number of other Canadian immersion program studies (including the St. Lambert), the positive effects were at least partially attributed to

- the subjects' white middle-class background;
- positive parental attitude towards school, the L2, and the program itself (indeed, parents chose to have their children participate) producing possibly the so-called "Hawthorne effect" which implies that parental involvement (in the [bilingual] project) in itself contributes to the project's success (Engle, 1975; Kleif, 1980; Newman, 1985);
- the fact that the L2 (French) is a language not only of wider communication but of considerable prestige worldwide, and
- the fact that the students' L1 (English) is the socially, politically and economically dominant language (which they would therefore hardly "unlearn") (Lambert and Tucker, 1972; Navarro, 1985; Holobow et.al., 1987).

The designers of the Cincinnati Half-day French Immersion

Program (study 40) took the 'white middle-class bias' to heart and included black and white children from both, middle- and working-class backgrounds. Their finding that SES and race did not have an effect on French (the L2) progress (though, as expected, on English achievement), led these researchers to conclude that this kind of immersion experience may help to diminish effects of social class background.

If these findings were to be replicated in different contexts, this kind of immersion program might be a viable alternative, but it is as yet too early to draw any generalizable conclusions. Moreover, as this was a "half-day approach" it can be argued that this program is a new approach to second language teaching rather than a new kind of immersion program. It also does not really compare with 'pure' immersion programs on language dimensions: in the case of the Cincinnati children, there was no L2 in their environment and from that point of view there was really no need to learn it; whereas in the Canadian case, L2 is a forceful factor in the social environment, and it is of visible advantage to learn L2.

Immersion programs should not be confounded with -officially- 'L2-only' curricula as we find them in studies 5, 10, and 11 (all L2 Spanish in Latin American situations) and in study 18 (L2 English in Uganda), or in studies 35, 36, 37, and 38 (in European countries for [recent] immigrant children). These "programs" have as a common characteristic that they are not planned and structured as immersion programs, but are usually

simply what is available for the mainstream children, and thus constitute a kind of "swim or sink" approach for language minority children. Moreover, in studies 5, 10, 11, and 18, the students' L1s are not prestigious and not of wider communication, and parents' and teachers' attitudes towards these L1s are usually negative. The results of these "programs" are mixed, tending to be more negative for monolingual L1 children (see study 10), but positive where L2 is supported actively by parents of professional background and urban location (see study 18).

2. Actual USE of language(s) in the classroom

A common theme in a surprising number of studies and in supporting literature is what has become known as the "dual medium". This is not the officially sanctioned and curriculum-incorporated use of two languages of instruction in the classroom, but refers to what is going on in the classrooms in which officially only one language (namely L2) is the designated language of instruction (Ansre, 1978 [Ghana]; Chand, Tuladhar and Subba, 1977 [Nepal]; Derrick, 1977 [England]; Guzman, 1985 [Mexico]; Kubchandani, 1978 [India]; Larsen and Davis, 1981 [Peru]; Newman, 1985 [Guatemala]). In reality, L1 is used as an instructional language alongside L2 to an extent that ranges from using it occasionally to help explain subject matter in grades I and II (Unesco, 1984: Papua-New Guinea) to using it "mostly" (study 5). In one of the Paraguayan studies, 80% of teachers say they use "dual medium" out of necessity, but 60%

would prefer to use Spanish only if it were feasible (study 11).

In the Zambian study (13) , "dual medium" is seen as necessary to avoid a total breakdown in classroom communication; on the other hand, "dual medium" (which can also be regarded as an outcome, namely of the official language policy) is considered the main culprit for students' inability to write on their own even after grade three. Here, most teachers interviewed did not prefer to use L2, at least not before grade three.

The SIL (#19) program in the Peruvian jungle is the only one I found which explicitly endorses the use of "dual medium". On the other hand, its missionaries see the linguistic situation as a 'dual language problem' (Larsen and Davis, 1981; my emphasis). This is only a surface contradiction, though: the SIL's goal is faster transition to L2 and faster assimilation into the non-indigenous (Christian) mainstream; and "dual medium" is systematically used as a useful instrument to get rid of the "dual language problem" (and all that goes with it). (#20).

3. Teachers

As a policy variable, "teachers " means specifically teacher training and recruitment. In a paper on the role of teachers and teacher training in Africa, Gerhardt (1981) points out that the new concepts and tasks for the teacher should have consequences for future recruitment and teacher training. Teaching in a bilingual classroom or through a language recently introduced as medium of instruction needs specific training. Many teachers are

put into these teaching situations without the necessary preparation and find the experience overwhelming. As a result they do not teach effectively through the new medium (Taiwo, 1976 about the Nigerian situation) or they cannot "survive" and therefore "flee", a trend recently observed in the Federal Republic of Germany, where teacher retention has become a major concern for educational authorities (Hill, 1987). Probably both groups would have benefitted from special training. Steps in this direction have been taken: in Norway, 'Education in the Sami districts' is now classed as an (officially recognized) subject of specialization (Hoem, 1983); and the younger German generation of students of education now have the option to major in the education of minority children at several teachers' colleges (Hill, 1987).

The usefulness, indeed necessity, to employ bilingual teachers (in transitional programs preferably both-way bilingual staff) and m.t. speaking teachers in programs which teach initially only through the m.t. is reflected in the reviewed studies. It is, however, extremely unlikely that this policy variable impacted the outcomes without interacting with a number of other variables. Moreover, knowledge of the students' m.t. alone does not seem to make the greatest impact, but rather being a native speaker from the same community who is also involved in community work (see studies 4 and 8). Studies that specifically mention the use of bilingual or m.t. (indigenous) teachers are 1, 3, 4, 8, 9, 21, 25, 28, and 33a). In the

Individualized Bilingual Instruction Program (IBI), employing indigenous speakers as teachers also had good results (McConnell, 1981). Beyond being a native speaker of the students' language, another important factor for the success of indigenous teachers lies in an understanding which comes from belonging to the same group. A teacher from the Peruvian jungle expressed this in the following simple statement:

"Only an Aguaruna can teach an Aguaruna."

(Larsen and Davis, 1981, p. 79)

The notion of 'cultural mismatch' as a negative influence in the classroom is, however, not universally accepted: in a study investigating the effects of value similarity, Maestas (1983) found no evidence for the previously supported position that value congruence between educators and students is more conducive to student achievement. The study's population were, however, Mexican American high school seniors (in US schools), and we might assume that the assimilation process had already done its share, or that the students were well enough stabilized so that their different values (which, indeed, they had) could exist apart from the educational process they were undergoing.

Summarizing we can say that m.t. and bilingual programs need as a component teachers who are specially trained, proficient in the language(s), understanding of their particular student population, and in some circumstances (e.g. in small rural enclaves) preferably from within the community.

4. Test/Examination language

Many students who are taught in one language, or bilingually are not given the chance to be examined in that (or their preferred) language. As a result they do not do as well as they might have done had the test language been the same as the language of instruction. The reason that this situation still prevails lies mostly in the simple fact that test materials are not available in those languages. Sometimes, test material in a 'majority' language is simply translated into a vernacular, but the test results are not better. This may be because the tests were biased in their content and/or form in favor of the mainstream student. There is a large amount of literature on "culture-fair"/"culture-biased" testing for minority students. (Clarizio, 1982; Cummins, 1984; Haynes, 1971; Oller, 1982; Scotton Williams, 1983; Tucker and Cziko, 1972). Generally, tests of ability constructed for use in one particular culture group do not have predictive value for a different group, and it is even wrong to assume that non-verbal tests are more free from environmental influences than verbal ones (Haynes, 1971, p.22). Two of our studies include test language as a specific policy variable: 16/21a and 39.

In the cross-cultural study (16/21a), two groups each of Nigerian and Welsh students were measured on language proficiency: a bilingual group (with English L2 in both situations), and a monolingual English (control) group. For both

(experimental) groups proficiency was significantly higher, when the tests were given in LI (Yoruba and Welsh respectively).

The "Norra Real" study (39) showed higher reading comprehension when test and home language were the same ; that was also true for word knowledge (this was in the area of science).

These two studies, then, make the point that test language does make a difference in outcomes. Unfortunately, often outcomes are compared that do not take this into consideration, and the results are then less reliable. The test language is not even always mentioned in research studies. More negative than the impact on the evaluation results, however, seem to me the possible negative effects on the children who have to take these tests.

B (Mainly) Conditioning Variables

The conditioning variables that are most frequently mentioned in the 40 studies and appear to be of impact on the outcomes, can be grouped into three clusters:

1. Student characteristics
2. Parents', Teachers' and Community's attitudes
3. Language role in society.

1. Student characteristics

Age: The age factor and its relation to language has been discussed before. (Please see Part Two). As the majority of studies deal with young elementary school age children, comparisons between age groups cannot be made. However, we noted that developmental reading age, age at entrance into a new

language community (study 33a and Collier, 1987), and age at introduction of L2 all play some role and possibly affect achievement.

In the case of many developing countries, age specific investigations are made more difficult because of large age ranges within one grade (e.g. study 6) or the practice of multi-grade classrooms (e.g. study 8). Same-age children, on the other hand, can sometimes not be compared because of different pre-school experiences which seem to be of particular importance for language minority children. (Mc Clintock and Baron, 1979 conclude that early bilingual education promotes bilingual language comprehension; and the Van Leer Foundation is increasingly interested in bilingual/multicultural pre-school education [Van Leer Foundation Newsletter, January 1987]).

Age in relation to language acquisition (here L2) has been extensively studied in international as well as U.S. contexts (Asher and Price, 1967; Collier, 1987; Fathman, 1975; Krashen, Scarcella and Long (Eds), 1982; Snow, 1986; and Snow & Hoefnagel-Höhle, 1977, 1978).

SES The role of SES on academic achievement was investigated in the following studies: 18 (Uganda), 19 (Immersion Canada), 21 (Wales), 29 (Hispanic), and 40 (Half-day immersion Cincinnati). We already discussed the results of studies 18, 19 and 40 in the context of programs.

The Welsh study comes to the same conclusion as the Immersion and the Uganda studies, namely that socially advantaged pupils

seem to gain more than others from a program of bilingual education. The Hispanic study comes to some very special results interrelating language of instruction in elementary school and SES and looking for outcomes in language and mathematics achievement in high school. These researchers found that in the all Spanish group 'English reading' outcomes, and in the all English group 'Mathematics' outcomes were not influenced by SES. However, in the all English and in the mixed medium groups, 'English reading' scores rose with rising level of SES, whereas in the all Spanish and in the mixed medium groups 'Mathematics' scores rose with rising levels of SES. They interpret these findings as evidence for a significant interaction effect between SES and language of instruction.

The situation gets more complex, when parental attitudes, linked to SES and status of language and other language factors are related. It is then almost impossible to dissect single variables; there is an ever greater net of confounding variables and interaction effects.

