

Departamento de Educação

universidade de aveiro

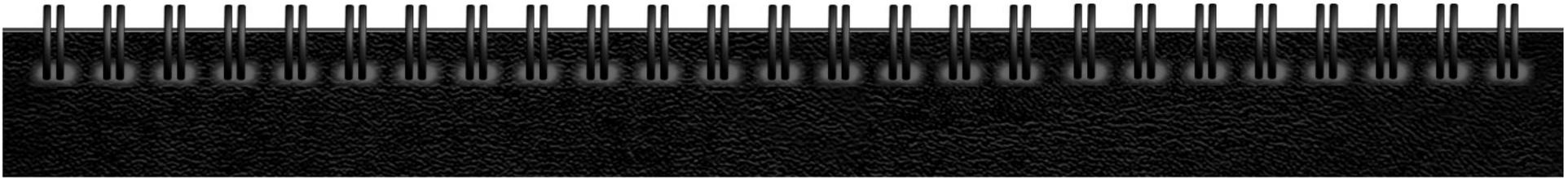


30 anos a projectar futuros

ETEN Conference 2012 - Coimbra
Mathematics Education TIG

Cross Curricular Mathematics - a case study -

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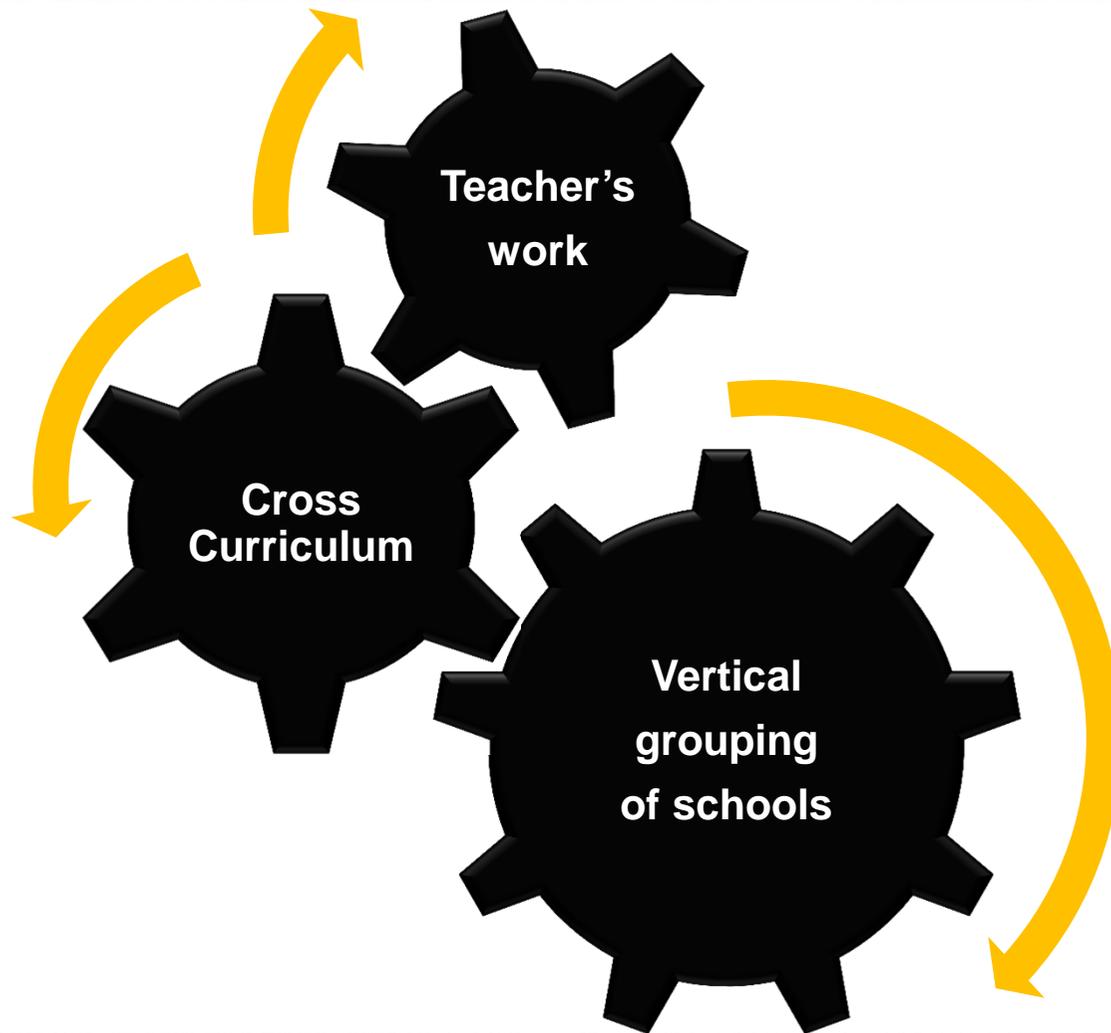


