Research Article

Collaborative learning in a context of massification: strategies and problems (Preliminary study conducted in the midwifery sector at ISTM of Lubumbashi)

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Abstract: Background: Massification has become a thorny issue in DR Congo. The challenge is great. Hence the need to rethink teaching strategies and strengthen the pedagogical model. **Objectives**: The study aimed to identify the strategies mobilized by students; in order to explore the perception and identify the problems that influence collaborative apprenticeship. **Method**: This transversal descriptive study involved 157 students in the midwifery field at ISTM/Lubumbashi. Two self-administered interview questionnaires were used for 8 months (14 November 2016 to 15 July 2017). **Results**: Cognitive (45.9%) and metacognitive (24.8%) strategies were more mobilized. Several problems hindered collaboration: lack of understanding (44.6%); low participation in group work (23.6%) and low level of interaction (20.4%). The motivating factors were productive brainstorming and interactions (28.0%), diversity of individual research results (19.7%); team spirit development (16.6%) and quality of exchanges (14%). In the end, collaborative work facilitated the assimilation of knowledge (26.1%); fostered interactions (21%); and enabled the exchange and acquisition of new knowledge (14.7%). Teachers had deficiencies in group organization (48.4%). Conflicts among students were related to the performance of the work (42.7%), lack of scientific contributions (19.7%), conflicts related to the functioning of the group (14.6%) and socio-cultural conflict (4.5%). **Conclusion**: Students' perception was positive. Collaborative learning can effectively contribute to skills development through teacher capacity building.
Keywords: Collaborative learning; overpopulation; learning strategies; problem.

1. INTRODUCTION

The overpopulation of education poses serious pedagogical and didactic issues in higher education resulting from the number and heterogeneity of the public (Ladage, L. 2016). The challenge of ensuring quality training is greater (Vanpee. D. *et al.,* 2008) in the face of overpopulation and even greater in a competency-based approach to health sciences training.

The overpopulation of education, a thorny problem, is forcing the teaching professional to rethink his strategies and strengthen the pedagogical model. The teacher should not deprive himself of creating conditions that favor the active involvement of students in their learning (Vanpee. D. *et al.,* 2008). For Lyson and Jutras (2014), teachers have begun, gradually and not without any problem, in order to propose

pedagogical situations centred on students' own responsibility for learning, in both face-to-face and virtual modes. Among these strategies, the collaborative approach has been tested. It has been successfully used in distance and online education (Walckiers, M., & De Praetere, T. 2004; Henri, F., & Lundgren-Caryol, K. 1998). However, in classroom and in a context of overpopulation, experiments are rare. Thus, we proposed to study it in a context of overpopulation. In particular, in health sciences, overpopulation has led us to reflect on the contribution of collaborative learning to skills development.

The collaborative approach was chosen because it puts human interaction and group input at the centre of learning. This choice was also supported by Denis (2005) who considered that collaborative learning

is undoubtedly an interesting way of working to work on different aspects of life skills.

This study aimed to identify the learning strategies of midwifery students and, in addition, the problems encountered in carrying out group work in order to improve the quality of training through a collaborative approach. The avenues to be explored and gaps will be taken into account when organizing teacher training on the collaborative approach. Finally, an evaluation will still be done on the process and results after the training, allowing for modeling.

We focused our research on midwifery students in midwifery training. This study continues to identify strategies mobilized by students in collaborative learning; to collect students' perceptions of collaborative learning; and to identify issues that influence collaborative learning at ISTM.

2. METHODOLOGY

This preliminary and transversal descriptive study addressed the collaborative approach as a palliative to overpopulation. The study concerned students in the midwifery programme organized at the Higher Institute of Medical Techniques in Lubumbashi, in D.R. Congo. Data collection took eight months from 14th November 2016 to 15th July 2017.

Thus, we included to the study 157 students enrolled during the period of the Academic Year 2016-2017, 14.0% of whom were female learners from the Third Undergraduate; 46.5% from the Second Undergraduate and 39.5% from the First Undergraduate. After consent, the learners answered to the interview and self-administered questionnaires.