2. Parents', Teachers', and Community's Attitudes

We have already alluded to the role of parents in the context of SES and looked at teacher training, language proficiency and ethnicity as (mainly) policy variables. We know from all kinds of educational situations that parents, teachers and (perhaps to a lesser extent) the community play a role. In a study on determinants of school achievement in developing countries, Schiefelbein and Simmons (1981) list a total of 16 teacher

attributes that were found to be linked to achievement. Strangely, neither language proficiency (#21) nor attitudes towards language(s) were among the 80 mentions of teacher attributes. (Parents and community attributes were not investigated at all).

In the context of m.t. or bilingual education, parents', teachers', and the community's attitudes towards language(s) are very important. They often find their reflection in the children's language attitudes, and all these together have an impact on how children succeed in an m.t. or bilingual program. Admittedly, these language attitudes are difficult to investigate, and results from studies using the so-called "matched-guise" technique (#22) do not explain everything. Language attitudes change because of personal and environmental factors, and L2 success can be the cause as well as the result of language attitudes (Extra and Vallen, 1985). Teachers' as well as parents' attitudes towards a minority language can be ambiguous (Corvalan, 1984): wanting not to lose the language for identity and cultural survival reasons, at the same time not wanting to teach/have taught their children through it, because of lack of prestige and likely negative ramifications in life out of school and after schooling. Hornberger (study 8) saw the importance of community resistance to m.t. teaching born out of a negative attitude towards the -less prestigious- m.t. (Wölck, 1973 had come to similar conclusions).

Parents', teachers' and the community's attitudes towards a new program in general, i.e. the "newness" of it, the simple fact of change which can bring positive aspects into their lives, but can also cause unwanted 'intervention' from the outside greatly affect m.t. and bilingual programs. They can stifle them from early on, or they can withdraw their support during the implementation phase, or be disenchanted when they do not see immediate results. Several researchers, planners and practitioners make the point that to counteract negative attitudes from the beginning, parents, teachers and community leaders should take part in all the program's planning and implementation stages. (For this and related issues see Cleaves, 1977; Davis, 1980; Warwick, 1979).

4. Language role in society

Attitudes towards language are greatly determined by the perceived prestige or status of languages. These basically derive from the social and political situations in which languages are embedded.

With few exceptions, a majority language has more prestige than a minority language if both are used in the same area. (Note that "minority" and "majority" are not used as numerical terms). (An exception is Catalan in Catalonia; see studies 24 and 25). Prestige is also -but to a much lesser extent- related to a language's history and to whether it is a written as well as a spoken language. The extent to which the status and role of language have everyday meaning can be seen in the two following

examples:

"In the Federal Republic of Germany ... Greek is an "immigrant workers' language" (negative undertone), but there are certain sympathetic feelings for the Greeks living in the FRG and therefore for their language, too, because of the antique Greek culture" (Radisoglou, 1984, p.303, my translation).

In Haiti, "... French, Catholic religion, marriage and health care in hospitals are part of the official culture; while Creole, Vodoo, concubinato and healers (curanderismo) are tolerated" (Corvalan, 1986, p.120).

The status different languages enjoy in a particular society is often reflected in that society's language planning orientation. Quoting Ruiz (1984), Hornberger (1987) summarizes these as follows: 1) the "language-as-problem" orientation, 2) the "language-as-right" orientation, and 3) the "language-as-resource" orientation. This third orientation has found an application in the previously mentioned 'two-way' approach, a novel bilingual education program in which language minority- and L1 monolingual students are placed in the same program, thus allowing both groups to "act as linguistic models for the other" (Snow and Hakuta, 1987, p.11) and to "[boost] minority self-esteem and majority tolerance" (Hakuta and Gould, 1987, p.44). This sounds promising, and it would be nice to end on this optimistic note. However, this approach has so far only been tried out where resources are plentiful, a situation that is not enjoyed by a large number of multilingual countries.

CONCLUDING CONSIDERATIONS

It certainly has not been possible, nor has it been intended to find the "ideal" language of instruction policy. As we have seen in the previous pages, a multitude of factors affect the educational situations of language minority children, and different educational language policies have shown different results. In the course of work on this paper, I found that it was easier to look for outcomes and for policy variables than for evidence of effect of language related conditioning variables. Probably the designers, researchers, authors and reviewers of the documents reviewed here were also overwhelmed by the complexity of confounding and interacting variables and decided to deal with only a few of them.

Some common themes and outcomes have been found in the 40 studies, and to some extent, outcomes could be meaningfully linked to certain policy and conditioning variables.

However, the restrictions on generalizability of the findings were themselves an outcome -i.e. of this review.

Macnamara (1974) expressed the opinion that the factors affecting the outcomes (of bilingual education programs) are so numerous and complex that no generalizations can be made regardless of the research model used, a viewpoint supported by Tucker and Cziko (1978) and others. The aforementioned recurrence of the same variables in so many studies need not indicate (only) that these are of paramount importance for the outcomes. Rather, it may also indicate similar inadequacies of

research design (Curiel et al., 1980; de Bot et al., 1985; Willig, 1985); policy makers' interests and tacit aims (Paulston, 1978); or what is more generally described as "the ethnocentric basis of social science knowledge production" (Stanfield, 1985; also see McGinn, 1980).

Paulston in particular criticizes the narrow -and politically one-sided- focus researchers have employed in their research on minority language children. Her major point, based on what has been called the 'conflict paradigm' is that

"we begin to understand the problems and questions of bilingual education only when we see bilingual education as the result of certain societal factors rather than as the cause of certain behaviors in children" (Paulston, 1975, p. 369).

Drawing on Schermerhorn's (1970) design for research on ethnic relations, she proposes that we look at the

"differential participation rates of subordinates in institutional and associational life (including rates of vertical mobility) as compared with rates for the dominant groups" (Paulston, 1978, p.211),

because "this is the variable under which the institution of formal schooling and bilingual education programs are subsumed" (ibid.).

Tosi (1984) and Skutnabb-Kangas (1983 and as analyzed in Shafer, 1986) follow a similar line of thought and propose that discussions on language minority education are only meaningful

when embedded in models of ethnic relations which distinguish societal goals such as "direct brutal assimilation", "apartheid", "soft human assimilation", "equality", "elite enrichment equality" and others (Skutnabb-Kangas, 1983 and Shafer, 1986). (For Skutnabb-Kangas' simple and elaborate models, please see Appendix Three).

Even though it was not within the scope of this paper to analyze language of instruction and achievement as one particle within a complex sociological/political model, I would like to conclude with a remark made by Goyvaerts and Semikenke (1983) about the situation in Zaire which goes just as well for situations in many other countries:

"Although one cannot neglect the problem of language in education in present-day Zaire, it is also probably the case that language problems are often evoked as an excuse to disguise the more urgent problems on which immediate solutions very much depend."

NOTES

#1) Definitions of 'bilingualism' range from the "minimalist's" to the "maximist's" point of view. The former being most clearly represented by Macnamara (1967) who considers anyone bilingual who possesses "even to a minimal degree" at least one of the language skills (or rather one of the "subskills" of the four basic skills) in a second language. Bloomfield (1935) and Thiery (1978) clearly represent the "maximists" who equate bilingualism with native-like control of languages. The most flexible and widely accepted approach towards bilingualism lies somewhat in the middle of these two rather extreme positions. Grosjean's (1982) realistic focus on the aspect of "use" rather than "fluency" when measuring the degree of bilingualism seems particularly appropriate, as it allows us to see bilingualism as neither static nor absolute.

#2) "Studies" denotes the different kinds of research documents reviewed and summarized in the "overviews" in Appendix One. It does not refer to other secondary sources.

#3) The total of 41 is the result of counting one study twice, because it addresses two different populations. Studies are henceforth referred to by their given number.

#4) I have not included the Philippines studies, because they date back to 1948 (Iloilo I) and 1967 (Rizal). For evaluations see Engle, 1975; Tucker and Cziko, 1978; Dutcher, 1982; Delpit, 1982.

#5) Bartley (1971) deals with elite bilingual education in special schools in the USSR; Lewis (1980) compares USSR programs and policies with those in Wales; Shoris (1984) focusses on ideological and political imperatives for language planning in the USSR. Studies published in Russian or other languages unknown to me I can unfortunately not understand.

#6) Willig's (1985) meta-analysis statistically synthesizes the U.S. studies of a body of literature previously reviewed narratively by Baker and de Kanter (1981) whose report resulted in controversy.

#7) Henceforth abbreviated as m.t.

#8) Cummins' original framework was based on Skutnabb-Kangas and Toukomaa (1976).

#9) How long depends to a large extent on the age of arrival.

#10) Wittgenstein, Whorf, Vygotsky have been instrumental in the debate on the character of thought-language relationship.

#11) These include among others: divergent thinking,

originality, cognitive flexibility, field independence.

#12) The evidence quoted here results from a review of three research projects in Britain who were not comparable because of differences in design.

#13) Controversy broke out between the supporters of the Swann Report and the National Council for Mother Tongue Teaching.

#14) The Bentahila study describes how French is progressively replaced by Arabic as the language of instruction for arithmetic and natural science in primary education in Morocco.

#15) We already know of Logo in Wolof, and other computer programs in Arabic.

#16) Grenier (1984) studied the effects of language characteristics on the wages of Hispanic-American males and found that language attributes had a significant effect on wages.

#17) Religious knowledge was the only item negatively affected.

#18) Quechua had been made an official language in 1976 by the Revolutionary Government, but it never achieved equal status.

#19) Summer Institute of Linguistics

#20) The SIL has done pioneering work in the linguistic field. I do, however, strongly disagree with their assimilationist concepts and missionary goals.

#21) With the exception of one mention (of a total of 80!) of 'English proficiency' from an African study.

#22) In this technique (first developed by Peal and Lambert), one bilingual person has read on tape standard passages in two (or more) languages (or dialects). The listeners then rate the what they assume to be two (or more) speakers on dimensions such as intelligence, language competence, SES and affective characteristics.