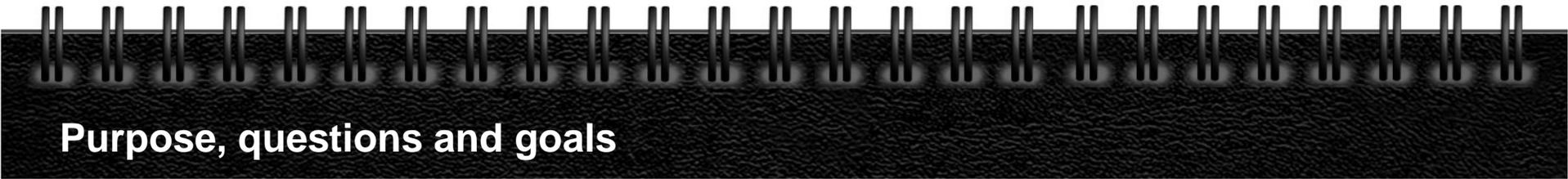
summary

1. Framework of the study
2. Purpose, questions and investigation goals
3. Methodology
4. The Study
5. Conclusions



Framework of the study





Purpose, questions and goals

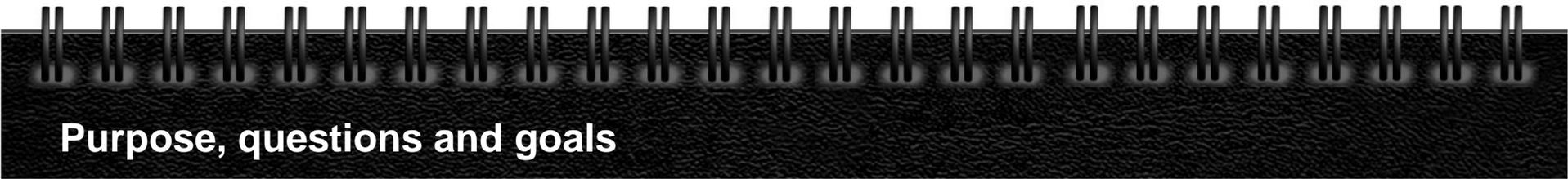
Main purpose

Analyse the constraints faced by math teachers in the development of their work, namely in the creation of inter-cycle and inter-year links/connections;

Perceive the measures to be implemented in order to overcome these constraints;

Observe what conditions and factors may favor the desired vertical articulation.