3. RESULTS

Table1. Socio-demographic characteristics of students participative to the study

Variables	Modalities	Number	%
Sex	Female	154	98,1
	Male	3	1,9
Age	≤20	58	36,9
	21 -30	93	59,1
	>31	6	3,8
Persons having chosen the course of study	Students themselves	124	79,0
	Other persons	33	30,0
	Total	**157**	**100**

Of the learners in the G1 and G2 promotions surveyed, only 1.9% of students (men) took part in the midwifery programme; whereas these promotions are mainly made up of female students (98.1%). In addition, the modal age group was 21 to 30 years old with 59.1% of learners. It is followed by that of under 20 years old with 36.9% and 3.8% of learners who were over 31 years old. In addition, 79% of the students surveyed chose the midwifery programme themselves;

while 30% of the students were guided by their secondary school teachers and parents.

Table2. Problems that hinder collaboration in the working group

Problems	Number	%
Incomprehension between learners	70	44,6
Irregularity	7	4,5
Low level of collaboration interaction	32	20,4
Various conflicts	6	3,8
Low participation	37	23,6
None	5	3,1
Total	**157**	**100**

The learners surveyed identified several problems that hinder collaboration within the group. These include misunderstanding between learners (44.6%); low participation of other learners in group work (23.6%) and low level of interaction (20.4%).

Table3. Expected contribution of the lecturer to improve group learning

Expected contribution from the lecturer	Number	%
- Decrease the number of learners per group	7	4,5
- Explain the instructions clearly	65	41,7
- Allow enough time for good work results	11	7,1
- Facilitate understanding and understanding in the group	7	4,5
- Guide and orientate the group in the performance of tasks	14	9,0
- Plan the course	4	2,6
- Diversify the tasks of the practical work	27	17,3
- Actively involve all learners	12	7,7
Total	**157**	**100**

Among the high expectations of the learners from their lecturers, we found that teachers clarify instructions (41.7%), diversify tasks (17.3%), Guide and orientate the group in carrying out tasks (9%), actively involve learners in group work (7.7%) and allow sufficient time (7.1%).

Table 4: Motivation factors for group learning

Factors of Motivation	Number	%
Quality of group discussion	22	14,0
Diversification of individual research results	31	19,7
Development team spirit	26	16,6
Interactions and productive brainstorming	44	28,0
None	34	21,7
Total	**157**	**100**

Of the learners surveyed, only 28.0% were motivated by productive brainstorming and interactions. Other motivating factors were the diversification of

individual research results (19.7%); team spirit building (16.6%) and the quality and richness of the group discussion (14%).

Table5. Help and support from the group in assimilating the material and/or developing skills

Help and support for assimilation	Number	%
No	61	38,9
Yes	96	61,1
Total	157	100

This table shows that 38.9% of the learners surveyed did not receive help or support from group members in assimilating subjects and developing skills. On the contrary, 61.1% of learners reported receiving this help and support.

Table6. Advantages of collaborative work

Benefits of collaborative work	Number	%
exchange knowledge and acquire new knowledge	23	14,7
Fostering Interactions	33	21,0
Facilitate the understanding of theoretical subjects	41	26,1
Encourage group discussion	8	5,0
Assist in the assimilation of materials	23	14,7
Nothing	29	18,5
Total	**157**	**100**

Considering this table 6; the advantages of collaborative work were: facilitating the understanding of subjects (26.1%); fostering interactions (21%); exchanging knowledge and acquiring new knowledge (14.7%); assisting in the assimilation of subjects (14.7%) and encouraging group discussion (5%). However, 18.5% of learners did not find any benefit in collaborative work.

Table7. Factors favoring quality group work

Favorable factors	Number	%
Self-confidence and confidence in others	47	30,0
Sound confrontation	20	12,7
Commitment of everyone to the work of the group	22	14,0
Accountability of each member at work	19	12,1
Attention to objectives	39	24,9
None	1O	6,3
Total	**157**	**100**

The factors favoring quality work in quality are multiple, among which, self-confidence and trust in others (30%), attention to objectives (24.9%), everyone's commitment to the group's work (14%) and healthy confrontation (12.7%).

Table8. Quality of the role played by lecturers with students in groups

Roles	Numbers	%
Well done	81	51,6
Incomplete	76	48,4
Total	**157**	**100**

For 33.1% of learners said that lecturers are trainers and have performed their role as facilitators well; while 48.4% of learners felt that the role of lecturers was deficient.