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APPENDIX ONE

Aa Language

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
<p>Rough Rock Demonstration School</p> <p>2</p>	<p>Navajo & English - USA (Arizona)</p>		<p>= language ability + willingness to speak Navajo</p> <p><u>Also see tables Ac, B</u></p>	<p>English and Navajo as language of instruction (no specifics given)</p> <p>emphasis on Navajo involvement and control</p> <p>school as center of community development</p>	<p>Note: similar variables were considered conditioning variables in Rock Point School case. Here, program developers see them as part of the program (i.e. power structure/control issues are policy features just as much as specific language of instruction features)</p>	<p>Control groups were: Rock Point School, a BIA * and OEO*funded, but independently administered "alternative" ** bilingual school; further an ESL type boarding school, and a public school; all serving Navajo children in the same area.</p> <p>Emphasis of evaluation was comparison with Rock Point School</p> <p>Controversial evaluation which was dismissed as ethnocentric by Navajo evaluators</p> <p>* Bureau of Indian Affairs * Office of Economic Opportunity ** denoted as such by BIA</p>	<p>N/L based on observation</p> <p>AF: evaluators were non-indigenous evaluation done for outside agency program less than three years old before evaluation.</p>

Aa Language

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
<p>Rock Point</p> <p>3</p>	<p>Navajo & English - USA (Arizona)</p>	<p>Elementary grades 2-6</p>	<p>grades 2 & 3 = or - (not specified)</p> <p>grades 4-6 + reading English + Engl. language (accelerating with each year)</p> <p><u>Also see</u> <u>table AB</u></p>	<p>. <u>Coordinate</u> <u>Bilingual Progr.</u> (one teacher for each language in each of the grades)</p> <p>. <u>Maintenance</u> <u>Program:</u> . learning reading in Navajo . English reading from grade 2 on</p> <p>. Use of Navajo: Kindergart. 70% grades 1,2 50% grades 3-6 20%</p> <p>. most teachers are Navajo</p>	<p>. strong parental involvement . continuity of leadership . community controlled, managed by own school board</p>	<p>importance of continued instruction in Navajo is stressed</p>	<p>L test based results</p>

Aa Language

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
Chiapas	Indian languages & Spanish - Mexico		+ Spanish reading compre- hension <u>Also see table S</u>	.1st year: mother tongue reading instruc- tion by global method (stress- es comprehen- sion) plus Spanish oral drills before .2nd year: introduction to Spanish reading .Native teachers	++ Teachers' community involvement	Importance of training for rural teachers stressed	L very thorough

4

Aa Language

PROJECT/ PROGRAM	LANGUAGES COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
<p>5</p> <p>Montaña de Guer- erro</p>	<p>Three Indian languages & Spanish - Mexico</p>	<p>Primary school grade 2</p>	<p>Language achieve- ment test and pro- ficiency test (grammar, lexi- cal readiness)</p> <p>consistently higher than expe- rimental group</p> <p>consistently lower than con- trol groups in all test sections</p> <p>highest scores</p> <p>medium scores</p> <p>lowest scores</p> <p>higher scores</p>	<p>No preschool Spanish and 1 1/2 years in officially <u>all</u> <u>Spanish medium</u> elementary</p> <p>1 year preschool Spanish and 1 1/2 years in officially <u>all</u> <u>Spanish medium</u></p> <p>Actual medium of instruction <u>use in class- room</u></p> <p>. exclusively Spanish</p> <p>. mixed medium</p> <p>. mostly ver- nacular</p>	<p>. rural, predomi- nantly Indian area</p> <p>. low socioecono- mic indicators</p> <p><u>monolingual</u> <u>Spanish</u></p> <p><u>L1 Indian lang.</u> <u>with L2 Spanish</u></p> <p><u>Home language</u> <u>use and profi- ciency</u></p> <p>good Spanish and used frequently by parents and siblings</p>	<p>. Nahuatls were the most consis- tently profi- cient group</p> <p>. of 332 tests of experimental group, only 52 gra- ded due to budget restrictions (selecting cri- teria not men- tioned)</p> <p>. author stresses need for a) classroom observation b) longitudinal studies (diffi- cult because of high attri- tion rate)</p> <p>. Recent policy changes: In India areas with bil. ed. no more pre- school Sp., be- cause reading/ writing in L1 and Sp as L2 only from grade 2 on</p>	<p>N/L</p>

Aa Language

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
6 Guatemala	Four Indian languages & Spanish - Guatemala	Preprimary and Primary grades 1 and 2	<p>Grades 1 and 2 (whole age range)</p> <p>+ language arts: end of year grades and post tests</p> <p><u>Only 10-13 year old second gra- ders:</u></p> <p>- language arts test</p> <p><u>Also see tables Ab, Ac, S</u></p>	<p>"Bilingual treat- ment" for pe- riod of three years (pre- primary, 1st and 2nd primary).</p> <p>(Type of program not specified)</p>	not specified	<p>Includes only data from 7-13 year old first- and 8-14 year old second graders; but there <u>are</u> first- and second graders who do not fall within these age ranges.</p>	<p>P/L</p> <p>AF: . no school census data . test partici- pation higher in pilot schools</p>
7 Ecuador	Quichua & Spanish - Ecuador	Primary grades (not spe- cified)	<p>After three years in school: + Spanish grammar</p> <p><u>Also see tables Ab, Ac</u></p>	Bilingual school (no details given)	Quichua speaking rural community (preschool-age children are monolingual Quichua spea- kers)	All tests were given in Spanish	n/L

Aa Language

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
8 Puno , Peru	Quechua & Spanish - Peru	Primary grades 1-6	+ Increased oral participation + Improved reading + Greater ease of writing <u>Also see table B</u>	<u>Maintenance-type bilingual program</u> Equal use of Quechua as medium of instruction in all subjects in constant (not decreasing) amounts through six years primary school	- Community resistance (deriving from language attitudes) - Out of synchronization with national language policy	An example of larger policy failure (decline from 100 to 40 participating schools) because of conditioning variables, but a success in the classroom in spite of these, and because of program policy variables	P/L Detailed observational - AF: Researcher lived in research area with community for two years
9 Jungle, Peru	Indian languages & Spanish - Peru	Primary grades 1-4	+ Reading and writing Spanish	<u>Transitional bilingual program:</u> . learning reading in L1 . systematic use of "dual medium" . native biling. teachers, trained by SIL personnel	. (Indian) monolingual background . missionary effort	<u>Goals:</u> . castellanization . "healthy" social integration . reading the bible	Detailed description of ongoing work of Summer Institute of Linguistics (SIL) a missionary enterprise

Aa Language

PROJECT/ PROGRAM	LANGUAGES COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
Paraguay I	Guaraní & Spanish - Paraguay	Primary grades 4 and 6	<p>Reading Sp., grade four: Sp. 45% } below Bil. 54% } medium Gu. 93% } medium</p> <p>Reading Sp., grade six: Sp. 33% } below Bil. 60% } medium Gu. 91% } medium</p> <p><u>Reading, grades four and six :</u> -</p> <p><u>Also see table Ac</u></p>	<p>Spanish medium curriculum</p> <p>Spanish medium curriculum, but teacher uses "dual medium" out of necessity.</p> <p>in grade 1:38% in grade 4:32% in grade 6:24%</p>	<p><u>Student Language Background</u> <u>First Language:</u> Spanish (Sp.) Bilingual (Bil.) Guarani (Gu)</p> <p>Not considering student language background</p>	<p>Teacher training and experience made no differ- ence</p>	

10

Aa Language

PROJECT/ PROGRAM	LANGUAGES COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
Paraguay II	Guarani & Spanish - Paraguay	Primary grade one (7-9 yrs)	<p>1. Great difficulties answering in Spanish and retelling story in Spanish</p> <p>2. When Spanish is used in rural schools:</p> <p>7% spontaneous verbal intervention vs. 93% direct answers</p> <p>When Guarani is used in rural schools:</p> <p>32% spontaneous verbal intervention vs. 68% direct answers</p> <p>(Difference less in urban schools)</p> <p>Also see <u>table S</u></p>	<p><u>Official:</u> 1965 curriculum in Spanish made in the Capital with urban children in mind. Promotion based on end of the year exams.</p> <p><u>Reality:</u> <u>Teachers' language use:</u> 80% use both languages in classroom, 16% use only Spanish</p> <p><u>Student-teacher interaction in Guarani:</u> rural area: 50% urban area: 20%</p> <p><u>Teacher Training:</u> majority of teachers without orientation about bilingualism</p>	<p>1. Rural children have no workbooks and spend much time in copying</p> <p>2. <u>Teachers' languages</u> 100% speak, read, write Spanish 99% speak Guar. 47% read Guarani 30% write Guar.</p> <p><u>Teachers' language attitudes:</u> but 60% would prefer to use only Spanish if it were feasible 71% would want first graders to learn in Spanish and Guarani at the same time; 78% believe that grades would go up if no Guarani was spoken in class</p>	<p>Nationwide: 26% first graders not promoted</p> <p>74% teachers live in urban areas -</p> <p>Antagonism between acknowledging rural children's language needs and rigid exam oriented school system geared to castellanize</p>	N/L Mainly observational

Aa Language

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
15 Six-Year Primary Project	Yoruba & English - Nigeria	Primary school grades 1-6	<p><u>English</u> end grade 3 - end grade 4 + <u>Yoruba</u> +</p> <p><u>English:</u> end grade 3 = end grade 4 +</p> <p><u>Yoruba:</u> surpassed all other groups including the later experimen- tal groups <u>School leaving exams Yoruba :</u> ++</p> <p>Also see tables Ab, Ac, S</p>	<p><u>Experimental groups</u> . Yoruba medium of instruction grades 1-6 vs <u>control groups</u> . Yoruba medium of instruction grade grades 1-3 . English medium grades 4-6 . English taught by non-ESL specialist</p> <p><u>Pilot experimen- tal group:</u> E. taught by ESL specialist</p>		<p>. No pre-project tests . After three- year pilot study in one urban school, ex- tended to 10 other schools (urban and rural)</p> <p>Conclusions differ depending on who interprets the evaluations: with Dutcher's (World Bank) re- port being the most cautious, and Bamgbose's (Univ. of Ibadan) the most positive as to the success of Yoruba as me- dium of instruc- tion.</p>	<p>This table is a summary of 3 pa- pers re- porting varying degrees 4 evalua- tion studies (3 of which by same author/c. author)</p> <p>— L</p>

Aa Language

PROJECT/PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
Cross-cultural study (page one) 16 and 21a	Yoruba + English - Nigeria and Welsh + English - Wales	Primary school age 9-11	<u>Language Proficiency (means)</u> 51.1%	test given in L2 (Engl)	<u>Nigerian group</u> <u>bilingual</u> pupils with English L2	assessment measure: cloze tests 1) differences between two groups interpreted as result of different "socio-cultural" backgrounds"(see 2)	N/L
			60.8%	test given in L1 (Yoruba)	<u>monolingual</u> Engl		
			60.9%	test given in L1 (English)			
			63.9%	test given in L2 (Engl)	<u>Welsh group</u> <u>bilingual</u> pupils with English L2		
			66.9%	test given in L1 (Welsh)	<u>monolingual</u> Engl		
			61.2%	test given in L1 (English)			
			For both bilingual groups proficiency is significantly higher when test given in L1 1)				
			<u>CONTINUED</u> <u>on next page</u>				