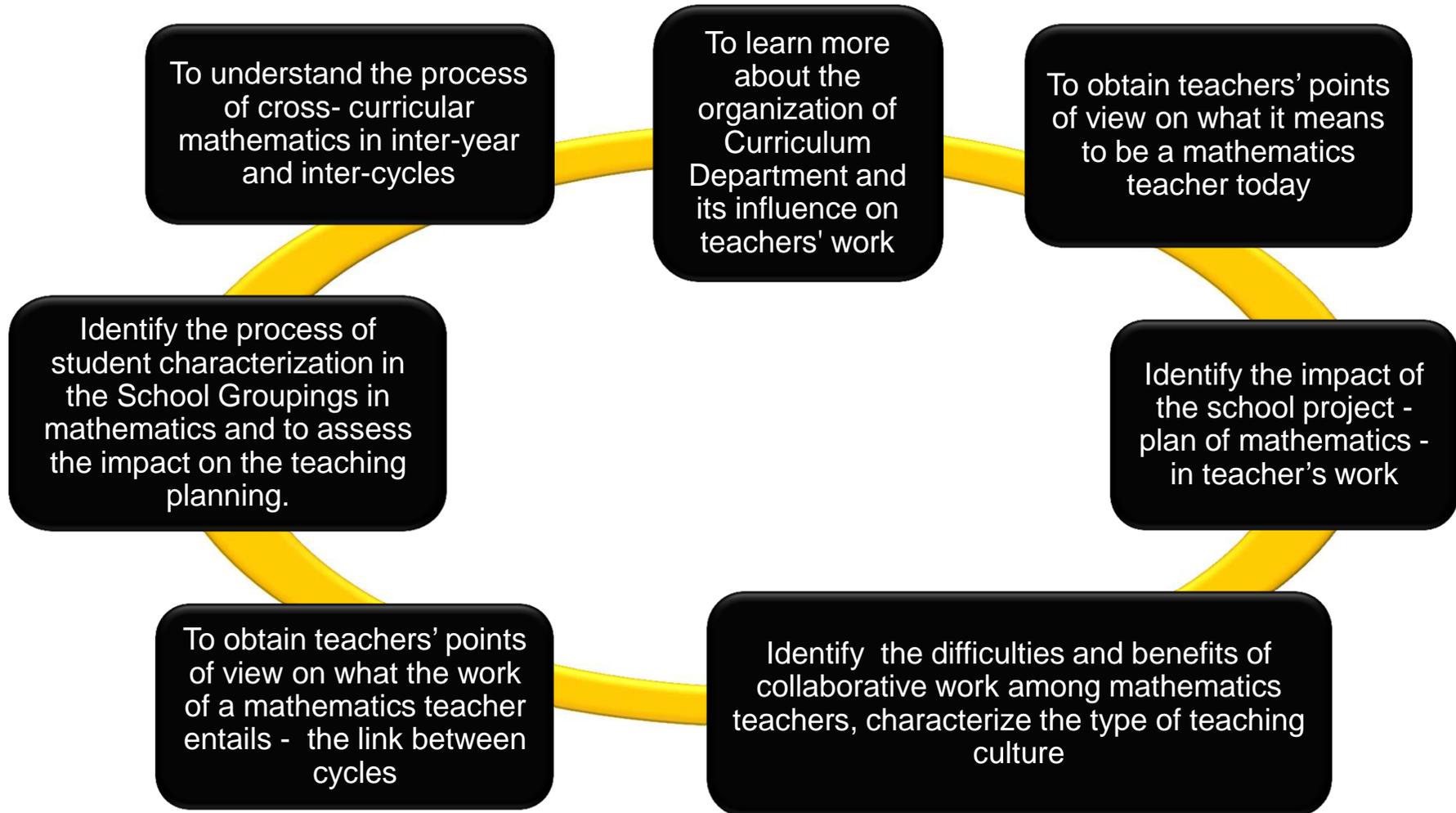
Purpose, questions and goals

Questions and goals

How the process of inter-year and inter-cycle Cross Curricular Mathematics is interpreted, planned and experienced as set out at a ministerial level within a vertical grouping of schools?

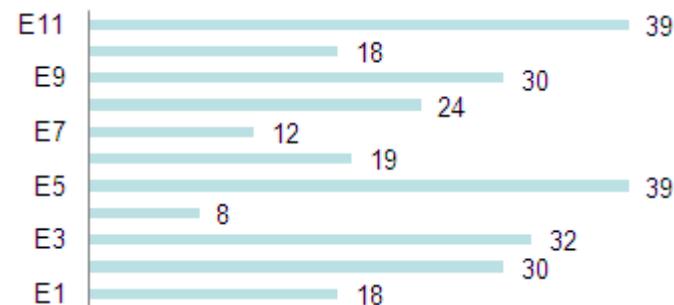


Purpose, questions and goals



Methodology

- **Methodological options:** qualitative and interpretative case study
- **Selection of the case:**
 - Vertical grouping of schools of the Central Coastal Region
 - 11 Participants: President of the Executive Board and Chairman of the Pedagogical School Board; Coordinator of the Curriculum Department of the 2nd and 3rd cycles which integrate the subject of Mathematics; Coordinator of the Curriculum Department of the 1st cycle, three mathematics teachers of the 3rd cycle, three teachers from the 2nd cycle and one teacher from the 1st cycle.
- **Data collecting technics**
 - Document analysis
 - Inquiry
 - Observation



Study description



Methodology

Treatment and presentation of data

interviews
remarks on direct observation
available official documents



Categories
according to the
research
purposes

“A good qualitative work is based and documented on good descriptions from data to illustrate and corroborate the assertions made”.