Table9. Types of conflicts encountered in the group

Types of conflicts encountered	Number	%
Inferiority or superiority complex	18	11,5
Related to team operations	23	14,6
Lack of scientific contributions	31	19,7
Related to the performance of work	67	42,7
Sociocultural	7	4,5
None	11	7,0
Total	**157**	**100**

Conflicts related to the performance of work were at the top of the list (42.7%) of the most common conflicts encountered in learning. Next come the lack of scientific contributions (19.7%), conflicts related to the functioning of the group (14.6%) and the superiority and inferiority complex (11.5%) and finally, the sociocultural conflict (4.5%).

Table10. Conflict management strategies in the group

Strategy to resolve conflicts	Number	%
Raise awareness	45	28,7
Asking for forgiveness	12	7,6
Fostering dialogue	35	22,3
Withdrawal or exclusion from the group if recurrence	21	13,4
Out-of-court settlement	16	10,2
None	28	17,8
Total	**157**	**100**

In the event of conflicts within the team, management strategies differ, in particular raising awareness of the conflicting learner (28.7%), encouraging dialogue (22.3%), removing the learner from the group in the event of a repeat offence, forcing the learner to make amends (7.6%).

4. DISCUSSION

Overpopulation, a reality experienced in the Democratic Republic of Congo, has led to the opening of other universities in different cities of the country (currently 36 universities excluding higher education institutions and private institutions in order to reduce the demographic pressure on existing universities (Mohamedbhai, G. 2014).

It is obvious that in a context of overpopulation, students learn less. Lecturers multiply

in vain the strategies and pedagogical styles that lead to lassitude and end up falling back on the lecture. However, in midwifery practice, the student, at the Centre of his learning, had to work more on developing his skills.

As the years go by, student enrolment in recruitment increases further even in promotions that use the competency-based approach. Like other researchers looking for ways to improve, we have embarked on this research in order to find ways to bring together the collaborative approach and overpopulation. In this first phase, our study is limited to students and mainly those in the midwifery field. Because Billouard-Fuentes (Billouard-Fuentes, D. 2009, June) stated that collaborative learning implies that the learner actively participates in the expansion of his knowledge by making the best use of relationships with other learners.

4.1 Mobilized Collaborative Learning Strategies

In education, interest in learning strategies has increased with the idea of competencies (Bégin, C. 2008). The choice of a pedagogical model also depends on the students' abilities and their characteristics. In this study, we focused on strategies as resources mobilized by the student for the development of his or her skills. Because in fact, we have studied the possibility of integrating and modelling the collaborative approach in large group learning. For Larue and Hrimech (2009), teaching strategies, especially metacognitive strategies, is a factor in supporting success. The category of metacognitive strategies includes self-assessment, self-regulation and self-control strategies. In addition, the category of affective strategies includes strategies to maintain motivation, concentration and emotional management. The management category includes strategies for time management, environmental management, material and human resource management. Our study reveals that cognitive and metacognitive strategies were the most mobilized and used by students in the respective proportions of 45.9% and 24.8%. However, others adapted their strategies according to the tasks (16.6%). In Larue and Hrimech's study (Larue, C., & Hrimech, M. 2009), students used more memorization strategies than development or organization despite a favorable learning context. These are surface information processing strategies than in-depth processing strategies despite indications that the use of a "depth" approach is associated with greater success in the course. However, the context in which we conducted our study was unfavorable because it lacked didactic and learning support resources, particularly very limited access to the Internet and a library without reference books.

4.2 Motivation Factors for Collaborative Learning

The students participating in our study were motivated to work in groups by the diversity of ideas and complementarity (44.6%), the quality of facilitation (16%) and enrichment through group discussion (14%).

Our results are in line with those of Boukelif, A. (2008), according to him, effective collaboration between the members of a team requires the development of several attitudes such as the active and equitable participation of all, respect and listening to others, attendance and punctuality at meetings, respect for agreed deadlines. In our study, group work provided different interests for learners; we noted the understanding and assimilation of subjects, the acquisition of new knowledge and complementarity at the socio-psycho-cognitive level.