PROJECT/ PROGRAM	LANGUAGES COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
<p>16 and 21a contin.</p>			<p><u>Language pro-</u> <u>ficiency tests</u></p> <p><u>% of children</u> <u>attaining</u> <u>"competence</u> <u>level"</u> (mean 40-55)</p> <p>Yoruba 97% 2)</p> <p>English 89%</p> <p>English 90%</p>		<p><u>Nigerian group</u> bilinguals with L1 Yoruba</p> <p>monolinguals (Engl)</p>	<p>2) interpreted as a reflection of different "socio-cultural" conditions: L1 supportive home environment in Nigerian group; intense and sustained exposure to English through media and gener- al environment in Welsh group</p>	
			<p>Welsh 84% } 2)</p> <p>English 94%</p> <p>English 90%</p>		<p><u>Welsh group</u> bilinguals with L2 English</p> <p>monolinguals (Engl)</p>		

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
Uganda	Several African languages & English - Uganda		<p>Primary, grade 7: = English reading</p> <p>+ English reading scores</p> <p>++ English reading scores</p> <p>++ English reading scores</p>	<p>1st grade instruction in English medium</p> <p>+ teacher credentials and experience</p>	<p>city school</p> <p>Home background professionals</p> <p>Location city</p>	<p>no rural school used English medium in 1st grade (only 406 children included in this analysis)</p> <p>all 1560 children included in these analyses</p> <p>only 12 schools selected for this analysis</p> <p>May be confounded with location (better teachers more likely to be in city)</p>	<p>N/L</p> <p>AF: retrospective self-reporting; cross-tabulation of extreme groups</p>

18

Aa Language

PROJECT/ PROGRAM	LANGUAGES COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
<p>Early French Immersion, Canada</p> <p>1st part: longitudinal study</p> <p>19</p>	<p>English & French - Canada</p>	<p>K- grade 6</p>	<p><u>English language</u></p> <p>+ (enhanced L1 skills of an "essentially metalinguistic nature")</p> <p>= composition writing</p> <p>L1 advantage not established ←</p>	<p>Early French Immersion: all schooling in Fr. from K to end of grade 1 or 2; by grade 6 half of curriculum still in French (control group: all English curriculum)</p>	<p>L1 English students (in Ottawa-Carlton and Toronto)</p> <p>parents of relatively high educational background in both groups (59% semiprofessional or professional)</p> <p><u>Specific level of L2 competence</u></p>	<p>"Threshold hypothesis" not sustained</p>	<p>L (6 year period)</p> <p>data on matched sample selected from Bilingual Education Project files</p>
<p>2nd part: cross-sectional study to investigate specific hypotheses arising of above study</p>		<p>grade 6</p>	<p><u>English (L1) vocabulary skills</u></p> <p>= <u>lexical range</u></p> <p>= <u>grammatical usage</u></p> <p>+ <u>general discourse skills</u></p> <p>= <u>discourse interpretation skills</u></p>	<p><u>OUTCOMES cont.:</u></p> <p><u>knowledge and use of reference materials</u></p> <p>+</p> <p>Conclusion drawn: early bilingual schooling will enhance certain L1 skills among majority children</p>		<p>cloze test</p> <p>making use of context of adjacent sentences</p>	<p>N/L (cross sectional)</p> <p>2 testing sessions</p>

Aa Language

PROJECT/PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
Wales 1978	Welsh & English - Wales	5-9 year olds	<p><u>Age 7:</u> = verbal ability</p> <p><u>Age 9: (Engl.)</u> + verbal ability (Engl.)</p> <p><u>Junior schools:</u> + L2 (Welsh) attainment in general</p> <p>+ Welsh speech skills</p> <p><u>Infant schools:</u> ++ L2 attainment</p> <p><u>Also see table Ab</u></p>	<p>Bilingual treatment throughout primary school:</p> <p>mixed medium; ideally half day English, half day Welsh</p> <p>adequate supply of bilingual teachers</p>	<p>Parental involvement +</p> <p>SES +</p> <p>teacher attitude to L2 +</p> <p>student background level of 'Welshness' +</p> <p>adequate allocation of time +</p> <p>. Students' L1 English</p>	<p>meaning: high SES and high scores significantly related</p>	L elaborate

21

Aa Language

PROJECT/PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
Spoken Irish	Irish & English - Ireland	grade 6	significantly higher level of achievement	<p><u>Some aspects of curriculum taught through Irish</u> (only 22.03% of all classes with six graders¹⁾ get this treatment)</p> <p><u>"ABC-related" course methods</u> (used by 38.65% of teachers)</p> <p>Between variables of instruction, region and location</p>	<p>English-speaking areas of R. of Ireland</p> <p><u># of sixth graders in class</u> (smaller)</p> <p><u>region</u> (Munster)</p> <p><u>location</u> rural (vs. combined town and city)</p> <p><u>school size</u> smaller schools</p> <p>correlations e.g. medium region and location</p>	<p>Amount of variance explained (of a total of 32.4%; 9 variables)</p> <p>→ 13.5%</p> <p>→ 11.0%</p> <p>→ 8.9%</p> <p>→ 7.6%</p> <p>1) sampling unit is "class" (classes are single- and multi-grade)</p> <p>No significant correlations with gender, # of grades in class, teacher experience</p> <p>Not investigated here, but in other studies strong predictor variables:***</p>	<p>N/L</p> <p>Extension of an earlier study by same author, for which he had developed 'objective test for spoken Irish' used here too.</p> <p>Detailed and statistically elaborate study</p>
<p>*** home background SES, parental attitudes to lang., use of Irish at home, parents competence in Irish</p>							

22

Aa Language

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
Catalonia 1970 24	Catalan & Spanish - Spain (Catalonia)	Elementary school	Catalan Spanish ability and school results	<ul style="list-style-type: none"> . Learn reading & writing in L1(C.) . L2 (Sp.) introduced at same time . subsequently use of L1 and L2 as media of instruction 	<ul style="list-style-type: none"> . L1 Catalan . Catalan long established as literary lang. (since 13th/14th century) . Catalan a romance lang., similar to Spanish 	"Experimental bilingual project" begun by Univ. of Barcelona	no details available
Catalonia 1982 25	Catalan & Spanish - Spain (Catalonia)	General basic education grade 4	<ul style="list-style-type: none"> . high degree of competence in Catalan . good level of Spanish . satisfactory knowledge of Spanish and Catalan 	All subjects had received some Catalan since beginning their schooling. Catalan compulsory in all schools (in Catalonia) since 1978) <u>Predominantly Catalan Schools</u> . Catalan main medium of instr.	<ul style="list-style-type: none"> . majority of students and teachers with L1 Catalan <u>L1 Catalan speakers</u> <u>L1 Spanish speakers</u> 	Catalonia different from the "typical minority region in a centralized state": . is richest & most industrialized community of Spain . has a primarily non-native working class (monolingual Castilian speakers from the poorer South) (i.e. Catalan is prestigious)	N/L large scale survey; most accurate; strict scientific standards in C. far <u>meas.:</u> tests; teacher assessment; student & parent questionnaire

PLEASE SEE CONTINUATION ON THE NEXT PAGE

Catalonia 1982; Continuation

PROJECT/ PROGRAM	LANGUAGES COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
25 Contin.			<ul style="list-style-type: none"> . good level of Spanish . totally inadequate in Catalan . good level of Spanish . much lower level of Catalan than those in mainly C. schools <p>Summary conclusion: Catalan-lang. school obtains very good results in both C. and Sp., while Spanish language school does not achieve satisfactory results in Catalan</p>	<p>Predominantly Spanish Schools</p> <p>Spanish main medium of instruction</p>	<p>majority of students and teachers with L1 Spanish</p> <p><u>L1 Spanish speakers</u></p> <p><u>L1 Catalan speakers</u></p>		

Aa Language

PROJECT/ PROGRAM	LANGUAGES COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
<p>Mexican American 1980</p> <p>27</p>	<p>Spanish & English - USA (Houston)</p>	<p>Junior High Grade 7</p>	<p>at end of grade six: - on three measures of Engl. reading test + English GPA (means of grades 1-6)</p> <p>at end of grade seven: - on one measure of English reading test - on two measures of English reading test - English GPA</p> <p>length of time in bilingual program (1-3 vs. 4-7 years) did not affect performance</p>	<p>1-3 or 4-7 years in elementary school bilingual program (within same school district). Programs comparable in content scope, sequence, and continuity: - Spanish reading introduced in grade 1 - teachers trained in bilingual instruction - had bilingual aides</p> <p>No other program specifics are given</p>	<p>33% of control vs. 13% of experimental students had been retained in elementary school for one year</p> <p>unspecified number of Engl. dominant black students were in <u>experimental</u> group of original evaluation: for them the bilingual program had been used for <u>remedial</u> purposes</p>	<p>Flaws in design evaluation design stand out</p> <p>But students entered at (unspecified) varied levels</p>	<p>N/L quasi-experimental</p> <p>AF: Mixture of data from previous evaluation (by others) and author's later research. (Participants' groups not comparable)</p>

Aa Language

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
<p>Mexican American 1985</p> <p>28</p>	<p>Spanish & English - USA</p>	<p>Elementary grades 1-3</p>	<p><u>end of grade 1:</u> = English reading comprehension</p> <p><u>end of grade 2:</u> ++ English vocabulary</p> <p><u>end of grade 3:</u> = English reading</p> <p>(Learned English reading one year before formally instructed)</p> <p>. Maintained level of Spanish reading at or above national norms for all three years</p> <p><u>Also see table Ab</u></p>	<p><u>Exemplary* transitional bilingual program:</u></p> <ul style="list-style-type: none"> . bilingual teachers and aides . inclusion of students' home culture . <u>Use of L1 and L2 :</u> grade 1:75% Span. grade 2:70% Span. grade 3:50% Span. . transition from L1 to L2 in 3rd grade depending on English oral and Spanish reading skills . Reading instruction in L1 . Focus on oral language and concept development in L1 <p>* as evaluated by school district</p>	<p>Groups equated for ethnicity, grade level and duration in programs; differed in language background (Spanish vs. English dominant)</p>	<p>SES data were eliminated from final analyses because they had no effect on outcome. However, SES was <u>solely</u> based on voluntary "free lunch participation"!</p>	<p>L</p> <p>AF: only 24 experimental vs. 118 control subjects</p>

Aa Language

PROJECT/ PROGRAM	LANGUAGES COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
29 Hispanic	Spanish & English USA	High School	<p><u>Reading English</u></p> <p>++</p> <p>+</p> <p>=</p> <p>=</p> <p>+</p> <p>←</p> <p>←</p> <p>Also see <u>table Ab</u></p>	<p><u>Language of instruction in elementary school</u></p> <p>mixed medium</p> <p>all English</p> <p>all Spanish</p> <p>all Spanish</p> <p>all English and mixed medium</p>	<p>Limited or Non-English speaking at school entrance with L1 Span., solely educated in USA</p> <p>regardless of SES</p> <p>SES =</p> <p>SES +</p>	<p>meaning: scores rise with rising level of SES (significant interaction effect)</p>	<p>P/L</p> <p>AF: Secondary data analysis based on "High School and Beyond" data set</p>
30 Santa Fe	Spanish & English USA	Elementary grades 1-6	<p>+ reading</p> <p>Also see <u>table Ab</u></p>	<p>Bilingual program (no specifics given)</p>	<p>(no information)</p>	<p>general results of a very large study</p>	<p>L</p>