Bogdan & Biklen (1994: 252)



Conclusions

Impact of students characterization

- Effective and constant concern with students characterization
- Implications on the planning of activities (macro, meso and micro)
- Anticipation of changing and innovating factors in learning assessment procedures involving teachers and organization of vertical grouping of schools

Curricular Departamentos/ Curricular Articulation/ Collaborative Work

- Initial and final meetings with the three CEB in the attempt to accomplish the curricular articulation and sequencing (in accordance with the guides proposed by ministries and several authors, e.g. Simões, 2005)
- 2nd e 3rd CEB – weekly meetings, enhancing an horizontal and vertical curricular articulation among years.
- 1st CEB – regular meetings, but isolated from other cycles.



Conclusions

School Project – Math Plan (2nd and 3rd CEB) / (Perceptions) To be a teacher today

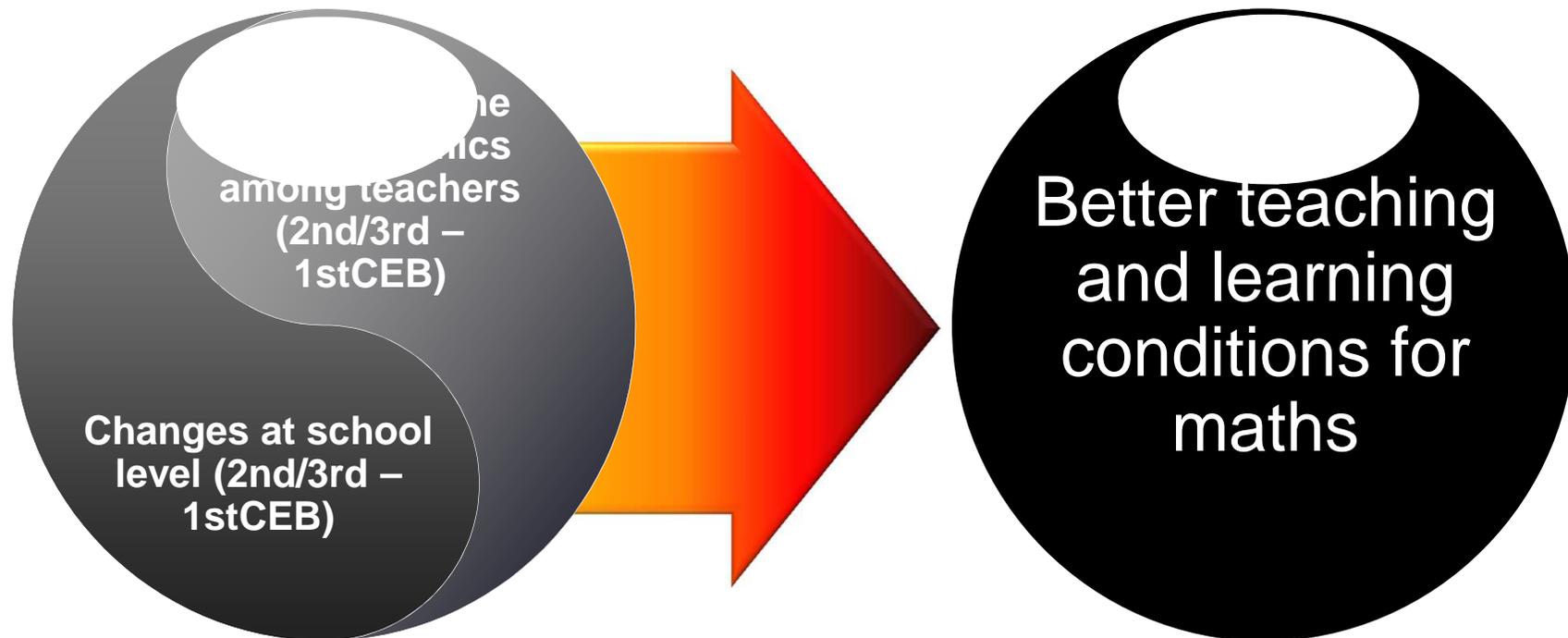
- Collaborative culture and cooperation among schools
- Team teaching
- Proper equipment of schools
- Leverage of assessment and evaluation procedures
- More lecturing time for the subject
- Continuity among years and cycles (2nd and 3rd) in an effective articulation so as to achieve better results