Among the factors that encouraged good group work, students cited mutual trust (29.9%), attention to pedagogical objectives (24.8%), the degree of commitment of each student (24.1%), healthy exchange of ideas (12.7%) and empowerment and/or responsibility (12.1%).

4.3. Barriers and Other Problems Encountered During Collaborative Learning

Individual differences summarize the major obstacles encountered by students during interactions. For Viens and Amélineau (1997), even if the basic principles apply to all learners, there are differences in ability and individual preferences related to heredity and social environment. Learning is more effective when the linguistic, cultural and social characteristics of the learner are taken into account. In our study, these obstacles arose because of the insufficient role played by lecturers; because they did not promote the overall interaction and progress of the work within the group. In addition, study participants added conflicts related to the functioning of the group or the coordination of group tasks (57.3%), lack of scientific contribution (19.7%), inferiority or superiority complex (11.5%) and socio-cultural conflict (4.5%). The role of the facilitator is therefore crucial. The results of Denis' (2005) research provided some explanatory factors for the difficulties encountered by the students participating in our study. Denis noted that the quality of group productions can be thwarted by the dynamics prevailing in a class namely: negative leaders, amorphous or hypercompetitive groups, conflicts within the group.

Our study revealed that during the group work, 48.4% of learners felt that the lecturers' role was deficient. These shortcomings were related to the lack of training on how to organize collaborative learning. They are, therefore, for us, an avenue and a need for training for lecturers. In addition, these gaps are the direct consequence of the overpopulation due to the difficulty of adapting this pedagogical strategy; hence the need for modelling. For Boukelif, A. (2008), "learning to learn" requires that the learning process stops being mysterious; it should be controlled effectively instead of being subjected to it. To do this, the lecturer should acquire methodological reflexes and a capacity for self-reflection. In addition to the lecturer, students will need to be convinced of the benefits they could gain from using new strategies, experience them

and repeat them. For students to be convinced, teachers should take into account in the preparation of their teaching what motivates students and it is often the success of the exam (Bégin, C. 2008).

Focusing his research on collaboration in problem solving (Boukelif, A. 2008), it was noted that the exclusive use of traditional methods did not favor the transmission of information over training itself. As a result, the learner had great difficulty translating knowledge into action (knowledge transfer and problem solving), communicating ideas, working effectively in a team, and pursuing training independently.

In our study, the students surveyed identified other problems that hindered group collaboration. These include misunderstanding among students (44.6%); lack of participation and commitment (23.6%) and lack of collaboration (20.4%). These problems stem from the shortcomings of some lecturers in properly organizing group work and in fulfilling their role as facilitators. Contrary to our results, Denis, C. (2005) found that one of the important revelations of this research was the awareness of the difficulties posed by teamwork and its effects on the quality of relationships within a group. The lecturer therefore had the responsibility to generate the appropriate pedagogical conditions so that these learning could be carried out as harmoniously as possible.

4.4. Student Profile and Perception of Collaborative Learning

Some men (1.9%) have chosen the midwifery sector, although this is a profession reserved for women. In the surveyed population, the modal age range was 21 to 25 with 44.5% of students. It is followed by those under 20 years of age with 36.9%. The choice of midwifery course was made freely by the students themselves (79.0%). This choice made individually is a factor of internal motivation and increases success.

Perception was positive for 61.1% of students. Therefore, collaborative work is preferred because of its considerable contribution to the assimilation of theoretical knowledge and the assistance and support of peers in skills development. However, for 38.9% of students, this contribution is questionable. Their perception was mixed. In a study similar to ours, Denis, C. (2005) found it important to supervise teamwork well, particularly to avoid penalizing students who find themselves in difficult situations. Because, he thought that the approach seemed to be successful and effective both in teaching theoretical concepts and in integrating the more practical aspects of the profession.

CONCLUSION

Learners' perceptions were positive. They adapted their learning strategies to the tasks. The most mobilized were cognitive and metacognitive strategies. However, the problems identified are justified by the insufficient role played by the lecturer. The current realities in higher education in D.R. Congo have shown that the collaborative approach can contribute to the assimilation of theoretical knowledge and the development of skills. Therefore, the collaborative approach can be used effectively in a context of overpopulation. The opportunities and needs for lecturer training on the organization of collaborative work are twofold: capacity building for lecturers and support during the implementation of collaborative work.

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