Aa Language

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
Edmonton Ukrainian Program	Ukrainian & English - Canada	Elementary school	<p><u>Development of English</u></p> <p>in general: no detrimental effects</p> <p><u>grade 5 English reading</u></p> <p>+</p> <p><u>grades 1 and 3 students relatively fluent in Ukrainian</u></p> <p>↓</p> <p>better in detecting ambiguities in English sentence structure</p>	<p><u>Elementary school:</u></p> <p>50% of instruction in Ukrainian and 50% of instruction in English</p> <p>(comparison group English only presumably)</p>			<p>Information here from short summary of several "evaluations of this program"</p> <p>No details provided</p>
					consistent use of L1 (Ukrainian) at home		
						<p>compared to</p> <p>a) monolingual L1 English children and</p> <p>b) to children in the bilingual program, but with little use of Ukrainian at home</p>	

31

PROJECT/ PROGRAM	LANGUAGES COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
<p>Olof- ström/ Goten- burg</p> <p>32</p>	<p>Finnish & Swedish - Sweden</p>	<p>grades 1- 1-9 (age 7- 16)</p>	<p><u>Finnish verbal tests</u> level lower than 90% of Finnish children in Finland</p> <p>below average score of children in Finland, but higher than groups 1 & 2</p> <p><u>Swedish verbal tests</u> lower level than 90% of Swedish children <u>Swedish skills</u> best worst in between</p> <p>Swedish + Finnish - -</p> <p>skills in Swedish +</p>	<p><u>Group 1</u> Instruction in Swedish</p> <p><u>Group 2</u> Instruction in Swedish plus Finnish as L2 subject 2 hours/week</p> <p><u>Group 3</u> Instruction in Finnish plus Swedish as L2 subject 2 hours/week</p> <p>Groups 1 and 2</p> <p>(clear link (according to authors it is a causal</p>	<p>Finnish students with m.t. Finn. in Sweden</p> <p><u>age of arrival</u> 9-11 years 6-8 years before school or born in Sweden <u>Length of residence in Sweden</u> + 1)</p> <p>skills in m.t. (Finnish) +</p>	<p>These researchers' conclusion that the lack of m.t. proficiency is in itself the cause of all the other problems is seen as unsubstantiated by other researchers/reviewers</p> <p>holding length of residence constant 1) meaning: positive effect of time on learning Swedish is less than negative effect on Finnish (possibly 'semi-lingualism' as result)</p> <p>1 link; this is much debated</p>	<p>P/L</p>

Aa Language

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
Original FISK: Evaluation I 33a	Finnish & Swedish - Sweden	Elementary school	<u>Swedish</u> <u>list/reading/</u> <u>oral production</u> - at level with Swedish peers <u>writing</u> - almost at grade level General results: much better in m.t. program than in Swedish only program	<u>grades 1+2</u> Finnish only <u>grade 3</u> Finnish medium plus <u>some</u> use of Swedish <u>grades 4-6</u> continued use of Finnish, but Swedish main medium of ins- truction (compared to pupils in Swe- dish program)	Finnish L1 immi- grant pupils in Sweden		L
ORIGINAL FISK: Evaluation II 33b			communication test <u>Swedish</u> - communication test <u>Finnish</u> - General result: worse in m.t. program				

Aa Language

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
EXTEND- ED FISK (1982)	Finnish & Swedish - Sweden	grades 7-9	<u>Swedish</u> a) compared to Swedish pupils in parallel (Swedish me- dium classes) = or + b) compared to Finnish pupils in Swedish only classes + +	grades 1-6: Finnish medium only grades 7-9 Swedish medium only, but Finnish L2 instruction	Finnish immigrant pupils in Sweden with Finnish L1		no details

34

Aa Language

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
England multi- racial	English & other European & Asian languages & Creoles - England	Junior School grades 2 & 4	<p><u>Engl. proficiency</u></p> <p>- ←</p> <p>-- ←</p> <p>--- ←</p> <p><u>Engl. speaking</u></p> <p>- ←</p> <p>= ←</p> <p>= does not affect lang. proficiency of English children ←</p> <p><u>Asian group, grade 2 :</u> ++ reading ←</p> <p><u>Asian group:</u> ++ listening, ++ reading ++ writing <u>European group:</u> + listening + reading</p>	<p><u>English medium only</u></p> <p>no SET* ←</p> <p>with "full-time" SET ←</p> <p>with "part-time" SET ←</p> <p>no SET ←</p> <p>no SET ←</p> <p>% of minority children in class ←</p> <p><u>Pre-school attendance</u> (official medium English, but actual language provision not investigated)</p> <p>* SET= Special English Teaching</p>	<p><u>Ethnicity *</u></p> <p>all minority children</p> <p>Asian children ←</p> <p>European children ←</p> <p>* Comparison group: English indigenous child.</p> <p><u>Use of English at home</u></p> <p>some/lot of English ←</p>	<p>No SET children might have been more proficient initially and therefore not in need of SET. (This was not measured).</p> <p>Possibility that they speak more English at home is given as possible explanation</p> <p>only indication that minority children benefited from pre-school</p> <p>Amount makes no difference; difference is between <u>none</u> and some/lot of</p>	N/L

35

Aa Language

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
Holland Pilot	Dutch & Turkish - Holland	Primary grade 6 (=last year) and Secondary grades I and II	<p><u>All age groups:</u></p> <ul style="list-style-type: none"> -Dutch text comprehension - Dutch vocabulary - Turkish text comprehension <p>Positive correlation between text comprehension in L1 and L2</p> <p><u>Also see tables Ac, S</u></p>	Dutch medium only	At least four years in Holland + length of stay in Holland	<p>No special treatment for non-Dutch speakers; compared are Turkish-Dutch bilingual Turkish and monolingual Dutch children from same classrooms</p> <p>Possibly supporting Cummins' theory of skill transfer</p> <p>Authors stress that cross-sectional design puts severe limits on group comparability and that longitudinal results are needed.</p>	P/L AF: Dutch tests developed by researchers; Turkish tests developed in Holland for this study

36

PROJECT/ PROGRAM	LANGUAGES COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
orra eal tock- olm	several languages & English & Swedish - Sweden	Upper Se- condary grades I-III (age 16- 18)	<p>Also see <u>table Ac</u></p> <p><u>Reading Comprehension</u></p> <p>49% correct on ← test (<u>Swedish test</u>)</p> <p>34% (<u>English</u> ← test)</p> <p>44% ←</p> <p>23% ← <u>Word Knowledge</u></p> <p>25% (<u>English</u> ← test for all)</p> <p>49% ←</p> <p>57% ←</p> <p>39% ←</p>	English medium only for teaching Swedish curricu- lum science program	<p>.Internationals' background mainly middle class</p> <p>.Program has com- pleted its 4th year</p> <p>.no option for Internationals but science line (if they want English medium)</p> <p>.At least 4 months in <u>this</u> program</p> <p><u>Swedish students</u></p> <p><u>Internationals</u> (home language not considered)</p> <p><u>Internationals</u> a) home lg. Engl b) home lg. "other"</p> <p><u>Swedish students</u></p> <p><u>Internationals</u> (home language not considered)</p> <p><u>Internationals</u> a) home lg. Engl b) home lg. "other"</p>	<p>.International students compar- ed to Swedish students in the same school</p> <p>.very few girls in Swedish sample (see "no option" under conditioning variables)</p> <p>. amount of home- work done made no difference</p> <p>29 small 25 samples</p> <p>*IEA=International Assoc iation for the Evaluation o Educational Achievement</p>	N/L AF: .cross- section .achieve- ment tests from IEA* test archive .student and teacher questio naires develop for thi study

39

Aa Language

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE									
Half-day French Immersion Cincinnati	English & French - USA	Kindergarten	<p><u>English progress</u> =</p> <p><u>French progress</u> no difference ← no difference¹⁾ ←</p> <p><u>English language tests</u></p> <table border="0"> <tr> <td>pre-test</td> <td>end of year test</td> <td></td> </tr> <tr> <td>-</td> <td>-</td> <td>←</td> </tr> <tr> <td>--</td> <td>--</td> <td>←</td> </tr> </table> <p>French progress results suggest that immersion experience may help diminish effects of social class background. 3)</p>	pre-test	end of year test		-	-	←	--	--	←	<p>Half-day French immersion (French exclusively), other half-day in English with monolingual English teacher (control group: conventional all English program)</p>	<p>Children with L1 English in large US city's public school</p> <p>SES* (middle or working class) Race (62% white and 38% black)</p> <p>SES</p> <p>working class</p> <p>Race and SES black working class 2)</p>	<p><u>Special feature:</u> subjects from both working and middle class backgrounds</p> <p>1) Black middle class group was best of all; black working class group was lowest. But sample was too small and differences not large enough to make generalizations.</p> <p>2) Differences between black and white working class pretest and end of year test negligible.</p> <p>3) In contrast to earlier French immersion studies</p>	<p>P/L * (1 year) - matched control groups - very thorough statistically elaborat - * 1st report of a 4-yr. evaluation - first collaborative effort of researchers in Cincinnati & Montreal</p>
pre-test	end of year test															
-	-	←														
--	--	←														

40

Ab Mathematics

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
Alaska- Eskimo	Yupik & English - USA	Elementary grades 1-3	<u>counting and naming numbers</u> : - grades 1,2 -- grade 3 <u>arithmetic</u> + grades 1,2 = grade 3 <u>Also see table Aa</u>	<u>Bilingual Program</u> : . <u>Yupik</u> medium of instruction . specially trained Yupik L1 instructors . <u>ESL</u> (by regular certified teacher): 1st yr.:1hr/day 2nd yr.:2hrs/day 3rd yr.:3hrs/day <u>Goal:</u> English as me- dium of instruc- tion and Yupik as enrichment from grade 4 on	.students'L1 Yupik .village schools	comparison groups from nearby village schools with unilingual English pro- gram sizeable drop in grade 3	L (3 yrs) AF: change in evaluatio design over the three years

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY PRINCIPLES	CONDITIONING VARIABLES	COMMENTS	TYPE
3 Rock point	Navajo & English - USA	Elementary grades 2-6	grades 2&3 = or - (not spe- cified) grades 4-6 + (accelerating with each year) Also see table Aa	Coordinate <u>Bilingual</u> <u>Program</u> (one teacher for each language in each of the grades) Maintenance <u>Program:</u> learning rea- ding in Navajo English reading from grade 2 on Use of Navajo: Kindergart. 70% grades 1,2 50% grades 3-6 20% most teachers are Navajo	strong parental involvement continuity in leadership community controlled, managed by own school board	importance of continued instruction in Navajo is stressed	L test based results