achieve better results

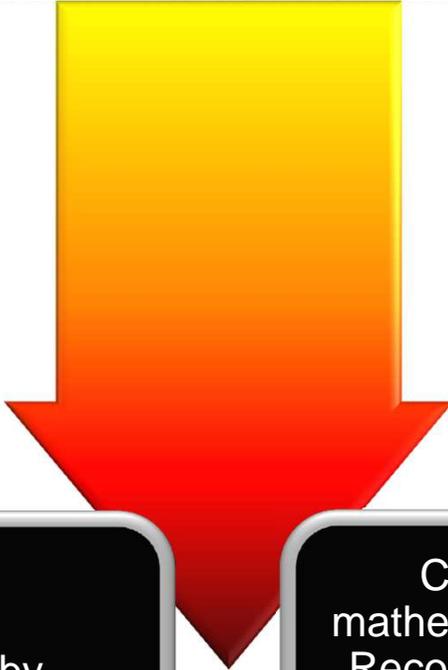
- Continuity among years and cycles (2nd and 3rd) in an effective articulation so as to
- More lecturing time for the subject
- Leverage of assessment and evaluation procedures



Conclusions



Conclusions



Resolution of some constraints evidenced by researchers in this area

Comes with the study of mathematics 2001-Diagnosis and Recommendations for Teaching and Learning of Mathematics, conducted by APM

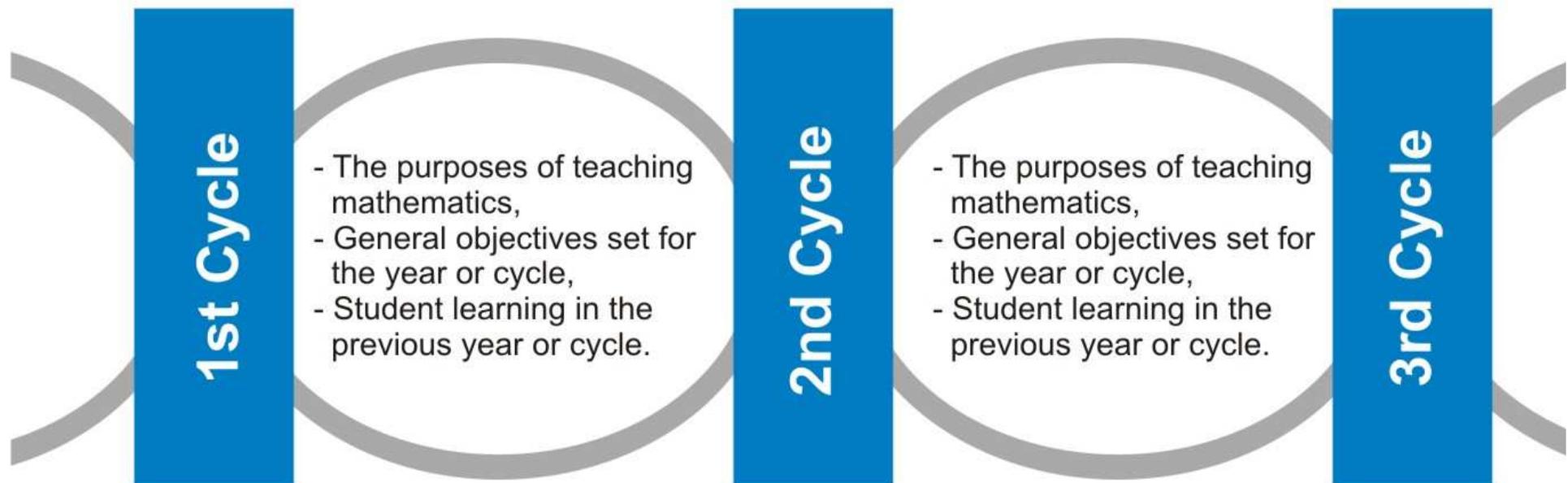
researchers in this area constraints evidenced by

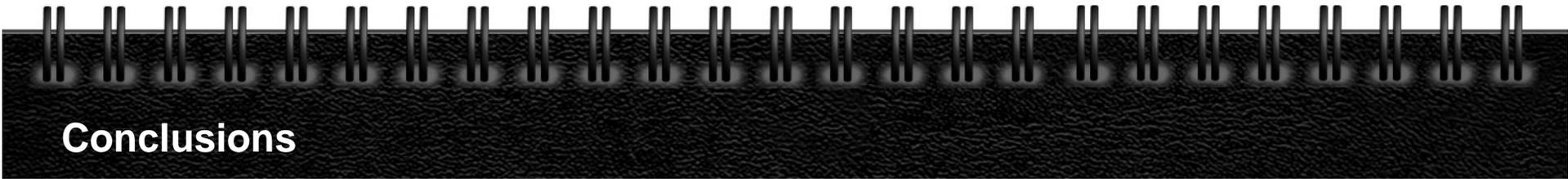
conducted by APM and Learning of Mathematics, recommendations for teaching



Conclusions

The work of a mathematics teacher entails - the link between cycles





Conclusions

- 1 Overload of activity
- 2 New demands require more time, exceeding the 35 hours.
- 3 Lack of motivation due to the image attributed to the teacher by society.
- 4 Lack of rooms for meetings.
- 5 To be a math teacher today demands a high and constant level of updating.



Conclusions

Synthesis conclusive

Teachers' work as a link between cycles as a platform is the articulation curriculum. Such an articulation is obtained horizontally, however, the vertical is more visible at the 2nd and 3rd CEB being Potentiated by a collaborative culture.

Improve the articulation lacking between 1º e 2/3º Cycles

The implementation of the Action Plan for Mathematics (2nd/3rd) was, following the creation of Vertical grouping of school, the most important, successful and necessary factor for teaching this subject, thus creating the conditions and factors to enhance continuity and support the transition between years and/or stages of schooling within a sequentially progressive logic.



Conclusions

Suggestions for further research

Studying the implementation of the Action Plan for Mathematics

Process

Changes

Involvement and
motivation of
participants

Assess the consequences of other actions and measures PAM

Continuous training program in
Mathematics with 1st and 2nd cycles of
the Basic Education

The implementation of the
New PMEB (accompanying teachers, c
oordinators and other teachers)



Conclusions

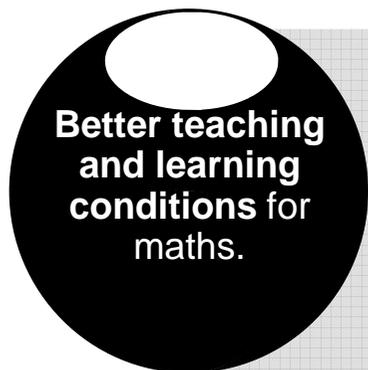
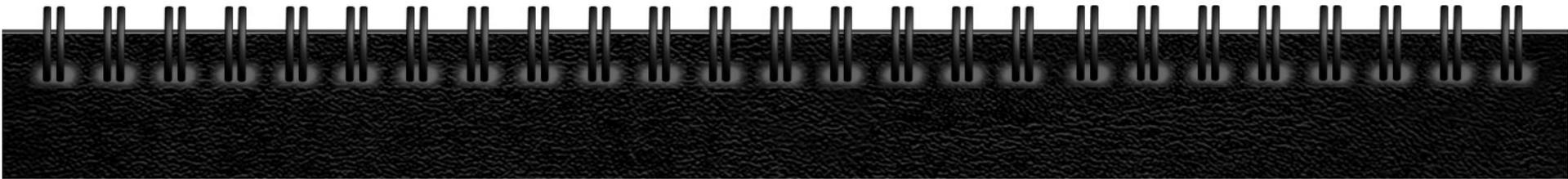
Implications of the study

Creation of mechanisms relating to the implementation of the process of cross curricular between cycles

Common time schedules in the mathematics teachers including the 1st cycle

Conditions of valuation and motivation to work collaboratively





**Better teaching
and learning
conditions for
maths.**

“ Change is a serious thing because the purpose is always to improve people’s lives. But it is complicated, because believes, lifestyles and behaviour can be at conflict. Those who try to modify education, whether in a classroom or in the whole educational system, rarely know what the people involved in the process think about it. ”

(Bogdan e Biklen, 1994: 265)



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