Ab Mathematics

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
6 Guatemala	Four Indian languages & Spanish - Guatemala	Preprimary and Primary grades 1 and 2	<u>Grades 1,2</u> + end of year grades + post tests <u>Also see</u> <u>tables Aa,Ac,S</u>	Bilingual "treat- ment" for three years (preprimary and grades 1,2) (type of program not specified)	not specified	Includes only data from 7-13 year old first- and 8-14 year old second gra- ders; but there <u>are</u> first-and second graders who do not fall within these age ranges.	P/L AF: no school census data . test partici- pation higher in pilot schools
7 Ecuador	Quichua & Spanish - Ecuador	Primary grades (not spe- cified)	+ (years of schooling not given) <u>Also see</u> <u>tables Aa, Ac</u>	Bilingual school (no details given)	Quichua speaking rural community (preschool-age children mono- lingual Quichua speakers)	Test language was Spanish	N/L

Ab Mathematics

PROJECT/ PROGRAM	LANGUAGES COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
Wales 1978	Welsh & English - England	5-9 year olds	<u>Age 7:</u> = <u>Age 9:</u> = <u>Also see</u> <u>table Aa</u>	Bilingual treat- ment throughout primary school: . mixed medium; ideally half day English, half day Welsh . adequate supply of bilingual teachers	parental involve- ment + . Students' L1 English		L elaborat

21

Ab Mathematics

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
<p>Mexican American 1985</p>	<p>Spanish & English - USA</p>	<p>Elemen- tary grades 1-3</p>	<p><u>end of grade 1</u> = math computa- tion = math concepts <u>end of grade 3</u> = math computa- tion = math concepts</p> <p><u>Also see</u> <u>table Aa</u></p>	<p><u>Exemplary*</u> <u>transitional</u> <u>bilingual program</u></p> <p>.bilingual teachers and aides . inclusion of students' home culture . <u>Use of L1 and</u> <u>L2:</u> grade 1:75% Span. grade 2:70% Span. grade 3:50% Span.</p> <p>.transition from L1 to L2 in 3rd grade depending on oral English skills and Spa- nish reading skills .Reading instruc- tion in L1 .Focus on oral language and concept develop- ment in L1</p> <p><u>*as evaluated</u> <u>by school dis-</u> <u>trict</u></p>	<p>Groups equated for ethnicity, grade level and duration in pro- grams; differed in language back- ground (Spanish vs.English do- minant)</p>	<p>SES data were eliminated from final analyses because they had no effect on outcome. However, SES was <u>solely</u> based on "free lunch participation"!</p>	<p>L</p> <p>AF: only 24 experimen- tal vs. 118 con- trol sub- jects</p>

28

Ab Mathematics

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
<p>Hispan- ic</p> <p>29</p>	<p>Spanish & English - USA</p>	<p>High School</p>	<p>++ + = = + ← ←</p> <p>Also see table Aa</p>	<p>Language of in- struction in elementary school</p> <p>mixed medium } all Spanish } all English } all English } [all Spanish and } mixed medium }</p>	<p>Limited or Non- English speaking at school entran- ce with L1 Span., solely educated in in USA</p> <p>regardless of SES SES = SES +</p>	<p>meaning scores rise with rising levels of SES (significant interaction effect)</p>	<p>P/L</p> <p>AF: Secondary data ana- lysis based on "High School a- Beyond" data set</p>
<p>Santa Fe</p> <p>30</p>	<p>Spanish & English - USA</p>	<p>Elemen- tary grades 1-6</p>	<p>+</p> <p>Also see table Aa</p>	<p>Bilingual pro- gram (no specifics given)</p>	<p>(no information)</p>	<p>general results of a very large study</p>	<p>L</p>

Ac Other subjects or unspecified

PROJECT/ PROGRAM	LANGUAGES COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
Rough Rock Demos- tration School	Navajo & English - USA (Arizona)		<p>- academic achievement</p> <p><u>Also see tables Aa, B</u></p>	<p>. English and Navajo as languages of instruction (no specifics given)</p> <p>. emphasis on Navajo involvement and control</p> <p>. school as center of community development</p>	<p>Note: similar variables were considered conditioning variables in Rock Point School case. Here, program developers see them as part of the program (i.e. power structure/control issues are policy features just as much as specific language of instruction features)</p>	<p>Control groups were: Rock Point School, a BIA* and OEO* funded, but independently administered "alternative" ** bilingual school; further an ESL type boarding school, and a public school; all serving Navajo children in the same area.</p> <p>. Emphasis of evaluation was on comparison with Rock Point School</p> <p>. Controversial evaluation which was dismissed as ethnocentric by Navajo evaluators</p>	<p>N/L</p> <p>based on observation</p> <p>-</p> <p>evaluator non-indigenous</p> <p>-</p> <p>done for outside agency</p> <p>-</p> <p>program less than 3 yrs old when evaluated</p>
						<p>* Bureau of Indian Affairs * Office of Economic Opportunity ** denoted as such by BIA</p>	

2

Ac Other subjects or unspecified

PROJECT/ PROGRAM	LANGUAGES COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
6 Guatemala	Four Indian Languages & Spanish - Guatemala	Preprimary and Primary grades 1 and 2	Grades 1,2 + social science <u>Grade 1</u> - natural science <u>Grade 2</u> + natural science <u>Also see</u> <u>tables Aa, Ab, S</u>	Bilingual "treat- ment" for three years (preprimary and grades 1,2) (type of program not specified)	not specified	Includes only data from 7-13 year old first- and 8-14 year old second graders; but there are first-and second graders who do not fall within these age ranges.	P/L AF: no School census data tes partici pation higher pilot schools
7 Ecuador	Quichua & Spanish - Ecuador	Primary grades (not spe- cified)	+ social science - natural science (years of schooling not given) <u>Also see</u> <u>tables Aa, Ab</u>	Bilingual school (no details given)	Quichua speaking rural community (preschool-age children mono- lingual Quichua speakers)	Test language was Spanish	N/L

Ac Other subjects or unspecified

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
Para- guay I	Guarani & Spanish - Paraguay	Primary grades 4 and 6	- science - total achieve- ment (- meaning be- low medium of Spanish instruo- ted students) (no "dual me- dium") <u>Also see</u> <u>table Aa</u>	Spanish medium curriculum, but teacher uses "dual medium" out of necessity.	Students' language backgrounds not taken into con- sideration in this part of analysis	Promotion still contingent upon academic achie- vement, although "revised curri- culum" (1973) features auto- matic promotion (but implemen- tation is slow)	

10

Ac Other subjects or unspecified

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
12 Tunisia	Collo- quial Arabic & Formal Arabic & French - Tunisia	Primary grades 1-6	<p>"Mosaic test" * Results : Grade 3: progress rate highest and ← much higher than in 2nd grade progress rate lower ← progress rate lowest and only minimally higher than in grade 2 ←</p> <p>highest progress in 2nd and 3rd ← grade less, but still substantial progress in 2nd and 3rd grade ← little progress in 2nd and very little more in 3rd grade ← very little in 2nd 2nd and hardly more in 3rd grade ← grade</p> <p>* see comments section</p>	<p>Grades 1,2: Arabic only</p> <p>Grade 3: 15 hrs Arabic 10 hrs French (per week)</p>	<p>Socio-economic background</p> <p>"upper"</p> <p>"middle"</p> <p>"lower"</p> <p>Home Languages →</p> <p>balanced A-F bi- linguals</p> <p>other A-F bilinguals</p> <p>formal and colloquial Arabic</p> <p>colloquial Arabic only</p>	<p>Achievement measures: 1. teachers' evaluation 2. 1950s test battery developed in France (the "mosaic test" *)</p> <p>used as sole in- dicator of "socio- cultural back- ground" which is classified into categories "modern" "traditional" "peasant" (and "mixed" stages")</p>	<p>L based on test results</p>

Ac Other subjects or unspecified

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
<p>15</p> <p>ix-Year primary project</p>	<p>Yoruba & English - Nigeria</p>	<p>Primary school grades 1-6</p>	<p>religious knowledge (primary school leaving exam) - science + social and cultural studies + <u>Also see</u> <u>tables Aa, Ab, S</u></p>	<p>Yoruba medium of instruction grades 1-6 (experimental groups) Pilot experi- mental group (same as above plus E. taught by ESL specialist)</p>		<p>No pre-project tests (only reported in Bamgbose)</p>	<p>L</p>

Ac Other subjects or unspecified

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
South Jutland	Sonder- jysk (Danish dialect) & German (standard & Danish (standard - Denmark	Primary school	<p>- progress in general</p> <p>. language use <u>perceived</u> (by pupils) differ- ed notably from language use <u>observed</u> (by researcher)</p>	<p>German only me- dium from grade one on <u>grades 1+2</u> 1 Danish "play lesson"/week (oral only)</p> <p><u>grade 3 on</u> Danish as a sub- ject, 5 hrs/week</p> <p>L1 method and syllabus for teaching of ger- man and Danish for all children . use of <u>Danish</u> <u>textbooks</u> in math, natural science and his- tory <u>for German-</u> <u>medium lessons,</u> but : all wri- ting is in German</p>	<p>. minority German boarder communi- ty with own (German language school system, cultural rights, and political party</p> <p>. <u>assumption</u> on which language policy is based: pupils are Dutch (standard) and German bilingu- als, having both languages as L1, <u>but</u> . <u>home language</u> <u>reality</u> is: . 2/3 of pupils: Sonderjysk dia- lect 1/3 of pupils: standard German or mixture of this with Sonder- jysk</p>	<p>. compared with pupils from Danish language majority schools in same area</p> <p><u>mismatch</u> be- tween school's language poli- cy and pupils' perceptions and competen- ces</p>	<p>N/L</p> <p>observa- tional</p> <p>AF: based on 7 months field - work . <u>instru-</u> <u>ments:</u> language diaries - interview - partici- pant observat on</p>

23

Ac Other subjects or unspecified

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
Holland Pilot	Dutch & Turkish - Holland	Primary grade 6 (=last year) and Secondary grades I and II	+ scores <u>Also see tables Aa, S</u>	Dutch medium	+ school level	meaning: signifi- cant correlation between higher school levels and higher scores for Turkish children (not so for Dutch chil- dren) (As school level rises, scores rise)	P/L AF: tests develope for this study

36

Ac Other subjects or unspecified

PROJECT/ PROGRAM	LANGUAGES COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
<p>39</p> <p>Corra Real Stock- holm</p>	<p>Several languages & English & Swedish - Sweden</p>	<p>Upper Se- condary grades I-III (age 16-18)</p>	<p>Also see <u>table Aa</u></p> <p><u>Science (test)</u></p> <p>58% ←</p> <p>23% ←</p> <p>29% ←</p> <p>17% ←</p> <p>.strong corre- ← lation between reading compre- hension and science achieve- ment</p> <p>Grade II consis- tently better in all tests than grades I and III</p>	<p>English medium for teaching Swedish curricu- lum science program</p>	<p>Internationals' background main- ly middle class</p> <p>.Program has com- pleted its 4th year</p> <p>.no option for Internationals but science line if they want English medium</p> <p>.at least four months in <u>this</u> program</p> <p><u>Swedish</u></p> <p><u>Internationals</u> (home language not considered)</p> <p><u>Internationals</u></p> <p>a) home lg. Engl</p> <p>b) home lg. "other"</p> <p><u>Swedish and In- ternationals</u></p>	<p>For Internatio- nals this means:</p> <p>+ fluency in reading English</p> <p>=</p> <p>+ science achie- vement</p> <p>This result re- mains unexpla- ined</p>	<p>N/L</p> <p>AF:</p> <p>.cross- sectional</p> <p>.achieve- ment tests from IEA* test archive</p> <p>.student and teacher question- naires developed for this study</p>

B B Pedagogical Benefits

PROJECT/ PROGRAM	LANGUAGES & COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
2 Rough Rock Demonstration School	Navajo & English - USA (Arizona)		<ul style="list-style-type: none"> - "emotional climate" - embracing traditional Navajo culture <p>Also see <u>tables Aa, Ac</u></p>	<ul style="list-style-type: none"> .English and Navajo as languages of instruction (no specifics given) . emphasis on Navajo involvement and control . school as center of community development 	<p>Note: similar variables were considered conditioning variables in Rock Point School case. Here, program developers see them as part of the program(i.e. power structure/control issues are policy features just as much as specific language of instruction features)</p>	<p>Control groups were: Rock Point School, a BIA* and OEO* funded, but independently administered "alternative" bilingual school; further an ESL type boarding school, and a public school, all serving Navajo children in the same area.</p> <p>.Emphasis of evaluation was comparison with Rock Point School</p> <p>. Controversial evaluation which was dismissed as ethnocentric by Navajo evaluators</p> <p>* Bureau of Indian Affairs * Office of Economic Opportunity ** denoted as such by BIA</p>	N/L based on observation

B Pedagogical Benefits

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
8 Puno, Peru	Quechua & Spanish - Peru	Primary grades 1-6	+ easier class- room relations + improved tea- cher techniques (more content oriented in- stead of routine formal skills orien- ted) + more effective transmission of educational content <u>Also see</u> <u>table Aa</u>	<u>Maintenance-type</u> <u>bilingual program</u> Equal use of Quechua as medium of instruction in all subjects in constant (not decreasing) amounts through six years of primary school	. Community resistance (deriving from language atti- tudes) . Out of synchro- nization with national language policy	An example of larger policy failure (decline from 100-40 participating schools) because of conditioning variables, but a success in the classroom in spite of these, and because of program policy variables	P/L Detailed obser- vational AF: re- searcher lived in research area with communi- ty for two years

B Pedagogical Benefits

PROJECT/ PROGRAM	LANGUAGES COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
17 Concept formation - Ghana)	Ga and Twi & English - Ghana	grade 6 (age 12- 14)	<p>Language usage measured in four specific language characteristics:</p> <p><u># of statements made</u></p> <p>+ <u>relationships reported among objects or events</u></p> <p>+ <u>conceptual levels</u> 1)</p> <p>+ <u>models</u></p> <p>+ <u>vernacular</u></p> <p>Conclusion drawn vernaculars allow better conceptualization; are more fruitful media for enhancing language-thought inter-</p>	<p>Two 5-6 lessons science units; one taught in vernacular, one in English, in reverse order in two groups per language (Ga and Twi) *</p> <p>when taught through <u>vernacular</u></p> <p><u>vernacular</u></p> <p><u>vernacular</u></p> <p><u>vernacular</u></p>	<p>m. t. Ga or Twi (Ghanaian languages) school language English (had been studied for about 6 years)</p>	<p>quality of E. instruction difficult to determine</p> <p>* Elaborate design</p> <p>1) according to Vygotsky's theory of conceptual development</p>	<p>N/L</p> <p>experim- ental - elabo- rate design - thorough statist- ical analyses</p>

A and B Achievement and Pedagogical Benefits

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING- VARIABLES	COMMENTS	TYPE
13 Zambia English Medium	Several African Languages & English - Zambia	Primary grades 1-3	<ul style="list-style-type: none"> . inability to write on their own even after grade 3 . failure to understand subject matter breakdown in classroom communication . students' bewilderment . problems magnified in rural schools . facilitate acquiring skills in English 	<p>English medium only (officially) but "dual medium" in reality</p> <p>(this can also be considered an 'outcome' of the official policy)</p>	<ul style="list-style-type: none"> . lack of trained teachers . lack of adequate materials (both can also be considered policy variables) . teachers' resistance to use of English medium . location . pre-school facilities 	<p>Teachers suggest use of English medium not before grade 3</p> <p>- many children do not go beyond grade 3</p>	<p>N/L</p> <p>AF: Observations in urban and rural schools; Teachers Questionnaires</p>

A and B Academic Achievement and Pedagogical Benefits

PROJECT/PROGRAM	LANGUAGES COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
PEIP Primary Education Improvement Project	Hausa & English (also Arabic) - Nigeria	Primary school	<ul style="list-style-type: none"> . more confident to talk . achieve literacy faster in English, Hausa and Arabic . more fluent in English and Hausa . achieve numeracy and mathematical concepts faster . more aware of events and phenomena in environment 	<ul style="list-style-type: none"> . new instructional materials . mobile teacher trainers . revision of curriculum (content and methodology) . clear distinction between language as medium of instruction or subject . choice given between two language policy options depending on language situation in the states: Hausa medium grades 1-3 then E., or E. throughout; other language as L2 subject 	<p>popular acceptance</p> <p>1)</p>	<p>1) Author claims that following the existing order and adding some modifications served better, because a radical departure from existing policy would have been suspicious, and that the 6-year primary project's radical nature in contrast made that program unacceptable to any government in Yoruba speaking states.</p> <p>PEIP was begun at same time as 6-year primary project (in 1971), extended to 800 schools by 1974; its instructional model used for UPE classes in 10 northern states</p>	<p>General summary of L project - no details</p>

14

S School efficiency and beyond

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
4 Chiapas	Indian languages & Spanish - Mexico		more successful in teaching girls Also see table <u>table Aa</u>	. 1st year: Ll reading instruction by global method (stresses comprehension) plus Spanish oral drills before . 2nd year: introduction to Spanish reading . native teachers	higher literacy rates of older women in villages with indigenous schools ++ teachers' community involvement	may also be a reason for outcome Importance of training for rural teachers stressed	L very thorough
6 Guatemala	Four Indian Languages & Spanish - Guatemala	Preprimary and Primary grades 1 and 2	- 2nd grade assistance rate <u>Repetition</u> - 2nd grade -- 1st grade <u>Promotion</u> + 5.7% 2nd grade + 7.4% 1st grade But promotion increases were lower when compared to the previous year. Also see tables	← less days of class in pilot schools three years of program completed		relationship not established but possible; lack of school census data age average in third year lower (perhaps due to project, but inconclusive evidence)	P/L AF: no school census data - test participation higher in pilot schools

S School efficiency and beyond

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
<p>Paraguay II</p>	<p>Guarani & Spanish - Paraguay</p>	<p>Primary grade 1 (7-9 yrs)</p>	<p>- final exams ← (resulting in less promotions meaning + wastage)</p> <p>but</p> <p>← more total wastage when based on repe- tition and drop- outs in relation to the initial enrolment</p> <p><u>Also see table Aa</u></p>	<p>- <u>less</u> use of Guarani in the classroom</p> <p>+ <u>more</u> use of Guarani in the classroom</p>	<p><u>Teachers' Languages</u></p> <p>100% speak, read and write Spanish</p> <p>99% speak Guar. 47% read Guar. 30% write Guar.</p> <p><u>Teachers' Language Attitudes:</u></p> <p>60% would prefer to use only Spanish in class- room if it were feasible</p> <p>71% would want first graders to learn in Spanish and Guarani at the same time</p> <p>78% believe that grades would go up if no Guarani was spoken in class</p>	<p>Initial hypothe- sis (more re- pression of L1 use results in more wastage) can (only) be partially accepted.</p> <p>The situation is changing be- cause the "Revised Curricu- lum" (1973) features auto- matic promotion; however, imple- mentation is slow</p>	<p>N/L mainly observa- tiona.</p>

11

S School efficiency and beyond

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE				
12 Tunisia	Colloquia Arabic & Formal Arabic & French - Tunisia	Primary grades 2-6	Admission to middle school (after grade 6)	<u>grades 1+2:</u> Arabic only <u>grade 3:</u> 15 hrs Arabic 10 hrs French <u>grade 4:</u> 10 hrs Arabic 15 hours French French medium for science and mathematics	<u>Socio-economic background</u> high middle low →	only 2 students	L				
								78.57% *	<u>Home Language(s)</u> F-dominant bil- ingual A-F balanced bilingual A-dominant bilingual Colloquial and Formal Arabic Colloquial Arabic only →	only present in high SES group	only <u>one</u> student
								35.78% **			
								0.48% **			
								95.83% **			
								69.56% *			
								28.67% *			
								3.40% *			
								1.06% *			
								* figure in article ** figure calculated from other information in article			

S School efficiency and beyond

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
<p>ix-Year Primary Project</p> <p>15</p>	<p>Yoruba & English - Nigeria</p>	<p>Primary school grades 1-6</p>	<p><u>Promotion</u> Common entrance examination to secondary school = <u>Drop out rate</u> Unusually high drop out rates in both groups, but higher in control group (drop out rate considered as due to poor academic per- formance) highest second lowest <u>Also see</u> tables Aa, Ab, Ac</p>	<p>Yoruba medium of instruction grades 1-6 (experimental groups) control group pilot group later project groups</p>		<p>possible ex- planation given as : possibly due to greater pressure to succeed in the project school (no evidence for this is pro- vided) only reported in Delpit;* Dutcher reports a 'no difference' result * as reported in <u>then</u> ongoing evaluation by Yoloye (as re- ported in Delpit</p>	

S School efficiency and beyond

PROJECT/ PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
Yugos- lavia	Serbo- Croat, Slovenian Macedo- nian 1) + 9 langua- ges of the nationali- ties 2)	<u>Primary school</u>	<u>1980/81</u> <u>Promotion rate</u> 97.61% ← 94.73% (from 92.86% in Turkish to 99.43% in Italian)	← taught in the languages of the nationalities 2) with Serbo- Croat as L2 sub- ject (representing 13.76% of all primary educa- tion)	all Yugoslavia belonging to "nationalities" 3)	1) languages of the "nations" (Serbs, Croats, Muslims, Monte- negrins; Slovenes; Macedonians)	Summary of several studies, surveys and official statisti- cal data (almost all refer- ences in language unknown to me
		<u>Secondary school</u>	90.05% 90.43% (from 89.8% in Romanian to 95.32% in Ruthe- nian)	← taught in the languages of the nationalities with Serbo- Croat as L2 sub- ject (representing 8% of all se- condary schooling)	all Yugoslavia belonging to "nationalities"	2) Albanian, Bulgarian, Czech, Italian, Hunga- rian, Romanian, Ruthenian, Slovak, Turkish 3) meaning national mino- rities who are all guaranteed equal rights under the constitution	
			<u>In final grade in secondary school:</u> 77%	Romanian group 19% had secondary instruction in m.t.	→	only 264 students	

26

CONTINUATION Study 26 Category S School efficiency and beyond

61% had secondary instruction in Serbo-Croat

Hungarian group
61% had secondary instruction in m.t.

39% had secondary instruction in Serbo-Croat

Both groups had completed primary education three years earlier (complete primary in m.t.)

2872 students

S School efficiency and beyond

PROJECT/ PROGRAM	LANGUAGES COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
Holland/ Pilot	Dutch & Turkish - Holland	Primary grade 6 (last year) and Secondary grades I and II	Overrepresent- ation in the lower two (of five) Secondary School types <u>Also see</u> <u>tables Aa, Ac</u>	← Dutch medium only since 1st grade of pri- mary school	At least four years in Holland	No special treat- ment for non- Dutch speakers; compared are Turkish-Dutch bilingual Turkish and monolingual Dutch children from same class- rooms. The widely held teacher assump- tion that limi- ted reading ability in Dutch is the possible cause of this overrepresent- ation led to this study. Authors stress that cross- sectional design puts severe li- mits on group comparability and that longi- tudinal results are needed.	P/L data from official records

36

S School efficiency and beyond

PROJECT/PROGRAM	LANGUAGES - COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
Turkish adolescents	Turkish & German - FRG	through adolescence there are: 6% under age 6 17% age 6-10 34% age 10-15 43% age 15-25	<u>Command of German *</u> high 49.35%* average 39.35%* low 11.35%*	German medium regular classes	<u>Duration of school attendance in FRG</u> 1-2 years		N/L mainly based on survey data
			high 76.30% average 23.75% low 0.00%				
			<u>girls only :</u> low 16.00% high 94.70%		<u>girls only:</u> 1-2 years 9+ years	of a total of high 69.30% average 27.20% low 3.50%	
			<u>Unemployment:**</u> 19.00% 23.70% 65.20%		<u>Command of German:</u> high average low	meaning: school attendance has stronger impact on girls' command of German (one) possible reason: girls' restricted social contacts outside of school of a total of 26.80% unemployed	
			*figures are calculated averages of separate figures for boys and girls **presumably boys and girls (not specified)				

37

S School efficiency and beyond

PROJECT/ PROGRAM	LANGUAGES COUNTRY	AGE GROUP	OUTCOMES	POLICY VARIABLES	CONDITIONING VARIABLES	COMMENTS	TYPE
Offen- bach Greeks	Greek & German - FRG	grade 7	<p>• 55% go on to Realschule* or Gymnasium* (Highest rate of all immigrant workers' children) **</p> <p>• The higher the % of Greek children in the national or "bilingual" classes (i.e. the fewer in the regular German classes), the higher the achievement of those in the regular German classes</p> <p>* secondary school types</p>	<p>Fully integrated: attending regular German elementary school classes from the beginning (no special language or other provisions)</p>	<p>• parents are Greek immigrant workers mostly intending to stay in FRG</p> <p>• These make up 10% of all Greek immigrant children</p> <p>• The other 90% go to Greek national or "bilingual" classrooms in the city</p> <p>(Greek parents can choose where to send their children)</p> <p>** comparison groups are: Italian, Yugoslavian, Turkish, Spanish, Portuguese. National/ "bilingual" classes are not available for these groups</p>	<p>• More home country oriented parents prefer to send children to (Greek government sponsored) Greek national/ "bilingual" classrooms, whereas more integrated parents with positive attitude towards German school system send children to regular German classes.</p> <p>• Author contends that this results in a "qualitative selection" (i.e. group attending regular German classes is already selected)</p> <p>• similar data from: Nurnberg, Munchen. Ludwigsburg</p>	<p>N/L very detailed and thorough - based on survey data, observations, intimate knowledge of the situation (part of a book on Greek children in the FRG)</p>

38

APPENDIX TWO

THE STUDIES

<u>Group one: Indigenous peoples</u>			<u>Size</u>	
<u>No.</u>	<u>Name of study</u>	<u>Students</u>	<u>Classes</u>	<u>Schools</u>
1	Alaska-Eskimo	190 (year 3 evaluation (137 ex., 53 c.))	-	13 (year 1 evaluation)
2	Rough Rock	-	-	4 (1 compared to three)
3	Rock Point	≈ 1000 220 ex. 780 c.	-	1 ex and 7 c.
4	Chiapas	1601	-	-
5	Montana de Guerrero	52	-	-
6	Guatemala	-	-	80
7	Ecuador	-	-	2
8	Puno, Peru	-	-	2 (extensive observation) 20 (brief observations)
9	Jungle, Peru	not specified		
10	Paraguay I	1367	-	-
11	Paraguay II	1437 students 20 teachers	80	20 (10 urban and 10 rural)
12	Tunisia	521	-	-

No.	Name of study	Students	Size	
			Classes	Schools
13	English Medium Zambia	50 teachers	30	10
14	PEIP (Nigeria)	-	"several project classes"	66 project schools; later 800 additional ones
15	Six-Year Primary Pro- ject (Nigeria)	439	-	11
16	*(Nigeria; also see Cross- cultural Study)	289 (122 Nigeria - 187 Wales)	-	-
17	Ghana (Concept Formation)	58	-	2
18	Uganda	1560 tested but only 406 for statistical analysis	-	58
<u>Group two: Established Language Minorities</u>				
19	Early French Immersion Canada	a)44 (longitudinal study) b)194 (cross-sectional study)		
20	French Immer- sion Canada (Math)	631 182 ex. 449 c.	70	-
21	Wales 1978	-	-	16 (Fris evaluation)
21a	*(Wales; also see Cross- cultural Study)	289 (122 Nigeria 187 Wales)	-	-
22	Spoken Irish	-	119	-
23	South Jutland	30	-	1
24	Catalonia 1970		-	"various schools"

No.	Name of study	Students	Size	
			Classes	Schools
25	Catalonia 1982	1500	-	54
26	Yugoslavia	"very large scale" (national surveys)		
<u>Group three: Immigrants/Recent Arrivals</u>				
27	Mexican- American 1980	174 86 ex. 90 c.	-	-
28	Mexican- American 1985	142 24 ex. 118 c.	-	-
29	Hispanic	623	-	-
30	Santa Fe	"very large study"		
31	Edmonton Ukrainian	not specified		
32	Olofstrom and Gothen- burg	687 351 in Olofstrom 1971-2 336 in Gothenburg 1973		
33a and 33b	Original FISK (Sodertalje)	"large scale"		
34	Extended FISK	-	"several classes"	-
35	England Multi- Racial	-	-	127 immigrant schools 19 non-immig schools
36	Holland/Pilot	200	-	-

No.	Name of study	Students	Size	
			Classes	Schools
37	Turkish Adolescents	480	-	-
38	Offenbach Greeks	248	-	-
<u>Others:</u>				
39	Norra Real Stockholm	128 60 ex. 68 c. and 11 teachers	6	1
40	Half-Day French Cincinnati	143	-	-

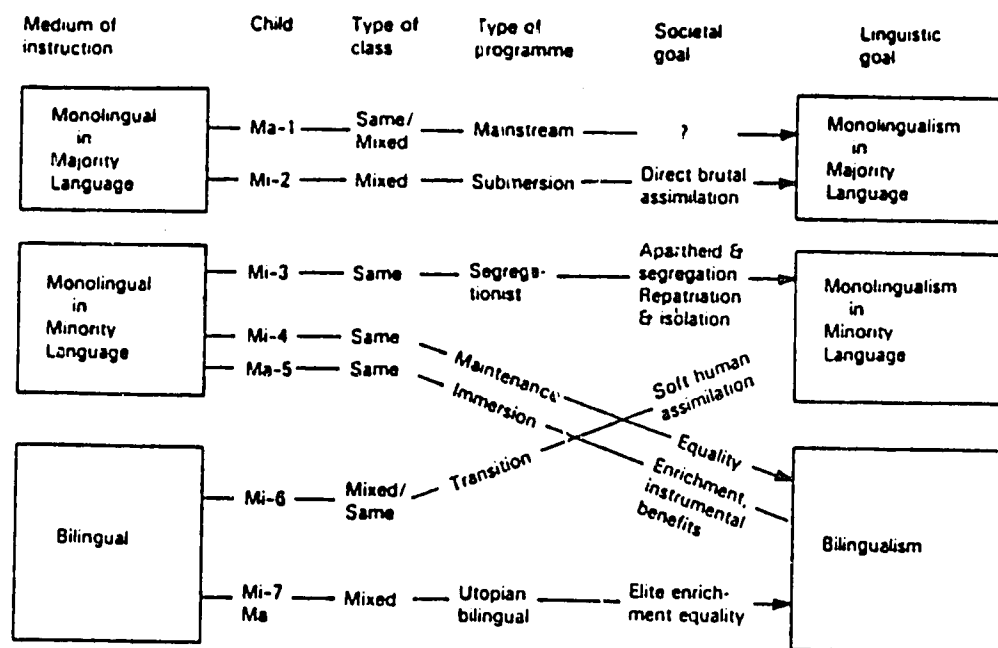
Tove Skutnabb-Kangas' Typology of minority education and corresponding language of instruction policies

1. Simple model

	ISOLATIONIST SEGREGATIONAL	ASSIMILATIONIST	MAINTENANCE MOTHER TONGUE
GOAL	monolingualism or dominance in L1	little or none, often voluntary, outside school hours	bilingualism in L1 and L2
MEDIUM OF INSTRUCTION	L1	L2	L1 (→ L2?)
INSTRUCTION IN THE OTHER LAN- GUAGE	little or none or bad	little or none, often voluntary, outside school hours	good, later extensive
SEGRETATION	physical, natural or forced	psychological, no means to cope	none, or psychological, class gives means to cope
EXAMPLES	-Same, Finns in Sweden earlier -"Bantustans" in South Africa -Turkish classes in Bavaria, BRD	most minority education	mother tongue classes in Sweden & many other countries

source: Skutnabb-Kangas, 1983, p. 130

2. Elaborate model



source: Shafer, 1986, p. 190 (citing Skutnabb-Kangas, 1984)

CONTINUATION Study 26 Category S School efficiency and beyond

61% had secondary instruction in Serbo-Croat

Hungarian group
61% had secondary instruction in m.t.

39% had secondary instruction in Serbo-Croat

Both groups had completed primary education three years earlier (complete primary in m.t.)

2872 students